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Contents

Oral Abstracts

Antiretroviral Therapy and its Complications

O1

The Protease Inhibitor Versus Ongoing Triple-therapy (PIVOT) trial

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Background: Previous randomised trials show patients switching to PI monotherapy maintain high rates of viral load (VL) suppression over 48-96 weeks, sometimes meeting VL non-inferiority criteria. However, longer-term resistance and toxicity risks are uncertain and the place of PI monotherapy in long-term management therefore remains controversial.
Methods: PIVOT was a pragmatic 5-year prospective, randomised, controlled, open-label strategy trial in HIV-positive adults taking a stable NNRTI or PI-based regimen who had no previous VL failure and had VL<50 c/ml for ≥6 months at trial entry. Patients were randomised to maintain ongoing triple therapy (OT) or switch to a PI monotherapy strategy (PIm) using a ritonavir-boosted PI (physician drug choice) with prompt reintroduction of NRTIs if unable to maintain VL suppression <50 c/ml. VL was measured every 12 weeks, with resistance testing for all confirmed VL rebound ≥50 c/ml. Primary outcome was *loss of future drug options*, defined as new intermediate/high level resistance to ≥1 drug to which the patient's virus was considered to be sensitive at trial entry. Secondary outcomes included serious disease complications (AIDS, serious non-AIDS, all-cause death) and total grade 3/4 adverse events. All analyses were by ITT; non-inferiority margin 10%.
Results: We randomised 587 patients (77% male, 68% white, 53% on NNRTI-based regimen at baseline) at 43 sites in the UK. Median (maximum) follow-up was 44 (59) months; 2.7% withdrew or were lost-to follow up. In PIm, 80% selected DRV/r, 14% LPV/r, 7% other PI/r. VL rebound was much more common in PIm than in OT (35.0% vs 3.2%; difference 31.8%, 95% CI 24.6 to 39.0%; $P < 0.001$). However, all rebounds on monotherapy re-suppressed either spontaneously or with NRTI reintroduction. Few new resistance mutations were seen in either arm. PIm was non-inferior on the primary outcome of loss of future drug options at 3 years (2.1% PIm vs 0.7% OT, diff PIm-OT 1.4% (-0.4 to 3.4%); $P = 0.15$) or at end of trial (2.1% PIm vs 1.8% OT, diff 0.2% (-2.5 to 2.6%); $P = 0.85$). There were no significant differences in serious disease complications or adverse events. Mean ART costs were substantially lower in PIm.
Conclusions: PI monotherapy, with prompt reintroduction of NRTIs for VL rebound, was a successful long-term management strategy, preserved future treatment options, was safe and well tolerated, and may be considered for more widespread use in long-term HIV care.

O2

Attachment inhibitor prodrug BMS-663068 in antiretroviral-experienced subjects: Week 24 analysis

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Background: BMS-663068 is the prodrug of BMS-626529, an attachment inhibitor that binds HIV-1 gp120, preventing the initial interaction between virus and target cell. This study is investigating the safety, efficacy and dose-response of BMS-663068 vs. atazanavir/ritonavir [ATV/r] in treatment-experienced (TE) HIV-1 infected subjects.
Methods: In this ongoing Phase 2b, randomized, active-controlled, blinded to BMS-663068 dose study; TE adults (≥1 week exposure to ≥1 antiretroviral) with viral loads (VL) ≥1,000 c/mL and susceptibility to study drugs were randomized to four BMS-663068 groups (400 or 800 mg, BID; 600 or 1200 mg, QD) and a control group (ATV/r 300/100 mg QD), each on a backbone of raltegravir 400 mg BID + tenofovir disoproxil fumarate 300 mg QD. A lead-in monotherapy substudy was performed in approximately 10 subjects per BMS-663068 arm. The primary endpoints were the proportion of subjects with HIV-1 RNA <50 c/mL at Week 24 and the frequency of SAEs and AEs leading to discontinuation through Week 24.
Results: Overall, 254 subjects were randomized and 251 were treated. Median VL and CD4 counts were 4.85 $\log_{10}$ c/mL (43% of subjects had >100,000 c/mL) and 230 cells/mm^3 (38% had <200 cells/mm^3), respectively. Across all arms, 20–40% had baseline NRTI/NNRTI resistance. Subjects in the 7 day monotherapy substudy (n = 32) showed mean VL reductions of 0.7–1.5 $\log_{10}$ c/mL at Day 8 across all arms. By Week 24, 69–80% of BMS-663068-treated subjects and 75% of ATV/r-treated subjects had HIV-1 RNA <50 c/mL (Table, modified Intent-To-Treat [mITT] FDA SnapShot). In the observed analysis, 78–87% of subjects in BMS-663068 arms had HIV-1 RNA <50 c/mL at Week 24 compared with 86% of subjects on ATV/r (Table). BMS-663068 was well tolerated; no SAEs or AEs leading to discontinuation were BMS-663068-related.

Week 24 Primary Study Results

	BMS-663068 + TDF (300 mg QD) + RAL (400 mg BID)				ATV/r + TDF (300 mg QD) + RAL (400 mg BID)
	400 mg BID	800 mg BID	600 mg QD	1200 mg QD	
Primarys Study mITT, N (FDA SnapShot)	50	49	51	50	51
HIV RNA <50 c/mL, n (%)	40 (80)	34 (69)	39 (77)	36 (72)	38 (75)
Primary Study Observed, N (Subjects within Week 24 window)	46	42	50	43	44
HIV RNA <50 c/mL, n (%)	40 (87)	34 (81)	39 (78)	36 (84)	38 (86)

Conclusions: In TE subjects, BMS-663068 was generally safe and well tolerated, with similar efficacy in mITT and observed analyses vs. ATV/r through Week 24. These data support continued development of BMS-663068.

O3

How would health care professionals (HCP) who care for HIV patients treat themselves or a family member if they were HIV+?

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Background: Global treatment guidelines recommend a variety of antiretroviral (ARV) regimens and CD4 criteria for initial therapy. We aimed to identify health care professionals' (HCPs) choices were they or a family member HIV infected.
Methods: An anonymous computer assisted self-interview was developed for HCPs who manage HIV at Autumn BHIVA 2013. Questions (all preceded by 'if you or a family member were HIV+') included 'when to start' (CD4 for initiation, seroconversion & treatment as prevention) and 'what to start' at

'lower' and 'higher' viral loads (VL) 50,000 and 200,000 copies/ml, respectively. HCPs also rated importance of factors including dosing frequency, pill burden, food requirements, drug-drug interactions, risk of hypersensitivity, GI and neuropsychiatric toxicities.

Results: There were 207 respondents who directly cared for HIV patients: 122 consultants (59%), 49 specialist registrars (24%), 19 nurses (9%) and 17 pharmacists (8%). 88% would initiate therapy at CD4 >350 (23% 350-399, 21% 400-499, 13% 500-750, 31% at any CD4). 80% would initiate treatment if seroconverting with no BHIVA guideline indicators and 98% to prevent transmission. At lower VL the top 3 regimen choices were Eviplera Atripla (ATR) and Stribild (STB) (35%, 29% and 10%); and 29% chose >1 pill options. At higher viral load the top 3 choices were ATR, Truvada/Darunavir/RTV and STB (40%, 14% and 13%). When considering Truvada vs. Kivexa, 89% & 86% preferred Truvada at lower/higher VL although 9% and 7% selected Kivexa-based regimens respectively. HCPs rated the following 3 regimen characteristics most frequently as 'most' or 'very' important: lack of GI side-effects 89%, lack of neuropsychiatric toxicity 83%, once vs. twice daily 74%. Lack of food restriction (56%), 1 pill vs. 2 (44%) and 2 pill vs. 3 (32%) were also considered as "most" or "very" important for a substantial portion of HCPs.

Conclusion: The survey suggests HCPs would initiate treatment at higher CD4 than current BHIVA recommendations if they or a family member were HIV+. Preferred regimens differed by baseline VL although the majority of HCP would choose a single tablet regimen at both VL levels. Truvada was preferred over Kivexa regardless of baseline VL. GI and CNS toxicities were rated as highly important with fewer HCP ranking pill burden and food restrictions as important factors.

04

Multicenter open-label study of switching from Atripla to Eviplera for CNS toxicity

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Background: Efavirenz (EFV) based regimens are recommended for initial HAART. Potential drawbacks include short and long-term CNS toxicity. We assessed the impact of substituting rilpivirine as part of the FDC Eviplera (EPA), for EFV as part of the FDC Atripla (ATR), in individuals with virologic suppression and possible EFV-associated CNS toxicity.

Methods: An open-label multicentre, pilot study switching virologically suppressed individuals on ATR with ongoing CNS toxicity after at least 12 weeks of therapy to EPA. The primary endpoint was rate of CNS toxicity at week 12 using an ACTG based adverse event (AE) score and Sleep Questionnaire (SQ). Secondary endpoints were: rate of CNS toxicity at week 24 (AE+SQ), continued virologic suppression, change in CD4 count and change in fasting lipids at weeks 4,12 and 24.

Results: 40 subjects (36 male, 4 female) with mean age of 47 years (range: 24-73) and median time on EFV of 42 months (range: 24 to 100) were enrolled. Median baseline CD4 was 610 cells/μl (IQR: 436 to 884). A significant reduction was observed in median total CNS score from baseline (40; IQR 29 to 57) to week 12 (20; IQR 10 to 33, p<0.001). At week 24 the median CNS score was 13 (IQR 7 to 40, p<0.001).

	Proportion of Subjects Reporting Symptoms			
	Baseline	Week 4	Week12	Week 24
Any Symptom	98	38 (p<0.001)	51(p<0.001)	44 (p<0.001)
Dizziness	33	10 (p=0.013)	8 (p=0.008)	8 (p=0.004)
Depression	53	13 (p<0.001)	31 (p=0.029)	28 (p=0.012)
Insomnia	60	20 (p<0.001)	26 (p=0.001)	26 (p<0.001)
Anxiety	45	13 (p<0.001)	26 (p<0.001)	23 (p<0.001)
Confusion	30	8 (p=0.003)	10 (p=0.005)	10 (p=0.021)
Impaired Concentration	48	8 (p<0.001)	23 (p=0.008)	18 (p=0.001)
Headache	10	10 (p=0.998)	8 (p=0.564)	10 (p=0.999)
Somnolence	50	13 (p<0.001)	21 (p=0.003)	18 (p<0.001)
Aggressive Mood	25	13 (p=0.096)	10 (p=0.034)	15 (p=0.103)
Abnormal Dreams	75	10 (p<0.001)	13 (p<0.001)	15 (p<0.001)

Median total SQ improved from 30 (IQR 22 to 38) at baseline to 14 (IQR 9 to 21) at week 24 (p<0.001). All patients completing study maintained virologic suppression. Significant improvements were seen at week 24 for total cholesterol (-0.9mmol/l; p<0.001), LDL cholesterol: (-0.57mmol/l; p<0.001) and triglycerides (–0.35mmol/l; p<0.001).

Conclusions: Switching ATR to EPA led to significant improvement in CNS toxicity and sleep quality with maintenance of virologic suppression and lipid improvements. Identification of individuals with EFV toxicity is essential as use of alternative agents lead to improvement in tolerability and toxicity.

05

Variation in mode of delivery for HIV-positive women in UK & Irish hospitals, 2008–2013

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Background: BHIVA pregnancy management guidelines have included planned vaginal delivery for HIV-positive women with suppressed viral load (VL) at term as an option since 2008, and recommended it since 2012.

Methods: The National Study of HIV in Pregnancy and Childhood (NSHPC) collects comprehensive surveillance data on pregnancies in HIV-positive women. Data from the 17 units with at least 100 deliveries reported 2008-September 2013 were analysed; these units contributed almost half of all reports to the NSHPC. Logistic regression was used to assess whether variation in vaginal delivery rates was related to caseload (number of deliveries 100-149 v >150), region (strategic health authority), pre-term delivery (<37 weeks) and delivery year.

Results: Data on 2346 singleton deliveries with known mode of delivery were analysed: 42% were planned vaginal, 32% elective caesarean section (CS) and 26% emergency CS. Planned vaginal delivery increased by 30% overall 2008-2013, but varied between units from 12 to 67% (elective CS 14-62%, p<0.001). The proportion of emergency CS deliveries was relatively stable over time and between units (19-31%, p=0.73).

1849 deliveries were in women with suppressed virus close to delivery (i.e eligible for planned vaginal delivery); there were 860 (47%) planned vaginal, 507 (27%) elective CS and 482 (26%) emergency CS deliveries. Significant variation between units in the proportion of planned vaginal deliveries remained p<0.001, mean 45% (IQR 35%,53%); at the extremes, in one unit with 109 deliveries only 14% (10/70) of eligible pregnancies ended in planned vaginal delivery, while at another with 124 deliveries 69% (72/105) were planned vaginal.

Variation in mode of delivery was explained by caseload, region (deliveries in London, and East and West Midlands significantly less likely to be vaginal) and gestation (pre-term delivery less likely to be vaginal).Year did not contribute significantly. Caseload had the greatest effect on outcome: women delivering at units with more than 150 deliveries were significantly more likely to have a planned vaginal delivery, OR 1.73 (95% CI 1.41, 2.13).

A similar analysis based on all 38 units with at least 50 deliveries since 2008 showed similar patterns including with respect to caseload.

Conclusion: There appears to be wide variation in practice with respect to mode of delivery between units and regions, including among women with suppressed virus, which could reflect local policy differences.

06

The clinical utility of therapeutic drug level monitoring of Atazanavir and Darunavir in pregnancy

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Background: Optimal dosing of antiretrovirals during pregnancy is paramount to obtaining an undetectable viral load throughout third trimester in preparation for the safest delivery of the infant(s). Achieving this not only reduces the risk of vertical transmission of Human Immunodeficiency Virus (HIV) but also enables the mother to consider a normal vaginal delivery (NVD) and the infant to receive single rather than triple antiretroviral therapy. More women with HIV are conceiving on antiretroviral therapy including the modern protease inhibitors (PI)s Atazanavir and Darunavir which are well tolerated and

efficacious, but have altered pharmacokinetics in pregnancy, with reduced plasma concentrations reported during the third trimester. In an attempt to ensure optimal dosing of these drugs, we introduced routine therapeutic drug monitoring (TDM) of these drugs, and set out to evaluate the clinical utility of this.
Method: From the start of 2012 our HIV treatment policy changed to state that all pregnant women taking boosted Atazanavir or Darunavir should have TDM performed at the start of the third trimester. A retrospective case note review was conducted of all such patients from 2008 until 2013. Patient outcomes were then compared between those who received TDM and appropriate dose modification and those who did not (mainly before routine TDM was introduced).
Results: There were 52 pregnancies in 46 women identified and their notes reviewed. TDM was performed in 23 of these pregnancies and the majority (66% on Atazanavir and 100% on Darunavir) were in the therapeutic range. However, changes to drug dosages were made by clinicians in 61% of women, often because of drug levels in lower parts of the therapeutic ranges (61%). None of these patients had detectable viraemia at the time of TDM or at delivery. The outcomes from the two groups was compared using Fishers Exact test and no significant difference ($p>0.9999$) was found in terms of HIV viral load suppression at the time of delivery. This was the case for both PIs.
Conclusion: We did not find that the introduction of routine TDM for those pregnant women taking Atazanavir or Darunavir to be clinically useful or lead to better outcomes in terms of planning for a NVD and neonatal single monotherapy. We suggest that TDM for these drugs should not be performed routinely in pregnancy, but performed in the same circumstances as is indicated in non-pregnant individuals.

O7

Recommendation for the off-licence use of maraviroc in children with perinatally acquired HIV-1 infection by a regional paediatric virtual clinic

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Background: The CCR5 receptor antagonist maraviroc (MRV) is licenced for use in adults with CCR5-tropic HIV-1 but not yet approved for paediatric use. Safety and efficacy studies of MRV for 2-17 years olds are currently enrolling. The off licence use of MRV in children occurs due to resistance, prior ART toxicity and simplification to once daily regimens in adolescents, however published data is lacking.
Methods: Audit of recommendations for MRV use by a regional paediatric virtual clinic (PVC) in children aged <18 years with perinatally acquired HIV. The analysed variables included: age, weight, sex, ethnicity, previous ART exposure/toxicity, resistance, reason for ART switch and ART recommended by the PVC.
Results: 17 children ever received MRV on the recommendation of the PVC. Median age 14 years (12-17), 13/17 (76%) male, median weight 43 kg (range 29-72), Reasons for referral to PVC were: virological failure (VF) (8), ART Toxicity (5) VF and ART toxicity (2), VF and proteinuria (1) and simplification to OD regimen (1). ART toxicity included hyperlipidaemia (4) and tenofovir associated nephrotoxicity (3). All patients were CCR5 tropic on RNA or DNA V3 loop sequencing within 3 months prior to switching to MRV based ART. All received 300 mg MRV once daily with a boosted protease inhibitor (PIs) either darunavir/r (DRV/r) (14) or atazanavir/r (3) and an optimized NRTI backbone. 2 patients also received etravirine and 2 raltegravir (RAL). At start of MRV based ART, median CD4 count was 690 cells/ul (176-1400), median VL 140 copies/ml (IQR <50 – 4670) and 5/17 (29%) were suppressed. Follow up data was available for 12 (71%) patients; 8/8 from our centre, 4/9 from referral clinics. At latest follow up median time on MRV was 20 months (range 3-38) and 9/12 (75%) had a VL <50 copies/ml. 2 patients had low level viraemia 50-400c/ml and one patient experienced virological failure after 24 months on Truvada, MRV and DRV/r with a CXCR4 tropic virus and subsequently switched to RAL-based ART. No side effects resulted in the discontinuation of MRV, however 1 patient suffered a transient rash on MRV, DRV/r and lamivudine.
Conclusion: Though not licenced in children, MRV was safe and well tolerated in a small cohort of perinatally infected adolescents with CCR5 tropic virus, three quarters of whom remain virally suppressed. Once daily dosing with boosted PIs offers convenient once daily regimen for some treatment experienced adolescents.

O8

Temporal trends in cART initiation amongst HIV seroconverters in the UK

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Background: Although the optimal time for initiating cART is not known, there has been a shift towards earlier initiation over time. We sought to characterise cART initiation in the UK and establish whether, and to what extent, time to initiation has changed over time.
Methods: We used time to event analyses on data from individuals enrolled in the UK Register of HIV Seroconverters to examine time from HIV seroconversion (SC) to cART initiation. Data were restricted to individuals seroconverting on or after 1/1/1998, when cART was first available, to 31/12/2011 or earlier, to allow adequate follow-up. Follow-up was censored at date last assessed or date of death. Cox proportional hazards models were used to assess changes in time to initiation over calendar time, adjusting for age at SC, sex, HIV exposure category and HIV test interval (interval between negative and positive HIV test dates).
Results: Of 1734 individuals seroconverting 1/1/1998-31/12/2011 with 4634 person years of follow-up, 1337 (77.1%) started cART during follow-up. The cohort was largely male (94.1%), exposed to HIV through sex between men (89.9%) and with median (IQR) age 32.8 years (27.2, 40.3). Median (95%CI) time to cART initiation was 2.5 years (2.3, 2.7). 282 (16.3%) started cART in PHI (within 6 months of SC) and a large proportion overall (23.5%) interrupted cART (>14 days), likely reflecting a policy of prescribing short-course therapy in primary infection (PHI) and enrolment into the SPARTAC trial. After excluding individuals initiating in PHI, 12.2% interrupted, decreasing from 23.5% pre-2000 to 4% in 2010-2011. Median duration of initial cART for those interrupting was 0.76 years (0.20, 1.85). Excluding those initiating in PHI, median (95%CI) time to initiation decreased from 4.9 (3.5, 5.2) years pre-2000 to 4.3 (3.5, 5.2), 4.2 (3.6, 4.7), 3.4 (3.0, 3.7), 2.7 (2.3, 3.0), 2.6 (1.9, 3.1) and 1.7 (1.5, 2.2) years in 2000-1, 2002-3, 2004-5, 2006-7, 2008-9 and 2010-11, respectively. In the adjusted Cox models, the relative risk of starting cART was 1.10 (95%CI 1.08, 1.13) per calendar year ($p<0.001$). For those initiating cART, median (IQR) CD4 at initiation was 304 cells/mm^3 (235, 379), increasing from 275 (187, 352) pre-2000 to 375 (301, 500) in 2010-11.
Conclusion: Our data suggest a trend towards earlier cART initiation over time in line with changes in guidelines, although a substantial proportion initiated at CD4 ≥500 cells/mm^3 in the most recent time period.

O9

HIV and health-related quality-of-life in the UK – where are we now?

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Background: Little is known about health-related quality-of-life (HRQoL) among people living with HIV in the era of combination antiretroviral therapy (cART), compared to the general population (GenPop). It is also unclear whether HRQoL decreases more quickly with increasing age in people with HIV. This study assesses these two issues.
Methods: Data from two (2011-12) UK cross sectional studies were used. ASTRA, containing an unselected sample of people diagnosed with HIV attending outpatient clinics (n = 3,258) and the Health Survey for England (n = 8,503). HRQoL was assessed using the EQ5D-3L utility instrument (utilities of 0 and 1 equal to perfect health and death respectively). EQ5D-3L includes mobility, self-care, usual activities, pain and anxiety / depression. Multivariable analyses compared HRQoL between the two samples, using two part regression modelling (TPM). Different categorisations of HIV infection were used in four models (1) HIV versus GenPop; (2) HIV sample split by CD4

count c/mm^3 (≤200 / >200); (3) HIV sample split by ART status/viral load (on cART VL≤50 c/mL, on cART VL≤50 c/mL, never cART, stopped cART). All models were adjusted for age and gender; 2 and 3 were also adjusted for socioeconomic variables. In a 4th model, an interaction term between HIV and age was included.
Results: HRQoL was lower for those with HIV compared to GenPop for all EQ5D-3L domains but particularly anxiety / depression, with a 24% absolute difference in the proportion with at least 'some problems'. The TPM's showed that people with HIV had significantly lower scores compared to the GenPop (difference for model 1: 0.11; 95% CI 0.10 to 0.13). Differences remained significant after adjusting for socioeconomic variables, and were apparent across all CD4 and ART/VL categories (models 2 and 3). Female gender, non-white ethnicity, not having children, smoking and lower education were also associated with lower HRQoL. The effect of HIV on HRQoL was of a similar magnitude to heavy smoking. There was no interaction between age and HIV status ($p = 0.70$).
Conclusion: People living with HIV have significantly reduced HRQoL compared to GenPop levels, despite the majority being virologically and immunologically stable. This may be due to HIV itself or other factors. There was no evidence of a greater effect of 'ageing' effect on HRQoL for those with HIV. This study provides evidence on the 'value' of preventing further HIV infections, particularly for future cost-effectiveness analyses.

Basic Science and Immunology

O10

Evaluation of circulating gut-homing T cells as a marker of HIV-1 progression and immune reconstitution

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Background: Gut-associated lymphoid tissue (GALT) is a major site of HIV-1 replication and depletion of CD4+ T cells from the earliest stages of infection. Expression of gut-homing alpha-4 and beta-7 integrins on peripheral CD4+ T cells is correlated with intestinal CD4+ T cell loss in SIV-infected monkeys but their relevance to HIV disease is uncertain. This study aimed to evaluate circulating gut-homing T cells as a marker of HIV-1 progression and immune reconstitution.
Methods: We used flow cytometry to quantify gut-homing CD4+ T cells, defined by high expression of beta-7 integrin, in peripheral blood mononuclear cell samples in 4 study groups: 20 healthy HIV-uninfected controls, 37 HIV-positive naïve to ART, with either controlled (VL <5000 copies/ml) or uncontrolled viraemia and 30 ART-treated subjects (VL <50 copies/ml).
Results: Mean (SD) frequencies of beta-7-high CD4+ T cells were 4.7% (1.6), 4% (1.5), 2.8% (1.1) and 2.3% (0.8) for healthy controls, untreated viraemic subjects, ART-treated and viraemic controllers respectively. These differences were statistically significant (1-way ANOVA, p<0.0001). The difference in frequencies of beta7-high CD4+ T cells between ART-treated and ART-naive viraemic subjects was not explained by concurrent CD4 counts (means 546 and 657 cells/ul respectively, p=0.5); furthermore, beta-7-high CD4+ T cell frequencies among ART-treated subjects were not influenced by the duration of ART (mean, SD: 6.3, 3.4 years). Surprisingly, beta-7-high CD4+ T cells were also significantly reduced among viraemic controllers compared with HIV-negative controls. To investigate these findings further, we measured plasma intestinal fatty acid binding protein (I-FABP), a marker of enterocyte apoptosis, by ELISA. Preliminary data indicate higher levels of I-FABP levels in all HIV-positive groups than HIV-negative controls, consistent with gut mucosal damage in both treated and untreated chronic infection.
Conclusions: Our data suggest that chronic HIV infection results in both destruction and defective trafficking of gut-homing CD4+ T cells from the circulation back to GALT. These effects are not reversed by long-term ART. Evaluation of beta-7-high CD4+ T cells and I-FABP in blood is an attractive alternative to sampling gut tissue and together, these parameters may prove useful as a marker of immune restoration in the development and evaluation of viral eradication strategies.
[BHIVA Research Awards winner 2010: Lucy Dorrell]

O11

Beneficial effect of NNRTI over boosted PI first line cART on CD4 T-cell restoration in older HIV-1+ patients

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Background: More than 10% of people living with HIV (PLHIV) worldwide are over the age of 50 according to the most recent UNAIDS figures and this percentage is increasing. This, amongst other factors, is due to the success of combination antiretroviral therapy (cART) as well as older people becoming infected with HIV-1. However little is known about the impact of various regimens on immune reconstitution including CD4 T-cell restoration in these patients. We aimed to investigate the effect of NNRTI versus boosted PI first line cART on lymphocyte subset changes in ageing HIV-1-infected subjects.
Methods: HIV-1$^+$ patients managed from 1996-2011, whose first line therapy consisted of either 2NRTI+NNRTI or 2NRTI+boosted PI, were studied to assess the effect of cART regimen and age on lymphocyte restoration. A linear mixed model was generated using MIXED procedure in SAS to derive point estimates by fitting lymphocyte subsets as a dependent variable by age grouped into decades and stratified by first line cART. The differences between restoration slopes for lymphocyte subsets, for both cART regimens, were investigated for PLHIV aged 40 years and older.
Results: 79% of 4,346 HIV-1$^+$ PLHIV started on 2NRTI+NNRTI and the remainder on 2NRTI+boosted PI; 87% were men, 73% Caucasians, and 80% MSM. Since the age of 40, we observed significantly better restoration slopes for NNRTI regimens compared with PI boosted regimens for CD4 T-cell counts (p<0.001), CD4 T-cell percentage (p=0.005) and CD56 NK-cell counts (p=0.005); no differences were observed for CD8 T cells. Significantly better CD4:CD8 T-cell ratios (p=0.049) were observed for PLHIV whose first line cART included NNRTI, although they were consistently below normal values. Moreover, there were no significant differences in plasma HIV-1 RNA levels from the age of 40 years between these two first line treatments (p=0.484).
Conclusion: In our cohort, first line cART that included NNRTI was associated with higher CD4 T-cell count restoration and improved CD4:CD8 T-cell ratios; in addition to the importance of timely initiation of cART, the choice of regimen is also crucial particularly for the ageing PLHIV. Persistence of overall low CD4:CD8 T-cell ratio may be indicative of accelerated immunological ageing and immune senescence. Further studies investigating differences in T-cell activation/exhaustion and viral reservoirs between these two first line cART groups in the context of ageing are warranted.

O12

Protection versus pathology in aviremic and high viral load HIV-2 infection – the pivotal role of immune activation and T-cell kinetics

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Background: Human HIV-2 infection can cause AIDS in the same way as HIV-1 infection, but many HIV-2-infected individuals remain aviremic and behave as long-term non-progressors, mirroring a state of "functional cure". Conversely, a sub-group with high viral loads progress rapidly to AIDS. The relatively protected status of aviremic HIV-2 non-progressors is not a characteristic of the virus *per se* and differences in plasma viral loads do not adequately explain the clinical disparity. We postulated that immunological factors critically determine the non-progressor state and specifically, that differences in immune activation and T-cell turnover would correlate with patterns of disease progression.
Methods: We studied 37 subjects in The Gambia, West Africa: 10 HIV-negative Controls, 10 HIV-2-infected subjects with low viral loads (HIV-2-LV), 7 HIV-2-infected subjects with high viral loads (HIV-2-HV), and 10 with HIV-1 infection. T-cell phenotyping by flow-cytometry was correlated with *in vivo* turnover, measured by deuterium-glucose labeling, and TREC abundance, for T-cell replicative history.

Results: Immune activation (co-expression of HLA-DR/CD38) differed between groups with a significant trend: Controls < HIV-2-LV < HIV-1 < HIV-2-HV ($P < 0.01$ for all cell types). A similar trend was observed in the pattern of *in vivo* turnover of memory $CD4^+$ and $CD8^+$ T-cells, whilst TREC levels in naive $CD4^+$ cells showed a reverse trend. Naive T-cell turnover was relatively unaffected by either HIV-1 or HIV-2 infection. Correlations showed that the strongest predictor of T-cell turnover was immune activation ($P < 0.001$ for both $CD4^+$ and $CD8^+$ T-cells).
Conclusions: HIV-2 non-progressors have low levels of immune activation and low rates of T-cell turnover (for both $CD4^+$ and $CD8^+$ T-cells), whereas high viral load HIV-2 progressors had values similar to or exceeding those in HIV-1 infected individuals. Immune activation appears pivotal to disease progression in HIV regardless of the virus driving pathogenicity.

O13

IP-10 levels in HIV/HCV co-infection decrease with the initiation of successful antiretroviral (ART) therapy: Implications for earlier ART in co-infected patients?

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Background: Patients with HIV/HCV co-infection have poorer HCV treatment outcome than patients with HCV alone. High levels of Interferon gamma induced protein 10 (IP-10) are associated with a lower SVR to antiviral treatment in both HCV and HIV/HCV subjects. Optimal Vitamin D3 levels are associated with higher SVR and Vitamin D receptor agonists have been shown to decrease IP-10 production.
Methods: This study had both cross-sectional and prospective components. We compared IP-10 in 36 samples from HIV/HCV patients pre-ART with IP-10 in 55 samples from those on effective ART. 25(OH)D was measured in all patients with samples available. Prospectively we measured IP-10 and 25(OH) D in 10 patients before and after initiating ART. Finally we measured IP-10 in 10 HIV + patients with HCV Ab + HCV RNA - indicating spontaneous HCV clearance. IP-10 was measured using the Quantikine ELISA Immunoassay
Results: Median IP-10 levels were higher in ART naïve patients than those on ART, 250 (IQR 152, 324) pg/ml vs. 147 (90, 187)pg/ml p<0.005. Median CD4 pre- ART was 389 (260,472) cells/ml and post-ART was 459 (291,655) cells/ml (p=ns).Mean 25(OH)D was 25.5 (sd 18.3) in ART naïve patients (n=20) and 16.0 (10.8) in patients on ART (n=30) (p=0.04). In univariate analysis, only use of ART was significantly associated with IP-10. There was no correlation between 25(OH)D and IP-10. IP-10 in those patients who had spontaneously cleared HCV and were on ART was 35.9 (26,59) pg/ml; significantly lower than those with chronic HCV on ART. In the 10 individuals for whom longitudinal samples were analysed, median IP-10 prior to ART was 269 (175, 304) pg/ml, median post-ART was 156 (110, 204)pg/ml (p=0.03). In these 10 patients, mean 25 (OH)D was 29 (17) pre-ART and 18 (10) post-ART (p=0.09)
Conclusion: This is the first study to prospectively show that ART resulting in undetectable HIV viraemia is associated with a fall in IP-10 levels in patients with HIV/HCV. We also demonstrate that in an ART naive sample IP-10 was higher than in those on ART, despite no significant difference in CD4 count, suggesting a more aggressive fibrogenic milieu. Vitamin D was lower in those on ART which has been previously reported. If serum Vitamin D levels were maintained during ART, IP-10 may have decreased further. This data supports early initiation of ART in patients with HIV/HCV, regardless of CD4 count. HCV therapy in coinfected patients should not be undertaken until effective ART has been initiated.

O14

The effect of HCV infection duration on HIV disease progression

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Background: A number of studies have assessed the effect of HCV co-infection on HIV disease progression, with conflicting results. None have considered the effect of HCV infection duration. The question remains outstanding although it is important for the management of co-infected individuals.
Methods: Using data from individuals with well-estimated dates of HIV seroconversion, we estimated HCV infection duration for co-infected individuals. If HCV serostatus was not recorded, we assumed that all those attending clinics after annual HCV testing was introduced to routine practice in UK (January 2003), were HCV negative at each subsequent year following that date, unless otherwise recorded. We fitted Cox proportional hazard models using time from HIV seroconversion to a composite endpoint of CD4<350, clinical AIDS or death, with HCV serostatus as a time-updated variable. As HCV infection duration was collinear with follow-up time, we considered its effect (HCV-uninfected, <1, 1-2, >2 years) in each period (<2, 2-4 and >4 years) to ensure that individuals with HCV were compared to those with similar HIV infection duration, adjusting for sex, age group (per 10 years), exposure category, acute infection, and decade of seroconversion. In sensitivity analyses, we required a confirmed CD4<350 and we included cART initiation in the endpoint.
Results: Of 1430 individuals with HCV status information, 84 were HCV co-infected, of whom 67 became HCV-infected during follow up. Mono-infected individuals seroconverted more recently (median: 2005 vs. 1998) and were less likely to be IDUs (<0.1% vs. 32%). HCV infection independently increased risk of HIV disease progression (HR=1.57, 95% CI [1.13, 2.20], p<0.01). Furthermore, individuals with HCV coinfection <1 year had higher risk of reaching the endpoint compared to mono-infected individuals (<2 years follow up: HR=2.64, 95% CI [1.50, 4.65], p<0.01, 2-4 years: HR=15.69, [4.77, 51.64], p<0.01, and >4 years: HR=4.98, [1.95, 12.73], p<0.01). The risk of endpoint did not significantly differ between those with longer HCV infection duration (>2 years) and HIV mono infected individuals. Results from sensitivity analyses did not qualitatively change.
Conclusion: Individuals with recent HCV infection are more likely to experience more rapid HIV disease progression compared to those with longer infection and those with mono HIV infection. This warrants further investigation but may explain the discrepancy in published findings.

O15

Immunological efficacy of a prime-boost vaccine strategy combining the 13-valent Pneumococcal Conjugate Vaccine (PCV13) followed by the 23-valent Pneumococcal Polysaccharide Vaccine (PPV23) versus PPV 23 alone in HIV-infected adults

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Background: Invasive pneumococcal disease remains a significant cause of morbidity and mortality in HIV+ adults. PPV23 has been shown to have suboptimal immunogenicity in this group. Strategies such as priming with PCV13 followed by boosting with PPV23 may augment immune response. This single-centre randomised controlled trial assessed immunological efficacy of PCV13 + PPV 23 versus PPV 23 alone in HIV+ adults.
Methods: HIV+ adults ≥18 years with no prior history of pneumococcal vaccination with a CD4 count >200cells/mm^3 were randomised to receive PCV13 at week 0 + PPV23 at week 4 ("prime-boost" group, n=27) or PPV 23 alone at week 4 ("un-primed" group, n=33). Quantitative antibody titres for 12 pneumococcal polysaccharide serotypes (PPS) (1,3,4,5,6B,7F,9V,14,18C,19A, 19F,23F) shared by both vaccines were measured at week 0, 8 and 28.
Proportion of responders (≥2-fold increase in antibody titre to ≥ 6 vaccine serotypes) and fold increase in PPS IgG geometric mean titre (GMT) were compared. Wilcoxon and x^2 tests were used to compare IgG levels and categorical variables as appropriate.
Results: 60 patients (mean age [SD] 37[9] years, 92% male, mean CD4 count 503 [209] cells/mm^3, 47% on HAART, mean HIV RNA 4.5log_{10} copies/ml) were enrolled. Baseline characteristics were well matched between groups.
Week 8 vaccine response rates were 88% and 86% in the prime-boost and un-primed group respectively (p=1). Week 8 fold increase in GMT was greater in the prime-boost group (mean [SD] 8.69 [4.61] vs. 4.49 [1.24], p<0.001) with significantly higher GMT for serotype 23F (3.20 vs. 0.52ug/ml, p=0.0038).
At week 28, proportion of responders was significantly higher in the prime-boost group (85% vs. 52%, p=0.01). Week 28 GMT in the prime-boost group were significantly higher for 4 serotypes; 1 (0.48 vs0.29ug/ml, p=0.05), 4 (0.83

vs. 0.42ug/ml, p=0.023), 19F (1.51 vs. 0.88ug/ml p=0.04), 23F (1.54 vs. 0.42ug/ml, p=0.013) and fold increase in GMT remained greater in the prime-boost group (4.39 [1.77] vs.2.47 [0.67], p=0.05).
Conclusions: The immunogenicity and durability of pneumococcal vaccine response was enhanced by the prime-boost vaccine strategy. Our study adds to evidence supporting recent changes in US pneumococcal vaccination recommendations and strengthens the call to review current pneumococcal vaccine guidelines in Europe.

Service Delivery

O16

Less is more: The impact of a new senior model on clinic throughput and its ability to support staff to reach their full potential

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Background: Matching the needs of patients with staff competencies is essential for optimal throughput in a sexual health service. However, training and then supporting staff to reach their full potential is difficult in the face of clinic pressures. A new service model was devised where one senior staff member was asked not to directly see patients but instead provide real-time second opinions. We therefore tested if the senior model would release capacity and support nursing and junior doctors to see more symptomatic patients.
Methods: This study was performed at an inner London clinic working across two sites seeing 32,000 new/rebook clients a year where 80% are either symptomatic and/or require contraception. Early in 2013 four changes were embedded, namely: patient self-triage, intensive nurse training [supporting band six nurses (B6N) to see symptomatic patients], a reception filter based on staff numbers to determine clinic capacity and finally a standard matrix to govern patient numbers at the end of the working day. The senior model started on 10th June 2013 and the analysis of patients seen by B6N, clinical nurse specialists (CNS) and junior doctors (JD) was performed over 68 days just prior to the start date and 68 days up to the end of October. Results are presented as total patient numbers; those having sexually transmitted infection (STI) testing and symptomatic patients (where a gram stain performed) adjusted for the number of staff in each group. The engagement of B6N, CNS & JD with a senior doctor was captured by a local code.
Results:

Patients seen	Senior model		
	Baseline	After implementation	Increase (%)
		Total patient numbers	
B6N	108	176	63
CNS	181	249	38
JD	60	100	67
		STI testing only	
B6N	31	66	113
CNS	40	42	5
JD	16	28	75
		Symptomatic	
B6N	12	25	108
CNS	65	114	75
JD	22	42	91

The number of local codes submitted for senior doctor consultations rose after the introduction of the senior model from 305 to 812 (266%) during the two respective time periods.
Conclusion: Since the introduction of the senior model all three staff groups have seen more clients; however, this is proportionally greater for those patients with symptoms. For each patient the senior did not see, the clinic saw six additional patients. Even though these results are encouraging, more analysis is required on the role of the senior, the impact of skill mix on patient throughput and the scalability of this model.

O17

ePN: electronic partner notification is an effective, efficient method to deliver partner notification and capture verified outcomes

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Background: Partner notification (PN), a key aspect of Public Health and STI control, is of increasing interest to commissioners of HIV and sexual health services. Efficient delivery and capturing established outcomes has proved difficult and time consuming, and has not kept pace with other processes in utilising IT. ePN is a novel programme automating the delivery of PN via text messages, updating with subsequent diagnoses and capturing contact attendance at clinics.
Methods: In this feasibility pilot, ePN was offered in 2 London GU clinics, Feb-Nov 2013. Data was reported on STI, number of contacts (C), C reported clinic attendance (cCA; via texting 'update' when attending another service), and C attendance verified by a health care worker (HCWCA); the last only possible at the 2 pilot clinics. The clinic data base (CDB) was interrogated to identify additional C attendances.
Results: Of the 139 patients offered ePN, 62 accepted; the majority declining at initial telephone contact. There were 73 STI diagnosed and 252 C; the average number of C per index case (IC) was 1 (range 1-29, 12 IC≥5C, 8 IC ≥ 10C). There were 60 cCA and 18 HCWCA (4 had both), giving outcomes of 0.97 and 0.29 per total number of STI respectively. CDB revealed an additional 2 cCA and 48 HCWCA; giving outcomes of 0.97 and 0.94.

STI	No.	No. C	ePN alone/ePN +CDB			
			No. cCA (incl. HCW verified)	No. HCWCA	cCA per STI	HCWCA per STI
Syphilis	13	101	32/33	7/11	2.46/2.54	0.53/0.85
Gonorrhoea	20	91	30/30	3/28	1.5/1.5	0.15/1.40
Chlamydia	40	91	24/25	13/34	0.60/0.63	0.33/0.85

CDB revealed contact outcomes including 5 new cases of syphilis, 6 GC and 4 chlamydia; all treated.
Conclusions: ePN is a feasible and acceptable way to deliver partner notification. Even with the limitation of only 2 pilot sites able to produce HCWCA (the gold standard), its reported outcomes, which require minimal staff time, in some instances match or exceed national standards. Supplemented by CDB these targets are exceeded. The first outcome has the advantage over the current measure as it originates from the contact rather than the index patient. Further work is required to validate contact reports and capture contact outcomes, assess acceptability of the recently added HIV option and expand the number of clinics; the latter would remove the need for CDB interrogation. With automated delivery and outcome reporting, this innovative new service has the potential to improve PN performance and reporting, as well as deliver significant efficiencies.

O18

Active recall for HIV/STI testing: a systematic review

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Background: Active recall has been successfully used to improve re-attendance rates in healthcare and could be a useful tool to increase re-screening rates and detection of HIV and sexually transmitted infections (STIs).
Methods: We systematically reviewed and critically appraised studies of active recall for HIV and STI screening. Randomised and non-randomised interventional and observational English language studies with and without

comparator arms were included. We searched six electronic databases from 1983 to 2013. Search terms for HIV, STIs, tests, and active recall were used. Active recall was defined as a reminder to re-test for HIV/STIs, e.g. by short message service (SMS), email, phone call, letter or sending a home sampling kit. Outcomes included re-attendance/retesting rate and STI diagnosis at follow up. Quality assessment used the NICE Public Health Methods Manual. Meta-analysis used a random-effects model due to heterogeneity of studies.
Results: Of 5634 papers identified, 17 met the inclusion criteria. All but one high quality study of active recall demonstrated high re-attendance rates. Among all active recall interventions, the odds ratio (OR) for re-attendance in the intervention compared to the control group ranged from 0.93 (95%CI 0.65, 1.33) to 14.0 (95%CI 1.63, 120.1) and the pooled OR in the 9 RCTs was 2.42 (95%CI 1.84, 3.19) and had low heterogeneity (I^2=38%, p=0.12). In the subset of home sampling RCTs, the pooled OR for re-test compared to clinic testing with and without email/postcard/phone reminders was 2.20 (95%CI 1.65-2.94) and had low heterogeneity (I^2=44%, p=0.13). The pooled OR for re-attendance in 7 observational studies of SMS reminders compared to standard clinic care was 2.19 (95%CI 1.46-3.29), but had high heterogeneity (I^2=94%, p<0.001). In the two high quality studies that reported infections at re-test, difference in positivity (number of infections at re-test/number recalled) between intervention and control groups was 3% and 25% and in diagnosis rate (number of infections at re-test/number sampled) was 0.6% and 7%.
Conclusion: Active recall interventions are associated with an increase in re-testing rates for HIV/STI. The evidence is limited by heterogeneity of interventions and control groups and therefore cannot determine which modality of active recall is most effective. Further work is needed to determine this and to explore cost-effectiveness and acceptability of active recall interventions for HIV/STI screening.

O19

Patients' referral pathway in the first year of HIV care

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Background: Standards of HIV Care noted the importance of prompt referral pathways and integration into care following diagnosis. We explored the extent of referral and its impact on the timeliness of baseline assessment.
Methods: A national cohort of HIV adults (aged ≥15 years) diagnosed with HIV in 2011 in England was analysed. Patients' referral pathways (RP) were grouped as diagnosed:

- and seen for care at an integrated GUM/HIV clinic (RP1)
- in non-GUM settings within the same hospital (RP2)
- in GUM/non GUM settings at another hospital in the same NHS trust (RP3)
- in GUM/non GUM settings in different NHS trusts (RP4)
- in primary care or community settings (RP5).

Link to care was defined as being reported to the cohort by 2012. The time from diagnosis to first CD4 count was used to assess the timeliness of baseline assessment. Prompt assessment was defined as having a CD4 test within one month of diagnosis. Multivariate analysis assessed the characteristics of those with referred pathways to HIV care (RP1 vs. PRs 2-5).
Results: Of 5,441 adults newly diagnosed with HIV, 2.0% (107) died within 3 months, 90% (4,880) entered care by 2011, an extra 3.6% (196) entered care by 2012 and 4.7% (258) were not in care by 2012. Of 5,076 adults linked to care, 73% (3,706) were diagnosed in integrated GUM/HIV settings (RP1), 7.9% (400) on RP2, 8.3% (422) on RP3, 8.3% (422) on RP4 and 2.4% (126) on RP5.
Where a CD4 reported, 88% (4,098) and 97% (4,491) had an assessment within 1 month and 3 months respectively. Adults on RP2-5 were significantly less likely to be assessed within 1 month of diagnosis (91% RP1, 84% RP2, 85% RP3, 76% RP4 and 76% RP5) compared to RP1 (all p<0.001).
Adults aged >50 years at diagnosis (OR=1.38, 95%CI: [1.13, 1.70], ref: 20 – 35), of black ethnicities (OR=1.30, 95%CI: [1.07, 1.57], ref: white), and heterosexuals (OR=1.57, 95%CI: [1.29, 1.91], ref: MSM) were more likely to be on RPs 2-5.
Conclusion: Referral to HIV care following diagnosis is high and prompt in the UK, but 1 in 8 had a delayed assessment. The highest level of prompt assessment was provided by integrated GUM/HIV services. While efforts to expand HIV testing in non-GUM settings are continuing, it is critical to strengthen referral processes. This is of particular concern since those with greatest probability of being referred, and thus at greatest risk of delay in care were heterosexuals and black ethnic groups who are also more likely to present at late stage of infection.

O20

Trends in HIV testing outside of traditional services

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Background: In 2012, it was estimated ~22% of people living with HIV were undiagnosed and 48% of adults were diagnosed late. BHIVA and BASHH guidelines highlight the importance of increasing HIV testing outside of traditional services to increase early diagnosis. The sentinel surveillance of blood borne viruses collects laboratory data irrespective of test result; providing information on the population undergoing HIV testing at 15 sentinel laboratories in England.
Methods: Demographic and testing data for people tested for HIV between 2008 and 2012 were extracted in yearly cohorts. Service type and age at first test per year was recorded. Ethnicity was assigned using name analysis software. Duplicate records, reference testing, under 16's, and people tested via unknown locations were excluded. HIV positive individuals were excluded from analysis in subsequent years.
Results: Overall 1,480,882 persons were tested for HIV across all settings; of whom 0.9% tested positive. Half were tested in STI clinics (48.8%) and 19.9% underwent antenatal screening.
A third 31.3% (n=463,827) were tested in non-traditional settings (NTS); 51.8% were female, 81.3% were of white ethnic origin. The number of persons tested in NTS increased 1.6-fold from 69,940 in 2008 to 112,033 2012; conversely the proportion testing positive declined from1.1% to 0.8%. The increase in testing over time was more pronounced among males (172.2%) than females (152.4%); and among persons of black or ethnic minority origin (180.3%) than those of white origin (152.1%). The increase in persons tested over time varied by service.
The odds of testing HIV positive were significantly higher among males (aOR=1.66; 95% CI=1.54-1.79), those of black ethnic origin (aOR=5.29; 95% CI=4.77-5.87), those attending accident and emergency services (aOR=4.34; 95% CI=3.67-5.14) or specialist liver services
(aOR=5.45; 95% CI=4.88-6.09). Positivity also decreased over time
(aOR=0.83; 95% CI=0.81-0.85).
Conclusion: Since 2008, there has been a 1.6-fold increase in HIV testing in NTS; with the greatest increase in testing observed among males, BME individuals, and those attending accident and emergency. Multiple factors were found to significantly affect the odd of testing HIV positive. These findings highlight the importance of HIV testing surveillance outside of traditional specialised sexual health services.

O21

Home HIV sampling linked to national HIV testing campaigns: a novel approach to improve HIV diagnosis

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Background: In the UK approximately 22% of individuals with HIV remain undiagnosed and 47% are diagnosed late. There is therefore a clear need to focus on increased uptake of HIV testing and repeat testing in those most at risk. There are many barriers to HIV testing, including ease of access to clinical services and fear of stigma. A home HIV sampling service, linked to HIV testing campaigns, could overcome many of these concerns.
Methods: From January – September 2013 we piloted a national, free at the point of use home HIV sampling service. HIV tests are requested on-line and sent to the client in the post. The test is a 4th generation dried blood spot HIV test, which is posted back to the laboratory. HIV testing is undertaken using the Abbott Architect platform. Negative results are communicated by text and positive results are given by phone with support and the offer of referral to HIV services. A number of clients chose to self-refer and, where acceptable, consent was obtained to follow-up in 2 weeks and confirm attendance.
Results: 9,868 tests were requested over the pilot period and 6,230 (63.1%) were returned, of which 105 (1.7%) were reactive. 8,015 requests (81.2%) were from men who have sex with men (MSM) and 76.1% identified as white British. The return rate in MSM was higher (65.2%) than that from Black

Africans (52.8%). An increase in requests for tests was strongly linked to HIV testing campaigns and marketing the service on social media. A single message on Grindr drove 3,575 visits to the online order page. Of the 105 reactive results, 12 (11.4%) were known to be positive. The positivity rate was highest in black Africans (3.5%) and amongst MSM it was 1.6%. 39/105 (37.1%) accepted referral to HIV services and 46 (53.3%) chose to self-refer. Overall we were able to confirm 63% as accessing specialist HIV care.
Conclusions: We have demonstrated both the feasibility and acceptability of a national home HIV sampling service. Key to the success of the service was its integration with HIV testing promotion campaigns. The high proportion of returned tests from MSM reflects the fact that promotion through social media to this group is easier than to other risk groups. Further work is needed to improve the engagement of black Africans in testing services like this. The large proportion of kits returned and the high HIV positivity rate demonstrates the important contribution this service provides to reducing undiagnosed HIV and late diagnosis.

Complications and Co-morbidities

O22

A hepatitis C virus core antigen assay is a cost-effective, sensitive and specific test in the detection of acute hepatitis C in HIV infected subjects

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Background: Guidelines have been established in the UK and Europe for the monitoring of HIV patients at risk of hepatitis C (HCV) acquisition including annual HCV antibody (anti-HCV) testing in MSM. Blood samples testing positive for anti-HCV should be screened for HCV RNA by PCR. PCR testing is costly, labour-intensive and requires advanced technical skills and specilaist equipment. Newer, automated and highly sensitive assays have been introduced that detect HCV core antigen (cAg) which might compliment anti-HCV testing and supplement RNA testing. These assays are less expensive and time-consuming and may be as effective in detecting HCV. Their use in the context of acute HCV infection in HIV has not been evaluated.
Methods: A fully automated immunoassay for the detection and quantification of HCV cAg was employed (Abbott Diagnostics). Three groups of samples were tested: (1) Commercial HCV seroconversion panels (genotypes 1a, 1b, 2b & 3a) were tested (n=45), (2) HCV RNA negative samples (n=41), and (3) HIV patients presenting with acute HCV between 01/01/08 and 31/08/13 (n=30). The detection threshold was assessed using a dilution series of the WHO HCV RNA Standard.
Results: HCV cAg was detected in all samples from each genotype seroconversion panel where HCV RNA was also detected. In 23 cases, anti-HCV antibody had not yet become detectable. 40 of the 41 HCV RNA negative samples tested were negative for HCV cAg (1 false positive). The corresponding HCV viral loads of the 30 samples from patients with acute HCV were 70 to 12,145,500 IU/mL (median 2,144,937). All 30 were positive by HCV cAg assay with 1/30 falling within the "grey zone" of reactivity (0.13 pg/mL). There were no false negative results. Taken together (75 positive and 43 negative samples), the test's characteristics were: Sensitivity 100%, Specificity 97.7%, positive predictive value 97.6%, negative predictive value 100%. The WHO standard titration showed that HCV RNA levels of 1250 IU/mL were reliably detected by the cAg assay whereas viral loads of 625 IU/mL were not. There was a good correlation between HCV viral load and cAg quantification, $r^2 = 0.99$.
Conclusion: Using the HCV core antigen assay in our setting (in place of HCV RNA testing) would not have missed any cases of acute HCV. The test is a rapid, sensitive and specific test for HCV infection with numerous advantages over current monitoring algorithms in HIV including a test price of one-third RNA testing.

O23

Seminal HCV RNA level may mirror dynamics of plasma HCV RNA in HIV-infected men with acute HCV

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Background: We hypothesise sexual transmission of HCV in HIV-infected MSM may be due to a raised semen HCV RNA level in acute or recent HCV (AHCV) infection.
Methods: The M2000 RT-PCR was optimised for seminal HCV RNA quantification, with a lower limit of detection of 60 IU/mL. Men with AHCV (duration ≤12 months) or chronic HCV (CHCV, >12 months) not on anti-HCV therapy were prospectively recruited. An STI screen was performed. Paired semen and EDTA plasma samples were assayed for HCV RNA. Results were analysed using Chi^2, Mann-Whitney U and Kruskal-Wallis tests with $p < 0.05$ implying significance.
Results: Of 66 HCV RNA positive men, median age 49, IQR 44-53 years, 18 (27.3%) were infected with AHCV/HIV, 22 (33.3%) CHCV/HIV and 26 (39.4%) CHCV. In men with AHCV, median duration of infection was 3.5, IQR 2.0-6.3 months. Of 40 HIV-positive men, 35 (87.5%) were on antiretrovirals with undetectable plasma HIV RNA; median CD4 count was 598, IQR 410-788 cells/mm^3. HCV genotypes were 1a (38, 57.6%), 3a (18, 27.2%) and other (10, 15.2%). Semen HCV RNA was detected in 29 (43.9%) men at baseline. There was a similar proportion of men with detectable semen HCV for AHCV vs CHCV (p=0.613), and HIV-positive vs HIV-negative (p=0.191). Median plasma HCV RNA was 6.1, IQR 5.5-6.5 log IU/mL and not significantly different comparing AHCV/HIV, CHCV/HIV and CHCV (p=0.055). When detected, median semen HCV RNA was 2.1, IQR 1.8-2.6 log IU/mL. HCV RNA levels in semen and plasma were correlated (r^2=0.142). Median plasma HCV RNA was higher in men with detected versus undetected semen HCV RNA for AHCV/HIV (6.2, IQR 6.0-6.7 vs 4.6, IQR 3.2-5.7 log IU/mL p=0.001) but not for CHCV/HIV (6.6, IQR 5.6-6.7 vs 6.2, IQR 5.5-6.6 log IU/mL p=0.451) or CHCV (6.2, IQR 5.7-6.7 vs 6.0, IQR 5.3-6.2 log IU/mL p=0.105). Of 35 men attending a follow up visit (at median 4.5, IQR 3.8-6.5 months), semen HCV RNA was detected for 26 (74.3%) in ≥1 sample, including for 12 (34.3%) in both. Median plasma HCV RNA was higher in men with 2 samples positive (p=0.009). Presence of STI was not significant for shedding (p=0.319).
Conclusion: Semen HCV RNA was detected in 43.9% of men at baseline, at median 4.0 log IU/mL less than plasma. In 40.0% of men followed up, shedding was intermittent. For men with AHCV/HIV, detectable semen HCV RNA was more likely with higher plasma HCV RNA, implying a possible relationship between HCV dynamics in plasma and semen in the acute phase. If, as previously described, HIV-coinfected individuals in early acute HCV have a higher plasma HCV RNA, this could increase semen levels, facilitating sexual transmission.

O24

Second malignancies in patients with Kaposi's sarcoma (KS): Does systemic chemotherapy contribute to the risk?

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Background: People living with HIV (PLWH) are at increased risk of cancer; both non-AIDS and AIDS defining malignancies (NADM & ADM). Systemic chemotherapy also predisposes to secondary cancers. The potential contribution of systemic liposomal anthracycline chemotherapy (SLAC) to the development of second cancers in PLWH is unknown.
Methods: Since 1998 we have treated 496 PLWH and KS with a stage-stratified approach including 137 who received SLAC. The total follow-up is 2581 person years. Subsequent ADM and NADM diagnosed in this population were recorded.
Results: More patients who received SLAC had T1 stage disease (p<0.0001) in line with the stage-stratified treatment, but there were no significant differences in age (p=0.11), gender (p=0.79), prior AIDS defining illness (p=0.87), receiving HAART at the time of KS diagnosis (p=0.48), CD4 cell count (p=0.12), plasma HIV viral load (p=0.28) or HHV8 viral load (p=0.33) between the two groups. During a median follow-up of 4.3 years (maximum 15 years) from KS diagnosis, 34 patients developed a second cancer (10 ADM & 24

NADM). The 5 year cumulative risk of second cancer is 5.6% (95%CI: 3.2-8.0%) and there is no significant difference in the rate between those treated with SLAC and those not (logrank p=0.69). Most patients (n=117) were treated with daunoxome (liposomal daunorubicin) chemotherapy and there was no significant correlation between risk of second cancer and cumulative dose of daunoxome (p=0.06).
Conclusion: Although the risk of second cancer after a diagnosis of KS in PLWH is high, systemic liposomal anthracycline chemotherapy does not appear to increase the risk.

O25

End-stage kidney disease and kidney transplantation in HIV-positive patients in the UK Collaborative HIV Cohort (CHIC) study

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Background: HIV positive individuals are at increased risk of end-stage kidney disease (ESKD). We describe the epidemiology and outcomes of HIV/ESKD in the UK CHIC Study including eligibility for and use of kidney transplantation (KT).
Methods: Patients in the UK CHIC Study who received permanent renal replacement therapy between 01/2000 and 12/2011 were included, with follow up to 12/2012. Cases were identified by review of all patients with stage 5 chronic kidney disease and by searching local renal databases. ESKD incidence and prevalence rates were calculated and Poisson regression was used to identify factors associated with ESKD. Kaplan-Meier and log-rank tests compared survival curves.
Results: Of 27817 patients, 112 (0.4%; median age 38 years, male 69%, black ethnicity 64%, HIV-associated nephropathy 46%, median eGFR at baseline 22 mL/min/1.73 m^2) had a diagnosis of ESKD. The ESKD prevalence increased from 4.4% in 2000/2001 to 10.7% in 2010/2011 among black individuals (p=0.01) and remained stable around 1.8% for non-black ethnicities (p=0.78). Over the 12 year study period, ESKD incidence was 1.12 (95% Confidence Interval (CI) 0.80, 1.44) and 0.23 (0.15, 0.31) per 1000 person-years for patients of black and non-black ethnicity respectively and remained stable over time. Factors associated with ESKD in multivariable analysis were: black ethnicity (Incidence Rate Ratio (IRR) [95% CI]: 2.72 [1.38, 5.37]), age (1.42 [1.12, 1.81] per 10 years), CD4 cell count (0.93 [0.88, 0.99] per 50 cells increase), HIV load (0.44 [0.23, 0.84] per log10 copies/mL), hepatitis B (2.73 [1.27, 5.86]) and hepatitis C (2.50 [1.09, 5.77]) co-infection. One and five year survival estimates were similar for patients pre-KT and post-KT (100% and 94% at one year, and 89% and 85% at five years respectively, p=0.53), while survival for those unsuitable for KT was substantially worse (83% and 46% at one and five years, p<0.0001). At the end of the study period (12/2012), of the 71 patients still alive and under follow up, 31 (44%) were post-KT, 27 (38%) were being worked up or awaiting KT (pre-KT), and 13 (18%) were permanently unsuitable for KT.
Conclusion: In the era of combination antiretroviral therapy, the incidence of ESKD has remained stable while the prevalence in black patients continues to increase. Low mortality was observed among patients with ESKD who were eligible for transplantation irrespective of whether they were maintained on dialysis or successfully transplanted.

O26

Management of cardiovascular risk in HIV-positive individuals in Europe

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Objectives: HIV has become a chronic condition associated with comorbidities of ageing, e.g. cardiovascular (CV) disease. We investigate CV risk and factors associated with CV risk modification in a European HIV-Cohort.
Methods: EuroSIDA patients (from 1/1/2000) with ≥2 time points for whom CV risk could be calculated (D:A:D risk equation) were included. Baseline was the first date CV risk could be calculated. High risk was defined as a 5-year CV risk >5%. Risk modification was defined as two consecutive measurements meeting the European AIDs Clinical Society guidelines (Table 1).

Table 1: Definitions of modifiable CV risk and successful risk modification

Modifiable CV risk	Clinical indication	Successful risk modification
Hypertension (systolic blood pressure (BP) >140 mmHg, diastolic BP >90 mmHg or on antihypertensive treatment)	Treatment of BP	SBP <140 (130 if diabetic), DBP <90 (80 if diabetic) mmHg
High cholesterol (total cholesterol>6 mmol/l, cholesterol:hdl cholesterol ratio >5 or receiving statins)	Predicted 10 year CV risk >20%, diabetic, or CV disease	Cholesterol <4 mmol/l
Current smoker	Current smoker	Stop smoking
BMI >25 kg/m^2		BMI <25 kg/m^2

Factors associated with risk development and modifications were investigated using Poisson regression. Individuals were followed from baseline until outcome of interest, the month of their last modifiable risk factor measurement, or 31/12/2011, whichever occurred first.
Results: Of 5719 individuals, 31.4% were hypertensive, 47.4% had high cholesterol, and 47.8% were current smokers. 1140 (19.9%) had a 5-year CV risk of >5%. Of 4142 individuals with a baseline 5-year risk <5%, 1157 (27.6%) developed high CV risk during follow-up, (6.6/100 person years follow-up, 95% confidence interval [CI]=6.3-6.9). These patients were more likely to be male (adjusted rate ratio [aRR]=3.81;CI=3.21-4.53) and of older age (aRR=3.43;CI=3.12-3.63 per 10 year increase).
Of those clinically indicated for risk modification, 819/1533 (45.6%) successfully modified BP; 803/2709 (29.6%) stopped smoking; 172/910 (18.9%) modified cholesterol and 418/1663 (25.1%) reduced their BMI. Gender, age and geography were associated with modification of at least one risk. Risk modification for BP and smoking improved over time (p<0.001).
Conclusion: The prevalence and incidence of CV risk was high. More than half modified some of their CV risk and this improved over time. The geographical and gender heterogeneity requires further investigation.

O27

Disease burden due to non-chronic viral hepatitis-related liver disease in HIV-positive individuals: preliminary results from a longitudinal cohort study

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Background and aims: Since the era of highly active antiretroviral therapy liver disease has emerged as a major contributor to morbidity and mortality amongst individuals with human immunodeficiency virus (HIV). This is often

related to chronic viral hepatitis B and C. In the UK alcohol-related liver disease (ALRD) and non-alcoholic fatty liver disease (NAFLD) have increased significantly over the last decade. There is very limited data in HIV positive individuals regarding prevalence of both ARLD and NAFLD. Early diagnosis is important to ensure institution of timely interventions. Our aim was to assess chronic liver disease (CLD) excluding chronic viral hepatitis in HIV positive individuals with emphasis on ARLD, NAFLD and antiretroviral-related hepatotoxicity.
Methods: This was a retrospective cohort study between 2005 and 2012. We initially identified HIV positive patients with negative hepatitis B and C serology and at least two aminoalanine transferase (ALT) >1xULN over a six month period. Patients with evidence of CLD on one or more of the following were included: abdominal imaging, Transient Elastography (TE) and liver biopsy results. CLD was defined as: abnormal imaging and/or histological or TE evidence of ≥F2 (METAVIR) fibrosis. Data collected included demographical information, antiretroviral history, patterns of alcohol use, liver panel, lipids, glucose, imaging, TE and liver biopsy results. Those with biliary, autoimmune or congenital liver disease were excluded.
Results: We identified 1053 HIV positive individuals with at least two elevated ALT > 1X ULN over a six month period. Of these, 170 patients met the criteria for CLD. Preliminary results have demonstrated that approximately 20% had evidence of CLD secondary to alcohol, 25% secondary to NAFLD and 7% to antiretroviral therapy. In 48% there was more than one contributing factor. Overall 22% of patients had ≥F2 fibrosis, portal hypertension or evidence of decompensation.
Conclusions: A significant number of HIV positive individuals have elevated ALT in the absence of chronic viral hepatitis, although only 17% are investigated further. Of those investigated about one in five have evidence of >F2 fibrosis/portal hypertension/hepatic decompensation largely related to ARLD and NAFLD. Our data underscores the need for increased awareness of non-chronic viral hepatitis related CLD amongst HIV positive individuals and more aggressive investigations of elevated ALT in such a cohort.

O28

Attitude of HIV patients towards organ transplant between HIV patients

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Background: With Combination Antiretroviral Therapy (CART) HIV patients are living longer. They may have higher risk of end organ disease and may need organ transplant. HIV patients are likely to be benefited from accepting organ from HIV infected donors. We aim to study the attitude of HIV patients for organ transplant between HIV patients.
Methods: We used cross sectional questionnaire study amongst HIV patients attending outpatient clinic for a period of six months with ethical approval and informed consent from patients. We collected information about baseline demography and clinical history. Statistics were by Multinomial logistic regression analysis.
Results: Of 608 patients, 207 (34%) filled in the questionnaire with mean age 42 (+/-8.8) years, 145 (70%) black Africans, 171 (83%) heterosexuals and 112 (45%) females. Mean CD-4 count was 486 (+/-231) cells per dl. 171 (83%) patients were on treatment and 159 (93%) had viral load undetectable. Mean duration of illness were 77 (+/-42.7) months and duration of treatment 68 (+/-41) months. 128 (62%) patients would consider donating organ to other HIV patients and of these, 82 (69%) would consider liver, 96 (81%) kidney, 75 (63%) heart, 17 (14%) other organ. 68 (58%) patients would consider donating all three specified organs. Thirty-three (16%) patients would not consider and 45 (22%) were not sure about donating organs. 114 (55%) patients would consider receiving organ from HIV patient, 37 (18%) would not consider and 56 (27%) were not sure. Of the 37 who would not consider receiving organ from HIV patient; 8 (26%), 7 (23%), 8 (26%), 11 (33%) were concerned about infection, quality of organ, confidentiality, worried about 'other' respectively. Ninety eight (42%) would consider donating and receiving organ from HIV patients. On multinomial analysis, black African patients were more likely to indicate that they were not sure if they would consider organ donation (p=0.011, OR=3.887). With increased duration of infection patients were less likely to consider receiving organ (p=0.036, OR=1.297) and longer the duration of CART, the more likely patients were to consider receiving organ (p=0.052, OR=0.804).
Conclusions: The majority of patients considered either donating or receiving organ from HIV patients. Use of HIV infected donors could potentially reduce the current waiting list for organs among HIV patients. HIV patients may have organ donation registry and a further study at National level may be helpful.

O29

Facilitating self-care in HIV with digital patient-controlled health records

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Background: The introduction of the HIV National Currency, National tariff's and Service Specification has resulted in HIV service providers having to develop new, innovative approaches to care. In response to this selected HIV providers in the UK are piloting a new scheme that will enable them to respond to these changes in a patient-centric and proactive way. This involves providing their patients with interactive, digital patient-controlled health records in a pilot funded by a pharmaceutical company.
Method: To deliver patient empowerment and engagement the system was designed to offer patients; Secure access to their medical information on any internet connected device; Enable patients to track symptoms, take measurements and review their blood test results; Incorporate accredited educational material, in a personalised 'library'; Include an integrated care pathway with a full treatment plan, which can be viewed by everyone in the patients' health network; Secure online consultations made possible through online messaging and a Skype service, to facilitate 'virtual clinics' via a secure site from each Trust.
Implementation: 14 NHS Trusts were selected to pilot and launch the programme to their patients. Questionnaires have been designed to assess patients' and healthcare professionals' initial perceptions and experiences of the system. A longitudinal follow-up survey to evaluate patient and healthcare professional's outcomes, engagement and an analysis of cost and efficiency savings will be produced.
Results: 12 sites across the UK have actively recruited patients to the scheme and are interacting with patients via the patient-controlled records system. 240 patients have already registered. There are a number of challenges and hurdles that have occurred in the process from Information Governance approval, IT integration and senior management commitment. Patient engagement has been positive with a high level of uptake across all age groups.
Conclusion: This is an innovative UK-wide service that facilitates a new model of care for managing HIV for both patients and providers, as well as allowing patients to overcome the practical and legal challenges in sharing information across networks. It is intended that the system and data collected will result in service developments that deliver increased efficiency, improvements in patient experience and greater self-management of their condition, all with the support of a connected multidisciplinary health network.

O30

Validation of the rationalisation of routine blood tests and visits for HIV-1-infected individuals

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Background: Our HIV unit has £627k pathology costs/year. The majority of individuals are stable attending routine follow up. It was hypothesised that fewer visits and less tests would be safe and provide cost savings for the unit.

Methods: Pathology order sets for routine visits for 4 groups of patients: new diagnosis; on ART; off ART; starting ART were developed whereby stable patients were seen 6 monthly instead of 4, and lab tests were dramatically reduced in terms of frequency of tests and content. This represented an extensive reduction in tests for stable and new ART patients compared to BHIVA monitoring guidelines.
After allowing for a 3-month embedding process the cost of pathology tests in the year before, and the year after the implementation of test rationalisation were analysed as well as the change in the number of clinic visits (routine and emergency) in both time periods. Safety was assessed using the number of hospital admissions; number of individuals on ART developing virological failure; and number of emergency clinic visits as surrogate markers.
148 patients and 15 HIV clinicians (consultants, specialty registrars, specialist pharmacists, and clinical nurse specialists (CNS)) completed satisfaction surveys over a two week period 10 months after initiating the test rationalization protocol.
Results: Compared to the previous year, over a 12 month period the changes saved £56.5k on the pathology budget, a 9.86% cost saving compared to the previous year. This reduction in pathology costs has been achieved despite a net increase of 157 patients during the same period (April 2012-March 2013). There was no difference between the time periods in numbers lost to follow up (p=ns), hospital admissions (p=ns), virological failure (p=ns), or the development of resistance (p=ns).
43/148 (29%) of patients had noticed the reduction in the number of tests being done. 60/148 (41%) preferred fewer tests. 88/148 (59%) liked to focus on more important tests. There was no significant association between length of diagnosis <5 years and opinion on having fewer tests (p=ns). 13/15 (87%) of clinicians agreed with the reduction in the number of tests and 15/15 (100%) were likely to follow them in their clinical practice.
Conclusion: A reduction in visit frequency and tests carried out on stable HIV patients can lead to significant cost savings with no short term safety concerns. Long term evaluation is underway

Sexually Transmitted Infections

O31

The epidemiology of **Mycoplasma genitalium** in the British population: Findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3)

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Background: Much of our current understanding of the epidemiology of *Mycoplasma genitalium* (MG), including associations with sexual behaviour, is derived from clinical settings or selected populations, and limited to young people. We present age and sex-specific prevalence estimates of MG, and describe risk factors, symptoms and the occurrence of co-infection, in the British population aged 16-44.
Methods: In 2010-2012, we conducted the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3), a probability sample survey in Britain. Urine from 4,550 sexually-experienced participants, aged 16-44 years, was tested for a range of infections, and results linked to detailed demographic and behavioural data, with analyses accounting for stratification, clustering and weighting of the sample.
Results: The prevalence of MG in sexually-experienced 16-44 year olds was 1.3% (95% CI: 0.9%-1.9%) in women and 1.2% (0.7%-1.8%) in men. In women, prevalence was highest at 2.4% in those aged 16-19 years, and decreased with age. In contrast, there were no positive MG tests in men aged 16-19, with prevalence peaking in men aged 25-34 years. In men, MG was associated with Black ethnicity and area-level deprivation. A positive MG test was significantly associated with younger age at first sex, increasing number of partners in the past year, unprotected sex, concurrency and ever having same-sex experience (for women). Over half (56%) of women and the majority of men (94%) with MG did not report any STI symptoms, although women testing MG positive were more likely to report bleeding after sex. MG was significantly associated with high-risk human papillomavirus (HR-HPV) in both women and men.
Conclusion: This population-based survey provides further evidence that MG is an STI, which is strongly associated with a range of risky sexual behaviours. The overall prevalence was low, with asymptomatic infection common. These findings in the population inform testing, treatment and control measures.

O32

The prevalence of **Mycoplasma genitalium** among male GUM attendees using an in-house PCR on BD Max platform

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Background: *Mycoplasma genitalium* is an important, emerging causative agent of sexually transmitted infection in males and females. Many studies have found that the pathogen is associated with acute and chronic non-gonococcal urethritis (NGU) in males. Limited studies have been carried out regarding outcome for females although association with urethritis, cervicitis and pelvic inflammatory disease (PID) has been noted. This fastidious organism is difficult to culture and due to lack of availability of commercially available diagnostic assays, routine testing for this organism is not available.
An anonymous pilot study (due to ethical constraints) was set up. The aim of this pilot study was to determine the prevalence of *Mycoplasma genitalium* among male Genitourinary Medicine (GUM) attendees in two centres within the same county.
Methods: Residual urine samples (after testing for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* by BD Strand Displacement Assay) were tested for *Mycoplasma genitalium* using an in house PCR on the BD Max platform.
A total of 563 urine samples (159 symptomatic and 404 asymptomatic) from consenting male attendees at GUM across both areas were tested. These samples were stratified over six different age groups, <20, 20-24, 25-29, 30-34, 35-39 and >39 years of age.
Results: An overall prevalence of 4.44% was found for *M.genitalium* among these patients, 12/159 (7.5%) of symptomatic and 13/404 (3.2%) of asymptomatic men being positive. The overall prevalence of *Chlamydia trachomatis* was 5.88% and *Neisseria gonorrhoeae* was 1.82% in the patient cohort over the same time period. The peak prevalence for *M.genitalium* was 25-29 year age group and 20-24 year age for both *C.trachomatis* and *N.gonorrhoeae*.
Conclusion: This pilot study suggests a significant prevalence of *Mycoplasma genitalium* infection in this cohort. Further studies are needed to assess the clinical significance of *M.genitalium* in relation to *C.trachomatis* and *N.gonorrhoeae* infections and to study the effect of treatment.

O33

Human papillomavirus infection and cervical cancer prevention in Britain: findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3)

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Background: Prevention of cervical cancer in Britain has included cervical screening since 1988. In 2008, a vaccination programme for human papillomavirus (HPV), school-based in 12-13 year olds with a catch-up programme in 14-17 year olds, was introduced. Population-based data linking sexual and demographic risk factors with high risk HPV (HR-HPV) prevalence, cervical screening attendance and HPV vaccination uptake can inform the design and evaluation of cervical cancer prevention strategies.
Methods: The third British National Survey of Sexual Attitudes and Lifestyles (Natsal-3), a probability sample survey of men and women aged 16-74, resident in Britain was undertaken in 2010-12 and interviewed 8869 women. Urine samples collected from 2569 women aged 16-44 who reported at least one lifetime sexual partner were tested for HR-HPV. In multi-variable analyses we explored risk factors for HR-HPV, non-completion of the 3-dose HPV vaccination course (N=1050; aged 16-21 depending on interview date) and non-attendance for cervical screening (N=3833; aged 26-49 years).
Results: HR-HPV was detected in 15.9% of women and was associated with younger age, risky sexual behaviour, relationship status, lower social class and smoking in multivariable analysis. 61.5% of women eligible for the HPV catch-up programme completed the vaccination course. Non-completion was

associated with older age at eligibility, lower education, non-white ethnicity, smoking, ever being pregnant and having 2 or more partners without a condom in the past year. Not having attended cervical screening in the past 5 years was reported by 8.1% of women and was associated with younger age (being 26-29 vs. 30-39), tenant (vs. homeowner), Asian/Asian British ethnicity, smoking and having no sexual partners in the past 5 years. Screening attendance was not associated with detection of HR-HPV among women providing a urine sample.
Discussion: Socio-economic markers and smoking were associated with HR-HPV positivity, non-completion of catch-up vaccination and non-attendance at screening. Approaches to improve screening attendance particularly amongst unvaccinated women in the catch-up cohorts (eligible for screening from 2015) should be considered to minimise cervical cancer disparities in the future.

O34

Feasibility and acceptability of a quadrivalent human papillomavirus vaccination programme (HPV4) for young men who have sex with men (MSM) within a comprehensive sexually transmitted infection (STI) testing and sexual health engagement strategy: Results from the first year

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Background: MSM are at high risk of genital warts and HPV-related anal cancer. Routine HPV4 vaccination at 0, 2-3 and 6-12 months has been available for MSM <28 yrs attending our services since 2012.
Methods: All eligible MSM in the first year of the programme were reviewed for attendance, vaccination, concurrent STI screening rates and STI diagnoses. We conducted an online survey after HPV4 completion.
Results: At 1 year, of 256 eligible MSM, 201(79%) started HPV4. 33(13%) were not offered HPV4, 18(7%) declined and 4(2%) accepted, deferred but did not return. 18(9%) had a past or current history of visible HPV genital lesions. All had STI screening at Time 0, when 72(36%) had a detected bacterial STI. 155(77%) received Dose 2 when 26(17%) had a new STI. Attendance for Dose 3 at 6 months was 48% of the total, and 65% of those receiving Dose 2. 19 (20%) had a new STI at Dose 3. 171/201(85%) completed Hepatitis A vaccination and 162/201(80%) have documented receipt of 3 or more doses of Hepatitis B vaccine. Attendance for STI screening is 87% of that possible for the total cohort at 1 yr.
Table: Characteristics of the cohort

Started N(%)	Orientation N(%)	Age Range yrs(mean)	Ethnicity N(%)
201(79)	Homosexual 172(86) Bisexual 27(13) Transsexual 2(1)	15 – 27 (22)	White British 72(36) Black/Minority Ethnic yrs Background 129(64)
	Dose 1 N(%)	**Dose 2 N(%)**	**Dose 3 N(%)**
Vaccinated	201(100)	155(77)	97(48)
Incident STI	72(36)	26 (17)	19(20)

161(80%) HPV4 recipients provided consent for an online survey. 82(54%) completed it. 76(93%) thought they had enough information about HPV4. 11 (13%) had "some concerns" about HPV4. 81(99%) thought HPV4 for MSM "a good idea". 81(99%) were happy with their decision to start. 82(100%) would recommend HPV4 to an eligible friend, partner or family member.
Conclusions: An HPV4 vaccination programme is both feasible and highly acceptable to young MSM and when delivered within sexual health services is a useful tool for early engagement to address their wider and ongoing sexual health needs. Sexual health services should consider implementing similar models in the absence of universal male HPV4 vaccination.

O35

High-risk drug practices associated with Shigella flexneri serotype 3a infections amongst men who have sex with men (MSM) in England

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Background: Sexual transmission of *Shigella flexneri* serotype 3a infection amongst MSM has emerged as a health concern. Control has been challenging as risk factors associated with transmission have not been determined. In-depth interviews were undertaken to explore and understand the lifestyle and sexual behaviour of MSM diagnosed with *S. flexneri* between October 2012 and February 2013 and inform intervention strategies.
Methods: All males ≥18 years consecutively diagnosed with *S. flexneri* 3a were asked to participate in enhanced surveillance. Those who consented were invited to take part in semi-structured face-to-face interviews.
Results: Of 53 men diagnosed with *S. flexneri* during the study period, 42 were interviewed, of whom 34 were sexually active MSM (6 heterosexuals and 2 MSM without recent sexual activity were excluded from the analysis). High numbers of sexual partners were reported (median=5) in the two weeks prior to illness; most were casual encounters met through internet sites (21/34) or saunas (10/34).The majority (27/34) used recreational drugs including mephedrone, ketamine, crystal methamphetamine and GBL during sexual encounters which appeared linked to sexually disinhibiting behaviour, a third reporting 'slamming' (injecting recreational drugs). A quarter (8/34) had attended sex parties during the previous two weeks where 'slamming' occurred. All reported oral-anal contact, fisting was common (16/34), scat play less so (5/34). The majority (20/34) were HIV-positive and actively sought positive partners. Condom use was rare. Many had had gonorrhoea (23/34) and chlamydia (17/34). Syphilis, lymphogranuloma venereum and hepatitis C infections were also reported; HIV-positive men reported higher rates of infection.
Conclusions: Recreational drug use appears strongly associated with sexual risk taking and transmission of *S. flexneri*. The potential for further infectious disease outbreaks and HIV transmission is clear. HIV and sexual health clinicians should discuss recreational drug use with their patients and refer them to appropriate treatment services where indicated. The serious impact of drugs on sexual and general health highlights the importance of integrated working between sexual health and drug services. Campaigns to raise awareness among MSM are urgently needed.

O36

Gastroenterology out-patient clinic: rectal pain and discharge associated with a history of receptive anal sex in women

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Background: There has been a sustained increase in the diagnoses of sexually transmitted infections (STIs) in the UK over the last decade[1]. Sexual repertoires are expanding and heterosexual anal sex is increasingly reported[2]. Gonorrhoea, chlamydia, lymphogranuloma venereum, syphilis and herpes infections may present with symptoms and endoscopic features mimicking inflammatory bowel disease (IBD). Individuals at risk for rectal STIs may not be identified within gastroenterology services by the referring or the specialist clinicians. The aim of this project was to estimate the prevalence of reported receptive anal sex (RAS) in a cohort attending an IBD clinic; and to determine associations between sexual behaviours and rectal symptoms.
Methods: An anonymised sexual health questionnaire was distributed to patients attending an IBD out-patient clinic (OPC) in a teaching hospital over a 6-week period. The questionnaire recorded age, sexual orientation, number of sexual partners, sexual sites, STI history and rectal symptoms.
Results: Only 2/106 males disclosed a history of RAS and the analysis is hereafter limited to females. 170 females (age 17-81) completed the questionnaire. 118 (69%) had at least one sexual partner in the previous 6 months. Twenty-four (14%) disclosed a history of RAS and 20/85 of those aged 17-44 disclosed RAS. The table compares rectal symptoms and STI history between those reporting and not reporting RAS. 41/170 (24%) reported ever having an HIV test.

	History of RAS	No history of RAS	P value
Chronic rectal pain	41.6%	15%	<0.002
Rectal bleeding	29.2%	28%	NS
Rectal discharge	25%	11.6%	0.076
Past history of STI	29.2%	4.8%	<0.0001

Conclusion: This is the first report of sexual behaviours in a cohort attending a gastroenterology OPC. The prevalence of reported RAS in this female cohort is higher than we would expect. The association between RAS and a past history of STI identifies women reporting RAS as higher risk for STIs. Sexual histories should be taken for all individuals presenting with rectal symptoms to gastroenterology services and STIs considered within the differential diagnoses. Further work is being undertaken to link sexual risk to clinical data and STI screening is being offered within the gastroenterology service to individuals disclosing a history of RAS, those <25 years old and those with rectal pain or discharge.

1. Health Protection Agency http://www.hpa.org.uk
2. Mercer *et al*. The Lancet (2013) 382; 1781/1794

O37

Highly diverse genotypes of rectal **Chlamydia trachomatis**, using multi-locus VNTR analysis (MLVA)-ompA sequencing, among men who have sex with men (MSM) attending a GUM clinic

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Background: Genotyping is useful in identifying transmission patterns and sexual networks. Specific C.trachomatis (CT) *ompA* genotypes have been correlated with infection in MSM (mostly D, G and J), and this distribution differs from that seen in heterosexuals (predominantly D, E and F). Sexual behaviour factors and tissue tropism may account for these differences. This study aimed to determine the distribution of MLVA-*ompA* genotypes in rectal CT among MSM at our clinic and to examine any correlations with clinical variables. An additional aspect was to isolate rectal CT in cell culture to maximise the possibility of obtaining complete genotyping data.
Methods: Samples were assigned genotypes by PCR and sequencing of the markers of the MLVA-*ompA* typing system (Pedersen et al, 2008). Rectal CT was isolated in cell culture using McCoy cells and infected monolayers were observed using phase contrast microscopy. Data regarding demographics, HIV status, rectal symptoms, past history of STI or CT were collected. P values were obtained using Fisher's exact test.
Results: Mean age 39 years, 90% white ethnicity, 41% HIV-positive.
85/112 (76%) rectal samples were assigned full MLVA-*ompA* profiles. The table shows the number of variants in all 112 samples.

CT genovar	No. of rectal specimens (%)	Number of variants	
		*omp*A genotypes	MLVA sequence types
D	22 (19.5)	2	13
E	22 (19.5)	1	11
F	9 (8.0)	1	5
G	25 (20.3)	3	17
I	1 (0.8)	1	1
J	7 (6.3)	2	7
K	1 (0.8)	1	0
L	11 (9.7)	3	8
Total	112 (100%)	14	62

A minimum spanning tree (MSpT) was generated for samples with full MLVA-*ompA* profiles. Two segments could be identified with respect to genotypes: cluster 1 consisted mainly of D, E and F; cluster 2 consisted of D, G, J and L2b ($p < 0.001$). Further, cluster 1 consisted of more HIV-negative men than cluster 2 ($p = 0.025$). There were no associations between specific genotypes or clusters and clinical variables.
Conclusion: The most prevalent genotypes were G, E and D representing some overlap with the heterosexual distribution in UK. Moreover, when comparing MSpT segments, cluster 1 consisted of more "heterosexual types" and significantly more HIV-negative men than cluster 2 suggestive of a bridging population. Using MLVA-*ompA* typing, we have seen much greater diversity in CT strains than was expected and larger studies with representation from other parts of the country are warranted. However the high performance of these typing systems and success of culture of rectal specimens, giving full typing data in 85% of specimens, is promising.

O38

Performance of ceftriaxone 500 mg-containing regimens for treatment of genital and extra-genital gonorrhoea

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Background: The management of gonorrhoea (GC) has changed dramatically in recent years. Widespread use of molecular tests has lead to an increase in diagnosis, particularly at throat and rectal sites in men who have sex with men (MSM) where the infection is often GC culture-negative. Current guidance recommends treatment with 500 mg ceftriaxone with 1 g azithromycin and routine test of cure (TOC) although evidence for optimal time of TOC is scant. Co-administration of doxycycline is often preferred, particularly in MSM where azithromycin has been shown to be inadequate at eradicating rectal Chlamydia and syphilis. We assessed the performance of our current GC treatment regimens.
Methods: Retrospective case note review of all cases of GC diagnosed by Aptima Combo 2 TMA (AC2) and confirmed with Aptima GC from Dec 2012 to Jan 2014 at two urban UK GUM clinics.
Results: To date, 292 cases of GC where TOC was performed within 42 days of treatment have been identified. 279 (95%) were in men. GC culture was performed pre-treatment in 248 (85%) of cases, and was positive in 154 (62%). No culture isolates showed in-vitro ceftriaxone resistance by disk diffusion. The most commonly used antibiotic regimens were ceftriaxone 500 mg + azithromycin 1 g (34%) or ceftriaxone 500 mg + doxycycline 100 mg bd >7days (55%). 272 (94%) were GC negative at TOC. Of the TOC positives, 3% were GC positive or equivocal on AC2 and subsequently become negative without further treatment.
3% were AC2 positive at subsequent testing and two-thirds of these had evidence for re-infection. Only 1 of 292 persistent positive results at TOC was suggestive of treatment failure in a patient treated with ceftriaxone 500 mg + azithromycin 1 g.

Antibiotic regimen used for GC	No of pts with TOC	No of patients with negative TOC result
Ceftriaxone 500 mg + AZI 1 g	105	104 (99%)
Ceftriaxone 500 mg + doxy ≥7 days	160	153 (96%)*
AZI 2 g only	13	12 (93%)
Ceftriaxone 500 mg	8	8 (100%)
AZI 2 g + doxy ≥7 days	3	3 (100%)

Conclusion: Our data support the current use of ceftriaxone 500 mg + azithromycin 1 g OR ceftriaxone 500 mg + doxycycline 100 mg bd 7 days, and show no obvious difference in treatment outcome. These results suggest that routine TOC is unnecessary at present in the absence of *in vitro* resistance to ceftriaxone. Prospective studies and ongoing surveillance are needed to monitor the efficacy of these treatment regimens.

O39

Detection of HIV-1 viral load in the rectum

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Background: The effect of rectal gonorrhoea and chlamydia on rectal HIV viral load in HIV-1 infected individuals is poorly understood. Critical to this is the use of reliable and acceptable methods for the quantification of HIV viral load in the rectum. We investigated whether routinely used swabs could be used to determine HIV rectal viral load.
Methods: 10 stored residual rectal samples from HIV positive men who have sex with men (MSM) collected for herpes simplex virus PCR were tested for HIV viral load using the Roche Cobas Taqman 48 analyzer and HIV-1 High Pure Extraction System. Swabs had been collected using a UTM kit (Flocked swab/ Universal Transport Medium, Copan Diagnostics) and stored at -70°C prior to testing. Results were compared to plasma HIV viral load from the same individual taken within 1 month of swab collection.
Results: 10 swabs from 9 MSM were analysed. 8/9 MSM had at least one rectal STI at time of sampling. 4/10 samples inhibited the HIV PCR. Mode of sample acquisition (blind swab or via proctoscopy) was not associated with inhibition. One MSM had two samples collected on the same day, an anal ulcer swab did not inhibit but the rectal swab did show inhibition. HIV was quantified in 5 swabs (2 on ART and 3 off ART). In ART naïve cases, the rectal viral load was 0.8 $\log_{10}$, - 2.5 $\log_{10}$ lower than in the plasma. For those on ART, rectal VL remained below the lower limit of quantification.

Table 1 Rectal & Plasma HIV VL in patients presenting with rectal STI (*anal ulcer swab)

Rectal HIV VL per swab	HIV stage	ARTstatus	Plasma VL copies/ml	Rectal HSV/ STI result
Inhibition	Chronic	On	<20	LGV & GC
Inhibition	Chronic	Off	642	HSV 2 & GC
<34	Chronic	On	Not known	Negative
153	Chronic	Off	46357	HSV2 & CT
<34*	Chronic	On	<20	LGV
Inhibition	Chronic	On	<20	LGV
Inhibition	Chronic	Off	25,000	HSV2, CT & GC
Target not detected	Chronic	On	<20	GC
26,600	Chronic	Off	160,000	LGV & GC
36,900	Acute	Off	7,776,618	GC

Conclusion: We were able to quantify HIV RNA in rectal secretions, and sampling methods suggest that rectal viral lower is lower than viral load in plasma. Optimisation of sample collection is ongoing to address PCR inhibition. A prospective study is underway to characterise the effect of rectal STI on rectal HIV VL.

Lifestyle and HIV Transmission

O40

Sex, drugs and STIs

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Background: The link between club drug use and high risk sexual behaviour/ STIs in MSM is well documented. The Global Drug Survey 2013 studied links between drug use and sexual risk but links with STIs in heterosexuals in the UK is undocumented.
Aims: Study club drug use in all attendees of a city centre Sexual Health (SH) clinic outside London; Determine if club drug use is associated with higher risk sexual behaviour; Establish if club drug users have higher rates of STIs
Methods: Consecutive patients attending clinic were invited to complete a questionnaire on their sexual behaviour, alcohol and drug use. Rates of drug use were compared with age, sexuality, sexual behaviour and STI rates.
Results: An interim analysis of this ongoing study includes 514 respondents. Mean age was 28y. 51% respondents were male; 21% MSM. 5% respondents were HIV+. 4% reported injecting drug use - 79% of which was steroid use. 41% heterosexuals reported anal sex (AI). 5% respondents had paid for sex. There was high club drug (cocaine, mephedrone, ecstasy, GBL, ketamine) use by all; 41% had ever used a club drug, but of these only 28% had used in the past month. There was no difference in drug use by age (<25 v ≥25 years), and sexuality except for GBL where use was significantly higher in MSM (OR 2.79; p=0.04) and bisexuals (OR 5.59; p=0.01) compared to heterosexuals. Heterosexuals reporting club drug use were more likely to have AI (OR 3.02; p<0.0001). Drug users were more likely to have unprotected sex and ≥3 partners in the past year (OR 8.50; p=0.006). Self-reporting of unprotected risky sex with GBL, cocaine and ecstasy was higher in heterosexuals (67%, 81%, 77%) than MSM (33%, 14%, 15% respectively). The rate of STIs was higher in club drug users than non-users in MSM (38% v 17%; OR 6.15, p=0.03) and heterosexuals (14% v 9%) but not significantly so. Only 9% admitted difficulty in controlling their substance use and 13% wanted to reduce intake.
Conclusion: This is the first study to look at club drug use, sexual behaviour and STIs in heterosexuals as well as MSM. Heterosexuals report equally high levels of club drug use as MSM. Club drug use in heterosexuals was associated with AI, more sexual partners and self-reporting of risky sex. Although rates of STIs were higher in club drug users this did not achieve significance. 72% of those who had ever used club drugs reported not having used drugs in the past month. This may suggest that current users are not attending sexual health services.

O41

High levels of recreational drug use (RDU) in HIV clinics – concerns for onward HIV transmission and adherence with treatment

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Background: RDU is common amongst men who have sex with men (MSM) and is associated with unsafe sex and HIV acquisition. At present there is a lack of data on the frequency of RDU use amongst HIV positive individuals. Risks associated with RDU in HIV positive people include drug-drug interactions, poor antiretroviral (ARV) adherence and unsafe sex leading to onward transmission of HIV and other sexually transmitted infections.
Methods: Anonymous surveys were distributed to patients attending an inner London HIV clinic in over two months (Aug-Sept 2012).Data was collected on age, gender, gender of sexual partner(s) and previous / current recreational drug use.
Results: 94 surveys were completed. 50/94 (53%) were MSM, mean age±SD 41±49.9 years. Overall 63/94 (67%) reported any recreational drug use and 32/94 (34%) reported current drug use. For current drug use, MSM were significantly more likely to use recreational drugs compared to non-MSM (table 1).

Table 1: Frequency of lifetime and last month use amongst HIV positive MSM and non- MSM respondents

	Last Month Use			Lifetime use		
	MSM	Non- MSM	p-value	MSM	Non-MSM	p-value
Cannabis	14%	5.1%	0.17	64%	28.2%	0.02
Poppers	24%	10.3%	0.09	72%	28.2%	<0.01
Cocaine	18%	5.1%	0.14	68%	28.2%	<0.01
Crack	2%	5.1%	0.6	16%	12.8%	NS
MDMA pills	8%	0	0.09	56%	17.9%	<0.01
MDMA powder	8%	0	0.09	46%	10.3%	<0.01
Ketamine	10%	2.6%	0.14	50%	15.4%	<0.01
Mephedrone	16%	7.7%	0.08	48%	17.9%	<0.01
Methedrone	12%	2.6%	0.09	26%	15.4%	0.02
Viagra	14%	7.7%	0.2	52%	17.9%	<0.01
Amphetamine	0	0	n/a	32%	7.7%	<0.01
GHB	6%	2.6%	0.3	38%	15.4%	0.02
GBL	12%	5.1%	0.17	34%	7.7%	<0.01
Crystal Methamphetamine	10%	0	<0.05	34%	7.7%	<0.01
LSD	0	0	n/a	6%	10.3%	0.03
Heroin	0	0	n/a	6%	5.1%	0.4

This group had higher frequencies of recreational drug use than seen in the general UK population; Crime Survey England and Wales (CSEW) data for 2012-13 reported last year use of cannabis and cocaine in the general adult population at 6.8% and 1.9% respectively. Reported cannabis and cocaine use in our cohort were higher (cannabis 14% MSM and 5.1% non-MSM use in the last month; cocaine 18% of MSM and 5.1% non-MSM reporting last month use).
Conclusion: Use of all recreational drugs except crack cocaine, heroin and LSD was significantly higher in MSM, and the study confirmed our concerns about the higher frequency of RDU in this HIV positive cohort. This study highlights the need for awareness of RDU amongst HIV physicians.

O42

Psychological interventions to reduce sexual risk-taking

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Background: NICE PH Guidance 3 recommends structured interventions based on behaviour change models to address high risk sexual behaviour. We developed a stepped care model comprising of: identifying sexual risk behaviour within sexual health services (Level 1); brief interventions by HA (Motivational Interviewing - Level 2), and interventions for complex risk takers (high intensity multi-modal psychological intervention, including CBT - Level 3). This paper evaluates Level 3 psychological interventions.
Methods: All Level 3 referrals from January 2011–December 2013 were reviewed. Outcome measures included reduction in high risk sexual behaviour, reduction in substance use, referrals to specialist mental health and/or substance misuse services and improvement in mental health functioning (depression (PHQ-9) and anxiety (GAD-7)).
Results: 219 patients were referred for specialist psychological input. Patients were between 16 and 68 years old (median 29). Nearly half of all referrals were MSM (49%); 68 (31.1%) were female; 9 were HIV positive. Ethnicity: 28.4% White UK, 22.5% Black African/Caribbean/UK, 44%,Other, 5.1% not stated. Of 125 (57%) patients attending for assessment, 59 (47%) completed a full intervention and further 16 (13%) are currently undergoing CBT. A reduction in risk behaviour including reduced casual sexual partners, increased condom use and reduced substance use was reported by 59.3% patients who completed the intervention. 5.1% individuals reported no risk reduction. 35.6% patients had severe and enduring mental health difficulties associated with risk behaviour. They were referred to specialist mental health services and were not followed up further in this service. Following the intervention, there was a clinically and statistically significant decrease in PHQ-9 and GAD-7 scores (both: $p<0.0001$, paired-samples t-test, $n=30$).

	Mean score on assessment	Mean score on discharge
PHQ-9	11.6	5.1
GAD-7	10.1	5.2

Conclusions: Results suggest that specialist psychological interventions are effective and acceptable to patients with high risk sexual behaviour, including MSM and BME populations. Additionally a high number of individuals were identified with complex mental health needs and referred to specialist services, underlining the value of identifying high risk patients in general GUM services. Further evaluation is required to determine whether sexual behaviour change is maintained over time and reduces acquisition and diagnosis of STIs.

O43

Who accesses PrEP? An analysis of baseline data in the PROUD pilot

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Background: Pre-exposure prophylaxis (PrEP) has proven biological efficacy to reduce the sexual acquisition of HIV, but public health benefit will depend on effective targeting. In the UK, PrEP is only available through the PROUD pilot study. Here we present the baseline demographics of the study population recruited to date.
Methods: PROUD is a randomized controlled pilot study in which eligible HIV negative gay and other men who have sex with men (MSM), aged 18 or above, who report condomless anal sex in the past three months, are randomized to receive Truvada as PrEP immediately or after 12 months. Thirteen sexual health clinics across England are participating. Data on demographics, sexual behavior and STIs are collected at enrolment into clinic and participant databases, and merged for analysis.
Results: By 31 December 2013, 393 participants had enrolled, and merged baseline data were available on 337. The median age was 36 (IQR 30-42). The majority (79%) were of white ethnicity. Over half (58%)were educated at university degree level or above. 73% were in full-time and10% in part-time employment, 7% were unemployed,5% were in education, 3% retired and 2% other or no answer. 48%of participants reported being in an ongoing relationship and 33% were living with a partner. In the past 90 days, the median number of total anal sex partners was 10 (IQR 5-20), and the median condomless receptive and insertive anal sex partners were 2 (IQR 1-5) and 3 (IQR 1-7) respectively. Over a third (38%)had used post-exposure prophylaxis (PEPSE) in the past 12 months, 12% more than once. Participants had attended clinic for a HIV test a median of 3 times in the previous 12 months. Of 306 to 310 participants answering the STI questions, rectal Gonorrhoea (GC)was reported by 25%, rectal Chlamydia (CT)by 22%, syphilis by 9% and LGV by 2% in the past 12-months. Of 157 to164 that were tested at baseline, 4% were infected with rectal GC, 4% with CT, and 4%with syphilis.
Conclusion: The study is recruiting highly-educated MSM at high-risk of HIV infection according to the number of condomless sex partners, higher rates of STIs and PEPSE use reported compared to the general population of MSM who attend sexual health clinics in England (http://www.hpa.org.uk/stiannualdatatables). This makes the planned main PROUD trial highly relevant for public health policy as high-risk MSM would be the most appropriate candidates for PrEP if the trial demonstrates it to be an effective intervention.

O44

Understanding the acceptability of pre-exposure prophylaxis (PrEP) for HIV prevention amongst gay and bisexual men in Scotland: a mixed methods study

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Background: PrEP is highly effective if taken regularly and was made available in the US in 2012. While PrEP is not currently available through most other national health systems, there is considerable interest in its efficacy and roll-out. Here we present mixed methods data to explore the awareness and acceptability of PrEP amongst gay and bisexual men in Scotland.
Methods: We employed concurrent mixed methods data collection and analysis, followed by sequential data analysis. Firstly, exploratory qualitative data (4 focus groups (FG) of convenience samples of MSM (n=22) were analysed thematically. Secondly, quantitative cross-sectional survey data (n=929, recruited via online social media) were analysed using descriptive and inferential statistics. Finally, in-depth interviews with MSM (n=20) were consulted to further elucidate key findings. Both samples included HIV positive, negative and untested participants.
Results: FG discussions revealed polarised views on PrEP. HIV positive men initially rejected PrEP use with their sexual partners, while HIV negative/untested men were more likely to consider PrEP. Survey data suggested that 30% of negative/untested men and 75% of positive men had previously heard about PrEP. Men from large cities were significantly more likely to have heard of PrEP than men from more rural areas for both positive (Chi^2=4.6, df=2, $p<0.05$) and negative/untested men (Chi^2=21.4, df=2, $p<0.05$). Overall, 48% of negative/untested men said they were likely to use PrEP in the future, in contrast to 27% who reported they were unlikely to use PrEP. Likelihood of use was neither patterned by urbanicity, (T=1.45, ns) nor by awareness of PrEP (T=0.001, ns). Analysis of interview data found that negative/untested MSM who expressed an interest in PrEP use were cautious about its effectiveness. Furthermore, participants indicated that PrEP use (in addition to or instead of condoms) would depend on the nature of sexual relationships and other, existing risk management strategies.
Conclusions: These findings suggest low awareness but widespread interest in PrEP amongst HIV negative/untested MSM in Scotland but the reverse pattern (higher awareness, lower interest) amongst positive men. Proximity to HIV reduces acceptability of PrEP use, but PrEP awareness does not. PrEP education and support needs to move beyond large urban centres, as well as consider how uptake of PrEP will be affected by social context and existing risk management strategies.

O45

Acute Hepatitis C in the PROUD pilot study

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Background: Pre-exposure prophylaxis (PrEP) has proven biological efficacy to reduce the sexual acquisition of HIV, but public health benefit is uncertain. Concerns have been raised about an increased risk of other sexually transmitted infections (STIs) as a consequence of decreased condom use. In the UK, PrEP is only available through the PROUD pilot study in which HIV negative gay and other men who have sex with men (MSM), who report condomless anal sex in the past three months, are randomized to receive Truvada as PrEP immediately or after 12 months. Excluding intravenous transmission, Hepatitis C (HCV) is almost exclusively found in HIV positive MSM. Therefore in the PROUD study HCV is not included in the routine STI tests listed in the protocol.
Methods: Sexual behaviour questionnaires and STI screens were collected at enrolment and at six monthly intervals. HCV antibody and ALT are not routine. Data from all participants with at least one set of STI results on the database as of DATE were included in this analysis.
Results: Of 393 participants who had enrolled by 31/12/2013, 160 (41%) individuals had been tested on one or more occasion for HCV. Five participants were diagnosed with acute HCV, giving a HCV cumulative incidence 1.3% in the whole cohort of 1.3% and amongst those tested of 3.1%.
The median age of men with acute HCV was 39(range 24-64) years; 3 were born outside the UK. Indication for ALT/HCV testing was: 2 partner HCV+, 1 multiple unsafe sex acts, 1 injecting drug use and 1 symptoms. All 5 reported unprotected anal sex in the preceding 3 months (1 had concomitant rectal Chlamydia and rectal Gonorrhoea). Mean HCV viral load at diagnosis was 6.22 log_{10} and median ALT at diagnosis was 344.5 (range 68-2763) IU. All were diagnosed within 64 days of trial entry (1 between enrolment and randomisation) and all had a negative HCV test within the preceding 3 months).
Conclusion: HIV prevention studies should consider including HCV testing at baseline and follow-up as part of testing for other STIs. Undiagnosed acute HCV infection in MSM reporting high risk sex is a public health concern. Routine testing of HCV and ALT in the list of routine STIs should be considered for this group.

Poster Abstracts

Access, Service Development and Delivery

P1

Factors associated with intervals between visits to HIV outpatient clinics

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Background: Retention in HIV care is vital for treatment success at both an individual and population level. As part of the REACH project, we examined factors associated with intervals between outpatient visits to better understand complex patterns of engagement in HIV services.
Methods: We conducted a secondary analysis of UK Collaborative HIV Cohort (CHIC) data, including 12 years of data from adult patients who made two or more visits to 15 UK HIV clinics (1st Jan 2000 to 31st Dec 2011). As clinic visits were not always reliably captured, CD4 counts, viral loads and/or haemoglobin measures were used as surrogate markers of attendance. We described the proportion of patients who re-attended within 4, 8, 12 months or more; examined the mean number of days between visits; and compared groups by demographic and clinical characteristics using standard univariate statistics. We conducted qualitative interviews with 6 HIV clinicians about factors associated with time to next appointment.
Results: The UK CHIC analysis included 31,784 adults with a median of 4.8 years in follow-up (IQR=7.3). While 18.8% of patients always re-attended within 4 months of a visit, 67.5% always re-attended within 8 months and 83.3% did so within a year. The remaining 16.7% did not attend for a year or more at least once. Those who did not attend for a year or more were more likely to be female (17.7%), black – other ethnicity (20.2% vs 16.5% for white, 17.0% for black African, 14.0% for Asian, 16.0% for other), other transmission group (20.3% vs 15.9% for homo/bisexual and 17.4% for heterosexual) and younger (19.9% of under 30s vs 10.3% of over 45s), all p<0001.
The average time from one visit to the next was 83.9 days. Shorter gaps occurred when patients had a lower CD4 count (CD4 <200: 62.4 days: vs CD4≥500: 107.0 days), had started treatment (80.6 vs 97.6 days), had an AIDS event within the last 3 months (32.7 days vs 85.1 days) or had a detectable viral load (82.1 vs 98.0 days), all p<0001.
In the qualitative analysis, clinicians also emphasised the importance of non HIV-specific factors in determining when the next visit should occur. Their knowledge of and relationship with patients, patient comorbidities and psychosocial issues were key determinants of the time to next appointment.
Conclusions: A range of demographic, social and clinical factors contributes to positive engagement in HIV care services and must be considered in the development of any successful intervention.

P2

Risk estimation in sexual health contexts: development and validation of a tool for screening asymptomatic chlamydia and gonorrhea

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Background: Due to rising health care costs and increases in client volumes, it is imperative to develop systems that make efficient use of increasingly scarce publicly funded sexual health care programs, including testing for chlamydia and gonorrhea (CT/GC). The aim of this study was to develop and validate a risk-scoring algorithm for the selective screening of asymptomatic patients at increased risk for CT/GC infection in a sexual health clinic setting (where CT/GC testing is typically recommended for the majority of patients).
Methods: We examined electronic health records (2000-2012) from clinic visits at two Vancouver, British Columbia sexual health clinics. We conducted multivariate logistic regression of seven years of clinic visits data (2000-2006). We weighted and summed the regression coefficients of significant predictors of CT/GC infection obtained from the final model. The model's performance was evaluated using the area under the receiver operating characteristic curve (AUC) and the Hosmer-Lemeshow (H-L) statistic. We examined the sensitivity and proportion of patients that would need to be screened at different cutoffs of the risk score. Temporal validation was assessed in clinic visits from 2007-2012.
Results: The prevalence of infection was 1.8% (n=13,791) and 2.1% (n=18,050) in the derivation and validation datasets, respectively. The final model included younger age, non-white ethnicity, multiple sexual partners, previous CT/GC diagnosis, and first time clinic visit. The model showed good performance in the derivation (AUC, 0.74; H-L *p=0.99*) and validation (AUC, 0.64; H-L *p=0.78*) datasets. Possible risk scores ranged from -2 and 28. We identified a risk score cutoff point of ≥7 that detected cases with a sensitivity of 89% and 80% by screening 60% and 63% of the derivation and validation populations, respectively.
Conclusion: To our knowledge this is the first study in sexual health contexts to derive and temporally validate a well-performing risk-scoring algorithm for screening asymptomatic CT/GC infection (particularly salient given the shift to more sensitive diagnostic tests in the validation time period). Applying the Canadian population-based recommendations for CT/GC screening to the development dataset would have increased screening (from 60% to 84%) with a marginal increase in sensitivity (89% to 92%). Use of algorithms for tailoring risk assessments based on patient characteristics may reduce unnecessary screening.

P3

How prepared are GPs to be more involved in the management of HIV?

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Background: As the HIV cohort ages it is increasingly important that we develop shared care models with GPs. Better communication and involvement of GPs will improve quality of care and avoid the risk of drug-drug interactions. We undertook a survey of English GPs to assess readiness to be more involved in HIV care and to better understand the barriers that exist to this.
Methods: A sample of English GPs was invited to complete an on-line questionnaire, which questioned current levels of knowledge, the relationship with HIV specialist services, barriers to better involvement in the management of people living with HIV (PLWHIV) and what is required to become more involved. GPs were recruited so that respondents came from a range of practices and geographical locations, had >3 years' experience and were not also working in HIV services. In addition a 'boost' sample of GPs was recruited from areas of high HIV prevalence (> 5 HIV cases /1000 population). These areas were London, Brighton and Manchester. Responses from GPs from high prevalence areas were compared with those from low prevalence areas.
Results: 239 GPs responded: 110 from low prevalence areas and 139 from high prevalence areas. 66% of GPs and 73% from high prevalence areas report receiving communication from HIV services but the majority did not think they worked closely with HIV services (56% and 63%). The majority of all GPs felt it was important to move the non-HIV care of patients to primary care and that GPs are best placed to provide this. Only 50% of GPs had received specific training in HIV prevention and management. GPs from high prevalence areas were significantly more likely to feel prepared to be more involved in care (63%) than those from low prevalence areas (47%). 84% of GPs and 75% of those in high prevalence areas thought there are barriers to primary care taking on more management of non-HIV issues. Lack of knowledge and training were cited as the key barriers. GPs also recognised that HIV patients have concerns about their inexperience and lack of knowledge. All GPs are looking for further training, specifically around antiretrovirals and drug-drug interactions, before they feel confident to be involved in more shared care.
Conclusion: The majority of GPs are willing to be more involved in the care of PLWHIV. However there are clear gaps in knowledge and confidence. Specialist services need to support primary care with training that focuses on issues of HIV management and monitoring.

P4

Targeted outreach: does it work?

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Introduction: An estimated one in four individuals living with HIV are unaware of their status. Those most affected are likely to be from BME (black minority & ethnic), specifically black African, and MSM (men who have sex with men) populations. Younger people bear the largest burden of sexual ill-health and are least likely to attend mainstream hospital-based services. During National HIV testing week 2013, in partnership with various third sector organisations, we designed a series of healthbus outreach HIV/STI testing ventures designed to target BME, MSM and younger populations.
Method: Anonymised data were collected from participants attending the outreach events including gender, ethnicity, sexual orientation, postcode, screening/service provision, diagnostic results and patient satisfaction outcomes. We compared these with individuals attending our mainsteam GUM service in the same timeframe.
Results: In total, 698 individuals attended ten outreach clinics in inner London compared with 2725 attending the mainstream GUM service. In the two MSM specific endeavours, a total of 399 individuals attended: 362(91%) were male of whom four identified as heterosexual. In the remaining eight outreach events, the majority of attenders were male (171/299, 57%) of whom 120/171(70%) identified as heterosexual and a further 27 (16%) of unspecified sexual orientation. Compared with the mainstream GUM clinic, a higher proportion of outreach attendees were male (76% v 65%), aged below 20 years (11.5% v 6.6%) and BME (26.1% vs. 23.3%). We conducted 660 HIV tests, 154 screens for *Chlamydia trachomatis* (CT) & *Neisseria gonorrhoea* (NG), resulting in one new HIV positive diagnosis who has since entered care. Positivity rates were: NG (6/154, 3.9%), CT (9/154, 5.8%). Overall, 332 (48%) patient feedback questionnaires were received: 298/332 (90%) rated the service excellent and 132/332(40%) stated they had not previously tested and 132/332(40%) stated they wouldn't have tested otherwise.
Conclusion: Linking sexual health screening with National HIV testing week by outreach clinic in inner London is popular, well-received and increases testing of BME, MSM and younger people compared with standard GUM clinic services. Of note, a higher proportion of outreach attendees were men, a difficult group to engage in healthcare. In addition to sexual health, this outreach model could be useful to engage men in other public health initiatives.

P5

A network approach to ensure high-quality HIV outcomes: the experience of a remote small unit

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Background: Specialised commissioning for HIV aims to deliver high quality equitable HIV care. For smaller services to be able to meet the service specification and provide care in line with BHIVA Standards the development of functional networks will be mandatory. The Bailiwick of Guernsey (population of approximately 67,000) is geographically isolated. Our HIV service network consists of provision of specialist clinical advice and governance for the management of HIV outpatients, inpatients, co-infection and sexual health. We aimed to compare local standards of care to those in the UK.
Methods: A retrospective review was undertaken of all HIV infected patients attending for care in Guernsey in 2013. We collected data on: ART initiation, plasma HIV RNA levels in patients on ART; PCP prophylaxis; GP involvement; offer of vaccination; screening and partner notification (including children).
Results: We identified 23 patients (8 female, 15 male) who are currently registered locally, 20 of whom are on ART (Table).

	Outcome (%)
On ART with VL<50 copies per ml	100
ART initiated in accordance with BHIVA guidelines	100
Partner notification completed	100
Children tested	11/12
PCP prophylaxis	100
GP communication with letter within previous year	100
Screening (cervical, hepatitis, STI, CVD risk, bone health)	100
Vaccination offer (hepatitis A and B, flu, pneumovax)	100
HIV related mortality	0 (3 deaths: all non HIV related)

Between 2008 and 2013, there were 6 admissions with an HIV associated diagnosis. All were newly diagnosed cases or receiving their care in the UK. Specialist advice was sought within 24 hours admission in all cases and there were no deaths. Two patients required transfer to a specialist unit in the UK.
Conclusion: The development of a bespoke network in our small island setting has resulted in excellent clinical outcomes and ensures equitable access to high quality services for patients who are unable to travel to large urban treatment centres.

P6

Peer mentoring – a community response to supporting self-management and well-being of people living with HIV

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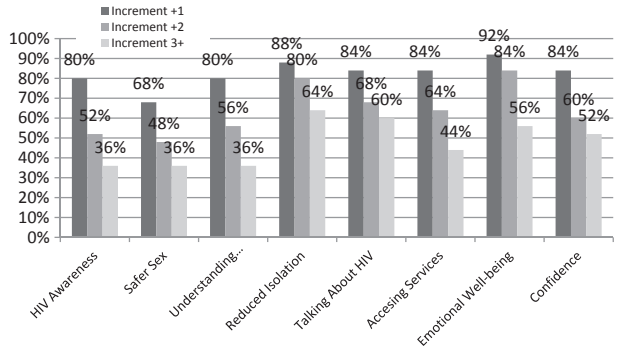
Background: Positively UK provides peer led support to over 1,000 people each year to improve the physical, emotional and social well-being of people living with HIV. In 2011 Positively UK established a new programme to train people living with HIV as peer mentors, with the objective of building capacity to provide peer support across London. Evaluation sought to identify benefits of the programme to mentees and volunteer mentors.
Methods: At evaluation the project had been operating for 18 months. Using a Star Outcome, beneficiaries were assessed their position in terms of 8 key indicators upon commencement of peer mentoring, at intervals during the support process and upon completion. An external researcher conducted interviews and focus groups with peer mentors and beneficiaries.
Results: Peer Mentors: A diverse group of 45 peer mentors were recruited, 58% women, 42% men; 65% heterosexual, 35% gay; 54% White British/European, 40% African, 2% Asian, 2% Caribbean. All accessed a tailored training programme, monthly supervision groups and professional development including mental health, benefits, and treatments. In rating knowledge on a 10 points scale volunteers recorded improvements in understanding of areas such as treatments (initial mean score 7, final mean score 9; and ability to advocate for others (initial mean score 6, final mean score 8). Qualitative interviews also identified personal benefits for mentors: "People have something to give – that is empowering. I'm not helpless – I'm useful"; "My consultant says I'm a new person."
Mentees: 150 people received over 1,200 hours of mentoring. The majority of mentees show progress against most of the outcomes, with a third to half recording a substantial increase of 3 points or more (table 1).



Mentees who recorded an initial score of below average, point 5 on a 10 point sale, for an indicator demonstrated greatest improvements with just under 90% reported improvements in negotiating safer sex and 100% in ability to access other statutory and voluntary care services.
Conclusion: Peer mentoring can be a useful psycho-social tool in supporting people living with HIV with beneficial outcomes for both mentors and mentees. Further research required into long-term benefits for mentees and mentors in advocating for and managing their health are social care.

P7

Management of patients lost to follow-up; early results of a new approach

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Background: At present, HIV care requires long term engagement between patients and treatment centres. Failure to attend clinic appointments is a common observation in HIV clinics. We investigated the impact of an enhanced protocol for follow up of patients who failed to attend their HIV clinic appointments.
Methods: In our centre, patients are routinely invited to attend the clinic every 4 months. The appointments are booked in advance to permit for necessary arrangements patients may require. Failure to attend a booked appointment is followed by three attempts to contact the patient on the phone within one week. A letter is then sent to the home address of patients who can not be reached. The letter states the number of attempts made to reach the patient and that no further attempt would be made to contact them. After two weeks and if the patient failed to contact the department, a letter is sent to their general practitioner (GP) to inform them of the patients' default from clinic where permission to write to GPs is granted. All patients defaulting from the clinic are discussed in monthly "Did Not Attend" (DNA) meetings. Their antiretroviral treatment, the number of days of available medicines according to our records, last CD4 and viral load counts, social issues, pending issues for partner notification and children testing, and any clinical issues from their last visit are discussed. A structured "final clinical summary" (FCS) letter containing the above information is dictated. It highlights patients' clinical and social issues and the consequences of interruption in HIV care. They are saved in patients' electronic records. A copy of the letter is sent to their GP where permission is given.
Results: Between September and December 2013, FCS letters were issued for 54 patients (33 men, 19 MSM) who were lost to follow up. They had a median CD4 count of 577 (IQR 364, 764) cells/mm3; 11 had CD4 count of less than 350 cells/ mm3. After a median of 24 (IQR 9.5, 64.5) days, 26 (48%) patients re-attended the clinic. All of the 9 patients who had not permitted to contact their GPs attended the clinic after receipt of the final written letter. Of the 45 patients whose GPs were contacted with the FCS, 17 (37%) re-attended the clinic.
Conclusion: Our new enhanced policy for management of DNA patients has resulted in re-attendance of 48% of patients who would have otherwise been lost to follow up. Early results suggest that GPs may play a significant role in convincing those patients to re-attend. Follow up of patients defaulted from HIV clinics should be pursued jointly with their GPs.

P8

Choral singing and psychological and physical wellbeing: findings from evaluation of the UK community choir of people living with HIV – Joyful Noise

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Background: Addressing the psychological needs of people living with HIV with community social support is critical in helping them to live well, and reduce feelings of isolation and marginalisation. Choirs are known to benefit health and wellbeing, and help individuals lead fulfilling and more participative lives.
In September 2013, a sexual health charity set up a pilot weekly community choir open to all people living with HIV. This pilot will run for one year and aims for the choir to become self-sufficient. It was publicised in HIV clinics and community settings and partner HIV organisations were encouraged to refer members. To increase inclusivity, child-care, refreshments and transport were offered. The objectives were to reduce isolation and encourage social participation, increase access to motivational peer support, create a sense of community, reduce stigma and educate the audience on HIV. Members were led by experienced choir directors and had the opportunity to participate in all aspects of choir development including musical and organisational. We evaluated the first 12 weeks, which culminated in a public performance.
Methods: Members were asked to fill out pre- and post- choir questionnaires, looking at their wellbeing, self-esteem and community engagement. Qualitative data were also collected.
Results: Response rate 17/48. Confidence: 37% ranked this at $\geq$7 on a scale of 1-10 (1 the lowest) before the choir and 77% after. Level of community engagement: 47% at $\geq$7 before and 82% after. Ability to build a new relationship: 37% at $\geq$7 before and 77% after. Motivation level: 42% at $\geq$7 before and 100% after. Confidence in goal setting: 42% before and 88% after. Confidence in disclosing HIV status: 42% ranked this at $\geq$7 before the choir and 88% reported scores of $\geq$7 after. All respondents said the choir had a positive impact on the quality of their lives and emotional wellbeing and 82% felt it helped them to deal with their worries and problems. 77% felt it improved their physical health. Qualitative data responses include "It is the best support group I have ever been to", "The choir has given me the confidence to just be me regardless of my status", "I have disclosed to my new found love and this has been because of the choir. I no longer have anything to hide".
Conclusions: After just 12 weeks, the choir has improved confidence, health and wellbeing. Further evaluation at the end of the pilot will demonstrate whether this positive impact is sustainable.

P9

Expand your option(e)s!

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Background: In our service stable HIV+ve patients are seen 6 monthly for standard HIV monitoring with additional assessments according to clinical need. Annually, patients have full haematology and biochemistry profiles, as well as hepatitis C serology, assessment of hepatitis B immunity, cervical cytology, measurement of cardiovascular risk and STI screening if appropriate. Stable patients may elect to be managed by a nurse in Option E and receive results by email. Patients are encouraged to receive their medication by home delivery.
Methods: We reviewed a random selection of 50 Option E (nurse-managed) and 50 non-Option E (doctor-managed) patients who attended our service from 1 December 2012-30 November 2013.
Results: No of patients in clinic cohort = 2757; no of patients in Option E 1244 (45%)
Below are presented results of random selection of 50 patients from each group.
There was no difference in number of clinic visits, referrals to Daycare/A&E or hospital admissions between Option E and general HIV clinic patients.

Characteristic	Option E n=50	Gen HIV clinic n=50
Median age (yrs)	41 (IQR 34-47)	49 (IQR 46-55)
Median time since diagnosis (yrs)	7 (IQR 6-11)	16 (IQR 14-19)
Undetectable VL on treatment	47 (94%)	48 (96%)
No of previous regimens	1 (IQR 1-2)	4 (IQR 3-8)
Home delivery	37 (74%)	30 (60%)
Annual review	50 (100%)	47 (94%)
Cardiovascular risk assessment	20/47 (43%)	16/49 (32.7%)
STI screen	23 (46%)	19 (38%)
Hepatitis C screen	50 (100%)	44 (88%)

Conclusion: Patients managed by nurses in Option E have similar outcomes to those managed by doctors in the general clinic. Younger, more recently diagnosed patients may be more accepting of new patient management initiatives than older, less recently diagnosed patients.

P10

The cost-saving impact of a new policy on prescribing of non-ARV drugs in an HIV centre

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Background: By 2013, estimates put the total number of HIV-positive patients attending NHS services at 78,370 with annual treatment and care costs between £720-£758 million.1 As resources are being stretched, initiatives for more efficient management approaches of antiretroviral (ARV) drug budgets are needed. Utilisation of services that save on value added tax, referring of non-ARV drug prescriptions to general practitioners (GP's) and limiting ARV drug supplies can reduce cost. We investigated the financial impact of HIV pharmacists' intervention in the reduction of prescribing of non-ARV drugs in a HIV centre.
Methods: From April 1st 2010, a new policy to limit the prescribing of non-HIV related drugs was adopted in our centre. The HIV clinicians and pharmacists informed the patients were that they should obtain these drugs from their GPs. Using the Trust's financial database, we extracted the stock values of the non-ARV drugs dispensed by our centre between 2010 and 2013.
Results: The size of our cohort has increased during the study period. Before adopting our current policy (2010-2011), the centre spent an average of £40.50 per each patient. The average annual cost of non-ARV drugs per patient decreased rapidly to £17.87 in the first year after implementation of our policy (Table 1). The most common non-HIV medications prescribed were topical creams, painkillers, antihistamines inhalers and dietary supplements.
Conclusion: Since commencing the new policy, our department has saved £49,269. Transfer of care for non-HIV related illnesses to GP's we believe has improved the quality of care. We witnessed a modest average increase in the value of non-ARV drugs issued by the centre in the following year. This was due to a one off prescriptions of non-ARV drugs for patients that transferred their care from other centres. If adopted by other HIV departments, the policy should result in significant savings in national HIV drugs' budget.
References: Mandilia S et al. Rising population cost of treating people living with HIV in the UK, 1997-2013. PLoS One, 5,12:e15677,2010

Table1. Financial savings via new policy on prescribing of non-ARV drugs.

Financial year	2010-11	2011-12	2012-13
Total value of non-ARV drugs prescribed(£)	42,939	20,361	24,289
Total number of HIV patients attended	1060	1139	1180
Average annual cost of non-ARV drugs/patient (£)	40.50	17.87	20.58

P11

Questions about medicines: how specialist HIV pharmacy services are utilised

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Objectives: Specialist pharmacy staff are a key source of information for medicines-related information for patients. We investigated the types of questions posed to pharmacy by patients at 3 London HIV clinics.
Methods: All patient questions independently asked over 10 consecutive working days in July 2013 were recorded. Method of contact, question type, and proportion resolved or referred were investigated.
Results: 157 questions from a cohort of over 10,000 patients were received. Contact was made by telephone (83, 53%), at the pharmacy (56, 35%), via email (9, 5.7%) or the medicines information service (9, 5.7%). Most were received by specialist pharmacists (80, 51%), with 46 (29.3%) received by pharmacy technicians. 115 (73%) of queries were prescription related, of which 19/115 (17%) were prescription issued outside the HIV clinic (12 other speciality, 7 GP). Questions related to supply of medicines (91, 57.9%), drug-drug interactions (DDI) (31, 19.7%), general medicines advice (20, 12.7%) and side effects (10, 6.4%).
Most DDIs questions related to a medicine not prescribed by the HIV clinic (28, 90%), including by family doctors (7), other specialities (5), and herbal/alterative or over the counter medicines (16) purchased by the patient. 27% (9/31) of DDIs were clinical significant, of which 5/9 were prescribed by GPs or other specialities, and 3/9 related to over the counter/herbal or complimentary therapies
Questions about DDIs were asked either before taking or when considering a new medicine in 84% (26/31) of cases. 50% (5/10) of questions about side effects related to the potential of side effects with ARVs or other medicines.
Questions were resolved by the pharmacy in 76.4% (120) of cases, with 20% (31) referred to other health care professionals, or referral to a senior HIV pharmacist (6). Questions resulted in 61 prescriptions for additional medicine, and 1 change of medicine. Most questions (130, 83%) were resolved within 10 minutes.
Conclusions: Specialist pharmacy is a key resource for a wide range of patient questions. The availability of specialist pharmacy staff to respond to questions should be considered when reviewing services.

P12

Confessions of an Outer London HIV clinic: Characteristics of those who chose not to disclose their HIV status to general practice

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Background: People living with HIV infection (PLWH) are living longer and at greater risk of concurrent health problems requiring General Practice (GP) care. BHIVA Standards for Clinical Care recommend all PLWH should register with a GP and inform them of their HIV diagnosis. We aimed to identify the patient characteristics and co-morbidities of those who chose not to disclose their HIV status to their GP.
Methods: The clinic management system identified patients attending for HIV care between 1st February and 31st July 2013. A retrospective review of each electronic patient record was undertaken. Demographic and clinical data were recorded including blood pressure (BP), body mass index (BMI), co-morbidities, anti-retroviral (ARV) regimen, and non-ARV medications. Notes were reviewed for documentation of a discussion with the patient around disclosure to the GP and why this was important.
Results: 327 patients were identified, 267 had disclosed to their GP. 18.3% (60/327) did not, of these; 61.8% (37/60) were male and the majority Black African (41.6%). 72% (43/60) were on ARVs. 5% (3/60) had a CD4 count <200 cells/mm. 38.3% (23/60) had other medical problems including diabetes, hypertension and viral hepatitis. 8.3% (5/60) were known to have a mental health problem. 35% (21/60) had a BMI >25 kg/m^2 and 10% (6/60) had a documented BP >140/90mmHg. 17.4% (4/23) of the females had documentation of a pregnancy since HIV diagnosis and 17.4% (4/23) had a history of abnormal cervical cytology. 20% (12/60) were taking non-ARV prescribed medications. There was documentation of discussion to encourage disclosure to GP in only 15 out of 60 cases (25%).
Conclusions: The majority of the patients in this group were prescribed ARVs. Co-morbidities, co-administration of medicines and abnormal cervical cytology were prevalent. HIV physicians should continue to encourage registration and disclosure to GPs. Patients who do not disclose their HIV status to their GP are vulnerable to sub-optimal clinical care, potential drug interactions and may not benefit from screening and immunisation initiatives. Recommendations include changing the electronic record to include a medication review at each visit, mandatory recording of discussion around disclosure to GP and exploring barriers to disclosure more frequently than the annual Commissioning for Quality and Innovation (CQUIN). Ongoing work is required to build awareness and trust so patients can comfortably access primary care.

P13

Evaluating our sexual health service: outcomes from a central London clinic

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Introduction: Our clinic is one of three clinics within one central London NHS Foundation Trust. We opened at a new location in March 2009 and present our sexual health and HIV care outcomes from 2012-13.

Results: Our annual GU attendances have increased year on year with 64068 attendances in 2012-13. Within this year our patient cohort were 75% male, 60% men who have sex with men (MSM), 44% aged 30-50 years. We prescribed 700 courses of post exposure prophylaxis; and had 3896 contraception attendances, 12% received long acting reversible contraception. We have attracted service users from every Local Authority, 24% of whom were from our tri-borough (Westminster, Kensington & Chelsea, Hammersmith & Fulham). We made a significant proportion of diagnoses in MSM in England through sexual health screening (see table below).

STI Diagnoses in MSM at our clinic (PHE, 2012)

STI	England	London
Chlamydia	17% (1447/8509)	36% (1447/3989)
Gonorrhoea	21% (2276/10754)	37% (2276/6104)
Syphilis	22% (464/2142)	41% (464/1133)
Herpes	24% (333/1360)	54% (333/619)
Warts	23% (827/3492)	67% (827/1231)

Our HIV cohort has almost tripled at our new location; we currently have a growing cohort of 2757 HIV positive patients (998 patients in March 2009). In 2012-13 we made 1 in 4 (358/1307) diagnoses of HIV infection in MSM in London (1 in 6 in England, 358/2256). The median CD4 count at diagnosis of HIV infection was 528. 33% of new infections were early infections using the recent infection testing algorithm (RITA). 80% of our patients take antiretroviral therapy, 70% are registered for home delivery and 89% have an undetectable viral load. 87 women are registered as HIV positive at our clinic; 36 have been identified as ongoing service users (seen within last 1 year). Of those women no longer receiving their care at our clinic: 15 patients had no data recorded following their diagnosis, 5 were deceased, 9 transferred their care and 22 had failed to attend follow up appointments. Our ongoing female service users are aged 24-64 years (mean age 41 years), 58% of whom are black British/African, 17% white British. 92% of these women are taking antiretroviral therapy.

Conclusion: Our move to a different location in 2009 was very successful. With our expanding HIV cohort and awareness of the need for efficient asymptomatic screening we are aiming to open another sexual health service in the near future.

P14

What women, who have sex with women, want

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Background: We have the largest lesbian, gay, bisexual, transgender community in the UK. Many services exist to meet the needs of men who have sex with men but there is little specialist provision for women who have sex with women (WSW), a group with multiple vulnerability factors whose healthcare is neglected. WSW are more likely than heterosexual women to have drug, alcohol and mental health problems and experience sexual assault and exploitation but are less likely to access routine services. The aim of this project was to identify the needs of WSW with a view to creating a service to meet these needs.

Methods: In 2012, WSW were surveyed at Pride and local club Tramfrau, using a different written questionnaire at each site. The Pride questionnaire collected data on their perception of their sexual health risks, needs and sexuality. The Tramfrau questionnaire collected data on their needs and barriers to accessing sexual health services.

Results: 86 WSW were surveyed at Pride and 100 at Tramfrau. Of the WSW surveyed at Pride, 95% were aware they were at risk of STIs. 66% reported sexual intercourse with men, increasing their risk further. Only 53% had ever attended a sexual health clinic. Of those surveyed at Tramfrau, 21% had been 'put off' attending sexual health services. Barriers included staff attitudes and lack of awareness of WSW needs, lack of anonymity, lack of awareness of services and difficulty accessing appointments. WSW wanted a service staffed by women, providing safe sex advice and STI screening, smear tests, breast awareness, conception and contraception advice and drug and alcohol advice. Only 4% wanted an exclusive WSW service, with 63% preferring a Women's only service.

Conclusion: The Women's Clinic, a weekly evening clinic meeting the needs of WSW within the context of a general women's clinic, started in May 2013. It provides a 'one stop shop' with the capacity for STI screening, treatment and advice and cervical screening, with contraception services added in August 2013. The clinic has been promoted at local GPs, libraries, social venues, public toilets and university and has been featured on several websites and WSW magazine DIVA. Over 6 months, there have been 631 attendances, of which 6.3% identified as WSW. Of the WSW, 97% attended for STI care and 19% for cervical cytology. 16% had both. Of 80 attendances for contraception, only 1 was WSW. Initial feedback is extremely positive, with further service evaluation planned.

P15

Sex, Steam and STIs

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Introduction: Recent HIV infection amongst men having sex with men (MSM) in our locality is higher than the national average. Addressing this was a high priority for sexual health clinicians, public health and local 3rd sector organisation. With the support of our 3rd sector partner, we approached one of the local male saunas to determine if a screening clinic for MSM was feasible. The sauna response was hugely positive and funding was obtained for a 6 month pilot project

The Clinic: The clinic runs on a weekly basis, from a dedicated room in the sauna, and is nurse led. 3rd sector staff offer support and outreach to men in the sauna area. Anyone presenting with symptoms is advised to attend the main sexual health clinic but is not turned away. Screening for chlamydia and gonorrhoea from the throat, urine and rectum is offered via molecular testing (NAATs) alongside blood sampling for HIV, syphilis, hepatitis B & hepatitis C. Oral and topical treatments are offered, as is Hepatitis B vaccination

Results: There were 80 new/rebook episodes over 19 clinics (4.2 per clinic). One man was heterosexual & therefore excluded from data analysis. The majority of men (84%) had accessed sexual health services previously but only 52% (36/69) had extra-genital swabs before. 25% (17/69) reported sex with both men and women. 50% had never tested for HIV or last tested >12 months ago. HIV uptake rate was 97%. 50% did not know about PEP.

The new:follow up rate was 3:1. Follow ups were mainly for Hepatitis B vaccination.

23% (18/79) had one or more new STI identified. This compares with an infection rate of 15% in asymptomatic MSM attending the mainstream sexual health clinic. 3 men had more than one infection. Rectal chlamydia was most common with a prevalence of 10%. One client had LGV. 86% of chlamydia and gonorrhoea infections were extra-genital. One client had very early HIV infection and commenced ARVs. Patient feedback was consistently excellent

Discussion: This is an exciting project, set up in response to a documented need. We continue to be impressed at the support gained from sauna staff and clients. With our 3rd sector partner and the sauna we aim to encourage more men to attend via increased advertising/outreach, running the clinic at busier times and offering a discounted rate at the sauna for men attending clinic. Notably, two clinics that were run on a Saturday had a higher STI positivity rate. Adapting to this will be part of the next phase of clinic implementation.

P16

Improving quality through service user involvement: focus groups with street-based sex workers

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Background: As an inner city sexual health service we provide a weekly outreach service for street sex workers (SSWs). Recent data suggests that health service uptake by SSWs remains low, with just over 20% accessing healthcare services in the city between April and September 2013.

In order to improve uptake of our service we involved service users in determining the future model.

Methods: Current and exited SSWs were invited to take part in focus groups. Nine participants discussed ideas to develop the outreach service. Topics for discussion included: The clinic logo; patient information leaflets; ways of increasing the clinic profile; improving attendance. Discussions facilitated exchange of views to generate ideas but also required consensus on some topics. Facilitators provided additional guidance on the process where needed.

Participants were provided with copies of the current logo and information leaflets and they highlighted on the existing literature aspects that they considered good and bad, as well as commenting verbally.
Annotated literature and comments were then used to redesign the logo and leaflets which were further reviewed at a second focus group. Comments from the group on four potential logos and a first draft of new information leaflets were collated for the final versions.
Results: All participants contributing to the group expressed that the process had been extremely positive.
Consensus was found within the annotated literature regarding what information was deemed important and how best to present it. Participants suggested that nightclub fliers provided information in an accessible format and this approach underpinned subsequent production of short, DL-sized leaflets. A standardised "Who? What? Where? When? Why?" was suggested to ensure readability.
The logo was deemed essential for clinic promotion and a strong female emphasis was considered important. Unanimous agreement was attained on the final logo.
Conclusion: Involving service users in service development is increasingly recognised as fundamental in improving service quality. The complex health needs of sex workers means their input into healthcare development is particularly important, thus ensuring that future services provide the care they need and want.
The participants in our focus groups provided novel ideas to develop and improve our outreach service. In order to represent this fully, one of the service users will attend BASHH/BHIVA to co-present this work.

P17

Barriers and facilitators to recruiting patients to clinical trials in HIV clinics

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Background: Research forms an integral part of HIV care. Departmental audit revealed only a minority of patients were informed of current studies with a large amount of inter-clinician variability in referrals to research. We investigate perceived barriers and facilitators to referral to studies in a large London teaching hospital.
Methods: An anonymous survey was circulated to all healthcare workers in the HIV clinic via email and personal communication. Free text questions investigated barriers and facilitators to research referrals and encouraged suggestions to increase recruitment to studies. Graded scale responses assessed the perceived impact of specific barriers (1=no impact; 4=great impact). Data were inputted onto a database.
Results: There were 25 participants: 14 doctors (43% consultant grade); 7 nurses, 3 pharmacists, 1 dietician. In the free text responses, barriers to referral were: lack of time in clinic (15/25, 60%), poor understanding of current studies (7/25, 28%) and lack of availability of research staff at time of referral (4/25,16%). Perceived patient barriers included: lack of patient time (13/25, 52%); fear of changing medication (4/25, 16%) and increased visit frequency (7/25, 28%). Responses differed between staff group with clinicians more frequently reporting lack of time, while other groups were limited by knowledge. Facilitators to referral included email updates (9/25, 36%); pre-clinic rounds by research staff (6/25, 24%); and highlighting eligible patients in the notes and clinic lists (7/25, 28%). Suggested strategies to increase research referral included more patient information literature, pre-clinic meetings, longer clinic slots and increased availability of research team. Observational studies and studies with fewer visits were considered the easiest study type to refer patients to.

Graded scale responses were totalled and ranked in order of importance below:

Barrier to referral to research	Total score (mean average)
1. Lack of time in clinic	91 (3.64)
2. Patients have no time	88 (3.5)
2. Patients declining the research referral	88 (3.5)
4. Knowledge of research studies	72 (2.9)
5. Type of studies being conducted	70 (2.8)
6. Desire to promote research	66 (2.6)

Conclusion: Time and knowledge represent the major barriers to referral to research. The department has proposed piloting extending clinic visit times and initiating a pre-clinic meeting to facilitate improved referral. Re-audit will assess the success of these strategies.

P18

Are SMS reminders useful to reduce DNA in routine GUM clinics?

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Background: Patient non-attendance (DNA) is expensive and has a significant impact on access to care. Appointment reminders by text (SMS) have been shown to reduce DNA rates in different settings. In our service, routine sexual health appointments are bookable but despite being mostly compliant with 48 hours (h) access our DNA rate averaged 21% in 2012. We aimed to ascertain whether SMS at 24h or 48h would reduce DNA rates in sexual health clinic appointments.
Methods: We compared appointment outcomes (attendances, DNA, cancelled, rescheduled) in three months periods when 24h SMS (03-05/13) and 48h SMS reminders (06-08/13) were sent, with respective periods in 2012 when no SMS reminders were sent. We used unpaired 2-sample T test to determine statistical significance. A patient survey is in process to establish the acceptability of SMS reminders.
Results: In 2012, 18,413 patients attended the service, of which 15% booked less than 24h in advance (DNA 5%), 44% between 24-48h (DNA 22%) and 41% more than 48hrs (DNA 26%). During the period of 24h SMS reminders in 2013, 4914 patients attended the service of which 85% booked more than 24h in advance; similarly during the period of 48h SMS reminder, 4521 patients booked appointments, of which 36% booked more than 48h in advance. The table shows the mean DNA rates in 2012, 24h SMS reminder and 48h SMS reminder:

		2012 noSMS DNA% (DNA/N*)	2013 SMS DNA % (DNA/N*)	P value
24h SMS	**All**	22% (1308/6029)	19% (1145/6059)	0.1963
(Mar/Apr/May)	F	24% (805/3444)	20% (699/3439)	0.2827
	M	19% (503/2585)	17% (446/2620)	0.1414
48h SMS	**All**	22% (1275/5782)	18% (997/5518)	0.0124
(Jun/ Jul/Aug)	F	24% (786/3298)	20% (641/3219)	0.0123
	M	20% (498/2484)	15% (356/2299)	0.0085

(N = appointments = attendances + DNA)

Overall, DNA outcomes decreased after SMS reminders reaching statistical significance for 48h SMS and a greater impact on male than female attendances. In addition more appointments were cancelled after 48h SMS were sent, with females more likely to cancel appointments (data not shown). There was no statistically significant impact on rescheduled appointments with SMS reminders. Informal patient feedback shows that SMS are highly acceptable.
Conclusion: 48h SMS reminders significantly reduced DNA rates in routine sexual health clinics even in a service where most appointments are booked less than 48h in advance, and is a cost-effective strategy to increase capacity.

P19

Indispensable? The questions healthcare professionals ask specialist HIV pharmacy services

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Background: Specialist pharmacy staff are a key resource for medicines-related information for healthcare professionals (HCPs). We investigated the types of queries posed to pharmacy by HCPs over 8 HIV services.
Methods: Observational study collating all queries independently asked by HCPs over 10 consecutive days. Queries recorded using a proforma, and analysed using Excel 2003.
Results: 271 queries were received, mainly from HCPs from HIV/GUM (83%, 226), predominantly doctors (60%, 164), of whom 64% (105/164) were consultants. GPs posed 10 of 22 queries coming externally from the hospital. The most common query type was choice of antiretroviral (ARV) (17%, 45) or non-ARV (29%, 78) in relation to other ARVs. Drug-drug interaction (DDI) queries accounted for 66% (82/123) of these, with 10% (13) requesting general advice and 9% (11) enquiring about side-effects or co-morbidities.
ARV DDI queries related to DDIs between ARVs (6%, 5/82), and ARVs with non-ARVs (93%, 76/82) and, for drugs that were being considered/about to be started (61%, 50/82). These were mainly initiated outside the HIV clinic (70%, 57/82): prescribed by GPs (25), other specialities (25), or purchased by the patient (6).
40% (9/22) of questions about side effects related to the potential of these with ARVs (9) or other medicines (1). Other questions related to drug supply (18%, 48), access to pharmacy records (11%, 32), general dosing (8.5%, 23) or other advice (14%, 38).
Most queries were received by specialist pharmacists (74%, 200), with 21% (60) received by pharmacy technicians. The majority were resolved directly (88%, 240), with 8% (21) referred to other HCPs and 3% (8) referred to a senior HIV pharmacist. Most queries (60%, 164) were resolved within 5 minutes.
Conclusions: Specialist HIV pharmacy teams are a key resource for a wide range of queries for HCPs, including those from outside the speciality who have input into our patients' care. The majority of queries came from consultants and related to DDIs, highlighting the need for specialist to specialist discussion with high level medicines expertise.

P20

Access to genito-urinary medicine clinics in the UK: Does 48-hour access exist without targets?

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Background: A cornerstone of genito-urinary medicine (GUM) care is free, confidential, open access. Previous studies had suggested that access was poor, having implications for onward transmission of STIs. In response, Government resources and performance targets were put in place in England and by 2010, 100% of 'urgent' cases were offered appointments within 48 hours. Since these targets have been removed there is no routine measure of whether services can meet patient demand. Using a 'mystery shopping' technique we assessed access for patients to UK GUM clinics.
Methods: During November 2013, trained researchers attempted to contact all GUM clinics open for more than 1 day per week, by telephone within known clinic opening times. Posing as male and female patients with urgent clinical problems and as asymptomatic patients they requested an appointment. Data collected were compared with data from a postal questionnaire to lead clinicians. Data were anonymised and analysed using SPSS v21.
Results: Overall, 213 clinics in the UK were successfully contacted with each scenario. For urgent clinical conditions 94.8% of 'patient' contacts were offered a time to be seen within 48 hours, although fewer were offered a specific appointment time, with 64% being advised to attend a walk-in clinic. For asymptomatic 'patient' contacts, 49% were offered a booked appointment within 48 hours and 32% were offered appointments after 48 hours with a wait of up to 4 weeks. For 19% of asymptomatic 'patient' contacts, no booked appointments were available; some were asked to call back at a specific time when further appointments would be released. Successful contact required more than one telephone call for 25% of clinics. Staff were reluctant to specify waiting times for walk-in services - estimates were up to 4 hours. There was no variation by gender but there was by region and country.
Conclusion: In spite of 48 hours access targets for GUM clinics in England being removed, most clinics can offer access within 48 hours for urgent cases. This, however, does not meet the recommended BASHH standard of 98%. In most cases a walk-in service rather than a specified appointment were offered. Our study suggests that many patients contacting GUM may have difficulty arranging to be seen promptly and are likely to experience highly variable waiting times. Future service recommendations should include a maximum waiting time for walk-in clinics.

P21

Reaching out online: researching the benefits and challenges of an Internet-based, sexual health community outreach model

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Background: Reaching Out Online identifies the opportunities and challenges facing community outreach teams who utilise digital platforms to engage with men who have sex with men (MSM) and communicate sexual health information. Funded by the Engineering and Physical Sciences Research Council, this is a collaborative research project between a higher education institution and a third sector HIV organisation. The research investigates outreach initiatives that situates health promotion work within the digital platforms (websites, forums, mobile applications) that MSM use to source sexual partners. This initiative contrasts other digital HIV prevention programmes, which rely on bespoke websites for health intervention work, and which often struggle to recruit and retain service users.
Methods: A mixed methods approach is employed including a self-completed online questionnaire (*n=1008*), focus group interviews and an ethnographic study of worker practices. Quantitative results have been analysed using SPSS and focus group interviews have been analysed and findings triangulated. Further findings have been identified via analysis workshops with key stakeholders.
Results: The findings of this project identify benefits and challenges of digitally-based intervention work.
The benefits include:
1 the ability to promote appropriate harm-reduction strategies to high-risk cohorts who are not visible offline
2 a greater degree of self-disclosure by service users during online interventions
3 an efficient means of communicating information about local services (such as HIV testing) to both permanent and 'transitory' populations.

The challenges include:
1 translating physical outreach communication skills and expertise into the digital sphere
2 developing sustained and effective interventions within the structural confines of commercial platforms
3 gaining trust and being accepted as a valid cultural and sexual health 'authority' within 'closed' or tight-knit online communities.

Conclusion: In summary, online outreach provides an effective way of engaging MSM around sexual health, and this research provides the wider sexual health sector with evidence-based knowledge regarding the skills and strategies required to undertake this work, as well as the opportunities and difficulties that such initiatives face.

P22

Screening for depression, excessive alcohol intake, recreational drug use and adherence to antiretrovirals within an HIV outpatient clinic: a pilot service evaluation

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Aims: In accordance with BHIVA and NICE guidance, we conducted a pilot service evaluation within our HIV outpatient clinic to assess the feasibility and acceptability of screening and success of onward referral for depression, excessive alcohol intake, recreational drug use and poor adherence to antiretroviral medication.
Methods: 100 patients were offered questionnaires, containing the following validated screening tools: PHQ-9 (depression), AUDIT (alcohol), DAST-10 (recreational drug use), and an adherence screen, enquiring about the number of missed doses of medication within the last 7 days and the patient's estimate of adherence to HIV medication within the last month, using a visual analogue scale (VAS). Patients identified with mild depression (PHQ-9 score 5-9) were offered a self-help booklet and those with moderate-severe depression (PHQ-9 score ≥10) were offered internal referral to the psychologist. Excessive drinkers (AUDIT score ≥8) were offered referral to an external specialist alcohol service, Aquarius. Patients with moderate-severe substance abuse (DAST score ≥3) were offered referral to an external drug service, Swanswell. Patients identified with poor adherence (≥2 missed doses last 7 days or <90% on VAS) were offered internal referral to the HIV pharmacist for adherence discussion.
Results: (2 questionnaires were not returned)

	PHQ-9 n (%)	AUDIT n (%)	DAST-10 n (%)	Adherence n (%)
Accepted	79 (79)	77 (77)	75 (75)	83 (83)
Declined	19 (19)	21 (21)	23 (23)	15 (15)
Positive screens	5-9: 16 (20.3) ≥10: 23 (29.1)	≥8: 8 (10.4)	Score ≥3: 3 (4)	3/83 (3.6)
Accepted referral	8/23 (34.8)	1/8 (12.5)	0/3 (0)	1/3 (33.3)

Conclusion: Screening was acceptable and feasible within this setting. High rates of depression were found, but internal psychology referral was not acceptable to patients. Rates of poor adherence were low. Referral to an external specialist alcohol or drug service was unacceptable to patients. Alternative strategies for managing these patients need to be researched.

P23

Growing up with HIV: what do young people want from their transition clinic?

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Introduction: As increasing numbers of HIV infected adolescents move from paediatric to adult care, it is essential to understand the needs of this vulnerable group. We performed a questionnaire of adolescents attending our HIV transition service to find out what patients want from their clinic.
Methods: Consecutive vertically infected young people aged 14 years and over attending the transition HIV service between 18.9.13 and 6.11.13 were approached with an anonymous questionnaire. Data collected included demographics, access to peer support and best suggested age to move to adult clinic. Participants were asked to rate importance of different aspects of the service, graded 1 (not important) to 5 (very important), and satisfaction, graded 1 (not satisfied) to 5 (very satisfied).
Results: Of 37 patients approached, 36 completed the questionnaire, 19 (53%) were female, 69% black African, 17% black British, 8% White; mean age 17.9 years (SD 2.9). 83% were in education, 8% worked and 6% unemployed. Mean suggested age to transition to adult clinic was 20.9 years (SD 3.6) with comments including "whenever ready" and "always (stay in young person's service)". Aspects rated most important included friendly staff, confidentiality, being able to contact staff and being seen in a familiar environment. Availability of pharmacy and dietary advice, free condoms and psychology support were deemed less important. 22 patients felt that peer support would be useful; 17 (77%) of these were not currently accessing this elsewhere. Other suggestions included "Wifi access "and "Music". Overall satisfaction was high (89% satisfied/very satisfied, 11% neutral).

Table 1: Importance of different aspects of the clinic (*Not all responders (n=36) completed all fields, % based on number of responders).

	Important* n(%)	Neutral n(%)	Not important n(%)
Friendly staff	33 (92)	3 (8)	0 (0)
Confidential service	31 (86)	4 (11)	1 (3)
Able to contact staff	28 (88)	4 (12)	0 (0)
Convenient times	26 (72)	8 (22)	2 (6)
Sexual health advice	24 (68)	6 (16)	6 (16)
Free condoms	19 (53)	9 (25)	8 (22)
Advice on healthy eating	21 (58)	13 (37)	2 (5)
Psychologist available	16 (52)	13 (42)	2 (6)
Pharmacy advice	17 (47)	12 (33)	7 (20)

Conclusion: These data give a valuable insight into the requirements of young people undergoing transition, and highlight the importance of tailoring services to the adolescent population. An accessible, confidential clinic and peer support were rated highly by respondents.

P24

A Survey of nurse-led/delivered services within genitourinary medicine clinics across the United Kingdom, conducted by the British Co-operative Clinical Group (BCCG)

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Background: Nurse-led/delivered services have expanded over recent years to meet the increasing demand for genitourinary medicine (GUM) services. The BCCG conducted a survey to explore the extent these services have developed and assess arrangements for ensuring good clinical practice.
Methods: The survey was distributed to 92 UK GUM clinics. Questions included clinic location, services available, training, clinical governance and prescription arrangements.
Results:

- 64 (70%) clinics responded. The clinics were based in a variety of settings. 30 acute trust, 22 community, 1 social enterprise, 1 third sector, 1 mental health trust and 9 were a based in multiple settings including schools, council, youth groups and social enterprise.
- Of the 61 GUM or integrated GUM/contraception services, 56 (92%) delivered a mixture of doctor led and nurse delivered service. Four clinics delivered only doctor led service and 1 nurse only led service (this was a CASH service).
- Asymptomatic GUM patients were managed by nurses band ≥ 5-7 in 37/53 clinics although in 16/53 clinics ≥ band 2 delivered this service. Management of symptomatic GUM and basic contraceptive services were provided by nurses band ≥ 5-7, except in 1 clinic where service was provided by band ≥ 4.
- For prescriptions 96% utilised Patient Group Directions, 61% had independent non-medical prescribers.
- The mean percentage of nurses who had dual training in GUM/contraception was 70% (0-100%). 45% (0-100%) had GUM only. 75% of training was funded by the trust.
- To ensure clinical governance is maintained, 52% of nurses worked to written protocols and 79% to clinical guidelines. 68% had regular notes review by medical staff, 54% regularly audited nurse led clinics. 5%

utilised other methods. 100% of nurse-led services were supported by doctors (in clinic/ building or phone). One clinic reported that on occasions no support was available.
- Of the 64 respondents, 39% reported no concerns with nurse led clinics. 36% raised concerns on issues such as supervision, training, clinical governance, management of complex patients, inappropriate triage, cost-effectiveness and efficiency. 25% did not submit a response.

Conclusion: The skills and roles of sexual health nurses have significantly expanded. However there is great variability in responsibilities, clinical governance and training. National guidelines to assist in standardisation of these services may help to ensure high quality care is delivered throughout.

P25

The effect of electronic patient records (EPR) on hepatitis B vaccination completion rates and documented immune response at a GUM clinic

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Background: EPR have been shown to improve a range of healthcare outcomes. We assessed the effect of an EPR-based system on Hepatitis B vaccination (HBVac) completion rates and immunological outcome in HIV negative patients attending a sexual health clinic.
Methods: Third dose completion and documented immune response (HBsAb>10) rates were measured for 3 groups of patients: those commencing vaccination from 01/01/2006-31/08/2008 when paper records were in use (Arm 1); from 01/01/2010-31/03/2011 when 'basic' EPR was in use (Arm 2) and, from 01/01/2012-31/12/2012 after the EPR system was enhanced with a patient recall function (Arm 3). The ultra-rapid HBVac course (day: 0, 7, 21) was used. p-values were derived from comparisons of proportions using Chi square or Fisher's exact test, as appropriate.
Results: The sample sizes for Arm 1, 2 and 3 were 119, 98 and 130 respectively. The 3 groups were of similar age, ethnicity, gender and sexual orientation. Compared to Arm 1, the 3rd dose completion rates for patients managed using EPR did not differ significantly: 74/119 [62.2%] Arm 1 vs. 58/98 [59.2%] Arm 2, p=0.68 and 89/130 [68.5%] Arm 3, p=0.35. There was improved vaccine completion in Arm 3 compared to Arm 1 for patients aged over 40yrs (22/24 [91.7%] vs. 19/28 [67.9%], p=0.046) and for patients of black ethnicity (16/19 [84.2%] vs. 11/23 [47.8%], p=0.023).
The proportion achieving documented HBsAb>10 in Arms 1, 2 & 3 were 37/119 (31.1%), 34/98 (34.7%, p=0.66) and 55/130 (42.3%, p=0.087) respectively. Compared to Arm 1, the proportion of Arm 3 achieving HBsAb>10 was significantly higher in males (44/96 [45.8%] vs. 26/86 [30.2%], p=0.034), those aged >40 yrs (16/24 [66.7%] vs. 9/28 [32.1%], p= 0.025), heterosexuals (32/74 [43.2%] vs. 19/78 [24.4%], p=0.016) and those who had previously attended the same clinic (25/40 [62.5%] vs. 11/48 [22.9%], p=<0.001).
Conclusion: Enhanced recall using EPR was associated with better HBVac completion rates for patients aged >40yrs and of black ethnicity, and with higher rates of documented response in males, those aged > 40yrs, heterosexuals and previous attenders. An EPR system with an automated, enhanced recall system has benefits in supporting HBVac completion and thereby response in certain sub-groups.

P26

"I couldn't accept I had HIV so I didn't come back until I felt ill" – the impact of a virtual recall clinic on retaining patients in care

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Background: An audit of in house recall methods conducted in June 2009 showed inconsistent methods were applied (32% of absentees were not recalled while 21% were recalled >3 times). Therefore a Virtual Recall clinic was established on 01/12/12 to standardise practice.
Methods: Attendance data were compared with SOPHID data and those found to be absent for >6 months were added to the Virtual Recall clinic. Methods included telephone contact, texting, emailing and contacting other professionals involved in their care, such as the CNS or GP. Patients that returned to treatment were interviewed about their absence using a standard proforma.
Results: 86 cases were investigated from 01/12/12 – 01/12/13. 21(24%) patients returned to treatment, 15 (17%) transferred to another treatment centre, 45 (52%) remained untraceable and 5 (6%) were elsewhere (2 in prison, 1 abroad, 1 inpatient, 1 homeless). Reasons reported for not attending were:
13 (62%) adjustment to HIV diagnosis, 2 (10%) Abroad, 2 (10%) moved away, 1 (5%) avoiding deportation, 1 (5%) recovering from surgery, 1 (5%) depression.
Analysis of patients returned to treatment: The median CD4 count prior to absence was 344 cells/mm^3 (range: 118 – 1202). Of 21 patients, 12 (57%) had been on ARV treatment and 4 had CD4 <350 cells/mm^3 but disengaged before treatment was initiated. Median length of absence was 17 months (range: 6 - 60) and only 2 (9%) patients accessed treatment during absence (both were abroad). On return the median CD4 was 323 cells/mm^3 (range: 1 -1158), 11 (52%) with CD4 counts <350 cells/mm^3 and 8 (38%) <200 cells/mm^3, compared to 8 (38%) <350 cells/mm^3 and 3 (14%) <200 cells/mm^3 prior to absence. 15 (71%) returners started ARV treatment.
Conclusion: The psychological effect of HIV diagnosis was reported as the main cause of absence (62%). Ongoing assessment of patients' response to their diagnosis may therefore be beneficial in retaining patients in care. As most patients did not access treatment during their absence, this demonstrates the importance of keeping patients engaged to prevent complications, infections or hospital admissions (one patient absent for 48 months was diagnosed with Castleman's Disease on return). As 41 (47%) patients were traced this shows the Virtual Recall clinic is a successful investment of clinician time and clinic resources in line with national standards.

P27

Integrated care pathways: An approach to delivering high-quality, evidence-based care across networks that meets the requirement of the National Currency and HIV Service Specification

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Background: The fundamental NHS changes now mean that the management of HIV not only needs to deliver the BHIVA Standards of Care and Treatment Guidelines, but also needs to deliver equitable care across the country; at the same time meeting the requirements of the HIV National Currency and Service Specification. The Service Specification places greater emphasis on the need for robust HIV networks to provide integrated care, in a Hub and Spoke structure. During 2013, a HIV Integrated Care Pathway (ICP) was developed, by a group of HIV specialists, to offer an approach to case management that ensures equity of service provision and delivers the requirements of the service specification at every point of patient contact. The ICP provides a robust platform for multidisciplinary management of patients with HIV, allowing practitioners to take a supported and active role in patient care. The ICP follows the entire patient pathway for HIV through a series of forms containing all appropriate data to be reviewed and actions to be taken at each step of the patient pathway. The full HARS data set is included within these forms. A full evidence base for HIV has been developed as a reference resource.
Method: Provider Units who had piloted or reviewed the ICP were surveyed online with an emphasis on their views to implement the ICP and the barriers and challenges towards implementation.
Results: The survey results showed that 10 out of 13 provider units surveyed online see the concept of the HIV ICP as very/extremely valuable (mean score 7.5/10). The majority of respondents had not used the ICP yet, with just under a quarter in the process of implementing it. The majority of respondents think that the ICP will be valuable in helping them to manage their HIV patients and service – with a mean score of 7.9/10, showing that the HIV ICP is accepted as a good idea and requires effective implementation. The main reasons cited for

not using the ICP so far include NHS and personnel changes, management acceptance and IT challenges.
Conclusion: This innovative approach helps to meet the challenge in HIV, as the NHS continues to evolve and seeks to balance clinical outcomes, budgets and priorities. The HIV ICP is available as word documents and as a fully functioning electronic patient record system that ensures collection and validated submission of the HARS data set. This ICP may be a useful resource for centres wishing to ensure delivery of the HIV service specification.

P28

Identification and characteristics of vulnerable adults attending an inner city sexual health service

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Background: The 2013 Abuse of Vulnerable Adults in England provisional report stated that 173,000 safeguarding alerts were reported for vulnerable adults in England in 2012. We aimed to describe the characteristics of vulnerable adults attending our inner city sexual health clinic, in order to improve recognition and management of this group
Methods: We performed a retrospective audit of adults identified as "vulnerable" by the staff member seeing the patient over a 6-month period. Data on demographics, reason for attendance, reason identified as vulnerable and safeguarding concerns were collected. Data were analysed using SPPS version 22.
Results: During this time, 46 patients were identified as vulnerable. Median age was 32 years (range 18-87), 78% female; 28% White British, 48% Asian, 13% Chinese. 87% identified as heterosexual, 7% homosexual. 78% lived locally; 16% in social housing, 2% were homeless. 21% had existing support arrangements via other agencies: 9% mental health care, 7% a key worker, 5% an IMCA.
15% were first attendees to sexual health services. 60% attended alone, 23% with a key worker, 11% with family. Reasons for attendance were as follows: 74% sexual health concern, 13% contraception, 2% pregnancy concern, 11% following sexual assault. 13 patients (28%) had a positive STI result.
14 patients (31%) were independently recognised as vulnerable by the health care professional; of these 9 were distressed, 3 displayed communication difficulties, 1 was an inpatient and 1 was elderly. Of the remainder, vulnerability was disclosed by the patient, via a referral or their accompanying party in 17 (37%), 6 (13%) and 2 (4%), respectively.
Of the total group, 26 (57%) reported a mental health history. 4 (9%) disclosed alcohol excess, 5 (11%) illicit drug use; 3 (7%) felt this affected sexual choice. 8 (17%) reported feeling pressure to have sex. 16 (35%) disclosed non-consensual sex, 4 (9%) had been paid for sex. 8 reported domestic violence (17%). 8 (17%) were seeking asylum and 1 disclosed forced marriage.
Conclusions: Our results show a significant vulnerable adult population attend our service, some being identified as vulnerable for the first time. They display well-noted, unifying risk factors for vulnerability, alongside the emerging and less-recognised themes of migrant groups and asylum.
These data highlight the importance of developing clear pathways in sexual health clinics to identify and appropriately manage adults at risk of harm or exploitation.

P29

Patient satisfaction survey of home delivery service for antiretroviral medication in East Kent Community Service

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Background: Kent Community Health NHS Trust introduced a home delivery service for antiretroviral medication in August 2010 as part of service development to improve patient management.
Aim: To evaluate patients' satisfaction and feedback regarding the home delivery service.
Method: This survey was conducted between May 2012 and September 2012. 100 anonymous surveys were distributed from the four HIV outpatient clinics in East Kent. Patient feedback was sought on: duration of service use, convenience, prior information received, delivery mode, timing, welcome pack information, clinical team support, confidentiality, appointment attendance and overall satisfaction. Patients' responses were rated 1(very poor) to 5 (excellent) with additional comments classified green (very satisfied), amber (satisfied), or red (not satisfied).
Results: 100 patients, 42% of the HIV cohort receiving antiretroviral therapy completed the survey.1 patient did not complete the last three questions of the survey. 86% of patients used the service for at least six months. 92% regarded the service as convenient.100% thought they were adequately informed before starting.79% chose van delivery, 11% via local post office, with 9% via Boots. 97% reported delivery arrived on time. 90% found the information on the welcome pack useful. 94% deemed the service from the clinical staff to be good or excellent.11 % of patients raised concerns about confidentiality issues when receiving packages from Boots or the courier service. 96% had no problems arranging doctor or blood test appointments. Overall satisfaction rate was 99% with 94% stating the service to be very good or excellent.
A total of 145 comments were received, 100 green, 20 amber and 25 red. Patients were very satisfied with the service for its convenience, efficiency and timely delivery although concerns were raised about confidentiality, discretion of packaging and training of staff at the courier service and Boots.
Conclusion: The majority of patients felt home delivery was a convenient way to receive their medication. The scheduled van option was the most popular with a high percentage of deliveries arriving within the allotted time. The service has not affected patient's attendance for their regular clinic appointments. We have made recommendations to the home delivery company based on the survey results to ensure that the training of the staff at Boots and the courier service is in line with current standard operating procedures.

P30

Development and use of an HIV outpatient Integrated Care Pathway

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Background: Health Improvement Scotland (HIS) HIV Standards (2011) require the development of an Integrated Care Pathway (ICP) for outpatient HIV care. The objectives of this project were to develop and pilot an ICP for the first 3 months following HIV diagnosis (or transfer of care), identifying variations in and improving consistency of data recording and care across two units (a GUM Clinic and an Infectious Diseases Unit) providing different models of care in Lothian.
Methods: After extensive development, piloting and revision, use of a paper-based ICP commenced in the GUM clinic in April 2012 for all new patients. Paperwork was analysed over the first year of use for compliance with ICP, and for recording of key data sets and variances should data not have been recorded. There were 24 fields, each reflecting an aspect of HIV care. Completion of 9 important data fields in the ICP was compared with a retrospective examination of conventional paper case notes of new patients from April 2010-April 2011 (n=38).
Results:
Compliance with ICP
38 new patients engaged in care for the initial 3-month ICP period. No ICPs were completed fully, the mean number of fields completed being 19.8 out of the total 24. Compliance did not seem to improve over the year.
Data recording and variances
Only 2 data fields were completed in all ICPs – sexual history and contraception. The worst completed field was a documented discussion of an "out of hours plan" should the patient need medical attention (3/38). Variances were recorded for only 8 of the fields. The most commonly cited variance (n=13) was "patient preference". "Clinical decision" was cited 8 times as a variance, and "lack of time" was cited 6 times.
In the retrospective comparison 7 of the 9 data fields were completed better with ICP use when compared to pre-ICP data recording although sample size is too small to show statistical significance.
Conclusion: Development of an ICP is a resource intensive process but appears to improve data recording on retrospective comparison with conventional case notes. There is some evidence that this may improve the quality of care. The ICP development process was valuable in informing a number of changes and improvements in care provided. In-depth analysis of variances has informed improvements which need to be made to clinical processes and decision-making. Comparison with data from the ID unit is underway along with a move to an electronic ICP.

P31

How accurate is SHHAPT coding in one UK region?

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Background: The aims of The Sexual Health and HIV Activity Property Type (SHHAPT) include supporting the monitoring and reporting of Sexually Transmitted Infections (STIs), facilitating robust assessment of local service needs and to enable informed planning and better allocation of limited resources at all levels to reduce the level of STIs nationally. In order to meet these aims coding requires accuracy and consistency.
Methods: We conducted a survey in which we circulated five clinical scenarios to clinics in one UK region requesting that up to five individuals that regularly participate in completing the SHHAPT code assign an appointment type (New/Rebook/Follow up) and the relevant SHHAPT code to each of them. The same scenarios were sent to Public Health England (PHE) and completed to provide the standard.
Results:

	% Consistency between respondents and PHE		
	Appointment type	SHHAPT Code	Both appointment type and SHHAPT code
Case 1	71	17	17
Case 2	29	42	13
Case 3	100	21	21
Case 4	4	4	0
Case 5	100	46	46

Conclusion: Analysis of the survey results suggested a range of discrepancies in coding. Respondents less frequently assigned no SHHAPT code at a patient visit than the PHE, either repeating a previous code, using a recurrence code or D2b/D3 inappropriately. Patients seeking ongoing management for either herpes or warts are commonly assigned as a follow up as opposed to rebook and vice versa, limiting the accurate use of the diagnostic codes.
We suspect that the overuse of codes occurs to capture workload and this is supported by the widespread use of the additional codes devised by the sexual health tariff pilot. We believe respondents are less confident in determining when to close or extend an episode beyond the 26 week period, particularly regarding patients with warts or herpes.
We support the decision of PHE to seek approval to make the sexual health tariff additional codes official SHHAPT codes. We suggest an extended set of BASHH codes would enable clinics to collect more detailed information on their workload. We would welcome further guidance on situations when the episode may be closed before or extended beyond the 26 week time period, specifically related to patient with warts or herpes. We believe that these approaches will increase the reporting accuracy of STIs, more fairly reflect the workload undertaken in GU services and minimise adverse financial implications. This is becoming increasingly important with the changes to the commissioning of services.

P32

Emergency care for HIV patients: remodelling a 'walk-in' service at a specialist HIV centre

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Background: BHIVA Standards of Care for People Living with HIV outline that HIV services should have pathways in place to provide equity of access to emergency treatment and advice. An audit of the emergency outpatient care pathway at a busy HIV clinic was performed and following this changes were implemented. The service was then re-evaluated to assess the impact of these changes.
Methods: The original care pathway, an open access all-day Emergency clinic (EC), was retrospectively audited over a 2-week period using case notes review with a standard proforma. After service remodelling all encounters (telephone triage or EC visit) were audited over a 4-week period. Data collected: demographics; GP registration status; antiretroviral therapy (ART) status; CD4 count; HIV viral load; reason for encounter; number of encounters/day; triage outcome.
Results: The emergency service was remodelled, changing from an all-day doctor-led 'walk-in' service to a doctor-led afternoon booked clinic with morning telephone triage. Triaged patients were directed to the appropriate service (EC, pharmacy, regular HIV clinic, GP, A&E, 999 services). The majority of patients using the service were white MSM. 174/244 (71%) patients were on suppressive ART, and 210/244 (86%) had a CD4 count >200 cells/μL. The demographics and HIV parameters of attenders were similar in both audits. Before remodelling, there were 87 attendances in total, mean 9.6 (5-17) per day. The commonest presentations were ART prescriptions (32%), gastrointestinal (29%), respiratory (19%). 41% required review and advice only. 85% of attenders were registered with a GP. After service remodelling there were 157 encounters in total, mean 8.3 (5-13) per day, of which 7.6 (2-9) were clinic visits. The commonest presentations were gastrointestinal (20%), ART prescriptions (18%), respiratory (13%). 14% of attenders required review and advice only, 32% were referred to non-HIV services. 81% of attenders were registered with a GP. Of the 54 calls to the telephone triage service, 76% were booked into the EC and 24% were redirected to other services.
Conclusion: Telephone triage enabled patients to access advice and be signposted to appropriate services early in their care pathway. The redesign of the service resulted in a reduced number of face-to-face and prescription-related attendances, allowing better use of staff resources whilst retaining patient-centred and accessible specialist HIV emergency care.

P33

Reaching the unreachable – nurse-led STI screening at Erotica 2013

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Background: Erotica, an adult lifestyle event started in 1997 providing a safe place to shop, socialise and enjoy an uninhibited venue attracting people who enjoy sex in all its forms. Our clinic has a history of novel outreach programmes and in 2013 was made aware of the event and the absence of any health promotion / sexual health presence at the event. Contact was made with the organisers and consent was given for a presence at the 2013 event within strict caveats, 20,000 tickets were sold.
Methods: The team were 6 senior nurses, driver & administration manager. We provided asymptomatic STI screening using self-collected sampling for Chlamydia & Gonorrhoea, bloods for HIV, Hepatitis & Syphilis, with the offer of HIV POCT. The outreach bus located near the food court was open for a total of 26 hours over 3 days. Our team actively engaged stall holders, entertainers and the venue support staff to promote the screening and health promotion material available. Our team toured the venue regularly engaging people, directing them to the bus.
Results: 180 screens completed, 44% female, 56% male, 5% refused HIV testing, 8% accepted or requested HIV POCT, 87% had venous sampling. Only 5% had ever tested for HIV previously, 95% stated they had not tested for a variety of reasons – access to clinic issues, not at risk, not important. As this was an adult only event the youngest person screened was 18yrs, the oldest was 71 yrs. with an average age 36 yrs. One HIV diagnosis was identified by HIV POCT in a 53 year old bisexual male swinger (last negative test early 2013). This was confirmed with the venous sample and he was referred to his local clinic in Yorkshire. We diagnosed 2 people with syphilis, 5 people with chlamydia & 1 person with gonorrhoea, all have been managed to national standards.
Conclusion: Testing in novel outreach settings is not new; however, focusing on those people whom we may not ever reach with specific targeted health promotion remains an issue. It is significant that 95% of those screened had never tested previously. Safer sex was not a common practice within this cohort. Seeking permission to work at events such as Erotica posed challenges for the team. The testing outcomes demonstrate the value of pursuing non-traditional clinic attendees with innovative access to sexual health screening. Timely access to STI screening, cited by many attendees, appears to be an issue of growing concern outside of large urban areas.

P34

"Call the radio doctor!" Experiences of a sexual health doctor on BBC Radio 1's Surgery

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Background: BBC Radio 1's Surgery, broadcast live weekly, provides medical and emotional advice to young people across the UK, who call and text with questions regarding sex and relationships. The author, a trainee in genito-urinary medicine, has provided medical advice on the programme as resident doctor since 2008. Radio 1 has a weekly listening audience of 10.8 million. This study investigates, for the first time, the basic demographics of young people who contribute to a phone-in radio surgery, the subjects of their queries and medical advice they received.
Methods: All callers and text queries to the programme are selected by a Radio 1 producer. In keeping with the General Medical Council's "Good Medical Practice" and with Ofcom broadcasting codes, callers are anonymised and consent is sought prior to discussion of their query on air. A random selection of 10 one-hour radio programmes broadcast on Sundays at 9-10pm from November 2010 to June 2013 was retrospectively reviewed.
Results: Over the 10 broadcasts analysed there were a total of 128 queries (40 calls and 88 by text), with a median of 15 queries per show (range 8-16). Two fifths of calls (16/40) and 36.3% of texts (32/88) were from male listeners. Of the 99 listeners who gave their age, the median was 18 years (13-24 years) for males and 16 years (12-22 years) for females, and is broadly reflective of the station's listenership. Subjects of queries were divided into (a) sexual health problems, such as sexually transmitted infections, pregnancy, contraception, puberty and sexual dysfunction (54.7%), (b) general medical queries such as poor sleep, hyperhidrosis, alcohol and drug dependence (19.5%), (c) emotional and relationship queries, such as dating advice (16.4%) and (d) dermatology problems, such as oily skin and acne (9.4%). For 78.4% (91/116) of queries regarding sexual health, general medical problems and dermatology, and 33% (7/21) of emotional queries, additional advice was given to seek further care from a health professional.
Conclusions: Traditional media offers rich opportunities to reach out to young people on issues regarding sexual health and relationships. Queries to BBC Radio 1's Surgery reflect a mix of health concerns across a broad range of topics from young men and women aged 12-24. This study highlights the importance of working with partners in the media towards innovative and effective ways to engage with young people about their health, notably young men.

P35

Loss to follow-up (LTFU)? A review of an HIV clinic service developed to assist retention in care in a high HIV prevalence area

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Introduction: People living with HIV who disengage from care can present late with consequent opportunistic infection and lower life expectancy. Barriers to HIV care may be multi-layered. Interventions can require localised and individualised approaches. Our hospital is based in an area of high HIV prevalence with a vulnerable population. We established a monthly multidisciplinary virtual clinic, with the short-term aim of re-engagement via the LTFU team, and long-term aim of re-integration in regular HIV services. Referral criteria are either electronic: more than 3 consecutive medical non-attendances or no attendance for more than a year; or clinical: any concerns re engagement. Objective: review of outcomes of the virtual LTFU service.
Methods: We performed a retrospective electronic and paper records review of the LTFU service from 18/9/12 to 9/12/13. We reviewed: 1) engagement strategies 2) outcomes defined as: i) re-engaged effectively: attendance and/or adherence to treatment if indicated; ii) re-engaged ineffectively- occasional attendance, health concerns; iii) LTFU-feasible contact performed without patient response, or declines to attend; iv) other eg death or transfer.
Results: 107 patients were included, with paper notes for 95. Mean age at first clinic virtual discussion was 38 years (range 23-62) and 57.0% (61/107) are female. 61.7% (66/107) are Black African. 18.7% (20/107) had been diagnosed for at least 10 years, and 15.6% (17/107) in the review period. Documented modes of contact planned or performed included: 78.9% (75/95) phone or text; 21.1% (20/95) patient letters; 10.5% (10/95) HIV community nurse referrals; 13.7% (13/95) GP letters. At end of 2013, 29.9% (32/107) were effectively re-engaged; 24.3% (26/107) were defined as LTFU; and 21.5% (23/107) were considered ineffectively engaged. Of the other 23.4% (25/107), 14 had transferred care, 3 had been in prison and 1 died.
Conclusion: The LTFU service helped re-engage nearly a third of patients missing from care. Our LTFU clinic experience suggests an individualised approach can adapt as patient needs change: 'lost' should not be an end. For us, this has required staff resource and a multidisciplinary linked community and hospital approach. We have now started a monthly clinic based in the community working with drug and alcohol services, and a weekly 'drop-in' HIV centre clinic for those re-engaging with care.

P36

Healthcare workers knowledge of, attitudes to and practice of pre-exposure prophylaxis for HIV

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Background: Pre-exposure prophylaxis (PrEP) has proven biological efficacy to reduce the sexual acquisition of HIV. Healthcare providers knowledge of and attitudes to PrEP will be key to successful implementation. In the UK, PrEP is only widely available through the PROUD Pilot Study.
Methods: In September 2013 a cross-sectional survey was issued (paper or on-line) to UK healthcare providers through sexual health clinics (219), professional societies' email lists (2599), and at a sexual healthcare conference (80). The survey asked about knowledge of, attitudes to and usage of PrEP.
Results: Overall, 328/2898 (11%) completed the survey, 23%, 9% and 43% of the clinic, societies and conference samples respectively. The respondents were: 160 (49%) doctors, 51 (16%) health advisers (SHA), 44 (14%) nurses and 73 (22%) unspecified. A quarter (83/328) were involved in PROUD. Most respondents (260/328:79%) rated their knowledge of PrEP as medium or high, lower among nurses (27/44:61%) and SHA (36/51:71%) than doctors (144/160:90%; $p<0.000$). Of these, excluding missing answers, 71% (175/247) felt that they knew enough about PrEP to have an informed discussion with patients, lower among nurses (17/33:52%) and SHA (18/33:55%) than doctors (116/131:89%; $p<0.001$). Half of respondents (166/328:51%) thought PrEP should be available outside of a clinical trial, higher among nurses (29/44:66%) and SHA (37/51:73%) than doctors (66/160:41%; $p<0.001$). The majority expressed concerns about prescribing PrEP without UK specific guidance (226/328:69%), higher among doctors (132/160:82%) and nurses (35/41:85%) than SHA (35/51:69%; $p=0.002$). Over half supported targeted PrEP availability on the NHS (217/328:66%), and 46% (152/328) believed that PrEP would be a more effective prevention option than PEP for frequent PEP users, with only 15% disagreeing. Just under half (147/328:45%) have been asked about PrEP by patients in the past year, with no difference if they worked in a clinic not involved in the PROUD study (86/202:43%).
Conclusion: There was a higher level of support for PrEP availability outside of a clinical trial among nurses and SHA compared to doctors, despite a lower level of perceived knowledge and ability to discuss PrEP with patients. A large proportion of respondents have already been asked about PrEP by patients, suggesting widespread awareness of PrEP, which may or may not reflect demand. More information is needed for training all staff and to inform UK specific guidance.

P37

Mobile applications for patients living with HIV

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Background: Mobile phone applications (apps) have great potential as an adjunct in health care. We sought to determine whether use of apps designed specifically for people living with HIV would be acceptable to patients attending our HIV service. We also assessed the quality of the existing free apps available on the iOS platform for this population.
Methods: We designed an online survey to test opinions about use of apps for people living with HIV. The survey was distributed to 71 patients who have

opted to be consulted about service improvements via email and Twitter. We searched for all free iOS apps as at October 2013 using the search criteria 'HIV' and 'human immunodeficiency virus'. Apps were screened for relevance to patients undergoing HIV care; apps that did not work or were intended for clinicians or predicting HIV risk were excluded. Apps were rated in 4 domains: content, reliability, usability and relevance.
Results: The online survey was distributed to the 71 members of our mailing list, of whom 23 responded (32%). Of these, 78% had a mobile phone or other device that runs apps and 61% were either already using apps designed for people living with HIV or would consider this in the future. The most desired features in an app were CD4/viral load tracker, appointment reminder, access to information about HIV and a medication reminder. Importantly, 84% of respondents indicated that they would like their clinician to recommend apps to them. Our app store search yielded 105 free apps. Of just 16 possibly relevant to ongoing HIV care, 6 did not work. Ten remaining apps covered HIV care monitoring, information, dating and games. The highest ranking app of 10 evaluated was LifePlus, developed by the Terrence Higgins Trust, which received a total score of 38/40.
Conclusion: The majority of respondents to our survey indicated that they would consider using apps designed for people living with HIV. Nearly all would welcome guidance from their clinician regarding which apps to use. This is understandable as the majority of free iOS apps purporting to relate to HIV are either irrelevant or do not work. LifePlus was the foremost free app currently available on this platform and incorporated all of the features that our respondents indicated as most desirable. We plan to extend this survey to paid-for apps, alternative platforms and a wider group of patients.

P38

Mapping care: clinical services for young people with HIV in the UK and Ireland

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Background: Increasing numbers of young people are transitioning from paediatric to adult HIV services. Data on service provison for this cohort is sparse. A project mapping HIV services for young people in the UK and Ireland aimed to evaluate provision and organisation of clinical services, assess the clinics' need for educational or informational resources and to establish a national service directory.
Methods: Adult and paediatric HIV clinics were identified from the NAM Aidsmap and CHIVA online directories and contacted to identify relevant respondents. Data of services provided for young people was collected using a secure structured online questionnaire.
Results: 58/73 (79%) clinics responded to email contact. 48/58 (83%) had an adolescent or young adult clinic; 44 clinics returned the questionnaire. Median clinic population was 12 (IQR 2-35), aged 10-27 years, with an estimated total population of 776. 7 clinics had over 40 patients, all in London. 72% reported most patients were vertically infected. 34% of clinics were located in paediatric and 54% in/partnered with adult GUM/HIV settings. 59% had psychology services and 78% offered on-site STI screening and contraception. Clinic size did not significantly correlate with the number of additional services offered (correlation coefficient=0.03 R^2=0.7 p=0.19). Clinics with GUM/HIV involvement offered significantly more services (p=0.03) (social work, psychology, dietician, patient liaison, voluntary sector support) and were more likely to offer STI screening and contraception than paediatric clinics (p=0.04, p=0.001). Regarding transition and follow-up, 27% of young adult clinics did not routinely receive paediatric discharge summaries at transfer. 77% of clinics saw stable patients 3 monthly and 64% offered annual health reviews. The most commonly requested resources were sexual health leaflets and advice and clinical proformas. All clinics agreed to listing in an online directory of young people's HIV services.
Conclusion: A directory of clinics in the UK and Ireland who care for HIV positive young people has been established. Inadequate provision of clinical information at transfer from paediatric care and limited access to psychology services remain a concern. Provision of specialist services, notably sexual health, was more complete in clinics with GUM/HIV involvement. Paediatrician-led clinics may benefit from partnership with local GUM/HIV services to better support young people with HIV.

P39

Overcoming challenges to establishing a post-exposure prophylaxis service in a centre in Eastern Uganda

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Background: In Uganda, post-exposure prophylaxis of HIV (PEP) is included in national HIV treatment guidelines, but there are many practical barriers to its implementation. Major regional centres with have no separate Genitourinary medicine) clinic, no confidential or anonymous HIV testing, and no occupational health service. PEP is given as part of the general hospital services. We looked at available data on PEP at one centre in Eastern Uganda to assess uptake and the opportunities for improvement.
Method: Registers were available for PEP given at the Regional Referral Hospital (RRH) and in a community-based organisation (CBO) which is a major provider of antiretroviral treatment (ART). Occupational exposures had been included in the same register as non-occupational PEP. We looked at all entries from January 2011 to November 2013 recording nature of the exposure, occupation and gender of the recipient. For 145 patients their ART regime was also reviewed.
Results: 275 persons sought PEP, 63 at the CBO and 212 at the RRH. The male:female ratio was 33:30 at the CBO and 96:116 at the RRH. There were 134 occupational exposures requiring PEP, of which 119 were due to needlestick injury, 65 males and 54 females. All grades of staff accessed PEP. Exposures were non-occupational in 141, the main indication being sexual exposure or burst condom in 68, of whom 44 were male. Rape was the indication for PEP in 59 clients, 55 of them female and 51 aged under 25 years. Children were 25 of those treated, 22 of them female. Detailed analysis of ART regimes prescribed was made in 145. All patients received lamivudine combined with either zidovudine or tenofovir, 37 receiving dual therapy and 108 receiving also a third agent. Lopinavir/r (5) and atazanavir/r (1) were accessed by staff. Efavirenz was used in 71, of whom 52 were at the CBO. Nevirapine was used in 31 of whom 30 were at the RRH.
Conclusion: PEP is being accessed for those with non-occupational exposure including young women and children who have been raped, and also for occupational exposure by a wide range of staff. Those receiving triple ART recommended in RRH guidelines for occupational PEP are fewer than those at the RRH receiving PEP with inappropriate ART including nevirapine. Training for staff and increased availability of ARTs are needed wherever patients attend for PEP.

P40

HIV inpatient care – are we meeting BHIVA standards?

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Background: In times of specialist clinical commissioning, it is vital that inpatient HIV services can demonstrate the ability to deliver a wide range of specialist care for ever increasing numbers of patients, and that this care complies with the appropriate standards of care. HIV inpatient care at our centre is currently provided by the Genitourinary (GU) Physicians who operate 24 hour on call and share care of the patient with the appropriate admitting specialities.
Methods: A retrospective audit of inpatient admissions of patients with HIV to a large tertiary centre during a six-month period (January-June 2012) was completed using data from an inpatient database, discharge summaries and clinical correspondence. Compliance with the BHIVA Standards of Inpatient Care (2013) was examined and admission details analysed.
Results: There were 85 admissions across 11 specialities within the 6-month period, with a total of 1046 inpatient days. The mean number of daily HIV inpatients increased progressively from January (1.3) to June (9.9). Of all admissions, 56.5% were female, 52.9% of Black African origin and 95.3% already had an established diagnosis of HIV infection. The most common reason for admission was for infection (26%), followed by peripartum care and delivery (20%). The service was fully compliant with almost all standards – 98.8% of patients were admitted within 24 hours and the percentage of patients who were admitted with an AIDS-defining opportunistic infection or cancer still alive 30 days after diagnosis was 100% (15/15). However, only

64.6% of patients were seen in outpatient HIV services within 1 month of discharge (target 95%) with this less likely to occur if they required joint clinic review – e.g. renal-HIV, as these clinics are less frequent.
Conclusion: Introduction of a proforma for HIV discharge summaries covering auditable outcomes would be a key step to improve documentation for future audits, and the use of the full MDT team including specialist nurses and pharmacists will enable us to meet post-discharge targets. This audit has demonstrated the increasing demands of HIV inpatient care within our centre and the requirement to provide care across a wide range of specialties. This needs to be reflected in the MDT skill mix and staffing of our department. We also need to highlight our findings to specialist commissioners to enable accurate HIV inpatient service provision planning in the future.

P41

Factors influencing patient choice of sexual health service: a 'footprint' survey in a large inner city sexual health network

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Background: Open access is a key tenet of sexual health service provision. Existing data collection records the postcodes of service users and shows an attendance 'footprint' that includes those resident in the Local Authority (LA) where a clinic is located, neighbouring LAs, or elsewhere. However, little is known about what informs or influences patient choice of clinic.
Method: Anonymous paper questionnaires were given to patients attending six genitourinary medicine services in an inner city sexual health network from October to November 2013. Patients were asked to select from a list of reasons for choosing the particular clinic they attended. Questions were also asked about how they found out about the clinic; mode of transport used; and whether they had tried to access alternative clinics prior to their attendance. Data was calculated using Microsoft excel.
Results: 329 questionnaires were analysed. 46% respondents lived in the LA where clinic was located. 59.4% indicated they were attending the clinic closest to home although rates differed for individual clinics. The primary reason patients selected for choosing a particular service was 'near home' (56.3%), except at one clinic, located in the centre of the city, for which it was 'near work' (45% n27/60). Prior use (24%), individual preference (18.2%) and ease of transport (16%) were other main factors determining choice (NB respondents could select multiple reasons, so proportions do not total 100%). The main ways people found out about a clinic were 'word of mouth' (38%) and 'internet'(36.1%). 10.3% stated that the clinic attended had not been their first choice and 10.6% had tried to get seen at another service before attending, but 99% who responded to the question "Would you come here again?" ticked 'yes'.
Conclusions: The footprint survey gives providers important information about why people choose their services, and how they might best promote them. Apart from proximity to home or work, previous attendance, patient preference, and recommendation of friends were strong influences on clinic choice. These appear to be powerful indicators of patient satisfaction with their local services. Results are likely to be of interest to commissioners in balancing a local agenda with the need for patient choice and open access. Further surveys may reveal what drives people to choose services further from home, e.g. in central city services with large variation of patient LA of residence.

P42

Unintended consequences: a lost opportunity to test men who have sex with men attending contraception and sexual health clinics

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Background: Recommendations suggest sexually transmitted infection (STI) testing and treatment for men who have sex with men (MSM) should be delivered within a level three service. MSM attending our community-based contraception and sexual health clinic (CASH) are signposted to the hospital-based genitourinary medicine (GUM) clinic. The aim of this review was to identify the men who accessed the CASH service despite signposting, their demographics, services provided and diagnosis made.
Methods: The clinic management system was used to identify the total number of MSM who attended for care between 1st April 2012 and 31st March 2013. Demographic data was identified. Service and diagnostic data were recorded for all attendances.
Results: 1650 attendances were made by 716 men identifying as gay or bisexual: 124 men attended CASH and 592 attended GUM. Most identified as White British CASH 41.4% (n=51/124) and GUM 60.5% (n=358/592), a greater number attending CASH were from India, Pakistan, Bangladesh and "other Asian" backgrounds 21.8% (n=27/124) compared to GUM 11.5% (n=68/592). The majority attending CASH were under 35 years old, 68.6% (n=85) compared to GUM 46.8% (n-277). At the first contact in the time period MSM accepting "Chlamydia, gonorrhoea, HIV and syphilis testing" was 64.5% (80/124 and 75.5% (447/592), "Chlamydia and gonorrhoea testing only" 11.3% (14/124) and 7.8% (46/592) and "HIV testing only" 10.5% (13/124) and 5.1% (30/592) at CASH and GUM respectively. Others attended for sexual health advice/condoms. Attendees testing positive for HIV infection were 0.8% (1/124) and 2.03% (12/592), Chlamydia 4.2% and 6.8% and gonorrhoea 1.4% and 7.8% at CASH and GUM respectively during the period recorded.
Conclusion: CASH clinics can offer an alternative venue for STI testing including HIV and may be particularly important for minority and young MSM who may not access traditional GUM settings. CASH services play an important role in providing integrated services for young people and service organisation should explore opportunities to integrate high quality coordinated care for young MSM. Training for CASH staff should address the sexual health needs of MSM and ensure venues promote and deliver testing to all sexualities. Restricting access at these clinics may result in a lost opportunity to discuss risks and test non-GUM users.

P43

Modernising services: a new strategy to increase uptake of sexual health services in high-risk men who have sex with men

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Background: Recent reports from Public Health England suggest sexually transmitted infections including HIV, in men who have sex with men (MSM) continue to rise (2011). Our clinic serves a large local population of MSM with the highest prevalence of HIV in the UK (15%), and a high burden of sexually transmitted infections (STIs): services to target this high risk population must evolve to meet the needs of patients.
Methods: In December 2012, we modernized our MSM service in an effort to target our high risk cohort. Our service was 'streamlined' to include a walk-in system, self-taken swabs, POCTs for HIV, and a dedicated clinic team for patient continuity. We publicised our clinic in the community with the help of the Terence Higgins Trust, and drug and alcohol support services. Data was analyzed from 2 months before and after the launch of our new service specifically looking at attendance rates, STIs, age of patients attending and demographics.
Results: Post launch of our new sexual health service for MSM, the total number of attendances increased from 60 (57 new patients) to 105 (91 new) patients over a 2 month period. There was an increase in younger patients attending our services with 54% under the age of 40 years compared to 43% previously. The prevalence of new *Neisseria gonorrhoea* diagnoses rose from 9 to 19%, although a corresponding rise in *Chlamydia trachomatis* infections was not seen. There was a doubling in the rate of syphilis diagnosed from 4 to 8%, and a rise in genital warts diagnoses from 7 to 8% (new or recurrent). There were 3 new HIV diagnoses compared to none before our modernized service which may be a reflection of seeing more patients. Our patient demographic remained static with the majority of patients identifying as White UK (80%).
Conclusions: With an increase in injecting drug use linked to high risk sexual behaviour in MSM, we can expect to see a continued rise in STIs in the coming years. In our new service, we are seeing and diagnosing more infections demonstrating we are attracting higher risk MSM. This study has demonstrated that clinics need to be flexible, accessible, well publicised and most importantly target high risk groups and that this can be achieved in collaboration with multiple services to provide bespoke, patient centred services. Collaborative working leads to increased diagnoses and attendances by high risk MSM, and opportunities for important public health interventions.

P44

Service integration: the establishment of a centralised results bureau across multi-site sexual health service providers

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Background: Over a span of two years, a newly formed NHS trust was created through the merging of three acute care legacy trusts and one community trust. Sexual health services continued with cross site delivery, incorporating community care via outreach and the local National Chlamydia Screening office. Consolidated management and governance across all sites was implemented, with a combined average yearly attendance rate of >100,000 patient visits. Following a comprehensive service evaluation, the establishment of a centralised results management bureau was prioritised as a means to address inconsistencies in protocol, infrastructure and delivery of patient care across all sites.
Methods: A benchmarking and systems review specific to results management was undertaken at all sites, where the following factors to address were established:
- variance in turnaround times from test to notification of results
- lack of automation
- inconsistent IT infrastructure
- lack of established standard operating procedures
- staffing

An established electronic patient record (EPR) and automated results system already in place at one clinic was rolled out in a phased upgrade to all sites. A consultation aimed at administrative staff was commenced with a vision to revise and streamline current roles, reduce overall numbers and relocate to a central office.
Results: All services are now operating with single EPR and pathology systems, which have the added benefits of being able to monitor patient attendance across multiple sites and electronic ordering, reducing the risk of human error and time spent on previous hand-written requests. The use of a uniform automated telephone results service has reduced the turnaround time for patients to obtain results from up to ten working days to an average of 4.5, increasing patient satisfaction and greatly improving the time from test to treatment. As a result of the reduction of staff and revision of job roles, operating costs decreased from £350,000 to £180,000 pa, releasing significant cost savings.
Conclusion: The establishment of a centralised results management bureau carries significant economies of scale in efficiency, staffing and governance, while offering opportunities for further scalability.

P45

How have referrals to the HIV virtual clinic changed?

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Background: The role of multidisciplinary teams (MDTs) in reviewing patients may improve outcomes and provide peer education and discussion. HIV MDT meetings, often referred to as virtual clinics (VCs) are required as part of national commissioning arrangements. We looked at the changes in our local VC over time.
Methods: All patients referred in 2005 and 2012/13 were included. We described changes in demographics of referrals relative to calendar year, treatment history and VL at presentation, and indication for referral.
Results: 405 referral episodes were reviewed in 345 patients, with 48% (195) referrals in 173 individuals in 2005 (19 with >1 referral) and 52% (210) referrals in 183 individuals in 2005 (22 with >1 referral). 11 patients were seen in both time points.
Within year, compared to those who were not referred, the demographics of referrals were similar in 2005, however in 2012/13 referrals were less likely to be MSM (38.3% [70/183] vs. 56.8% [1455/2560], of white ethnicity (37.2% [68] vs. 57.8% [1479]), but equally likely to be male (69.6% [96] vs. 74.4% [1905]).
Compared to 2005, patients referred in 2012/13 were slightly less likely to be MSM (39% vs. 57%, p=0.24), older (47 vs. 40yrs, p<0.0001), less likely to be on PI-based ART (75% [139/185] vs. 84% [144/171], p=0.01), with a tendency to towards having no resistance (43% [91] vs. 51% [100], p=0.1097) but as likely to be on ART with VL <50c/ml (35% [65/185] vs. 40% [68/171], p=0.37).
In 2012/13 significantly more patients were discussed due to need for ARV toxicity or co-morbidities review (17% [36] vs. 10% [19], p=0.64). In 2005 35% (70/195) of all referrals related to reviews for patients prescribed didanosine-tenofovir, whereas in 2012/13, 7.6% (16/210) related to HARS ARV complexity review. 2012/13 referral was significantly more likely due to virological failure when previous VL <50c/ml (26% [55] vs. 12% [24], p=0.0006), but there was no significant difference in referrals for failure to suppress VL on ART (12% [25] vs. 17% [33], p=0.1515).
Conclusions: There have been changes with time in the virtual clinic, with more referrals for review of toxicities and co-morbidities in 2012/13, although there is still a significant proportion patients discussed due to virological failure. Changes in demographics within and between years may reflect differences in managing an aging cohort.

P46

Clinical features and epidemiology of HIV and coinfection with TB and/or viral hepatitis in a large clinic in Jeddah, Kingdom of Saudi Arabia

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Background: There are insufficient data on the epidemiology and clinical features of HIV in the Middle East. WHO statistics show the Kingdom of Saudi Arabia (KSA) to be oone of the least affected countries globally. However, the Saudi National Program for HIV Control reported a 34.6% increase in cases in 2008 from the previous year. Jeddah region has the highest proportion of HIV cases in KSA (40%). Infection risk data are not always complete and coinfection rates have not been studied.
Aims: To describe demographic and clinical features of HIV infection in clinics and hospitals in Jeddah and to document prevalence and risks for coinfections with tuberculosis (TB) and/or hepatitis
Methods: Retrospective study including all HIV positive Saudi adults attending the main treatment centre in Jeddah in one year. Data were systematically collected from casefiles and summarised. Statistical comparisons included univariate and multivariate analyses with a p value <5% considered significant.
Results: 1383 HIV positive adults were reviewed, median (range) age 40 (18-86) years, of whom 1026 (74.2%) were male. Risk factors included heterosexual transmission in 709 (51.3%), MSM in 264 (19.1%), blood products in 148 (10.7%), injecting drug use (IDU) in 97 (7%) and not identified in 165 (11%). The predominant clinical presentation was with respiratory symptoms 611 (44%), followed by gastrointestinal manifestations in 312 (22%), while 29% (408) were asymptomatic. Past or present TB coinfection (clinical and/or radiology) was found in 208 (15%); 59 (4%) had hepatitis B coinfection (HBsAg positive) and 82 (6%) had hepatitis C coinfection (antibody positive). TB was associated with IDU (RR 1.67 (CI 1.13-2.41) p<0.01) and having been in prison (1.83 (1.18-2.85) p<0.01) and these two risk factors were closely linked themselves. HBV coinfection was not linked with IVU (1.89 (0.93-3.85) p=0.08) but was linked to being in prison (2.38 (1.25-4.54) p <0.01), while HCV was strongly linked with IVU (4.22 (2.71-6.57) p<0.01) but not with imprisonment (1.94 (1.04-3.63; p=0.07)
Conclusion: HIV/AIDS and related coinfections are medical problems in Saudi Arabia with many social challenges. The Saudi National Program for HIV Control actively addresses prevention of HIV and provision of high quality care for those affected. More detailed studies are needed on clinical patterns in outpatient and inpatient settings and on locally appropriate prevention programmes in high risk groups.

P47

Quality of life outcomes and service user evaluation of a pilot physiotherapy rehabilitation programme for people living with HIV

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Background: The Kobler Rehabilitation Class is a service for people living with HIV (PLH) with related impairments, limitations or participation restrictions and episodic disability. It provides twice weekly physiotherapy supervised group exercise and once weekly self-management programme (SMP). The SMP promotes knowledge and skills to assist PLH self-manage their physical, mental and social well-being whilst optimising peer-support opportunities. The SMP provides group discussion with professionals comprising physiotherapists, occupational therapists, dieticians, smoking cessation nurses and psychologists. PLH are offered 20 sessions over 10 weeks.
Methods: For 1 year from September 2012, evaluation via feedback forums and questionnaires was incorporated into service design and delivery. Outcomes assessed included attendance, adherence and quality of life (QoL) using the Functional Assessment of HIV Infection (FAHI) scale.
Results: Service modifications included a multi-professional referral option, patient advocates, SMP before exercise, variable group discussion time, inclusion of voluntary sector and symptom control physicians into SMP, flexible service utilisation (start, restart, treatment breaks) and "drop-in" availability upon completion of 10 weeks.
Fifty four patients were referred with 51% over age 50, 83% male and 76% white British/European. Adherence ($\geq$ 8 attended sessions) was achieved by 54%. Data was split into "adherent" (mean attendance 13 sessions) and "non-adherent" (mean attendance 3). Due to missing data, post intervention comparison was made in QoL outcomes only for "adherent" PLH, with reliable differences in total FAHI scores ($p=0.005$) comprising improved "physical well-being" ($p=0.019$) and "functional & global well-being" ($p=0.017$). Following modifications, average patient attendance improved from 5 to 11 patients, with a concurrent reduction in Did Not Attend (DNA) rates from 24% to 9%.
Conclusion: The Kobler Rehabilitation Class improves quality of life in those "adherent". It provides an approach to assisting PLH gain knowledge and skills around exercise and self-managing living with a long term condition like HIV. Establishing reasons for missing data among "non-adherent" PLH may assist future service delivery. PLH evaluation was integral to service planning and delivery and modifications were implemented with improved attendance and reduced DNA rates.

P48

Outreach sexual infection screening and postal tests in men who have sex with men: How do they compare with clinic-based screening?

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Background: The National Institute for Health and Care Excellence (NICE) recommends increasing the uptake of HIV testing among men who have sex with men (MSM), including testing in sex on premises venues. In response to these recommendations we implemented a screening service for asymptomatic MSM at a local sauna. To achieve maximum access to sexually transmitted infection (STI) testing, a nurse-delivered outreach screening service was established, alongside constantly available "do it yourself" (DIY) postal self sampling packs. Packs consist of self collected pharynx, urine and rectal *Chlamydia Trachomatis* (CT) / *Neisseria Gonorrhoeae* (NG) tests (Aptima Combo 2™) and self collected finger-prick blood spot collection system for HIV, Syphilis, Hepatitis B & C screening.
Methods: A retrospective service evaluation reviewing the test uptake and outcomes from the first 30 users of the nurse led and DIY kit services and the first 30 MSM attending our sexual health hub in 2013 (to provide a comparison).
Results:

Summary results with comparison between outreach groups and standard of care service

	Sauna Nurse Outreach (n=30)	DIY Postal Kits (n=30)	Sexual Health Clinic (n=30)	P-value
Mean Age (Range)	57 (24-77)	43 (23-63)	37 (18-61)	<0.001*
Test uptake N (%)				
Ever had previous STI tests	16/30 (53.3)	18/30 (60)	28/30 (93.3)	<0.001
Accepted CT & NG screening	26/30 (86.6)	30/30 (100)	30/30 (100)	0.032
Accepted blood screening	25/30 (83.3)	16/30 (53.3)	30/30 (100)	<0.001
Successfully contacted with results	29/30 (96.6)	26/30 (86.6)	30/30 (100)	0.121
Newly identified infections in those tested N (%)				
CT or NG infection (any site)	4/26 (15.3)	4/30 (13.3)	7/30 (23.2)	0.599
HIV	1/25 (4)	0/16 (0)	1/30 (3.3)	0.999
Syphilis	0/25 (0)	0/16 (0)	0/30 (0)	0.999
Hepatitis B / Hepatitis C (Active)	0/25 (0)	1/16 (6.25)	0/30 (0)	0.228
Hepatitis B / Hepatitis C (Cleared)	1/25 (4)	4/16 (25)	0/30 (0-0)	0.003
Infections treated / linked into care	5/5 (100)	5/5 (100)	8/8 (100)	0.999

*One-way ANOVA, All other P values obtained via Fisher Exact Test.

Conclusion: Men using the outreach services were older and less likely to have undertaken previous STI testing. Fewer men using the postal service performed blood tests, this may represent a reluctance to use self sampling methods. There were no significant differences in active STI incidence across the three groups. We believe that a nurse delivered outreach service in combination with postal self sampling can provide an effective means of STI testing in a group that may not access traditional sexual health services, allowing some to test for the first time.

P49

Does gender of clinicians matter to patients attending a walk-in primary care-based STI service? A patient survey

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Background: Brighton & Hove has high rates of STIs and HIV. BSHC operates a 7 day per week Level 2 Sexual Health Service run by 2 male nurses supported by the local level 3 GUM service. Findings from the STIPP study suggest that the most important attribute to patients accessing sexual health services the expertise of the clinician. The aim of this study was to evaluate the patient experience of this service
Methodology: We conducted a survey to evaluate patient experience of our STI service with particular emphasis on access, waiting times, gender preference of the clinician and overall satisfaction.
Results: We offered the survey to 200 consecutive patients accessing the service in July 2013. 157/200 (79%) surveys were completed and returned and 84/157 (54%) of all patients surveyed were female. 154/157(98%) of patients were happy with opening times & 156/157 (99%) were happy with the waiting time in clinic. 70% of patients had no preference for the gender of the clinician they saw and statistically more patients stated they prefer a male .v. female clinician 36/157 (23%) .v. 12/157 (8%) (chi=14.2, $p<0.05$). 155/157 (99%) of patients were satisfied with expertise of the clinician they saw & 154/157 (98%) stated that they were satisfied with the service overall.
Conclusion: This survey demonstrated a high level of overall patient satisfaction with the service and importantly that the gender of clinicians is not important to patients when attending a walk in primary care based STI service

P50

Referral patterns and treatment outcomes from a regional Paediatric Virtual Clinic

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Background: The use of Virtual Clinics for complex treatment decision-making in adult HIV practice is well established. Childhood prescribing is further complicated by limited liquid/paediatric tablet formulations, reduced pharmacokinetic data and delayed access to newer drugs. The small UK population of HIV-infected children limits treatment experience of individual paediatricians. Previous paediatric networks encouraging shared decision-making have been formalized with a national paediatric Virtual Clinic (PVC) based in our service. Requests for advice from abroad were also referred to the PVC. The monthly PVC comprises 4 ID/HIV paediatricians, 2 adult physicians with expertise in drug resistance/family care, virologist, paediatric HIV pharmacist and clinical nurse specialist.
Methods: Database audit of PVC referrals from October 2009 to November 2013.
Results: 220 referrals received for 182 children, discussed in 42 meetings, median age 13 yrs (IQR 10-15). 150/182 (82%) were discussed once; 24/182 (13%) twice, 5% (8/182) on 3 or more occasions. Referrals came from 37 centres in 11 countries. Referral reasons: 65/220 (30%) for virological failure with or without new resistance mutations; 57 (26%) for simplification of suppressive regimen; 16 (7%) start/restart ART post treatment interruption; 7 (3%) ART switch due to new drug availability, 15 (7%) other. ART toxicity resulted in 60/220 (27%) referrals for: 27 (45%) lipodystrophy/hypercholesterolaemia; 11 (18%) transaminitis; 4 (7%) thrombocytopenia; 9 (15%) proteinuria on tenofovir and 9 (15%) other. Of those with prior ART exposure, 91% (146/161) had HIV-1 associated resistance: single class 26% (38/146); dual class 59% (86/146); triple class 14% (21/146) and four class 1% (1/146). Additional adherence support was recommended in 21/182 (12%) children, including psychology, social services, CAMHS and a gastrostomy in 10 children. At follow up, PVC recommendations were followed in 76% (167/220) of referrals, 80% in our centre (83/104), 76% (73/96) other UK centres and 85% (11/13) internationally. 79% (143/182) remain suppressed at last clinic visit.
Conclusion: Over time, referrals to the PVC for toxicity/simplification and resistance have remained stable. Combined multidisciplinary input with adult expertise in resistance and newer agents, with paediatric knowledge of pill swallowing, childhood formulations/weight banding and parental support assists complex treatment decision making in this population.

P51

Evaluating the effects of improvement initiatives in sexual health and HIV services using management theory, run charts and learning histories – an example from the introduction of electronic patient records

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Background: Physicians are increasingly involved in management, but formal training in business management and theory is rare. Management theory and tools can be used to assess the impact of improvement initiatives and be applied to mitigate against adverse outcomes and enable organizational learning. The example used is introduction of an Electronic patient record (EPR), an improvement initiative to enhance data management & patient flow, reducing clerical staff costs.
Method: A learning history (LH) was constructed 3 months after EPR introduction into a GUM service, using LH methodology of data collection through interviews, corridor conversations, and written feedback from a variety of staff. A run chart was constructed of patient attendances for a 2 year period during which EPR was implemented as a single big-bang event. The median was frozen (extended into the future) if 10 points showed no signal shift, (trend, runs, astronomical data). Significant change p 0.05% was deemed to occur if there was a shift (6 or more consecutive points above or below the median). Systems archetypes were used to interpret LH results.
Results: There was stability in the system prior to EPR introduction which allowed the median to be frozen. Patient numbers fell by 9% at the introduction of EPR - there was a shift which was maintained for the year. The LH identified *Positive effects:* achieving goal of implementation, modernization, new skills, team work, benefits of electronic data, time saved by clerical staff and *Adverse effects:* on morale, training of juniors, patient experience and quality. Themes identified were team-working, modernization, learning styles, blame. Assumptions were regarding attitudes; "undiscussable issues" included sadness, guilt & frustration. Archetypes included systems that fail, shifting the burden and eroding goals.
Conclusion: There were many benefits of EPR but also adverse consequences on patient numbers, training & morale. A run showed the fall in attendances was "real". The LH allowed identification of adverse effects. The use of systems thinking theory (seeing the whole and interrelationships) may have allowed consideration, preparation and mitigation of some of these unforeseen or larger than expected adverse consequences detected. This evaluation can be used to enable organizational learning both in our own organization for the implementation of further EPR interventions but also for others moving to EPR.

P52

"No one has God's pharmacy": Pentecostalism and divine healing in the context of HIV in migrant African communities in the UK

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Background: There has been growing interest in the role UK-based African Pentecostal Christian churches play in the lives of people living with HIV. This follows well-publicised media reports of HIV-related deaths attributed to advice from pastors at a London-based church for members to eschew antiretroviral therapy in favour of divine healing. There remains little scholarly work that systematically explores HIV and Pentecostalism.
Methods: Our findings are drawn from interviews with 24 pregnant African women living with HIV, and ethnographic fieldwork at a London-based African Pentecostal church (referred to here as The Triumph of Christ Pentecostal Ministry, TCPM) conducted in July - September 2011. Data were analysed using grounded theory.
Results: The TCPM, typical of many Pentecostal churches, promulgates a belief in a universe where all misfortune (ranging from immigration concerns to illness such as HIV) is a *demonic* affliction necessitating spiritual warfare through a range of ritual practices including fasting, intensive prayer and healing ceremonies. The belief in divine intervention and the promise of transformation of circumstances fosters hope and self-efficacy in the face of seemingly insurmountable challenges. The church's willingness to recognise and address the social marginalisation faced by some of its members, providing the protection of a surrogate family and material assistance in times of hardship, further adds to its appeal. We found no evidence of Pentecostal beliefs acting as a barrier to engagement with HIV services. Clergy were not observed to give directives to discontinue medical treatment, and people described drawing upon their faith *alongside* biomedicine in a pragmatic quest to manage life with HIV.
Conclusions: Pentecostal beliefs in divine healing did not necessarily prevent patients from engaging with HIV services and interventions. Beliefs in divine healing of illnesses such as HIV are situated in a wider religious framework in which *all* types of misfortune are seen to have a spiritual aetiology. However, seeking a spiritual solution to misfortune does not preclude other approaches. Our work reveals that many patients draw upon their Pentecostal faith *alongside* biomedicine in a pragmatic search for outcomes. For many, Pentecostalism not only offers succour in the form of material assistance and a sense of collectivity, but is also an important resource in fostering hope and self-efficacy.

P53

Are the sexual health needs of adolescents admitted to the paediatric department of a county hospital, with acute abdominal symptoms, being adequately assessed?

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Background: Increasing numbers of adolescents are entering into a sexual relationship before their 16th birthday[1].Over the past 12 months, 229 adolescents aged 12-16 years (181 girls & 48 boys) have visited level 3 Genitourinary Medicine services (GUM) locally. Results showed 20 girls and 3 boys to be *Chlamydia trachomatis* positive and 1 boy *Neisseria gonorrhoeae* positive. The Cornwall Chlamydia Screening Service (CCSS) have performed 461 *C. trachomatis* tests on young people aged 11-15 in in 2013 with a positivity rate of 8.45%. In light of these findings, we wanted to explore whether local paediatric services are considering sexually transmitted infections as a cause of abdominal symptoms in adolescents admitted acutely.
Method: During 3 months of 2013 there were 48 admissions for acute abdominal symptoms in the 13-16 year old age group. Of these, 33 were included in the audit: 20 girls and 13 boys. Hospital notes were reviewed retrospectively for presenting complaint, sexual history, diagnosis and investigations.
Results: Of the 33 sets of notes reviewed, 24 (73%) had no sexual history documented, including all boys. Pregnancy tests were done on 15 (75%) girls (all negative). Only 1 patient was tested for genital *C. trachomatis* despite no recorded sexual history. Discharge summaries showed 10 (50%) girls left hospital with no specific diagnosis. There were no referrals made to GUM.
Conclusion: A sexual history is currently not a routine part of an adolescent acute admission clerking locally. With a significant proportion of adolescents testing positive for *C. trachomatis* in both GUM and CCSS, sexual infections should be considered in the differential diagnosis for all adolescents with abdominal symptoms. Where appropriate, a sexual history should be taken and samples sent following liaison with GUM. Local pathway development is urgently required. Even for adolescents without suggestive symptoms, there may be missed opportunities for screening and for appropriate sexual health promotion and support, including discussions around contraception needs and safeguarding issues.
References: [1] Field N, Mercer CH, Sonnenberg P *et al.* Associations between health and sexual lifestyles in Britain: findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3). *Lancet* 2013 Nov 30;382 (9907):1830-44.

P54

Internet survey on the attitudes and practices of HIV clinicians in the travel health setting

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Background: HIV and malaria coinfection has been found to be associated with an increased risk of severe malaria, intensive care admission and death. A recent study found a 4.4% incidence of malaria in HIV patients who had travelled to a malaria endemic country in the preceding year with a minority seeking pre-travel advice and taking malaria chemoprophylaxis (CP). There are no travel health guidelines for this cohort of patients.
Methods: An anonymous survey was self completed on an internet based format between March and June 2011. All HIV centres in London were invited to participate.
Results: Of the 60 respondents, 60% were consultants, 30% registrars, 5.5% associate specialists and the remaining were unspecified. Over 90% of clinicians frequently asked if their patients have recently travelled abroad. The most common destinations were to Africa. The majority of the clinicians had no formal training or qualifications in travel medicine nor had ever practised in this field. Despite this, >90% gave travel health advice, 69.5% sourced travel medicine information from the internet. 64% of clinicians prescribed malaria CP in the HIV clinic. The motivation given by the clinicians for choice of CP was predominantly side effects. Of the concerns expressed by clinicians, CP adherence was rated the most important followed by adverse drug reactions and cost. When asked what concerns they thought their patients had about CP, the most serious concerns were thought to be side effects (74%), cost (67%) and pill burden (49%).19% believed their patients were non adherent to CP. 81% of clinicians in their experience believed that patients tolerated their CP well. In the past year 70% of clinicians had diagnosed a travel associated infection in their cohorts (including malaria).The majority of clinicians did not feel that patients should be exempt of charges for travel health advice/CP however there was a favourable majority response for the provision of a specific travel health service for high risk patients.
Conclusion: There is clearly an unmet need in the growing HIV traveller population for coordinated travel health advice. HIV clinicians acknowledge this need and support specific travel health provision for high risk patients. This approach needs to be proactive and coordinated to maximise the health impact of the consultation and reduce the burden of travel-related preventable diseases.

P55

Co-production in practice: HIV prevention services for men who have sex with men

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Background: There is concern in England that the integration of genitourinary medicine and contraceptive services may negatively impact on men who have sex with men (MSM) accessing sexual healthcare and HIV prevention interventions. Tendering of contracts can set NHS and 3rd sector providers in direct competition and may fracture best care for patients. However the commissioning of integrated HIV and sexual health services in England is now being progressed and Terrence Higgins Trust (THT) wish not to compete with NHS providers but rather work in partnership. A local MSM needs assessment was undertaken in 2012 and recommended dedicated specialist and outreach clinics for MSM. A service targeting MSM was commissioned to be co-provided by the integrated sexual health service and THT under a new "brand". We present an evaluation of the 6-month pilot.
Methods: Data were collected from patient records for all men accessing the MSM service between 22/01/13-31/07/13 including demographics, sexual risk-taking, HIV testing activity and STI diagnoses. A patient satisfaction survey was undertaken.
Results: There were 137 attendances of 107 unique clients. The mean age of attendees was 27 and 15 identified as heterosexual. 49% were previously unknown to sexual health services and 43% had no documented history of past HIV testing. The median partner number in the past year was 4; 42% reported unprotected anal sex in the past 3 months and 15% were diagnosed with a new STI. Hepatitis B vaccination and HIV testing uptake were 70% and 94% respectively. Two clients were already known to have HIV and a further 2 tested positive giving a prevalence of 2.4% in the previously undiagnosed group and 4.8% in the tested MSM group. The number of MSM seen within the overall sexual health service increased by 85% from the previous year. 100% stated that they would recommend the service to a friend.
Conclusion: The introduction of a co-provided men-only clinic targeting MSM has significantly improved access to services by this group. Co-production between the NHS service, THT and their volunteers has achieved a breadth and standard of care that neither organisation could provide alone. The service received a quality award from the health board for this work.

P56

Setting standards in providing psychological support to people living with HIV: engaging service users in the community

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Background: In 2012, the British Psychological Society's Faculty for HIV and Sexual Health was awarded a Public Engagement Grant to facilitate the creation and dissemination of a service user version of the Standards of Psychological Support for Adults living with HIV (2011). These standards, developed through multidisciplinary and multi-sector collaboration, set out a clear framework to guide practice in this complex field. However, the final product is a 91 page document that is primarily written for commissioners and service providers. It is questionable as to how much of this document is accessible and relevant to people living with HIV (PLWHIV).
Methods: The development of the pamphlet was informed by service users during focus groups with Terrence Higgins Trust, The African Health Policy Network and George House Trust. Each discussion explored three key areas; (1) whether service users had heard of the Standards; (2) what information they would like to be included in the pamphlet; and (3) where they would like the pamphlet to be available from. Feedback was transcribed and summarised into themes.
Results: During the focus groups it became clear that there was a distinct lack of awareness of the Standards. However they gave many suggestions for what to include in a more accessible pamphlet version. In doing so, they wanted descriptions of different kinds of psychological difficulties such as anxiety and depression as well as some case studies of people receiving different levels of psychological support. The final product is an 8-page printed pamphlet and an extended 10-page pdf version containing additional case studies that can be downloaded from various websites. The dissemination plan involves a series of public launch events across the country.
Conclusions: The purpose of the public engagement project was evident from the very beginning. In the focus groups, there were a number of service users who were surprised to learn that HIV services are expected to provide easy access to timely and appropriate specialist psychological support services. But the reality is that some specialist psychological support services are becoming threatened, as there is a general push towards mainstream mental health services. Given this context, there is a long way to go in implementing the Standards. However an important and necessary step in doing so will be to increase awareness of these issues amongst service users.

P57

Alcohol and sexual health: a pilot study of screening and brief intervention

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Background: Excessive alcohol consumption is an increasing problem in the UK, and has been associated with poorer sexual health outcomes including unwanted pregnancy, STIs and sexual assault. The National Sexual Health and Alcohol policy guidance has increasingly pointed towards implementing screening and brief interventions in sexual health settings. Recent evidence suggests that screening with minimal provider feedback or a leaflet may be as effective as a more prolonged intervention in most cases. We developed an alcohol misuse self-screening tool in a busy London sexual health clinic and provided an on-site alcohol drop in service with trained alcohol workers, to raise awareness and facilitate use of local voluntary sector alcohol services for those requiring support.
Methods: A short pilot study to determine the prevalence of alcohol misuse and uptake of an on-site alcohol drop-in service amongst sexual health attendees was carried out. We distributed the AUDIT-C validated screening tool with additional questions about alcohol and sexual risk behaviour to consecutive patients attending our service. A leaflet was provided indicating where to access help via the internet or local services and patients were invited to self-refer to the alcohol service for advice. Data was obtained from patient notes regarding sexual risk behaviour and demographics and analysed alongside questionnaire answers.
Results: We present here the results of a short trial carried out to refine clinic processes.
72 patients attended the clinic during this brief study period, 61% female (n=44), 39% male (n=28) aged 17-60 (mean=29). 42 (58%) returned questionnaires (38 female, 4 male). 8 (19%) reported alcohol scores of $\geq$ 3, considered high risk drinking, 1 of which reported sexual risk related to alcohol use. 3 of the 8 patients with scores of $\geq$3 reported an STI in the past year and 2 reported recent unprotected sex with a casual partner. There were no requests for further support in this small sample.
Conclusions: The use of a health screening tool appears feasible in our setting. During this pilot study, a large proportion of patients reported problematic drinking, with a suggestion that higher alcohol scores are associated with poorer sexual health outcomes. With the implementation of expanded screening, we will collect more detailed data to explore these conclusions, and determine the usefulness of a self-referral alcohol service within the sexual health setting.

P58

An audit of screening for measles immunity and vaccination

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Background: BHIVA guidelines advise testing for measles IgG antibody. We commenced testing in our HIV cohort in summer 2012 after the measles outbreak in Liverpool which started in Jan 2012. Since then, there has been a further outbreak in Swansea.
Method: The case notes of patients attending in 2013 were reviewed in December 2013. Measles IgG status, advice given and MMR vaccination were recorded.
Results: 431 notes were reviewed (328 M; 105 F). 427 (99%) patients had been tested: 392 (91%) IgG positive, 1 (0.2%) equivocal and 34 (7.9%) negative. Of the 34, 29 were advised to have MMR vaccination. In 2, MMR was medically contraindicated (low CD4 count and very low platelets) and 3 had not yet been advised. 2 had failed to attend since the result was available. Of those advised, 5 have been vaccinated: 4 are now immune and 1 awaits retest.
Discussion: Measles is a more severe infection in adults and can be a potentially life threatening infection in HIV patients leading to diffuse progressive pneumonitis or measles inclusion body encephalitis. We have tested 99% of patients within 18 months of initiation of testing. Some patients have only been tested more recently, due to biannual appointments/new diagnosis, so have not yet completed the pathway. The GPs of some patients, who have been advised MMR, have been reluctant to give it. Of those not tested, 3 have not attended. Improved longevity may mean that some patients will have lost pre-existing antibodies.
Conclusion: Screening to identify those who would benefit from vaccination was easily instituted. Attention should be paid to encourage vaccination and retesting. Serious consequences of measles infection in HIV are largely avoidable.

P59

Evaluation of a pilot student LGBT sexual health "pop up" clinic

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Background: Rates of sexually transmitted infections are higher amongst young people and lesbian, gay, bisexual and transgender (LGBT) populations than in the general population. The student LGBT society at our local university approached our department in October 2013 requesting a dedicated student LGBT clinic, to complement the largely MSM focussed third sector sexual health promotion experienced thus far by their members. A pilot clinic was organised and we aimed to evaluate this service in terms of STI diagnosis and user experience.
Methods: A systematic retrospective case note review and analysis of the anonymous feedback of all patients attending the student LGBT sexual health clinic was performed.

Results: 15 students attended a dedicated evening clinic. Demographics: Mean age 21 (range 18-33). 6 male (40%,), 7 female (47%), 2 gender neutral (13%). 6 MSM (40%), 4 lesbians (27%), 5 bisexual females (33%). 12 (80%) had never accessed a sexual health service before. 10 students (67%) had risk factors for HIV and of these, 7 (70%) had never tested for HIV before. 15 (100%) accepted HIV testing. Of 8 patients with risk factors for Hepatitis B, 3 had been previously vaccinated and of the remaining 5, 5 (100%) were offered, accepted and completed Hepatitis B vaccination. 3/15 (20%) had new infections identified; 1 Herpes Simplex Virus Type 2, 1 Pelvic Inflammatory Disease, 1 pharyngeal *Neisseria Gonorrhoea* and Hepatitis C (new diagnosis; HCV antibody positive, HCV RNA not detected). 15 (100%) of service users rated the service as good or very good.
Conclusion: Dedicated student LGBT 'pop-up' clinics can provide unique opportunities to screen for and diagnose STIs, additionally providing a platform for sexual health promotion to a high-risk population who may never have attended a sexual health service before. The acceptability of and satisfaction with this clinic suggests that this service can help overcome fears of accessing sexual health services for the first time. Feedback suggestions from this group also proved helpful in modifying our trans-friendly registration sheets & sexual history proformas and increasing awareness for our staff around gender-neutral language, notes, facilities & testing offered. We plan to organise similar clinics in the future and suggest that services in areas with significant student populations contact local student organisations to consider providing a dedicated service.

P60

Audit of BASHH management standards – key performance indicators in diagnostics

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Background: Standards for the management of Sexually Transmitted Infections (STIs) describes nine management standards covering all aspects of STI management including access to the services, diagnosis, treatment and the broader public health role of infection control. They support commissioners and providers in achieving high quality services.
Aim: An audit to measure key performance indicators (KPI) in diagnostics was undertaken. The service has a fully electronic system for access and management of results. The percentage of reports received by clinicians within 7 working days of the specimen being taken (standard 100%) and the reasons for delays were assessed.
Method: Retrospective case notes and electronic results database review of 485 patients attending for a full screen (chlamydia, gonorrhoea, HIV and Syphilis testing) was conducted.
The time intervals from sample taking to receiving results and treatment were analysed.
Results: Chlamydia and gonorrhoea results: 94.6% were received within 7 days, 5.2% 7-14 days, 0.2% > 2 weeks. HIV and syphilis results: 12.4% received on the same day, 67.4% 1-2 days, 19.6% 2-7 days and 0.6% >7 days. Time taken from sample taking to treatment - for chlamydia: 77% treated within 7 days, 17% 8-14 days and 6% >14 days; for gonorrhoea: 62.5% treated within 7 days and 37.5% within 8-14 days.
Discussion: All results were received electronically and data travelled from the laboratory interface to the GUM database (Telecare, facilitated by the Mills System). The results were handled by the reception staff and the health advisors. Delays for receiving results were due to a number of reasons. Manual entry of data into the electronic system led to errors in transcription. It was more robust if the investigations were sent electronically. However, timely review and allocation of incoming data from the laboratory was crucial. The health advisors recheck all positive results from separate lists to minimise any omissions or delays. Overall most patients had treatment on the day of attendance due to symptoms or epidemiological treatment due to positive contacts.
Conclusion: Despite delays in receiving results (<100% Standard), delays in receiving treatment were low. Improvements are needed to manual data entry and electronic database systems. Initiatives to upgrade the electronic system and staff training to decrease human errors are being undertaken to persistently improve the delivery of this service.

P61

Breaking the silence: the role of a slide-out feedback form to capture user experience

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Background: Accurate information about service provision is important for patients to decide which provider to attend. SXT (www.sxt.org.uk) was formed in 2012 and over 3000 clients have been successfully directed to a local provider offering the service they require. However, despite adding a hyperlink to a webform for feedback less than a dozen individuals elected to leave their thoughts. Feedback is a challenge to capture across all web-based services (e.g. TripAdvisor 2%, I want great care 25%*). We therefore tested if the introduction of a slide-out feedback form, appearing three seconds after the client viewed a single provider page, would engage users and determine if they found the SXT service useful.
Methods: Over the summer months in 2013 the website was re-designed (v3.0) and made responsive so that it adapts to any device – computer, phone & tablet. During this development a slide-out feedback form was added asking the question 'Did you find this service useful? This form gives the option to score from 10 (very useful) to 1 (not useful) using radio buttons and a comment box is available for any text. The new site went live on the 5th August 2013 and the database records details of the date, time, postcode, service requested, local providers displayed, the provider selected, feedback score and comment.
Results: Over six months a total of 683 clients looked for information or a service and 451 (66%) chose a specific provider and the sliding banner was displayed. A total of 67 (15%) clients left a score and these are shown on the table below. The provider types chosen by clients giving feedback were 15 genitourinary medicine clinics, five sexual reproductive health clinics, five third sector clinics, four general practices, two sexual assault referral centres and one pharmacy. Only three clients wrote text with their feedback. The majority of clients found the service useful with 85% giving a response of eight or more out of ten.

	Did you find this service useful? [Score 1 – 10]					
Device used	**1**	**7**	**8**	**9**	**10**	**Total**
Phone & Tablet	0	1	5	3	26	**35**
Computer	5	4	6	3	14	**32**
Total	**5**	**5**	**11**	**6**	**40**	**67**

Conclusion: The slide-out feedback form has enabled SXT to engage clients and the responses to date support its utility to identify local services. Further work will include placement of slide-out feedback form(s) on other pages of the website to determine the utility of the information services provided.
*Personal communication Dr Neil Bacon (Founder of I want great care www.iwgc.org)

P62

Services for complainants of sexual assault in the United Kingdom

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Background: In 2006, a national survey demonstrated wide disparities in services offered to sexual assault (SA) complainants in the UK, most marked between the 13 sexual assault referral centres (SARCs) and non-SARCs. We aimed to evaluate the current situation.
Methods: A questionnaire collecting data on population covered, access, funding, personnel, medical care and clinical governance was sent to all 44 UK SARCs open in 2012. No non-SARCs were identified. Data were collected over 6 months from December 2012.
Results: Response rate: 23/44 (52%) but not all respondents answered every question. 14/21 (67%) covered a population of >1 million. 6/23 (26%) saw >500 clients/year. 20/20 had 24hr access for acute referrals. One SARC

reported 24hr opening was not always possible due to recruitment issues. 13/20 (65%) had a separate rota for under 16s, but this was often not 24hrs/day. 20/20 were funded by police and health and none privately. One SARC reported, "gross underfunding" leading to governance issues. Most examiners were forensic physicians with many working part time. 10/20 (50%) employed forensic nurse practitioners. 11/17 (65%) employed male and female examiners; 8 (47%) offered a choice of gender of examiner when possible. 19/21 (90%) employed crisis workers. 19/20 (95%) had access to an ISVA (independent sexual violence advocate), 11/21 (52%) to a CYPSVA (children/young persons SVA). 20/20 services accepted non-police referrals and anonymous intelligence provision. Acute SA services on site: 21/21 offered pregnancy testing and emergency contraception; 19/21 (90%) HIV post-exposure prophylaxis (PEP); 12/21 (57%) hepatitis B (HBV) vaccine; 11/21 (52%) medical care for injuries; 13/21 (62%) prophylactic antibiotics. Follow up provision on site: 12/21 (57%) counselling; 10/21 (48%) STI screening; 12/21 (57%) HBV vaccination and 14/21 (67%) HIV PEP. 19/20 (95%) SARCs provided induction; 17/20 (85%) regular teaching, 19/21(90%) formal clinical supervision and 15/20 (75%) peer review. 15/20 (75%) services had local policies for adult examinations and 13/17 (76%) for under 16s.

Conclusions: Since 2005, the number of SARCs has increased in the UK. Respondents reported a good consistency of care for SA complainants, which is encouraging and should be reflected in future commissioning. However, the low response rate and lack of involvement of non-SARC services in the study makes us cautious about interpreting the results.

P63

Sexual health @ the bush

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Introduction: Sexual health is disproportionate across the UK. Our local borough boasts some of the highest rates of sexually transmitted infections (STIs)/HIV in the poorer north with lower rates in the more affluent south. The northern borough houses a diverse population, with a large population of individuals of non-white/non-British origin and non-English speaking communities. Due to stigma, successfully integrating sexual health services into these areas can pose a challenge and may benefit from collaborative working with local organisations/primary care, many of whom possess an invaluable knowledge of their local communities.

Methods: In partnership with a local charity and primary care organisation, we designed and delivered a weekly, specialist community sexual health service from a GP surgery in west London. Data pertaining to: gender, age, ethnicity, appointment type, service provision, referral, follow-up and infection rates were collected.

Results: In 18 months, 68 clinics were delivered, resulting in 291 attendances (255 patients) of which 84 (33%) were male. The majority (89%) were from the local borough with 183 (72%) identifying as non-white /non-British origin, 20% of male attendees identified as African in origin. In total, 205 (70%) STI screens were performed diagnosing: 11 cases of *Chlamydia trachomatis* (CT), two late latent syphilis, two *Neisseria gonorrhoea* (NG), one active hepatitis B, three episodes of genital warts, one herpes (HSV) and one Molluscum contagiosum. All patients requiring further input (30%) were asked to attend our mainstream GUM services for level 3 follow-up. Of these, 56 (64%) patients re-attended further identifying: two CT, four HSV and six genital wart cases.

Conclusion: The high rate of uptake illustrates that sexual health outreach can be delivered successfully by sexual health providers within primary care settings. This strategy ensures that links to level 3 GUM services are maintained. The clinic benefits from strong community links and partnership working which has encouraged more vulnerable individuals to undergo sexual health screening in a non-traditional and potentially less stigmatising setting.

P64

Are you sitting comfortably? Patients' views regarding the waiting area

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Background: The waiting area creates the patient's first impression of the clinic, it's essential that it be perceived as welcoming. Patients may be in the waiting area for some time and this could provide an opportunity to deliver sexual health information.

Methods: Patients were invited to take part in a structured interview regarding their opinion of the waiting area. Patients were selected to give a representative spread of gender, age and appointments versus walk-ins. They were only approached after registration if they still had time before they were due to be seen.

Results: Forty patients were interviewed (18 men and 22 women, 20 walk-ins and 20 had appointments; average age 28, range 17 to 69, median of 23 and mode of 21 years.)

Question (N° of responses)	Top three answers		
What information did you notice? (34)	Sexual Health 77%	Lifestyle 59%	General Health 41%
Why did it catch your eye? (33)	Design 61%	Display 55%	Content 33%
What could be better about the info displayed? (17)	Design 6%	Display 71%	Content 35%
What other info would you find useful? (15)	Sexual Health 60%	General Health 27%	Clinic Info 27%
What info would you like to see on video? (35)	Sexual Health 77%	Clinic 43%	Lifestyle 29%
What services are you aware that we offer? (38)	Sexual Health 100%	Psychology 16%	Health Advice 11%
Where did you find this information? (38)	Word of Mouth 45%	Online 29%	Other HCP 24%
Answered yes to the waiting area being welcoming (33)	Room Design 53%	Entertainment 29%	Staff 26%
Did you feel you could be overheard? (39)	No 56%-(41% walk-in & 59% appointments) Yes 44%-(65% walk-in & 35% appointments)		
Answered yes to waiting area easy to use? (37)	Signposting 53%	Layout 43%	Staff 13%
What one thing you would change about waiting area? (23)	Comfort 65%	Information 26%	Confidentiality 17%

Conclusions:
- Most service users notice sexual health information, but "the more there is the less you see". We have reduced poster quantity, improved quality and organised displays into sections
- Those who would like to see video in the waiting room wanted sexual health and clinic information – we aim to produce a video shortly
- Most patients were not aware of the full range of services we offer and would like more information online/via leaflet – website and leaflet are currently being updated
- We already have privacy booths at the reception desk – we have improved confidentiality by queuing stands and ropes especially for walk-ins.

P65

High rates of STIs in SWISH clinic – a dedicated service for sex workers

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Background: Sex Workers into Sexual Health (SWISH) is a nurse led service run in partnership with a voluntary community organisation (VCO) which has been in operation since 2008. The SWISH clinic is run in a local primary care health clinic offering free sexual health testing and contraceptive services; the VCO provides community engagement workers who offer advocacy services, free condoms, massage and counselling.
Methods: A notes review of all patients who attended SWISH in 2013 was carried out. Data collected included gender, age, country of birth, ethnicity, investigations infections diagnosed and whether patients were new or re-attenders.
Results: There were 98 patients who attended SWISH in 2013; 56 (57%) men, 32 (33%) women and 10 (10%) transgender women. Of these 82 (84%) accepted an HIV test, 6 (6%) declined and 10 (10%) were known to be HIV positive. Of the 82 who tested, 3 (4%) tested positive, all reported 100% use of condoms for AI. Overall, 23% had an STI and 4 (4%) had more than one STI diagnosed. Six patients (6%) disclosed recreational drug use (including cocaine, GBL, ketamine and mephadrone) all of whom shared straws/notes though they stated they understood the risks of acquiring a blood borne virus. One patient was referred to the PROUD study and 2 were provided with PEP. There were 47 (48%) new patients

	STI n (%)							
Patients	HIV	STS	Hep B	HSV	CT	NG	Scabies	Total
Total n=98	3 (4)	2 (2)	1 (1)	1 (1)	6 (6)	13 (13)	1 (1)	27 (28)
Male n=56	3 (5)	2 (4)	-	1 (2)	3 (5)	10 (17)	1 (2)	20 (36)
Female n=32	-	-	1 (3)	-	1 (3)	-	-	2 (6)
Trans gender n=10	-	-	-	-	1 (10)	3 (3)	-	4 (40)

Conclusion: The SWISH service continues to attract new patients from this often hard to reach group. There was a high rate of STI diagnosed in men and transgender women, including 4% newly diagnosed HIV infections, with low rates in women. Further prevention work is required, including examining the role of recreational drug use and the potential value of PrEP in high risk patients.

P66

What adherence support do patients require from an HIV service?

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Background: High levels of adherence to anti- retroviral therapies (ART) are necessary for the long term health of those with HIV and the prevention of onward transmission of infection. Lifelong adherence poses substantial challenges to many individuals for a multitude of reasons: effective support from HIV services is therefore essential. Understanding what constitutes effective support is important for service development. The aim of our study is to understand what aspects of care are important to patients in supporting their adherence to ART.
Method: This qualitative study involved two care centres – a sexual health clinic and an Infectious Diseases unit - in a provincial city. Semi structured interviews were conducted with a purposive sample of 23 HIV positive patients and analysed using a modified framework analysis approach.
Results: Four themes were identified that captured the important elements of adherence support: 1) being prepared for ART, 2) being supported to take the treatment, 3) providing a responsive service and 4) supporting engagement with the service. The relationships within which care was delivered and the impact that it had on the experience of care was an important cross cutting thread that ran through the themes. For example, collaborative decision making was an important element of being prepared for ART.
Conclusion: This study identified essential components of adherence support and provided insights into their importance from the perspective of the patient. Changes in commissioning will necessitate changes in the way services are delivered. These findings can be used to inform service developments to ensure optimal adherence support.

P67

A retrospective case note review of a multi-speciality penile dermatoses clinic from January 2009 – December 2011

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Background: Patients presenting with penile skin complaints can suffer from a vast spectrum of conditions; including penile dermatoses, benign and malignant dermatological conditions and variants of normal anatomy. For managing the full range of conditions and for effective treatment of rarer or more complex diseases, multi-speciality clinics are of particular benefit. At our health board we provide a tertiary-level monthly clinic, undertaken by a triad of consultants from Genitourinary Medicine, Dermatology and Urology.
We undertook a retrospective case note study to review conditions presenting to our specialist clinic, and compared clinical management with similar services in the UK. Of particular interest was the appropriateness and indications for penile biopsy as an adjunct to clinical examination, as controversy exists on this issue between services.
Methods: Electronic and hand-written clinic notes were reviewed for all patients seen at the clinic over a 3-year study period (January 2009-December 2011). Patient demographics, diagnosis, management including biopsy, referral and discharge information were collected and analysed.
Results: 226 patients presented with 240 individual episodes during the study period. A majority were white, middle-aged, uncircumcised men referred from their GP. Lichenoid conditions were the most common category of genital pathologies seen (n=60, 24%), but non-specific balanitis was the most common individual diagnosis (n=55, 22%). Other common conditions seen included eczema and psoriasis (n=28, 11%), Zoon/Plasma cell balanitis (n=26, 10%), malignancy/ pre-malignant (n=25, 10%) and infective conditions (n=24, 9%). The clinic had a low biopsy rate of 10%; the most common indication was for diagnostic purposes for a suspicion of malignancy/ pre-malignancy. Compared to other similar clinics, there was a high clinical to histological correlation in the biopsies of 79%. The most common treatment prescribed was topical corticosteroids and the clinic had a high discharge rate of 93%, the majority discharged back to GP.
Conclusion: The multi-speciality clinic provides a highly specialised service with a significant amount of clinical expertise, enabling clinical governance and contributing to high-quality, effective and swift patient care. The range of conditions encountered was broad, but comparable to those seen at similar specialist services. Our clinic biopsy rate was low, and we had high clinical to histological correlation.

P68

An integrated sexual heath service: Are we value for money?

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Background: The funding of integrated sexual health services in England continues to be complex with 2 funding streams and is not conducive to the

provision of integrated services. Since April 2013, commissioning of sexual health services has been taken over by local authorities. With budgets tight, commissioners are increasingly questioning: are they getting value for money? This is an important question and may influence whether services are put out to tender. Data systems currently used, provide insufficient information to answer this question.

Methods: We performed a prospective study of patients attending a busy integrated walk-in service, presenting with a new episode. We asked clinicians to complete an Excel spreadsheet after the patient consultation. We collected data on whether patients had symptoms, received sexual transmitted infection (STI) testing+/- microscopy + any STI treatment. We collected data on STI risk including: sexual orientation, commercial sex work, sexual assault,HIV risk, STI contact and whether they had 3 or more sexual partners in the last 3 months. Whether an abdominal, pelvic or testicular examination was performed, was also recorded. We also asked whether the patient had seen their GP with this condition and whether this was a recurrent problem. In female patients, contraception intervention (including complex contraception needs), pregnancy risk and gynaecological symptoms were documented. Complete GUMCAD and SRHAD data for this cohort was added to the Excel spreadsheet 1 month later to ensure inclusion of all STI diagnoses.

Results: We collected data on 100 men and 100 women. 32% of men had one or more high STI risk. 98% had STI testing +/ or treatment. 67% of men attended with symptoms. Of the 33% who were asymptomatic,15%had one or more STI risk. In the female cohort,66%attended with symptoms. 84% received STI testing+/ or management and 38% received a contraceptive method. 23% received both a contraceptive method and STI testing/ treatment.12% of women had one or more STI risk and a further13% had a pregnancy risk. GUMCAD and SRHAD data will be presented and a comparison made with our data.

Conclusion: This study indicates that patients attending our service have complex needs and many are at high risk of an STI. This may convince commissioners that they are getting value for money. We need to be cautious using current data collection systems to plan sexual health services and deciding on the level of tariff required.

P69

Provision of cervical cytology at genitourinary clinics is acceptable and worthwhile practice

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Background: Since the NHS national cervical screening program began in the late 1980s the incidence of cervical cancer has halved however it remains the 11th commonest malignancy in women and the commonest in those under 35[1]. In England cervical screening saves around 4500 lives per year and prevents up to 3900 cases of cervical cancer annually in the UK[1]. As sexual health services move toward an integrated model of care then provision of cervical smears, whether opportunistic or routine, should be within the remit and capability of UK GU clinics

Methods: Over a 16 month period (April 2012 – August 2013) offers of cervical smears were made, when appropriate, to women attending a DGH GU clinic. A routine offer was made if she had received a calling letter from the screening program or was due her annual check if HIV positive[2]. Opportunistic offers were made if she was 25 or over but never previously had a smear or were found to be overdue from their history. Smears were performed by trained staff – both nurses (band 6/7) and doctors (SAS/Consultant)

Results: A total of 100 smears were performed – 61 by nurses, 39 by doctors. 10 presented specifically for a smear including 2 HIV positive women. 81 were picked up opportunistically with 9 unclear from the notes. 75 smears were reported as normal, 11 abnormal, 6 rejected, and 8 outstanding for now. Abnormalities detected: borderline changes, high-risk HPV (6); low-grade dyskaryosis, high-risk HPV (3) and mild dyskaryosis, high-risk HPV (2). All abnormal smears were from women who had either never had a smear or were overdue (6 months – 9 years) from their last. Rejected smears were due to either incorrect labelling or insufficient sample

Conclusion: It has traditionally been felt in GU that provision of cervical smears should be left to primary care however our results show that a significant amount of undiagnosed pathology can be picked up by our service. If indicated from the sexual history then an offer of a smear should be made whilst women are attending for whatever GU reason particularly if a speculum examination is warranted. Care must be taken in selecting women appropriately and ensuring that GP details are taken and route of dissemination of results explained, ie, separate from GU results. Referral pathways should be in place and we recommend a database is set up to ensure results are acted upon appropriately. Additional burden of work appears to be minimal

P70

HIV patient information and NHS confidentiality – a survey of people living with HIV

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Background: There is increasing emphasis in the NHS, and within HIV clinics, on the sharing of personal confidential information between healthcare professionals to ensure safe, joined-up and high quality care. HIV remains, however, a stigmatised condition and one where there are heightened sensitivities as to when HIV positive status is shared and with whom. A survey was conducted amongst people with HIV to assess knowledge of and views on how their personal confidential information is used and their experiences of data sharing in the NHS.

Methods: An online survey was promoted to people with HIV both directly and via HIV voluntary sector organisations over a five-week period. This was complemented by two consultation meetings with people with HIV, 27 people in total attending.

Results: There were 245 survey respondents, with a broad demographic range. 99% of respondents had registered with a GP and 91% had disclosed their HIV status to their GP.

Results cover awareness of policy around sharing of HIV status amongst healthcare workers providing direct care, and the concept of implied consent; preferences around GPs asking for consent before sharing HIV status with other healthcare workers; information sharing with administrative staff who are part of the direct care team; whether the respondent has ever been surprised that a healthcare worker either did or did not know they had HIV; whether any information had ever been received about NHS confidentiality; and experiences of breaches of confidentiality and the complaints system.

Overall there was a high degree of contentment with the way data sharing operates within the NHS. There were however concerns over inadvertent breaches of confidentiality, for example in public spaces, and inappropriate responses from healthcare workers to knowledge of HIV status. There was also disquiet at the range of administrative staff who seem to have access to sensitive information. There was a strong demand for better information for people with HIV on data processes and their rights.

Conclusion: No significant changes need to be made to current data sharing processes in the NHS for people with HIV. Careless breaches of confidentiality and HIV stigma and discrimination need to be urgently addressed. A resource for people with HIV explaining how their personal confidential information is handled should be produced as soon as possible.

P71

A retrospective audit in a London HIV clinic, assessing the post-exposure prophylaxis for HIV following sexual exposure (PEPSE)

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Background: Evidence has shown that there may be a window of opportunity to prevent Human immunodeficiency virus (HIV) infection through initiation of antiretroviral therapy (ART). The recommended regimen is known as post exposure prophylaxis following sexual exposure (PEPSE). British Association for Sexual Health and HIV (BASHH) guidelines outlines PEPSE initiation criteria and management in order to achieve the national auditable outcomes.

Aim: To assess the compliance of PEPSE prescribing in a London HIV clinic against BASHH PEPSE guidelines.

Methods: This is a retrospective review of case notes of patients, who presented at the clinic, between January 2012 and December 2012. Data collected include indication for PEPSE, time PEPSE was initiated, time to baseline HIV test, proportion of patients who completed the PEPSE treatment, proportion of patients who had post PEPSE HIV testing and proportion of patients who had sexually transmitted infection (STI) testing.

Results: A total of 46 patients were included in this audit. Thirty (65%) were females, sixteen (35%) were males. Thirty two (70%) were heterosexual. All patients had baseline HIV test done within 72 hours of presenting. All patients their first dose of PEPSE within 72 hours of sexual exposure. Forty patients (90%) were prescribed PEPSE in accordance with the recommended indication. All patients who presented for PEPSE had STI testing. Twenty two (48%) completed their PEPSE treatment and twenty four (52%) had post PEPSE HIV testing.
Conclusion: There was a good adherence to the BASHH PEPSE guidelines. However, many patients did not complete their PEPSE treatment due to inability to tolerate the side effects. There was also a poor post PEPSE HIV testing rate.
The recommendation, after the audit, was to provide counselling support for the patients starting on PEPSE, just like it is done for HIV positive patients.

P72

Early results of a regional HIV network; sharing information and comparative data improve clinical outcomes

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Background: BASHH regional networks of HIV/ GUM consultants provide an opportunity to collaborate on improving the regional quality of care for HIV patients. In this respect, summarising HIV centres' clinical outcomes assist each centre to improve their protocols and policies. We report on the early impact of one regional HIV network on the clinical outcomes of HIV patients.
Methods: after selection of the members of the region's HIV group, the members proposed the clinical outcomes that should be monitored across the region to all members. Targets for the accepted clinical outcomes were selected based on BHIVA guidelines. Where published targets were not available, regional target based on consensus amongst all consultants were chosen. Public Health England (PHE)'s epidemiology office in the region analyse data from SOPHID reports of each HIV center annually. The reports contain information on all HIV centres, and the regional averages for the network's clinical outcomes. Results for each outcome are calculated on intention to treat analysis where absence of data is considered as failure for that outcome.
Results: Twenty of region's HIV centres participate in HIV network and look after 4,905 patients; 96% of region's HIV patients. Overall, 81% of patients accessing HIV care at participating centres in 2012 were receiving antiretroviral therapy (ART) – an increase from 76% in 2011. This included 86% of patients with a last reported CD4 cell count less than 350 cells per μL, compared to 78% in 2011. Similar to 2011, 84% of patients on ART for at least 6 months had a viral load of less than 50 copies per mL.
Conclusion: Early results of our HIV network suggest that sharing information on clinical outcomes between centres has been beneficial and has resulted in improvement of some of the clinical outcomes. With improvement in clinical protocols in HIV centres, further improvements can be achieved.

P73

Telephone follow-up for epididymo-orchitis and pelvic inflammatory disease

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Background: BASHH guidelines suggest 2 week follow up for all individuals diagnosed with either pelvic inflammatory disease (PID) or epididymo-orchitis (EO). This follow up consists of determining that partners have been notified, symptoms have resolved and that patients have abstained from sex. We audited attendance and documentation of outcomes over a 3 month period. 92 cases were identified. Following the results, our innovation was to provide follow up by booked telephone consultation using a proforma to collect relevant information. Here we present the audit of telephone clinic outcomes against the baseline audit.
Methods: The proforma design was based on the information suggested by BASHH guidelines, with an additional score to assess convenience of telephone clinic. Patients with a C5A diagnosis were offered a choice of telephone or face-to-face follow up. Exclusion criteria were severe C5A diagnosis and inability to communicate in English. After three months the telephone clinic was audited.
Results: 135 cases were coded as C5A, of which 102 (75%) cases notes were retrievable and coded correctly for the interval being examined. Baseline mean age was 24.5 years, re-audit was 26. Gender split was 38% male/ 62% female at baseline and 43% male/ 57% female at re-audit. We audited the rate at which an outcome was recorded for each of abstaining, partner notified and symptoms resolved, as well as the actual outcomes
The DNA rate was 3% lower in the telephone follow up however the documentation of outcomes was much improved with the follow up proforma. The cases with documented answers to abstaining from sex were 18% higher, the record of whether a partner had been notified was 16% higher and recording whether symptoms had resolved was 8% higher.

	Baseline			Telephone follow up		
	Yes	No	No record	Yes	No	No record
Abstained	63%	4%	33%	82%	3%	15%
Partner notified	42%	8%	40%	64%	6%	30%
Symptoms better	54%	23%	23%	82%	3%	15%

27% needed to be recalled to clinic based on their telephone answers. 25 patients (76%) patients gave a convenience score out of 10, the mean was 9.3.
Conclusion: The telephone follow up is feasible, effective, has improved documentation and is convenient for patients. The DNA rate was reduced in the telephone clinic.

P74

A shot in the dark – will outreach STI and HIV testing work in Newcastle saunas?

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Background: Encouraging those at high risk of HIV to be tested is a priority for tackling STIs and HIV. Rates of HIV testing have increased however there are groups who do not access "traditional" services for testing and who may remain at risk through high-risk behaviours. NICE guidance recommends expanding HIV testing into non-traditional settings, taking testing to individuals at higher risk in venues where sexual activity is happening.
Point of care testing (POCT) has been available at Newcastle sexual health service and for the past 6 years at MESMAC. An evaluation of POCT service found over 60% of men tested had had unprotected sex in the previous year. Since 2002, when syphilis cases started to rise in the local MSM community, sexual health staff have recognised saunas as venues where high risk sexual activity and transmission of infections occurred. Engaging with the venues and their clients had been difficult due to lack of POCT, but given the success of its use in sexual health and MESMAC services, a pilot project for outreach work in these venues was proposed.
Methods: The project to offer testing for HIV and STIs in saunas in Newcastle was established in May 2013. Sessions were run in the two city centre saunas; staff from the local sexual health service and MESMAC offered full STI & HIV screen and sexual health promotion advice. Demographic and risk behaviour information, including previous STI testing, was collected and attendees completed an evaluation form.
Results: Since May 2013, 9 sessions have been completed and 79 men offered STI and HIV screening. The age range of those tested was 18 – 73 years. 96% were white British. 70% described themselves as gay, 16% bisexual and 6% heterosexual. 72% had had a previous STI screen, although in 26% of those previously screened it was over 1 year ago. 22 (28%) individuals had never had a sexual health screen. Two cases of chlamydia, 3 of dual-infection with chlamydia and gonorrhoea and 3 of syphilis (old, treated infection) were detected. No new diagnoses of HIV were made.
Conclusion: This pilot has been effective in reaching men who had not previously accessed sexual health services or been tested for HIV or STIs. The outreach clinics have been well attended and feedback from users is positive, particularly valuing the convenience and confidentiality of the service.
We hope to continue the work with saunas and identify other opportunities for outreach STI and HIV testing work with high-risk groups.

P75

Development and evaluation of an innovative sexual wellbeing service: novel joint psychology and physician assessment for patients presenting with psychosexual difficulties

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Aim: To outline an innovative model of assessment of male and female sexual dysfunction in an inner London sexual health service.
Background: Over a third of patients attending outpatient sexual health services report problems with sexual function. Patients presenting with psychosexual difficulties have historically followed a patient pathway with lengthy waits for a series of appointments with clinicians as part of their assessment and diagnosis. This model resulted in multiple clinic visits and patients repeating intimate details on a number of occasions. 18 months ago we implemented a new service model whereby patients are seen jointly for assessment and consultation by a consultant GUM physician and a clinical psychologist. As well as from "in-house" referrals are received from primary care, other GUM clinics and other medical specialties. Initial consultation in the Sexual Wellbeing Service includes assessment, psychoeducation and a management plan. A physical examination is also conducted, in the female sexual wellbeing clinic, the psychologist is present for this. The service was assessed for patient satisfaction to explore the acceptability and utility of seeing two clinicians at the same time.
Method: Patient satisfaction data through a self-reported one page questionnaire was administered to 15 female patients and 11 male patients.
Results: Female patients consistently reported a high level of satisfaction with the service (average 4.3 on 5 point Likert scale) and valued the usefulness of attending a joint clinic. Male patients reported high levels of satisfaction (average 4.6 on 5 point Likert scale) and 94% stated they would definitely recommend to a friend.
Discussion: In line with recent professional standards, our patients benefit from a close MDT model of care. They are able to discuss physical and psychological aspects of their difficulties within one appointment facilitating understanding of a range of biopsychosocial precipitating and maintaining factors. As well as high patient satisfaction, outcomes have included improved team communication and sharing of knowledge around the biological-social-psychological models of sexual wellbeing. An MDT meeting has been developed to discuss difficulties any member of staff has encountered. Other benefits include joined up patient resources and strengthening of inter-professional links with cross-over of skills and knowledge between medical and psychology staff.

P76

Think U know? Think again: tailoring services for young people

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Introduction: Service evaluation is essential for tailoring provision. Despite bearing the greatest burden of sexual ill health, young people (YP) are often challenging to engage and may appreciate more innovative evaluation strategies.
Method: In partnership with a local youth organisation, we undertook a triphasic service evaluation designed to assess and improve our dedicated YP service. Traditional paper patient satisfaction surveys (PSS) and informal group debates (GD) in the waiting area were employed over a four month period, culminating in a more labour intensive concept, a youth forum (YF) in December 2013.
Patients were invited to complete a PSS, supported by a youth worker who encouraged GD from which key points were recorded. The YF was advertised throughout our YP service, promoted as an evening of *education & debate*. The evening was divided into: sex & relationship education, workshops delivered by partner organisations, graffiti board comments, competitions and debates on current and proposed service provision. Local businesses sponsored the event, enabling us to provide prizes, goodie bags & refreshments.
Results: In total 342 YP visited the service with 65 PSS completed (19% return rate). Overall, YP were happy with the service. The majority (91%) agreed the service met their needs and 97% said staff were helpful & friendly but there were few freetext suggestions for improvement. The GDs were useful in revealing the major barriers to attendance: embarrassment, stigma & lack of education. All users were invited to attend the YF. In total 38 tickets were issued and 14 YP attended (12 female). Of these, 11 attendees demographically similar to other service users with 63% being from a non-white background, 4 heterosexual, 1 MSM, 1 bisexual and 2 not sexually active completed an evaluation. Feedback was richer, detailing: service improvement, clinic layout & decor, timing, advertising, internet and social media.
Conclusion: With increasing demand and public choice it is essential that services are attuned to the needs of their local population.. Although small numbers attended, the GDs and YF proved to be the most fruitful method of data collection providing a forum for the capture of more qualitative data to assist future service design.

P77

Patient satisfaction questionnaire in a specialist clinic for HIV-infected adults over the age of 50 years

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Background: The HIV population is ageing and it is estimated that by 2015, more than 50% of HIV-infected individuals will be over the age of 50. A dedicated specialist clinic for HIV-infected adults over the age of 50 was established in January 2009 and to date it has seen 520 patients. Quantifying patient satisfaction has emerged as an important tool in monitoring performance and improving services. To evaluate the patient experience in our over 50 clinic, we conducted a patient satisfaction questionnaire based on a validated questionnaire designed for use in HIV clinical trials.
Methods: Patients who have been seen in the clinic between October and December 2013 were invited to complete the questionnaire. The latter utilised the Likert scale with questions regarding whether: i) they felt comfortable being referred to the clinic; ii) the aims of the clinic was clear; iii) they felt able to ask questions; iv) they would be happy to recommend the clinic to others; v)they were satisfied with the clinic.
Results: 25 questionnaires were handed out and returned, demonstrating a response rate of 100%. 16 patients (64%) strongly agreed and 8 (32%) agreed that they felt comfortable being referred to the clinic; 1 (4%) patient disagreed with the statement. 17 patients (68%) strongly agreed and 7 patients (28%) agreed with the statement that they felt able to ask questions. 1 patient (4%) neither agreed or disagreed with the statement. 16 patients strongly agreed and 8 patients (32%) agreed that the objectives of the clinic were clearly explained. 1 patient (4%) neither agreed or disagreed with the statement. 17 patients (68%) strongly agreed and 8 patients (32%) agreed that the follow up arrangements were clearly explained. 19 patients (76%) strongly agreed and 5 agreed (20%) that they would be happy to recommend the service to other people. 1 patient (4%) neither agreed or disagreed. 18 patients strongly agreed and 6 patients (24%) agreed with the statement that they were overall satisfied with their clinic experience. 1 patient (4%) disagreed with the statement.
Conclusions: The survey emphasised overall patient satisfaction with the service. It is a useful tool in planning further service development using patient involvement.

P78

A comparison of survey methods to measure patient experience in a sexual health setting

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Background: Increasingly satisfaction surveys are used as a qualitative measure for patient experience. Historically, data has been collected using a paper based method, during their clinic attendance. Is this method the most effective?
Methods: Patients attending the local sexual health service were asked whether they wanted to participate in a patient survey focussing on their experience of their journey through the clinic. Specifically they were asked whether they wanted to complete the survey via a paper based method, via an

online survey or via their own email. Clear information about accessing the online survey was given either via a web based link address or via an email link sent to an address of their choice. These methods were ratified by the Trust's Information Governance team.
Results: During the month patients were surveyed, **40/348 (11%)** chose to complete a paper based survey, **38/348 (10%)** gave permission to send an email. **9/38** of the email addresses given by the patients were incorrect. **6/348 (2%)** completed the survey via email and **1** completed the online survey. In contrast, a recent Trust led paper based patient satisfaction survey conducted in the clinic, over a period of one week, was completed by **58/85 (68%)** attendees.
Conclusion: Paper based surveys completed by patients during their attendance, proved to be a more succesful way of collecting data. Using email as a form of communication proved less effective, due to inaccuracies of patient self completed email addresses and a poor response to email requests sent out by the service. A shorter collection period with fewer choices of survey method appeared to have an improved uptake.

P79

Positively UK's peer support service – an HCP perspective

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Background: Positively UK provides peer led support to over 1,000 people each year through information, mentoring, guidance, advocacy, groups and workshops. Our aim is to improve the physical, emotional and social well-being of people living with HIV. This research was designed so we could understand more the role of Positively UK's peer-led service and how it might complement clinical care. Having already collected data from service users we wanted to find out the perception of this service from HCPs from the 10 London Clinics that host Positively UK's peer support outreach workers
Methods: An online survey was emailed to HCPs that work in the 10 London clinics that currently offer Positively UK's peer support. In total 9 HCPs responded from 8 different clinics
Results: On average 5.9 people living with HIV access Positively UK's peer support service, every week, per clinic that responded. This is out of an average of 257 that are seen each week.100% of the respondents (HCPs) said they believe Positively UK's peer support significantly (40%) or very significantly (60%) improves well-being. This result correlates with the service user results that showed a statistically significant improvement in well-being ($p \leq 0.01$) using the validated Warwick-Edinburgh Mental Well-being Scale (WEMWBS) 100% said that peer support complements clinical care (60%-extremely complementary, 20%-very complementary and 20%-quite complementary). 60% said that peer support significantly and 40% considerably improves understanding and management of HIV (table 1).

How much do you think Positively UK's peer support improves the following?	Significantly	Considerably	Moderately	Slightly	Not at all
Emotional well-being	40%	40%	20%	0%	0%
Understanding management of HIV	60%	40%	0%	0%	0%
Understanding the virus and blood test results	20%	60%	20%	0%	0%
Understanding HIV treatments and adherence	40%	40%	20%	0%	0%
Enabling people to access all the HIV services needed	40%	40%	20%	0%	0%
Enabling people to talk to their healthcare team	40%	40%	20%	0%	0%
Enabling people to talk to others about their HIV	60%	40%	0%	0%	0%

Conclusion: Positively UK's peer support significantly improves well-being in people living with HIV. It also complements clinical care helping people understand and manage their HIV. Acknowledgements: This project has been supported by an educational grant from MSD and the secondment of A K Gilbert, researcher and employee of MSD

P80

HIV inpatient pathways in a large Inner London hospital

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Background: Re-organisation of specialist services has lead to the amalgamation and or closure of some HIV in-patient units. We looked at our in-patient cohort to determine how our service is accessed, which specialist services and investigations are utilised to support the retention of in-patient activity at our Trust
Methods: An inpatient journey pro-forma was designed to capture data examining all HIV admissions between November 2012 and March 2013. Data collected included demographics, viral load (VL), CD4 count, investigations completed during admission, ICD10 diagnoses and specialist referrals to other teams. Distance to the hospital was calculated using the patient's postcode.
Results: 88 patients were admitted during the 6 month study; 58 (65.9%) from A&E, 12 (13.6%) from the HIV emergency clinic and 14 (15.9%) via another specialty team.
The majority 83 (94%) of patients were already diagnosed with HIV prior to admission. 65/88 (74 %) were on HAART. 34/65 (52 %) had a VL < 200, median CD4 = 293 (3 – 1052) and 32/ 88 (36%) had a CD4 < 200.
Median length of admission was 6 days (1 -30). 87 (99%) were seen by a HIV specialist consultant within 24 hours of admission. 11 (12.5%) patients were admitted to ITU or HDU and spent an average of 9 days there. 10 patients (11.3%) required admission to a negative pressure room where they spent an average of 12 days.
46 /88 (53%) required urgent CT and 25/88 (28.4%) required MRI imaging. The time from ordering to completing the scan was calculated and will be presented. Referrals to specialty teams included 13 (14.7%) patients to Haematology; 9 (10.2%) to Cardiology and Neurology each, Respiratory saw 6 (6.8%) patients and the renal team 4 (4.5%).
Patients originated from the local area, to as far afield as Exeter. The majority, 61 (69.3%) patients lived within a 5 mile radius of the hospital; 30 (34.8%) lived within 2 miles.
Conclusion: Most patients are admitted via A&E, many living within a 2 mile radius of the hospital, meaning that this is their local A&E. 99% were seen within 24 hours by a specialist HIV consultant and had rapid access to specialist services and appropriate investigations.

P81

Assessing the accuracy of SHHAPT coding at the Marlborough Sexual Health Clinic and its financial implications

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Background: We assessed the implementation of Genitourinary Medicine Clinical Activity Dataset version 2 (GUMCADv2) focusing on Sexual Health and HIV Activity Property Type (SHHAPT) coding. The aim was to highlight the accuracy of coding at the Marlborough Sexual Health clinic in relation to the Public Health England guidelines. Additionally the financial implications of incorrect coding were analyzed in order to make appropriate recommendations.
Methods: All patients seen at the Marlborough Clinic between 17th and 21st September 2012 were included in this retrospective study. Marlborough Sexual Health Clinic episode lists from 17/09/12 to 21/09/12 were cross referenced with clinical information and coding on Lily and GUMCADv2 was referred to identify correct coding for each episode. The total cost for the initial clinical coding was then added to a spreadsheet with the correct GUMCADv2 SHHAPT coding and the difference in cost was calculated.
Results: In total 168 patients were seen between 17-19 September 2012 (Part one of the data set). All 168 patients had coded episodes on Lily. A total of 34 cases had incorrect coding and a breakdown of the results are as follows: 15 loss – £771.39, 14 gain – £790.08, 4 no cost difference, 1 no consultation. Overall, patients had between 1 and 5 codes allocated to each episode. The vast majority of cases were correctly coded as less than 20% of cases had incorrect coding according to the PHE guidelines. Roughly half of these cases had a positive cost implication and roughly half had a negative cost implication meaning that the overall cost differential was negligible however the importance of accurate coding is still significant.

Conclusion: The average patient episode had 2 codes and cost £121. Overall the Marlborough Clinic has been coding accurately with the vast majority of patient episodes (80%) having the correct cost implication. The most common coding errors are in relation to additional information being added to the episodes regarding patients (eg. H, P1B, B) or regarding services (eg. C11A, D3 - condoms, OCP). Although there was no significant cost difference when coding was correlated, valuable information about diagnosis and service provision can be added to the episodes. Particularly with regards to differentiation between commonly used codes such as D2B and D3.

P82

Sexual health outreach clinic in a deprived GP setting : A service evaluation

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Background: The number of sexually transmitted infections in the UK continues to rise. There remain many hard-to-reach who may not attend main stream sexual health clinics for STI screening. Rotherham is within the 20% most deprived areas in the country. An outreach sexual health clinic was set up within a GP practice within one of the most deprived areas of Rotherham.
Methods: A nurse-led out-reach clinic was provided once a week to offer comprehensive STI screening to asymptomatic patients. Patients were able to self refer, as were GP's within the practice. We aim to evaluate the service which has been delivered, identify the service uptake and numbers of infections.
Results: Between May 2012 and September 2013 62 sessions (4 hours) were provided. 67 patients were seen in total accounting for 76 attendances. 32 (48%) were male (two men who have sex with men), and 35 (52%) were female. 30 (45%) were British, 18 (27%) were of Eastern European origin, 16 (24%) were of Asian origin and 3 (4%) were of African origin. The median age was 32 years (range 14-75)
26 (39%) of patients reported symptoms and were therefore referred to the GU clinic. Of the 67 patients seen, 52 tests for Chlamydia trachomatis (CT) and Neisseria gonorrhoea (GC) tests were performed. 41 HIV and Syphilis tests were performed. 25 Hepatitis B and 23 Hepatitis C tests were performed.
Of 67 patients seen, 3/67 tested positive for CT, of whom one was also positive for GC. 2 patients were diagnosed with PID. 4/67 were found to be hepatitis C antibody positive, of whom one was already aware of this diagnosis. No-one tested positive for HIV.
Conclusion: Small numbers of STI's were diagnosed within this single GP practice. On average 1.08 patients were seen per session which is probably not the most cost effective use of time. This service review has provided us with important information to re-examine how we might alter how we deliver outreach services to more deprived areas within Rotherham.

P83

Responding to need: an audit of self-reported outcome measures of The Food Chain's service users

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Background: Good nutrition is essential for people living with HIV to support immunological function, and to mitigate the sequelae of HIV infection and its treatment. Barriers to good nutrition include ill health, poverty, limited nutrition knowledge and cooking skills and social isolation. The Food Chain aims to address these issues in order to help people living with HIV in London access the food, knowledge, skills and motivation needed to improve their nutritional status. All potential service users (SUs) are assessed by a dietitian who assesses dietary intake and offers a personalised nutritional care package (PNCP), designed to meet mutually agreed goals, which comprises one or more of these services: Grocery delivery, Meal delivery, Eating Together, a communal meal with discussions on HIV health and nutrition and Eating positively, a cookery and nutrition class. At the end of service, a final review is performed to evaluate whether outcome goals have been met, using service users' self-reported evaluation this data is recorded and reported to funders. This audit aims to discover to what extent the PNCPs have met service users' goals.
Method: Outcome data for five areas from 01/04/13 – 30/11/13 were evaluated. All outcomes rely on self-reported data at the end of service. Average time spent on service was 12 weeks.
Results:

Goal	Total	Goal achieved %		
		Yes	No	Not known*
Improved weight	157	54	24	23
Improved nutritional intake	206	63	17	20
Improved nutrition knowledge and skills	24	63	25	13
Improved financial situation	64	42	27	31
Improved interest in food	17	47	41	12
*service users unavailable for final review	**Average**	**52**	**27**	**22**

Discussion: Outcome goals were successfully met in the majority of cases, particularly in those goals that were specifically nutritional. The number of final assessments not completed may be due to SUs not wishing to participate in a final review as their service package draws to an end. Self-reporting may introduce some bias in underplaying progress in the hope of continuing on service. Factors out-with the Food Chain's influence such as ongoing financial or health concerns may account for goals not being met. We conclude that The Food Chain is effective in achieving its aims. We need to explore ways of ensuring that final assessments are completed. Further research is needed to elucidate reasons for those goals not met.

P84

"Not enough HIV stories!": Staff reactions to a UK sexual health reality TV series

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Background: Mass media have influenced sexual health seeking behaviour by engaging viewers through identification of characters and dramatic storylines. Such entertainment-education programmes now include reality TV series where genuine patient stories are presented in dramatic style. What do sexual health clinic staff feel about participating in such programmes?
Our GU Medicine service featured in a BBC3 reality television show: "Unsafe Sex in the City" (Firecracker Films plc), broadcast from October to November 2013. Prior to the production of the programme concerns were raised by staff regarding threats to patient confidentiality, patient exploitation and service disruption. We aimed to assess whether these fears were realised and analysed the broadcast in terms of portrayal of our service, educational and entertainment value, and impact on patient care.
Methods: Questionnaires were distributed to medical, nursing and administrative staff after the programme broadcast period (December 2013).
Results: 22 of the 70 staff (31%) responded. 18 (82%) agreed that featured patient stories were typical of our clinic attendees. 21 (95%) felt our staff came across as professional and caring. 17 (77%) found the programmes entertaining and 11 (50%) found the programmes informative. 5 (23%) found the programmes were embarrassing. 14 (64%) felt the programme reflected our work accurately and 17 (77%) felt the programme was beneficial to patient care. 18 (82%) agreed that the programme would encourage more of the public to use our services.
Conclusions: Our experience suggests that participation in reality television is acceptable to staff in sexual health services, and we agree that effective sexual health promotion can be delivered via this easily accessible source. Careful co-operation with programme makers enables sexual health clinics to be portrayed accurately. This raises awareness of our work which can help overcome barriers to, and increase uptake of, sexual health services.

P85

Survey of PEPSE management in GUM, ID and A&E departments in North East England

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Background: Post Exposure Prophylaxis following Sexual Exposure (PEPSE) to HIV is increasingly being offered and accessed by patients. A survey of A&E, GUM and ID was conducted to assess if PEPSE was prescribed appropriately according to the BHIVA/BASHH 2011 guidelines.
Method: A questionnaire including case scenarios was sent to lead consultants in A&E (9), GUM (7) and ID (2) departments in North East England in August 2013. Survey questions asked indications for prescribing PEPSE; who assessed PEPSE; tests performed prior to its commencement and follow up arrangements.
Results: All GUM departments responded, whilst only 33% of A&E and 0% of ID did. Of those that responded, 66% of A&Es and 100% of GUM departments were aware of the BHIVA/BASHH 2011 guidelines. None of the A&E departments actively promoted PEPSE whilst 29% of GUM departments advertised PEPSE and 86% informed their HIV positive patients of PEPSE. None of the A&Es departments undertook point of care tests (POCT) for HIV prior to prescribing PEPSE and only 66% sent a laboratory HIV test. In contrast, 43% of GUM departments performed a POCT (4th generation) and 100% sent laboratory HIV tests. 66% of A&Es undertook baseline FBC, U&Es and LFTs compared to 100% of GUM. Only 33% of A&Es performed Hepatitis A, Hepatitis B and syphilis serology, while none tested Hepatitis C serology. 100% of GUM departments performed a full blood borne virus and syphilis screen. Regarding immunity to Hepatitis B, 33% of A&Es said they would routinely assess if the patient would benefit from vaccination compared to 100% of GUM departments. In the clinical scenarios involving PEPSE for HIV discordant patients who had unprotected insertive anal, insertive or receptive vaginal sex and fellatio with ejaculation with a patient with an undetectable HIV viral load, 66% of A&E departments said they would offer PEPSE whilst 100% of GUMs would not.
Conclusion: It is not clear from the survey why there was such a poor response from A&E but this may be due to this not being a priority. The reason for IDs poor response is unknown. Of the small proportion of A&E departments who replied, it is clear that PEPSE is overprescribed and the BHIVA/BASHH guidelines are not always followed. GUM departments do follow PEPSE guidelines and prescribe appropriately. The results of this survey suggest that GUM, A&E and ID departments should develop local care pathways for patients requesting PEPSE.

P86

A reaudit: Are the newly diagnosed patients within the South Essex District Hospital receiving timely HIV specialist care?

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Background: The British HIV Association (BHIVA) recommends that newly diagnosed HIV patients should be seen at a specialist HIV service within 2 weeks of a first positive HIV test.Prompt referral will allay anxiety and stigma associated with a new HIV diagnosis and identify those who are severely immunosuppressed.The first audit conducted in 2009 concluded that 40% of newly diagnosed patients were seen within 2 weeks. A new clinical referral pathway was designed.
Aim: A reaudit to determine the proportion of patients seen by the HIV care team within 2 weeks of first positive HIV test and to determine factors associated with delay.
Method: Demographic and retrospective data was gathered from GUM and HIV case notes and electronic records from Aug12-Jul13.Patients transferring their care were excluded.
Results: 21 patients were identified,age range 20-68 median 33.The number of newly diagnosed patients seen by the HIV team within two weeks improved from 40% to 52%(11 patients).The time delay for the remaining 10 patients was split into date of test to date of referral and date of referral to date seen by the HIV team.The majority of the delays were in the test to referral time (range 12-45 days,median 15.5 days).3 patients were seen > 7 days after referral.

Referral	No. patients	%seen in 2 weeks	Range-days	Median-days
Ward	3 (11)	100 (100)	1-5	2
OPD	2 (8)	50 (37)	5-21	-
GP	4 (10)	50 (20)	7-45	15 (23)
SHC	12 (24)	42 (21)	0-56	15.5 (39.5)

Table 1 illustrates the time it took for patients to be seen according to referral source.The numbers in brackets are from the initial audit.The majority of new HIV diagnoses came from GUM clinic and yet only 42% of patients were seen within 2 weeks.A review of patients not seen within the 2 week period has identified the following reasons for delay:difficulty in contacting patients, failure to attend,declined follow up,delay in GP referral, delay in patient attending for confirmatory test and poor documentation.Case notes review by the HIV specialist nurse concluded that some of the delays were potentially preventable even with patient factors excluded.
Conclusion: The time to referral from the date of diagnosis has improved since the introduction of a clinical referral pathway.Further improvement can be made by addressing causes of delays especially amongst patients diagnosed in GUM clinic e.g initiating referral before getting the confirmatory test result.The current clinical referral pathways will be revised based on the reaudit recommendations.

Age, Gender, and Migration-related Issues

P87

Between the Sheets: a patient-steered project identifying unmet needs of women living with HIV

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Background: More than 24,000 women received HIV care in the UK in 2011. Local women living with HIV (WLHIV) expressed needs that were not being met during routine clinic visits. 3 WLHIV became motivated to form a focus group with an HIV community specialist nurse. From this group evolved a project named Between the Sheets. Its aim was to supplement routine outpatient care by gathering WLHIV for peer support and educational sessions with a focus on HIV and personal relationships. The focus group organised the first one-day women-only event in December 2012.
Methods: All WLHIV known to community services were invited to the first event. Questionnaires formulated by the focus group were distributed before and afterwards. The baseline questionnaire asked about feelings on sexual relationships, HIV status disclosure, HIV transmission risk and experiences of abuse and violence. Repeat questionnaires asked for feedback on the event. We report the unmet needs of WLHIV identified by this project.
Results: 67 women attended the Between the Sheets event. Positive feedback was given by 96% who largely agreed that the event addressed an unmet need. Pre-event questionnaires were completed by 29(43%) women. 12(41%) were black African, 9(31%) white British. 14(48%) did not know where to access post-exposure prophylaxis, screening for sexually-transmitted infections or emergency contraception. A change in sexual behaviour since HIV diagnosis was reported by 20(69%). Half of women felt no confidence in negotiating safe sex and 14(48%) found it difficult to disclose HIV status to partners. Disclosure occurred just before intercourse in 17(59%) and 19(66%) wanted more support with disclosure. Viral load did not affect sexual behaviour in 12(45%). One woman reported possible non-disclosure to casual partners since her viral load had become undetectable. Violence or abuse as a result of HIV status was experienced by 13(45%) women.
Conclusion: WLHIV have needs that can be further explored and supported outside of the clinic setting. The first Between the Sheets event was innovative and acceptable to patients. Clinicians play a vital role in identifying these needs which may not be easily managed during clinic visits. Highlighting open access to sexual health screening and directing women to local support groups where available is vital. This project is ongoing and demonstrates willingness of WLHIV to be involved in development of HIV services.

P88

A qualitative survey of attitudes towards HIV among providers of community care

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Introduction: The majority of those infected with HIV are now expected to reach older age. Aging is associated with illness and disability. Dependence on others to provide care in older age raises concerns regarding discrimination and isolation. There is a need for preparedness of community services to provide care.
Aims: The survey sought to describe the feelings and concerns of potential carers of older people living with HIV in a community care setting; understand the extent to which these may impact care provision; assess basic knowledge regarding HIV transmission and treatment; and identify specific areas where intervention may help improve practice.
Methodology: A mixed-methods survey, by interviews and questionnaires, of attitudes and knowledge towards people living with HIV (PLWH), was conducted among healthcare workers from care home and domiciliary services from May to July 2013.
Results: 18 care home and 7 domiciliary supervisory staff were interviewed; 104 care home and 13 domiciliary staff completed the questionnaire. Only 22/117 (18%) answered correctly all questions about transmission by sexual and household contact. While the majority of services and respondents said that they would agree to care for people with HIV, concerns were expressed regarding the ability to care adequately for the emotional and physical needs, and of HIV transmission from carer contact.
Conclusion: This study, the first in the UK to explore attitudes among providers of community nursing care to PLWH, highlights varied levels of knowledge about HIV and mixed attitudes towards care provision. The majority of respondents were willing to provide care, but a minority had serious misgivings. A training intervention to provide more up-to-date information on risk, treatment and attitude shift strategies is planned.

P89

The changing age of genitourinary medicine clinic attendees and the infections they present with

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Background: Anecdotally, genitourinary medicine (GUM) clinics are seeing an older demographic of patients and sexually transmitted infection (STI) rates are increasing in the older age groups according to Public Health England data. We aimed to identify changes in age trends of clinic attenders and the infections they had, in our cohort.
Methods: Data were analysed for all patients attending a large city genitourinary medicine (GUM) clinic for a STI screen from 2004 to 2013 using KC60 and Sexual Health and HIV Activity Property Type (SHHAPT) codes. Numbers and rates of first episode anogenital warts, chlamydia, gonorrhoea and primary genital herpes were evaluated in addition to whether an HIV test was undertaken.
Results: A total of 157423 episodes of sexual health screening were recorded in the 10-year period with variation from 14554 in 2004 to a peak of 17191 in 2008 back to a similar 14919 in 2013.
During the time period there was a significant decline in under 25 year olds attending and a corresponding rise in all age groups over 25 years old.
Mean age went from 26.2 years old (2004) to 28.0 years old (2013). Median age increased from 21 (2004) to 26 (2013).
HIV test uptake increased from 42% in 2004 to 62% in 2013.
There were a total 15548, 14246, 2696, 3994 cases of warts, chlamydia, gonorrhoea and herpes respectively.
An overall fall in prevalence of chlamydia from 15% to 8% from 2004 to 2013 was driven by the 16-25 year age group who fell from 19% to 11%.
Gonorrhoea prevalence fell similarly from 2.7% to 1.5%.
A smaller drop in incidence of warts is not confined to any age strata.
A significant rise in genital herpes from 205 cases in 2004 to 494 in 2011 is universal to all age groups.
Conclusions: There have been significant changes in the age of patients attending the clinic as well as changing rates of infections. The fall in under 25 year olds may coincide with the opening of a young persons (Brook) clinic in the area or the expansion of the chlamydia screening programme.
The increase in the older age group may represent previous unmet need or changing sexual behaviour or societal norms as whole.
It is reassuring to see a decrease in chlamydia and gonorrhoea prevalence.
Due to difficulties in data collection it was not possible to split analysis on sexual orientation which may show further insight.

P90

Migrant populations: findings from an inner-city London cohort

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Background: The prevalence of HIV continues to steadily increase in the UK. One group particularly at risk are migrant populations. The aims of this study were to assess whether newly diagnosed UK born patients are presenting later compared to non-UK nationals and to determine which migrant populations are at highest risk of late presentation to inform targeted HIV testing strategies in these high risk populations.
Methods: Patients attending for HIV care in 2012 were included and demographics including country of birth, CD4 count at presentation and time to starting cART collected. Patients with no CD4 data were excluded from analysis.
Results: 2,374 patients attended for HIV care during 2012, of which 2,172 had baseline CD4 counts. Overall, the median CD4 at diagnosis was 300 cells/mm^3 (IQR 134-482). There was no difference between sexes. Median CD4 was significantly lower for heterosexual males and females compared to homosexual men (268 vs. 364 cells/mm^3, p=<0.001). 45% were of African origin, 35% UK, 10%, European, 6% Caribbean with the remainder from the Americas (3%) or Asia (2 %). Two thirds of the cohort reported heterosexual behaviour with only 2 of 769 (<1%) females reporting same sex behaviour. 82% of UK-born men were MSM compared to 8% of African origin; 90% of those from the Americas, 76% of European and Asian men were MSM, and 49% of Caribbean men. Median CD4 at diagnosis of UK-born patients was significantly higher than non-UK born (367 vs. 273 cells/mm^3, p=<0.001), as was with European born versus non-European patients (372 cells/mm^3 vs. 248 cells/mm^3, p=<0.001). Median CD4 counts were significantly higher for Eastern vs Western Europeans (497 cells/mm^3 vs. 367 cells/mm^3, p=0.008). The median CD4 of those born in Africa was 229 cells/mm^3 (IQR 100-395), with higher proportions of late presentation vs. UK-born patients (<350 cells/mm^3- 70% vs. 47%, p<0.001; <200 cells/mm^3– 43% vs. 27%, p=<0.001).
Conclusion: Non UK born patients present to our centre with significantly lower CD4 counts than UK born patients, with non-Europeans, particularly Sub-Saharan Africans presenting latest. Interestingly those of Eastern European origin presented with the highest CD4s, though numbers were comparatively small. This study reinforces the health inequalities met by migrant populations, the need for continued health promotion and targeted HIV testing in these groups, particularly in those born in non-European countries.

P91

Identification and characteristics of vulnerable adults attending an inner city sexual health service

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Background: The 2013 Abuse of Vulnerable Adults in England provisional report stated that 173,000 safeguarding alerts were reported for vulnerable adults in England in 2012. We aimed to describe the characteristics of vulnerable adults attending our inner city sexual health clinic, in order to improve recognition and management of this group
Methods: We performed a retrospective audit of adults identified as "vulnerable" by the staff member seeing the patient over a 6-month period. Data on demographics, reason for attendance, reason identified as vulnerable and safeguarding concerns were collected. Data were analysed using SPPS version 22.
Results: During this time, 46 patients were identified as vulnerable. Median age was 32 years (range 18-87), 78% female; 28% White British, 48% Asian,

13% Chinese. 87% identified as heterosexual, 7% homosexual. 78% lived locally; 16% in social housing, 2% were homeless. 21% had existing support arrangements via other agencies: 9% mental health care, 7% a key worker, 5% an IMCA.
15% were first attendees to sexual health services. 60% attended alone, 23% with a key worker, 11% with family. Reasons for attendance were as follows: 74% sexual health concern, 13% contraception, 2% pregnancy concern, 11% following sexual assault. 13 patients (28%) had a positive STI result.
14 patients (31%) were independently recognised as vulnerable by the health care professional; of these 9 were distressed, 3 displayed communication difficulties, 1 was an inpatient and 1 was elderly. Of the remainder, vulnerability was disclosed by the patient, via a referral or their accompanying party in 17 (37%), 6 (13%) and 2 (4%), respectively.
Of the total group, 26 (57%) reported a mental health history. 4 (9%) disclosed alcohol excess, 5 (11%) illicit drug use; 3 (7%) felt this affected sexual choice. 8 (17%) reported feeling pressure to have sex. 16 (35%) disclosed non-consensual sex, 4 (9%) had been paid for sex. 8 reported domestic violence (17%). 8 (17%) were seeking asylum and 1 disclosed forced marriage.
Conclusions: Our results show a significant vulnerable adult population attend our service, some being identified as vulnerable for the first time. They display well-noted, unifying risk factors for vulnerability, alongside the emerging and less-recognised themes of migrant groups and asylum.
These data highlight the importance of developing clear pathways in sexual health clinics to identify and appropriately manage adults at risk of harm or exploitation.

P92

An investigation into whether adolescent sexual health care provision is improved by the integration of Genitourinary Medicine (GUM) and Sexual and Reproductive Health (SRH) services

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Background: There is a current drive in the UK to combine the provision of Genitourinary Medicine (GUM) and Sexual and Reproductive Health (SRH) services; such integration occurred in our health board in 2011. Prior to this, we had undertaken a study at the separate stand-alone clinics, comparing the reasons patients <16 accessed these services and the quality of care provided. This revealed, among other results, that screening for sexually transmitted infections (STIs) was low at the SRH clinic, while contraception provision was poor at the GUM service. Following integration of services we repeated the study to assess any change in the reasons patients <16 attended and the quality of adolescent sexual health care provision.
Methods: A retrospective case record review was conducted for all patients aged <16 years attending the integrated service between July 2011 and December 2012. We reviewed patient demographics, referral pathway, reasons for attendance, risk factors for poor sexual health, care provided and test results. As the study criteria remained the same, we directly compared our results with those of the previous study which looked at the separate GUM and SRH clinics.
Results: Over the 18-month study period, 208 episodes were recorded, involving 189 patients; the majority were white heterosexual females, aged 14 or 15 years. There was an even mix of GUM and SRH primary reasons for attending the integrated service (40.4% GUM vs. 44.7% SRH) but an increased number of attendances with dual primary reasons (10.6%) compared to the previous study. The number of patients reporting alcohol and drug use (21.6% and 1.4% respectively) is lower in integrated clinic than the previous separate clinics as is the number of patients who report always using condoms (14.9%). Prior to integration, 2.8% of female patients attending the GUM clinic were commenced on contraception; the comparable rate in the integrated service (those females who attended with a primary reason which was STI-related) is 21.9%. In our study, 51.2% of applicable adolescents attending the integrated service for contraception-related reasons received testing for STIs, compared to 30.3% at the SRH clinic.
Conclusions: Our data shows that, in the combined service, adolescents are being considered for necessary sexual health care treatment and interventions beyond their primary reason of attendance; results are an improvement from the care offered by the previous stand-alone services.

P93

The relationship between migration and HIV risk in north India

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Background: Circular migrant workers are at increased risk of HIV acquisition and can act as a bridge population for onward HIV transmission if they remain undiagnosed or untreated. In India this group is targeted with HIV awareness programmes coupled with free HIV testing and treatment. However the risk-taking and health-seeking behaviour of migrants is influenced by a complex and multi-level set of factors which need to be understood in order to design programmes most effectively.
Methods: Qualitative interviews were conducted with 21 migrant men and 9 wives of migrants from two high out-migration villages, and 33 HIV-positive men and women with a history of circular migration (personally or via their spouse) recruited from an antiretroviral therapy (ART) centre in north India. Interviews were conducted in Hindi and transcribed into English. Data were analysed using Framework.
Results: We examined risk at three points along the migrant life course: HIV acquisition, HIV diagnosis and ART registration, and long term HIV management. HIV acquisition risk was embedded within the conditions of migrant work as much as individual behaviours, and varied by destination. Some men appeared to be at risk from one-off sexual encounters while others established longer-term associations with paid or unpaid, female or male partners.
Following infection, migrant men were generally diagnosed very late as a result of job insecurity and poor access to appropriate healthcare at destination, alongside their felt need to continue working until they developed debilitating symptoms.
After enrolment within ART services, HIV had made it difficult to migrate for work again. Late diagnosis left them feeling weak, and the prescribe regime, requiring a healthy diet, timely pill-taking and monthly visits to the ART centre, was difficult to combine with migrant work. Local rural-based employment was scarce and poorly paid making their livelihoods insecure, and threatening their HIV prognoses in the long term.
Conclusion: Expanding free testing and treatment may benefit migrant workers marginally. The broader social, economic and political context of migrant work reveals how risk is created and reproduced. An explicit understanding of these issues must inform HIV programmes targeting vulnerable groups such as migrant workers.

Basic Science, Immunology and Virology

P94

Assessment of viral diversity during viral rebound in a HIV-1 elite controller

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Background: HIV-1 elite controllers are a group of patients with sustained HIV RNA <50 copies per millilitre (c/ml) of plasma without the need for antriretroviral therapy. Although immunological associations of control have been reported the potency of the response has not been assessed.
Methods: We had the opportunity to obtain these data following a 51 year old HIV positive patient with multiple myeloma. This patient went on to subsequently lose and regain control of his HIV infection following melphalan administration immediately prior to an autologous stem cell transplant (ASCT). We used an in-house plasma RNA viral load method, quantitative total DNA real time PCR, single genome amplification of *env*, bulk sequencing of V3 loop, *gag* and *pol* and *in vitro* co-receptor phenotyping to assess the viral diversity during the first and second rebound. Antiviral activity of autologous $CD8^+$ lymphocytes and neutralising antibodies (NAbs) were also assessed.
Results: Viral rebound in this patient occurred and was first measured at day +6 following ASCT. The peak viral load of 28,000 c/ml subsequently decayed in two phases with a half life of 0.71 and 4.1 days returning to <50 c/ml within 40 days. Quantitation of total DNA showed a similar pattern of rebound to plasma RNA with a peak viral load of 127 copies / $1x10^6$ PBMC. These results corresponded to the ablation and re-population of white cells. Single genome amplification and *in vitro* phenotyping of emerging viruses demonstrated limited *env* diversity and classified them as R5 tropic with poor replication in

macrophages. Autologous $CD8^+$ lymphocytes exhibited strong antiviral potency, whereas NAb titres were low/absent.
Discussion: Here we present the first human data demonstrating an association between depletion of peripheral lymphocytes and subsequent virus reactivation and rebound. Regain of viraemic control was associated with potent $CD8^+$ lymphocyte response.
[BHIVA Research Awards winner 2012: Sarah Watters]

P95

Factors associated with detectable HIV-1 RNA in cerebrospinal fluid

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Background: Cerebrospinal fluid (CSF) HIV RNA is often assessed in HIV-positive patients presenting with neurological symptoms. We evaluated factors associated with detectable HIV-1 RNA in CSF in our cohort.
Methods: Data was collected on all patients undergoing assessment of CSF HIV RNA at an Inner London Hospital between January 2012 and July 2013. CSF viral escape was defined as a CSF viral load (VL) > 0.5 $\log_{10}$ copies/ml greater than plasma VL or >200 copies/ml where plasma HIV RNA was less than 50 copies/ml. The relationship between detectable CSF VL and CNS penetration effectiveness (CPE) score; and detectable CSF VL and plasma VL were assessed using Fisher's exact test. CPE was calculated using the 2010 CPE ranking.
Results: We analysed 47 CSF samples from 41 patients. 72% (34/47) had been on antiretroviral therapy (ART) for >6 months. Plasma VL was <50 copies/ml in 47% (16/34). Indications for CSF examination included headache 30% (14/47), confusion 19% (9/47), cerebellar signs 13%, (6/47), seizure 13% (6/47), and 25% (12/47) other reasons. 19 patients had CD4 count <200/μl.
CSF viral escape was present in 7/47 (15%) patients. All patients with a CPE score ≤ 3 had CSF viral escape.

CSF Virus	CPE score ≤ 3	CPE score >3
Undetectable	0	20
Detectable	5	13

Table 1. Presence of CSF virus characterised by CPE score (9 patients who were ART naïve or whose tests failed were excluded)

CSF Virus	Plasma VL <50	Plasma VL ≥ 50
Undetectable	14	9
Detectable	1	19

Table 2. Presence of CSF virus characterised by plasma VL (4 patients whose tests failed were excluded)

Conclusion: There was a statistically significant association between CPE score and detectable CSF virus (p=0.017) (Table 1). There was also a statistically significant relationship between detectable plasma virus and detectable CSF virus (p<0.001) (Table 2). CSF Predicted Tropism was determined in 4 patients. 3 were R5 tropic in both CSF & plasma. 1 patient was R5 tropic in the CSF but X4 in plasma and had different resistance profiles in the CSF & plasma. Only 1 patient with an undetectable plasma VL had detectable virus in CSF. That patient was on PI monotherapy. 4 patients were diagnosed with HIV encephalitis/encephalopathy. All 4 had CSF viral escape and were on protease inhibitor (PI) containing regimens. 3 patients were on PI monotherapy and all 3 had CSF viral escape. CPE score and plasma VL were significantly associated with detectable CSF virus. All patients with CSF viral escape were on PIs.

P96

Pooled HIV-1 RNA quantitation for monitoring patients on treatment: the impact of extraction methods

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Background: Regular sampling for plasma HIV RNA is recommended by BHIVA guidelines. Over 95% of our patients on ART have undetectable viral loads so pooling specimens may offer a cost-effective strategy for monitoring stable patients and contribute to the £20 billion efficiency savings targeted by the NHS by 2015. We aimed to determine the performance of pooling using two different extraction platforms.
Methods: Residual plasma samples from individuals who had HIV-1 RNA tests for routine care were selected. Minipools were created by pooling 4 undetectable samples or by taking one detectable sample and constituting the remainder of the pool with normal human plasma (NHP). The automated Qiagen BioRobot® MDx requires 265 μL per pool, ~65 μL per sample, and the QIAsymphony® (QIAGEN GmbH, Hilden, Germany) requires 1mL per pool, 250 μL per sample. Each sample was retested individually alongside the pools to eliminate inter-assay variability.
Results: We tested 128 specimens, of which 98 (77%) were undetectable on individual testing. 30 (23%) had HIV RNA over 50 c/ml with a mean $\log_{10}$ viral load of 2.8 (mean VL 700 c/mL, range 74 – 2555). The MDx was used to test 120 specimens. 96 undetectable samples were tested in 24 minipools which were negative and a further 2 undetectable specimens tested negative when pooled with NHP. Of the 22 positive samples (range 103 – 2555 copies/mL), 14 pools had detectable HIV RNA >50 c/mL, 2 had detectable RNA <50 c/mL, and RNA was not detected in 6 pools. The sensitivity did not appear to correlate to the level of viraemia and the pools which tested negative included specimens with RNA up to 1,300 c/mL. The MDx had a sensitivity of 63.6% and 100% specificity for pooled specimens. Positive and negative predictive values were 100% and 92%. 8 positive samples were tested with the QIAsymphony (range 74 – 746 c/mL) and 7 pools (87.5%) had detectable RNA. No RNA was detected in the pool containing the specimen with 74 c/mL.
Conclusion: BioRobot® MDx extraction was unreliable at identifying virological failure when samples were pooled, with a false negative rate of 36%, probably related to the small volume of plasma used. The QIAsymphony®, which utilises a larger volume, appeared to be more sensitive although fewer specimens were tested and evaluation is ongoing. Pooling of samples for HIV-1 RNA quantitation might offer a clinically acceptable way of making efficiency savings but it is important to evaluate the type of extraction used.

P97

A trial of vitamin D as an adjunct to HAART in HIV infection: potential to reduce progression and mortality

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Background: *In vitro* studies shows Vitamin D, Calcitriol, to have effects on innate and adaptive immunity. HIV progression, which is associated with immune activation and impaired T-cell immunity, is also associated with low serum vitamin D level although biological plausibility and causality have yet to be established. This study was designed to address this question in both HIV infected people and uninfected controls.
Methods: This prospective controlled study enrolled 28 subjects with low plasma vitamin D (Vit D) (<20ng/l, 50micromol/l) comprising 17 HIV+ patients (11 on HAART, 6 treatment naive) and 11 healthy controls. A single dose of 200,000 IU oral cholecalciferol was administered. Blood samples were analysed at baseline and one month. Advanced multi-colour flow cytometry was used to assess T-cell signalling, T cell effector responses, and markers of T-cell activation and homeostasis. Cytokines, including MIP1 Beta which blocks HIV entering cells, were assayed. The whole blood transcriptome was including the primary Vitamin D receptor, VDR,
Results: Plasma Vit D levels were restored to normal at one month. The following statistically significant results were found (p<0.05): CD4 T-cell responses to CMV and SEB were markedly augmented in HAART+ subjects and

similarly HIV-specific responses in HAART Naïves. Specifically MIP1 Beta+ CD4 T-cell frequency increased in HAART+ subjects, with an increase in plasma MIP1 Beta+, which correlated with plasma Vit D levels. An associated increase in T-cell pERK mobilisation following PMA stimulation was noted. T-cell CD38 expression was downregulated in HAART+ subjects; however no significant changes to T-cell CD39 or Treg and IL-17 numbers were noted. These specific changes to the T cell compartment were associated with changes to some 250 genes at the whole blood level in HAART naive and healthy controls. However, 10-fold fewer genes were altered in HAART+ subjects associated with significantly lower basal VDR expression. Pathways impacting T-cell function were altered in all three groups but a common gene signature spanning all three groups was not identified.
Conclusions: Vit D therapy may be a useful adjunct to HAART therapy in HIV infection by improving T-cell responses and increasing MIP1 Beta. There is a potential therapeutic benefit of this cheap, safe, easily administered therapy on slowing progression and reducing mortality in HIV which merits testing in adequately powered clinical trials.

P98

The influence of gender on ART-induced reconstitution of CD4 cell counts and function

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Background: There is growing interest in determining the influence of gender on ART outcomes, but data remain limited. The aim of this ongoing study is to determine gender-related differences in virological and immunological responses to first-line NNRTI-based ART.
Methods: A highly selected population was recruited that had initiated first-line ART with 2NRTIs+1NNRTI, had achieved HIV-1 RNA ("viral") load suppression <50 copies/ml within 6 months and during follow-up had maintained consistent viral load suppression without blips or treatment interruptions. Patients underwent testing for residual HIV-1 RNA below 50 copies/ml using an assay with 1 copy sensitivity. PD-1 expression on CD4 cells as a marker of T cell exhaustion was determined by flow cytometry.
Results: A total of 137 patients were recruited comprising 102 men and 35 women with a median age of 45.67 (IQR=52-38); 85% started EFV. At the time of recruitment, females had significantly lower nadir CD4 cell counts than males; the difference remained significant when accounting for the pre-ART viral load: median nadir CD4 counts in the stratum with viral load <150,000 copies/ml were 218 in men and 128 in women (p=0.012, Mann-Whitney Test). After a median of 6.5 years of suppressive ART CD4 cell counts increased by 56 and 79 cells per year in men and women, respectively (p=0.095, Mann-Whitney Test). Overall 50% of both males and females had residual HIV-1 RNA detection at median 3 copies/ml. Mean PD-1 expression on CD4 cells was 38 vs. 37 in males and females, respectively. Overall PD-1 expression was inversely correlated with total CD4 cell count (r=-0.61, p=0.007).
Conclusions: Despite lower nadir CD4 cell counts at the start of ART, which may reflect later presentation for care, women starting first-line NNRTI-based ART experience similar virological and immunological responses as men. Persistently high PD-1 expression is associated with lower CD4 cell count gains during suppressive ART.

P99

Dried blood spots for HIV and hepatitis community testing in Birmingham

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Background: NICE have identified the need to increase testing for HIV, hepatitis B and C amongst men who have sex with men(MSM) and Black Minority Ethnic(BME) communities. Dried blood spot(DBS) testing is an alternative to venepuncture and point of care tests(POCT). It is a minimally invasive finger prick blood sampling technique which can be performed by non-clinical individuals and has been validated in testing for hepatitis B and C as well as HIV using the same tests as conventional venepuncture. We piloted DBS sampling at Birmingham PRIDE initially and subsequently at the Handsworth Carnival(BME community), pubs and clubs.
Methods: A protocol was written and venue risk assessments undertaken. Health promotion workers were trained in DBS testing with a one day education and assessment programme supported by creating a training video http://youtu.be/lCwjrJH7_Po. DBS testing sessions were heavily advertised in local magazines, on twitter and the radio. Individuals were given information leaflets and completed a registration form and brief questionnaire about blood borne virus risk and prior sexually transmitted infection(STI) screening. At Birmingham PRIDE POCTs were also offered 50 metres from the venue. Results were delivered by health advisors after 10 working days.
Results: At Birmingham PRIDE 186 people were tested for blood borne viruses. 139(74.5%) had previously had a STI test but of these 64(46%) had not had one within the last year. There were 2(1%) new diagnoses of HIV and no new diagnoses of hepatitis. Against expectations only 2 people opted for a POCT. At the Handsworth Carnival 26 people were tested, there was 1(4%) new diagnosis of hepatitis B and 1(4%) known diagnosis of hepatitis C who had disengaged from services. 47 people have been tested through outreach work with 1(2%) new hepatitis B diagnosis.
Conclusion: DBS sampling proved to be feasible and acceptable in community settings. This technique is an alternative to POCT which may be preferable in some settings, where immediate results are not appropriate which also allows testing for hepatitis B and C as well as HIV. Governance with regard to specimen handling and correct labelling of samples were the main issues identified. DBS enables non-clinical staff to expand the horizons of outreach work and hereby increase the diagnosis of blood borne viruses in high risk groups.

P100

Outcome of cART and immunotherapy on virus-specific CD8+ T lymphocyte subsets

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Background: In patients with established HIV-1 infection, a skewed maturation/differentiation profile has been linked to viral pathogenesis, while in HIV-1 seronegative individuals, asymptomatic CMV is associated with higher T-cell activation and senescence. Combination antiretroviral therapy (cART) reduces T-cell activation that may be further improved by immunotherapy. However, little is known about the effect of such manifold therapies on $CD8^+$ T-cell activation, maturation and exhaustion. We addressed this by evaluating the magnitude and characteristics of both HIV-1- and CMV-specific T-cell responses in cART -naïve and -treated patients in the absence or presence of immunotherapy with the aim to further elucidate the effect of cART with or without immunotherapy on virus-specific T-cell activation, differentiation and exhaustion.
Methods: Multi-parameter flow cytometric analysis in combination with multimer technology was used to investigate the activation (CD38 and HLA-DR), differentiation (CD45RA and CCR7) and exhaustion (PD-1 and TIM-3) profiles of total and virus-specific $CD8^+$ T-cell populations in HIV-1^+ individuals. Phenotypic changes were compared between cART -naïve and -treated HIV-1^+ individuals. In addition, this phenotypic analysis was carried out on a subset of treated patients before and after receiving immunotherapy consisting of IL-2, GM-CSF and growth hormone.
Results: Twenty-two cART-naïve and 36 treated HIV-1^+ individuals, of which 9 received immunotherapy, were studied. A significant increase in frequencies of $CD8^+$ naïve T cells and a reduction of effector memory $CD8^+$ T cells was observed in treated patients compared to cART-naïve individuals (p=0.015 and p=0.049 respectively). This was accompanied by a reduction in activation levels between the two groups (p<0.0001). Furthermore, for the patients receiving immunotherapy, comparable frequencies of CMV-specific $CD8^+$ T cells with similar phenotypic profiles were detected in six patients both prior to and following immunotherapy, however only two patients had demonstrable HIV-1-specific $CD8^+$ T cells with no significant improvement following immunotherapy.
Conclusion: cART significantly lowered immune activation and stabilised differentiation. No significant differences were seen following immunotherapy despite changes on an individual basis. Our findings suggest that personalised therapy may be required for optimal restoration of immune profiles to account for individual variability.

P101

T-lymphocyte augmentation after structured treatment interruption in HIV-infected women after delivery

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Background: Structured treatment interruption (STI) after delivery in HIV-infected pregnant women is allowed in some guidelines and can give a clue to understanding of the nature of posttherapeutic controllers of HIV.
Methods: Observational study from Moscow regional HIV cohort (Russia). 72 HIV-infected pregnant women received lopinavir/ritonavir or saquinavir/ritonavir with nucleoside backbone during pregnancy and STI at delivery was performed. Within 5 year follow up period: in 48 women (67%) treatment was reinitiated - unfavorable STI outcome group; 24 women (33%) remained without treatment - favorable STI outcome group. Levels of $CD3^+$-T-lympocytes (CD3) were measured before (3^d trimester of pregnancy) and after delivery (within 90 days) by cytofluorimetry and compared in paired sample test.
Results: Significant CD3 elevation after STI at delivery was discovered. Average CD3 count before delivery was 2400 cells/mm^3, after delivery - 3415 cells/mm^3, average elevation was 815 cells/mm^3. CD3 elevation included CD4+, CD8+ and CD4-CD3- T-lymphocytes.
CD3 dynamics was strongly heterogeneous (table). In the group of unfavorable outcome the elevation was 433 cells/mm^3. In the group of favorable outcome the elevation was 1514 cells/mm^3 - a dramatic increase of CD3 after STI. The difference between groups was statistically significant (t=4,2, p<0,0001).

Table. T-lymphocyte augmentation after STI in HIV-infected women after delivery

Value	Average	Group of unfavorable outcome	Group of favorable outcome
Maximum	-1164	-1164	1219
Mean	815	433	1514
Minimum	2328	1391	2328

Probable causes of T-lymphocyte augmentation: cessation of gestational immune suppression after delivery, delayed effect of treatment, proliferative T-cell response (to the releasing HIV after STI). The latter hypothesis is most appropriate because it explains predominant T-cell augmentation in favorable STI outcome group.
Conclusion: Patients in the group of favorable outcome have strong posttherapeutic immune control of HIV. CD3 augmentation may play a key role in the process: it helps to develop and serves as predictor of immune control.

P102

We need to talk about HIV cure: a case report

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Background: Basic research has indicated it may be possible to cure HIV. There is strong demand for a cure; to remove the need for continuous medication, limit toxicity, costs and transmission. Understanding of patient knowledge and reaction to HIV cure studies in the UK is limited. We present this case to highlight the need for accurate representation of the status of HIV cure by the press and health providers.
Case: A 27 year old MSM presented with asymptomatic acute HIV (Ab neg Oct 2013, pos Nov 2013). Baseline CD4 count was 561cells/ml and HIV VL 39137 copies/ml. Between HIV diagnosis and doctor visit, internet searches had led him to conclude that antiretroviral therapy alone was not sufficient to manage HIV. His statements included "I don't care about the risks of cure treatment- I just want a cure". At his next visit he brought a list of eradication therapies he wanted to try (table 1).

Table 1

Therapy	Study Phase	Mode of action
Ciclopirox	Phase I	Antifungal. Inhibits HIV-1 gene expression in chronically infected CD4 cells in vivo.
Disulfiram	Phase II	Acetaldehyde dehydrogenase inhibitor. Induces HIV-1 transcription in latently infected CD4 cells.
Valproic acid	Phase II	Histone deacetylase 1 inhibitor. Depletes latent infection in resting CD4 cells in vivo.
Cordycepin	In vitro	Analogue of 2′,5′-oligoadenylate. Demonstrates anti-HIV-1 activity in vitro.
Bryostatine	Phase II	Protein kinase C activator. Induces HIV expression from latently infected CD4 cells.
Interleukin 7	Phase II	A cytokine. Promotes CD4 cell survival.
Cannabinoids	In vivo	Immunomodulators on HIV-1-infected macrophages.
Panobinostat	Phase I/II	Histone deacetylase 1 inhibitor. Stimulates HIV-1 expression from latently infected cell lines.

He was informed that no clinical trials were currently underway in the UK and the interventions listed were in Phase I/II and unlicensed. He was advised to start ART for acute HIV infection but declined whilst researching cures. Three visits later he accepted ART, representing a delay of 3 weeks.
Discussion: Strategies for HIV eradication are in phase I/II trials and a cure is unlikely to be available soon. With high levels of patient awareness and expectations, health providers must know the current state of play and limitations of cure research. Importantly, early phase treatment concepts should never delay the use of proven licensed treatments. A national survey on patient awareness and expectations of cure will start imminently to inform UK clinicians and cure research.

P103

Generation of recombinant fowlpox virus 9 (FPV9) carrying simian immunodeficiency virus (SIVmac239) sequences as a model HIV vaccine candidate

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Background: this study aims to develop an HIV vaccine, but by studying a related simian immunodeficiency virus of macaques, SIVmac239 strain. In our study, we are using FPV9, a highly attenuated host range-restricted fowlpox strain, to express different SIVmac239 proteins.
Methods: Multiple FPV9 transfer plasmids encoding various SIVmac239 proteins were successfully designed, constructed and verified by restriction enzyme (RE) digestion. We employed a transient colour selection (TCS) strategy to facilitate the screening of the positive FPV9 recombinants on primary chick embryo fibroblasts.
Results: Recombinant FPV9 carrying the Env and Rev sequences of SIVmac239 were generated and the positive recombinants were screened by the detection of beta-galactosidase gene expression. With further several rounds of plaque purification a pure recombinant has been isolated with subsequent elimination of the marker gene.
Conclusion: SIV sequences encoding env and rev have been successfully inserted into a novel site in the FPV9 genome with the creation of a markerless recombinant solely employing primary chick embryo fibroblasts. This successfully paves the way for the sequential construction of complex recombinants suitable for testing as vaccines in the SIV/macaque model of HIV infection, employing a methodology directly applicable to the future GMP construction and manufacture of an HIV vaccine candidate suitable for evaluation in clinical trials.

Behaviour, Sexual Dysfunction and Partner Management

P104

Failure to ask about club drug use in gay men at a central London GUM clinic

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Background: High levels of sexualised drug use have been reported in gay men (MSM). A previous study in our MSM service users had shown high levels of GBL, Mephedrone and Methamphetamine use and that this was associated with a greater risk of unprotected anal sex (UAI). BASHH advocate routine questioning about drug use in risk groups. We audited club drug history taking within our service.
Methods: The notes of all MSM attending for GUM appointments in one week were reviewed. We defined club drugs as GBL, Mephedrone and Methamphetamine.
Results: It was recorded that 9/144 MSM attendees were asked about drug use (6%). 100% of those asked admitted to club drug use, 8 of whom had used in the last 3 months. Only 1 user was offered onward referral for support regarding their drug use. 10.4% of MSM seen by doctors and 3.4% seen by nurses were asked about drug use. Reported recent UAI was similar in both group 67/135 (49.6%) vs 5/9 (55.6%)
Conclusions: Staff, regardless of role or discipline, were poor at asking about club drug use, and there were poor rates of onward referral. There was no evidence that those asked were selected based on reported sexual risk. The opportunity to engage those with sexualised drug use in risk-reduction interventions is currently being missed. The results demonstrate a need to support clinicians to ask drug-related questions. A full-time drugs worker has been employed to act as a "champion" to meet this need. Specific questions about club drugs are being added to all proformas. This audit will be repeated in 6 months time, with these interventions in place. It is hoped that this data and the subsequent interventions will help inform the clinic's strategy and allow for the provision of services that are better aligned to the needs of our clients.

P105

High rates of recreational drug use (RDU) in HIV+ men who have sex with men (MSM) with sexually transmitted infections (STI)

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Background: HIV+ MSM continue to be at high risk of STI, which may contribute to the ongoing high rates of new HIV diagnoses in the UK. High rates of RDU have been reported in this group with evidence that this is linked to high risk sexual behaviour. BHIVA guidelines and standards recommend regular screening of MSM, easy access to sexual health services (SHS) and awareness of ways to reduce transmission. We aimed to assess the extent of recent RDU and risk behaviours in HIV+ MSM with a diagnosed STI attending an urban HIV centre.
Method: All positive STI results (Chlamydia-CT, Lymphogranuloma venereum-LGV, Gonorrhoea-GC, Syphilis-STS, Acute Hepatitis C-HCV) in HIV+ MSM were identified by GUMCAD codes from June to November 2013 and patient notes reviewed. Data collected included demographics, recent HIV viral load, antiretroviral treatment (ART) status, high risk sexual behaviours, total sexual partners in the last 3 months, RDU documentation.
Results: There were 238 positive STI episodes in 223 patients undergoing 431 STI screens. 43% reported RDU in the last 3 months, 42% denied RDU and 15% were not documented. 24% reported mephedrone, 16% GHB/GBL, 9% metamphetamine and 19% reported polydrug use. Those reporting RDU had an average of 13 sexual partners in the last 3 months, compared to 5 in those who denied RDU. 75% of patients were on ART. Of those not on ART, 25/55 (47%) reported recent RDU and average 9 recent sexual partners, compared with 4 who denied RDU. Overall 43/223 (19%) reported group sex, 5% fisting and 5% intravenous RDU. 116 patients had CT, 145 GC, 20 STS, 16 LGV, 12 HCV. 62 had 2 concurrent STIs. 3 patients were subsequently offered ART as prevention of transmission (TasP). Overall, 61/223 (27%) were viraemic, 10 of whom were on ART; of these, one had "blipped", 2 had recent ART hiatus and the rest had started ART recently.
Conclusion: Our results highlight high rates of RDU amongst HIV+ MSM with diagnosed STIs. Access to effective SHS is essential for maintaining good sexual health and preventing onward transmission. Commissioners need to ensure that HIV services are able to demonstrate that they can provide high quality SHS for MSM and support use of TasP for those individuals with high risk of onward transmission. HIV services also need to work closely with drug support services, SH and psychology in order to improve health and well-being in this group.

P106

Key factors in the acceptability of TasP in Scotland: an exploratory qualitative study with communities affected by HIV

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Background: While the effectiveness of Treatment as Prevention (TasP) as an HIV-prevention intervention at the population-level continues to be debated, little evidence is currently available on the acceptability of TasP amongst those affected by HIV.
Methods: We employed consecutive, mixed qualitative methods - focus group discussion (FGDs), and one-to-one in-depth interviews (IDIs) - with HIV-Positive and HIV-Negative and/or untested participants from communities most affected by HIV in Scotland (men who have sex with men (MSM) and men and women from migrant African communities). Thematic inductive data analysis focused on identifying the factors that might affect potential uptake and effective use of TasP.
Results: We conducted 7 FGDs (4 HIV-Positive, 3 HIV-Negative) with MSM (n=22) and African (n=11) participants and 34 IDIs (17 HIV-Positive, 17 HIV-Negative) with MSM (n=20) and male and female African (N=14) participants across Scotland. Awareness of and engagement with TasP as an HIV-prevention strategy was identified as a key factor. The degree and nature of engagement with TasP was affected by HIV literacy (i.e levels of HIV-related knowledge and capacity to employ this knowledge), proximity to HIV, ethnicity and gender. A second key factor was if and how TasP might be incorporated into existing HIV risk management strategies (for example, as an alternative or complementary to existing practice). Willingness to start treatment early and use of TasP as part of combination prevention strategies was affected by perceptions of risk and the social context in which HIV risk management was practiced, including but not limited to the management of long-term sero-discordant relationships.
Conclusion: The acceptability of TasP at an individual level will affect how effective it is as a population-level HIV prevention intervention. Our findings demonstrate that while there is a need to increase knowledge about TasP amongst those most affected by HIV, context specific priorities, including risk perceptions and social dynamics in sexual relationships, could shape the nature of TasP uptake and use.

P107

Do HIV/hepatitis C co-infected men who have sex with men disclose their status to sexual partners?

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Background: The recent epidemic of hepatitis C (HCV) infection amongst HIV infected men who have sex with men (MSM) in the UK represents a significant disease burden. Transmission is ongoing and primarily occurs through high-risk sexual behaviours such as unprotected anal sex, group sex, the use of sex toys, fisting and the use of recreational drugs. We performed a study looking at disclosure of HCV status to sexual partners amongst HIV co-infected MSM.
Methods: HIV and HCV co-infected MSM receiving care at an inner city HIV centre in the UK were invited to complete a semi-structured face-to-face

interview. The frequency of HIV and HCV disclosure as well as key themes for disclosure or non-disclosure to sexual partners were recorded.
Results: 16/52 co-infected patients agreed to participate, aged between 25-61 yrs (median 43.5 yrs). The median years since HIV diagnosis was 7 (range 2-17) and HCV diagnosis was 3 (range 0.5-10). 4/16 (25%) participants remained co-infected at the time of the study. No participants reported only disclosing their HCV status. 4/16 participants (25%) chose to abstain from sexual activity during the time of active HCV infection negating the need to disclose to sexual partners. The reported frequencies of HCV status disclosure are shown in table 1.

Table 1	Abstinence*	Always	Mostly	Sometimes	Never	Total (%)
Total (%)	**4 (25)**	**3 (19)**	**2 (13)**	**4 (25)**	**3 (19)**	**16 (100)**
CD4 >350	3	2	2	4	2	**13 (81)**
HIV VL <40	2	1	1	2	1	**7 (44)**
Age ≥40 years	3	2	1	2	3	**11 (69)**
HIV Disclosure	2	3	1	3	1	**10 (63)**
• Always	1	0	1	1	1	**4 (25)**
• Mostly	0	0	0	0	1	**1 (6)**
• Never	1	0	0	0	0	**1 (6)**
• Abstinence						

Themes for non-disclosure included: wanting to keep information private, perceived stigma of HCV, fear of rejection or reaction to disclosure, use of drugs, perceived low risk of infection, casual sex, safer sex and behaviour, lack of HCV awareness. Themes for disclosure included: increasing HCV awareness, fear of legal prosecution, responsibility, trust and feelings for partner.
Conclusions: Participants were more likely to disclose their HIV status than their HCV status to sexual partners. Frequency of HCV status disclosure did not appear to be linked to CD4 count, HIV viral load (VL) or age in our cohort although a larger study is required to assess this further. A lack of HCV awareness contributes to or is linked to many of the themes for non-disclosure. Education to promote a greater understanding of HCV infection and routes of transmission are needed within the MSM community in the UK.

P108

Partner notification in HIV infection – closing the loop or not?

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Background: In 2007 a partner notification audit of HIV cases was performed, comparing patients diagnosed by Infectious Diseases (ID) with those diagnosed in Genitourinary Medicine (GUM). GUM were significantly more successful in initiating and achieving contact tracing than ID, identifying the need for closer working practices. Interventions included GUM placements for ID trainees and joint multidisciplinary team meetings. Until December 2013 the GUM and ID services were located in the same hospital. A joint re-audit was conducted in 2013.
Method: Patients newly diagnosed between 1st Jan 2009-31st Dec 2010 were audited, including 62 and 86 patients under ID and GUM respectively. Demographic data, sexually transmitted infection (STI) and hepatitis screening, and baseline CD4 counts were recorded, together with partner notification outcomes.
Results: In the 2013 data ID patients were older than the GUM patients (median age 42 v 35 years), and were significantly more likely to present with a CD4 count <200 ($p<0.0001$). 53% of ID patients had contact tracing performed by GUM.

	GU 2013 (n=86)	GU 2007 (n=200)	**ID 2013 (n=62)**	ID 2007 (n=200)
Male %	**60**	37	**58**	39
Black African %	**51**	81	**58**	85
Heterosexual transmission %	**66**	61	**76**	63
STI screened %	**80**	100	**34**	24
STI diagnosed %	**23**	44 (inc prev STI)	**19**	33 (inc prev STI)
Hepatitis B or C co-infection %	**5**	31	**5**	13
CD4 <200 cells/mm^3 %	**17**	28	**61**	45
Discussion about partner notification %	**94**	96	**90**	64
Contacts: index ratio	**2.23**	1.01	**1.05**	1.18
Traced contacts as % of total contacts	**42**	74	**52**	60
Traced contacts tested %	**66**	60	**80**	61
Contacts testing HIV positive %	**51**	76	**52**	86

Conclusions:
- Comparison between 2007 and 2013 demonstrates:
- ID achieved a marginal improvement in testing for STIs other than hepatitis/syphilis
- Both departments now have similar rates of documented partner notification discussions and an increase in the proportion of traced contacts tested
- Increased number of contacts identified and a reduction in the proportion who are successfully traced in GUM may reflect change in population dynamics (fewer black Africans and more casual, untraceable contacts)
- Approximately 50% of tested contacts were HIV positive in both groups, suggesting a large burden of undiagnosed infection in untraced contacts.

Although further improvements are needed, the progress made to date highlights the continuing need for a holistic approach to HIV care, particularly in the current climate of tendering and fragmentation of GUM and HIV services.

P109

Are women who have sex with women aware of the need to consider safer sex strategies? A systematic review

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Background: Most research on sexually transmitted infections (STIs) focuses on heterosexual or male homosexual populations, however women who have sex with women (WSW) are also at risk of STIs such as genital warts, herpes and trichomoniasis. The current study aimed to systematically review the literature on WSW, focusing on their perceived risk of STIs and the usage of safer sex strategies.
Methods: Four online databases were searched systematically. Studies were identified as relevant if they contained primary data regarding the perceptions of WSW on the risk of STI transmission, or knowledge or behaviours regarding safer sex in WSW. The studies reviewed included both surveys and focus groups, allowing for a deeper understanding of the reasoning behind the findings. The reviewed literature looked at participants worldwide, and studies were limited to the past 10 years.
Results: Twelve articles were identified which found that most WSW agreed that there was some risk of STI transmission, but around 10-30% of women in the studies either did not know, or did not believe, that they were at risk of STIs. The use of barrier protection in WSW was rare, but more commonly used in higher risk sexual practices such as in casual relationships or oral-anal contact. Safer sex practices such as the cleaning of shared sex toys before and after use were common. Explanations for the lack of knowledge surrounding STI transmission in WSW included a lack of sexual health information aimed at WSW, and inaccurate information given by health professionals. In those who were aware of the risks, safer sex strategies were often not used due to an "optimistic bias" amongst WSW, a feeling that they were protected against STIs by a type of cosmic protection, or by trust and open communication with their partner.
Conclusion: The current review found that while most WSW were aware that there could be a risk of STI transmission from sex with women, up to 30% did

not have the factual knowledge required to make an informed decision about safer sex strategies. Increased effective sexual education for WSW and greater availability of specifically-targeted safer sex products could be strategies implemented to increase safe sex amongst WSW.

P110

HIV risk management in the context of relationships: an exploratory qualitative study with young gay and bisexual men in Scotland

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Background: HIV prevention for men who have sex with men (MSM) has typically focused on behaviour change at the individual-level, rather than as part of a couple. However, recent research has highlighted the role of primary sexual partners in the transmission of HIV among young MSM in the US, estimating that as many as 84% of new transmissions were from men's main partner. This suggests that work with couples could contribute to prevention efforts.
Methods: We conducted qualitative in-depth interviews with 30 young MSM (aged 18-29) in Scotland, recruited via a number of strategies; online advertisements, through voluntary sector organisations working with MSM, and snowballing. Thematic data analysis focused on identifying how men understand HIV risk management strategies in the context of relationships, specifically the role of 'safer sex' practices, HIV testing, and expectations around monogamy and/or sexual exclusivity.
Results: At the time of interview, nine men reported being in a relationship, and the majority (n=28) discussed their aspirations for sex in long-term relationships. Participants' demonstrated varying levels of HIV literacy (i.e. HIV-related knowledge and an individual's capacity to apply this), and although all discussed condom use as part of 'safer sex' and their individual management of HIV risk, a recurring theme was desire to discontinue condom use in the context of a committed relationship. Over a third of the men (n=22) discussed discontinuing condom use in this context. Of those in relationships, six had discontinued condom use, but not all tested for HIV prior to this, nor explicitly discussed expectations for monogamy and/or sexual exclusivity with their partners. Agreeing to testing and discussing expectations of fidelity were complicated by issues of trust and intimacy.
Conclusion: How MSM understand and manage HIV risk in relationships has implications for future HIV prevention. Knowledge of their own (and partner's) HIV status - particularly where serodiscordant relationships are identified - could enable men to make decisions around prevention, and where appropriate, open up the possibility of accessing biomedical prevention. Our research suggests young MSM in relationships continue to base safer sex decisions on perceptions of fidelity and trust in their partners. Young MSM accessing testing in clinical settings could be targeted for interventions to encourage HIV status disclosure and informed safer sex negotiation.

P111

Does HIV status influence sexual risk behaviours in men who have sex with men?

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Background: Men who have sex with men (MSM) are at increased risk of sexually transmitted infections (STIs) and HIV. The presence of STIs is an important co-factor in HIV transmission. Recent data from the National Survey of Sexual Attitudes and Lifestyles showed that there has been an increase in risk behaviours that could be linked to HIV infection.
Methods: We performed a retrospective case note review of all MSM attending an inner city sexual health clinic over a 3 month period. Data was collected on demographics, HIV status, condom use, recreational drug use and STIs.
Results: 633 patients were reviewed with a median age of 30 (range 17 – 88). 466 (74%) were white British. 466 (74%) were HIV negative, 120 (19%) were known to be HIV positive and the remainder (7%) were unknown HIV status at their clinic attendance. 46 (7.3%) denied having anal sex, of which 27 (59%) were HIV negative. Of those having anal sex, 242 (42%) reported consistent condom use. There was no significant difference in individuals reporting condom use as 'always' or 'never' based upon HIV status (p=0.484). HIV positive attendees are more likely to have unprotected anal sex with HIV infected individuals (p=0.000001). HIV negative attendees were more likely to have sex with those who were HIV negative or had unknown status (p<0.0001). 107 (16.9%) reported recreational drug use, with 47 (44%) patients using cocaine. There was no significant difference in drug use between HIV positive and HIV negative MSM (23% vs 19%, p=0.305). 207 (32.7%) patients were diagnosed with STIs and multiple infections were seen in 26 (12.6%) of these patients. Of the 242 (42%) attendees reporting consistent condom use, rectal bacterial infections were found in 28 (12%).
Conclusion: When comparing MSM by HIV status, there were few differences in their sexual risk behaviours. MSM are more likely to have unprotected anal sex with partners of the same serostatus. However, a significant proportion of HIV negative MSM engage in unprotected sex with partners of unknown HIV status. It is therefore paramount that we continue to educate this cohort on safer sex and risk reduction, in order to prevent HIV transmission.

P112

Abstract withdrawn.

P113

Partner notification outcome measures for *Chlamydia trachomatis*-positive patients: a retrospective analysis

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Background: Partner notification (PN) is an important method to detect sexually transmitted infections. We reviewed our PN practice for *Chlamydia trachomatis* (CT) at a local level 3 sexual health service in the United Kingdom.
Methods: We conducted a retrospective case note review on all patients diagnosed with CT between October 2012 – March 2013. Outcome measures were taken from the BASHH Clinical Effectiveness Group Guidelines on PN (2012). These included a documented i) PN discussion offered to the index case, ii) agreed PN outcome action with the index case, iii) number of contacts reported by the index case to have been treated for CT, and iv) number of contacts with verified treatment for CT by a healthcare worker within four weeks of the first PN discussion.
Results: Of 199 CT positive patients (mean (SD) age 25.0 (8.1) years, 53.3% male, 78.2% White ethnicity), 91.4% had PN documented as being offered (BASHH target 97%). 82.2% were documented to have had an agreed PN outcome action (BASHH target 97%). It was documented that 0.49 contacts/index case were reported to have been treated for CT, and 0.33 contacts/index case were verified with treatment for CT by a healthcare worker within four weeks of the first PN discussion. Explanations for these findings are offered.
Conclusion: PN documentation is slightly below the recommended BASHH target. Sexual health services should consider ways to improve PH activity in order to improve performance, the focus of which should include improved documentation around the offer and uptake of PN.

P114

Alcohol and drug history taking in a sexual health service

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Background: BASHH sexual history guidelines highlight the importance of taking a history of alcohol and drug use; NICE guidance is to obtain an alcohol history in every healthcare setting. Young people (YP) and MSM are key groups at risk for sexual ill-health, as well as high levels of alcohol consumption and substance misuse respectively. We undertook a GU clinic based audit to assess adherence to these guidelines.
Methods: We reviewed the clinical records for consecutive patients attending from 1st June 2013; 40 new patients (NP), 40 YP (age <20 y) and 40 MSM. Demographic data was collected, along with documentation of alcohol and drug use, if use was perceived as potentially problematic, its potential effect on sexual health and if any interventions were offered.

Results: A total of 120 patients were included in the audit.

	Male n	Age y	Alcohol history taken n (%)	Negative impact on SH n (%)	Drug history taken n (%)	Drugs used n (%of those asked)	Negative impact on SH n (%)
NP*	23	31.9	0	NA	8 (20)	3 (38)	0
YP**	12	18.3	3 (7.5)	1 (33)	5 (12.5)	3 (60)	3 (60)
MSM	40	33.5	6 (15)	1 (16)	14 (35)	6 (43)	3 (7.5)

*all heterosexual, ** 37 heterosexual, 3 not known, SH=sexual health

Alcohol use was perceived to be problematic in one MSM; drug use in 2 YP and 3 MSM. Drugs included, by MSM, cocaine, crystal meth, G, cannabis and mephedrone (2 injected), by YP, cocaine, methadone cannabis mephedrone and heroin (2 injected) and by NP, cocaine. Nine patients were given advice by a clinician, 3 were counselled by a health advisor and 3 were referred to specialist services; 2 to the club drug clinic. The rate at which patients were asked about IVDU, but not drug use per se, was high across all groups, reflecting HIV risk assessment.
Conclusion: Low levels of documentation of assessment of alcohol and drug use were seen, even in groups known to be at increased risk of misuse and associated sexual ill health. In young people with documented alcohol and drug use, there was a perceived negative impact on their sexual health in a significant proportion (although numbers are small), suggesting unidentified lost opportunities for intervention. This audit has highlighted the need for improved history taking and recognition of those potentially at risk of substance misuse. Staff awareness and the introduction of tools (e.g. AUDIT, FAST) are being undertaken. Agreed interventions, patient accessible information resources and clear referral pathways must be in place to manage problems where identified.

P115

Staff attitudes towards psychosexual issues in an integrated sexual health clinic: A survey

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Aim/Objective: The aim of the study was to find out about attitudes of clinical staff to psychosexual issues in an integrated sexual health services.
Methodology: This was a questionnaire survey that was conducted in a large, newly integrated Sexual Health Service. The questionnaire was sent to 100 sexual health clinicians through survey monkey. The professional groups were health care support workers (HCSWs), nurses and doctors. There were sixty responses.
Results: The survey consisted of 10 questions. Of the 60 clinicians who completed the survey; 50% were doctors, 42% were nurses and 8% were HCSWs.
70% of doctors explored psychosexual issue in their routine practice as compared to 36% of nurses. A knowledge gap has been identified among clinicians as 2/3rds of clinicians are not very confident in taking a basic history related to psychosexual issues.
90% of doctors and 84% of nurses were either confident or very confident when a patient discloses a psychosexual problem during consultation whilst 7% of doctors felt embarrassed when this issue arises.
23% of clinicians think that the main barrier is lack of training and time during consultation. Some clinicians considered embarrassment related to topic, patient's reluctance and hidden agendas as other barriers related to disclosure.
Discussion: To our knowledge this is the first study in the United Kingdom (UK) that assesses the feelings of staff towards psychosexual issues in an integrated sexual health services setting. This survey has highlighted that although majority of clinicians were either moderately, slightly or not at all confident in taking a basic psychosexual history, but majority were confident when a patient discloses this issue during consultation. It is important to overcome the barriers related to disclosure of psychosexual issues because that can lead to non disclosure by the patient.

P116

Tantra in the GUM clinic: Mindfulness-based therapy and painful sex

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Introduction: Cognitive processes such as attention, rumination and intrusive and/or critical thoughts have been implicated in the maintenance of painful sexual conditions such as vestibulodynia and vaginismus. Mindfulness Based Cognitive Therapy is a psychological therapy which uses skills from mindfulness meditation and cognitive behavioural therapy to help people cope more effectively with depression and health problems, stress and difficulties coping. There is a growing body of evidence for application of these approaches in sexual dysfunction including arousal and pain. (Brotto, 2009; Brotto, 2011). This paper outlines a case series using mindfulness approaches to sexual pain in women attending a GUM clinic for vaginismus and vulval pain. This presentation will discuss application of mindfulness during assessment (including physical examinations with a GUM physician) and management. The rationale and long history from other contexts, such as Yoga and Tantric practices, of drawing on mindfulness practices to cultivate intimacy, sexuality and desire will also be described.
Method: Ten women presenting to the Female Sexual Wellbeing Service were seen for psychological therapy using MBCT approaches for painful sex. The content of therapy included re-establishing pleasure and desire, mindfulness practices within the therapy session, psychoeducation about sex, arousal, pain and neural plasticity and the role of thoughts and meditation. Homework sessions included mindful breathing, compassion meditation, sensate focus, graded practice with vaginal trainers and kegels as mindfulness exercises.
Results: Self-report ratings of satisfaction, severity of symptoms and connection to sexuality and desire showed positive changes. Patients found the enhanced mindfulness approach to have good face validity and the emphasis on pleasure felt validating and non-shaming.
Conclusion: Behavioural techniques used in sexual problems such as graded exposure, desensitisation to painful stimuli, kegel exercises and sensate focus can be augmented by mindfulness based approaches. A larger scale application and evaluation of these approaches would be helpful in supporting wider implementation of these approaches in clinical work.

Cancer and Malignancies

P117

Evolution of cellular and viral resistance in HIV patients diagnosed with lymphoma receiving chemotherapy and combination antiretroviral therapy

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Background: Cancer is an increasing cause of death in people living with HIV (PLWH) on cART. Patients receive concomitant chemotherapy and cART. Overexpression of the membrane transport proteins ATP binding cassette (ABC) and SLCO (OATP) transporters confer multidrug chemotherapy resistance and may contribute to cellular antiretroviral resistance by causing sub-therapeutic intracellular antiretroviral concentration and possible cART failure. In addition, chemotherapy may induce mutations in cellular DNA leading to secondary malignancies and in the case of integrated proviral DNA, antiretroviral resistance. Thus systemic cancer chemotherapy may lead to antiretroviral drug resistance via one of two hypothetical mechanisms.
Methods: : Following written consent, PLWH with lymphoma gave blood samples before (V1), during (V2) and post (V3) chemotherapy for expression of transmembrane transporters (ABCB1, ABCC1, ABCC2 and SLCO3A1); pre and post chemotherapy to determine new HIV genome mutations using PBMC extracted DNA (TruGene HIV-1 Assay GeneKit & Open Gene system, mutation analysis by Stanford database).
Results: 29 completed the study. Baseline median CD4 and viral load 273 cells/mm3 (32-740), 196 copies/mL (60-1975269, n=20, 9 had VL <40 c/ml). All commenced cART before study consent. Drug transporter expression varied throughout. Expression of ABCB1 was lower at V2 (15.4%; P=0.39) and V3

(20.3%; P=0.64) compared to V1. Similarly with ABCC2, expression was lower at V2 (48.2%; P=0.14) and V 3 (67.3%; P=0.19) than V1. ABCC1 expression was higher at V 2 (24.2%; P=0.62) and V 3 (13.9%; P=0.50) compared to V1. SLCO3A1 expression was lower at V2 compared to V1 (12.9%; P=0.79) but V3 expression was higher than V1 (73.7%; P=0.97). 9 had baseline HIV wild type. 5 had significant baseline mutations compared to six 4 weeks post chemotherapy. 1 patient developed 1 NRTI (184V) associated mutation.
Conclusions: ABCB1, ABCC1, ABCC2 and SLCO3A1 were expressed in samples and expression differed over the treatment period. Due to inter-patient variability, differences were not statistically significant. Over 161.6 months of chemotherapy and cART, 1 new mutation (M184V) emerged in proviral DNA yielding a mutation rate of 0.26/year, compared to a published rate of 0.38/year on cART alone (p=0.26-0.5). Mutagenic cytotoxic chemotherapy did not induce mutations in proviral DNA. No significant changes in viral resistance were observed pre and post chemotherapy.

P118

Screening for anal pre-cancer in HIV-positive and -negative men who have sex with men (MSM): early experience from a prospective study

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Background: The UK National Screening Committee has suggested that screening for anal intraepithelial neoplasia (AIN) in populations at high-risk of anal squamous cell carcinoma (ASCC) such as HIV positive and negative men who have sex with men (MSM) may be of benefit but that further information is needed. In these groups the risk of developing anal cancer is increased up-to 100-fold. A recent meta-analysis indicated that anal HPV and anal cancer precursors were very common in MSM. This on-going prospective study is designed to evaluate feasibility and acceptability of screening.
Methods: Men aged over 25 who practice anoreceptive sex, with no past history of anal cancer or pre-cancer who are either HIV positive or negative were included. All participants had baseline anal cytology (LBC), HPV typing and high-resolution anoscopy (HRA) at recruitment and at 6-months, with a diagnostic biopsy being taken for participants with an abnormal HRA. Data are presented for participants recruited from March 2013.
Results: To date, 92 participants have baseline data; 71 HIV positive and 21 HIV negative MSM. Overall 78.2% (72/92) were HPV positive of whom 50% (36/72) were HPV 16 positive (29 HIV positive and 7 HIV negative). Abnormal cytology was found in 45.6% (42/92). Abnormal HRA requiring a biopsy was found in 54.3% (50/92) of patients, but in HIV positive men this proportion was 54.9% (39/71), including 19 high-grade AIN (HGAIN 2 or 3) and one invasive cancer. This constitutes a prevalence of high-grade disease of 28.1% (20/71) and 4.7% (1/21) for HIV positive and HIV negative MSM respectively.
Conclusion: Early experience of anal screening in MSM suggests that it is both acceptable and feasible. These prevalence data are similar to a recently published meta-analysis.
This study has been funded by Public Health England.

P119

High level human herpesvirus-8 viraemia and multicentric Castleman's disease following initiation of antiretroviral therapy

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Background: Multicentric Castleman Disease is a lymphoproliferative disorder that clinically follows a fluctuant course, but without treatment, is often fatal within two years. The pathogenesis is incompletely understood though there is a strong association with infection with Human Herpesvirus 8 (HHV8).
Methods: A retrospective case notes review of patients diagnosed with MCD after initiation of combination antiretroviral therapy (cART).
Results: We present a series of three men with a median age of 52 years (45 - 54) with HIV-related Multicentric Castleman's Disease (MCD) presenting after the initiation cART. The presentations occurred at a median 3.5 months (range 3-8 months) following cART initiation (2 patients were cART-naïve and one was re-commencing after a period of non-adherence). The baseline CD4 count was median 92 $x10^6$/L (range 10-148 $x10^6$/L). All had a good response to cART (HIV virological suppression). Each presented with a systemic inflammatory response syndrome and had widespread lymphadenopathy on CT scan that was FDG-avid on PET scan. Lymph node biopsy confirmed HHV8 positive MCD in each case. All men had HHV-8 viraemia detected at baseline (retrospective testing) and had extremely high HHV8 viral loads at MCD presentation, median 9.8 $x10^6$ copies/ml (7.7 – 13.3 $x10^6$ copies/ml). In one patient, HIV seroconversion had occurred 6 months previously and retrospective serum samples were available to test for concurrent HHV8 IgG seroconversion. HHV8 IgG positivity at all time points confirmed more distant HHV8 acquisition. All patients improved symptomatically (and HHV8 levels fell) after treatment with rituximab in two cases and with conservative management in one (rituximab withheld due to hepatitis C coinfection).
Conclusion: MCD can present in the context of an immune reconstitution syndrome following cART initiation. The immunological control of HHV8 in subjects with MCD is not well understood and the disease pathogenesis could be reliant on an interaction between HHV8, the immune system and cytokine mediators. Given that the seroprevalence of HHV-8 is high in MSM, it is not clear why this phenomenon is not seen more frequently on cART initiation. These cases add further insight into our understanding of the pathogenesis of MCD in HIV and the utility of measuring levels of HHV8 in patients with appropriate clinical syndromes.

P120

Pilot project to assess the diagnostic value of anal cytology, HPV testing and high resolution anoscopy (HRA) in screening for Anal Intraepithelial Neoplasia (AIN) in HIV-positive MSM

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Background: The incidence of AIN and Anal squamous cell carcinoma (ASCC) has risen significantly over the past decade, in particular in HIV positive men who have sex with men (MSM). We introduced a pilot study incorporating routine screening for AIN with anal cytology, HPV DNA typing and High Resolution Anoscopy (HRA) for HIV positive patients considered to be at risk for AIN.
Methods: Data was prospectively collected on all patients attending the clinic from February 2013 to January 2014. All 3 screening tests were performed for each patient. The HPV DNA test used was Abbott real time PCR which detects 14 high risk (HR) HPV types, including 16 and 18.
Results: Over the 11 month period there were 104 attendances in 95 patients. 5% (5/95) were women and the remainder were MSM, with a median age of 47 years, and 13 years since diagnosis. Median CD4 nadir was $192x10^9$/L (range 92-1267). Median time on ART was 12 years with 43/95 (46%) having VL <50 c/ml for >5 years. 32% (28/88) were smokers.
99% (103) had HPV, 91% (94) anoscopy and 91% (95) cytology results available. 49% (50/103) had any HR HPV with 23% (24) with HPV 16 and 12% (12) with HPV 18 (4% with both HPV 16 and 18). 35% (36) had other high risk strains. There were no associations between presence of HR HPV and demographic factors. 36% (34/94) had abnormal cytology with 7% (7) identified with severe dyskaryosis. 23% (22) had abnormal HRA with changes suggestive of AIN. Of those biopsied, 2 had ASCC, 3 had AIN3, 3 had AIN2 and 2 AIN1.
There was not always good agreement between the three screening tests. 55% (26/47) of those with HR HPV had abnormal cytology and 17% (8/46) of those without HR HPV had an abnormal result. Only 40% (8/20) of those with abnormal anoscopy also had abnormal cytology. Conversely, only 24% (8/33) of those with abnormal cytology also had an abnormal anoscopy result.
Conclusion: Screening for AIN with the above tests is feasible. A third of patients screened had abnormal cytology with 49% detected with high risk HPV but the prevalence of types 16 and 18 were lower than expected. Two anal cancers were detected through routine screening in this 11 month period. There was no predictive association between all 3 methods of screening. HRA anoscopy therefore remains the gold standard but more data is needed to evaluate the value of non-invasive screening tests.

P121

Non-Hodgkin's lymphoma (NHL): Does being on cART before diagnosis make a difference?

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Background: Combination antiretroviral therapy reduces the risk of NHL and improves the survival of NHL in people living with HIV (PLWH). It is not clear whether the outcomes of NHL diagnosed in PLWH who are established on cART differs from those who are not on cART.
Methods: A prospectively collected database of HIV associated malignancies was interrogated to identify patients treated with curative intent for systemic NHL since the introduction of combination antiretroviral therapy (cART).
Results: Of 264 patients, 134 (51%) were established on cART for at least 3 months, of whom 71/129 (55%) had undetectable plasma HIV at NHL diagnosis. 130 (49%) were not established on cART at NHL diagnosis, including 53 who were diagnosed with HIV and NHL simultaneously and 35 who were diagnosed HIV seropositive less than 3 months prior to NHL. Patients established on cART were older (p=0.0058), had higher CD4 cell counts (p=0.0023) and were more likely to have had a prior AIDS diagnosing illness (p0.0003). Patients established on cART were more likely to have the following adverse lymphoma prognostic indicators: age >60 (p0.038) & performance status>1 (p0.035) but there were no differences in the other criteria in the lymphoma International Prognostic Index (IPI) and there were no differences in the overall IPI scores (p=0.057). Patients not on cART were more likely to have Burkitt lymphoma than patients established on cART (30% vs 19%) (p=0.031). The overall all cause 5 year survival is 58% (95% Confidence Interval: 52-65%) However, there was no difference in overall (all cause) survival (Log rank p=0.83).
Conclusion: Whilst NHL diagnosed in PLWH who were not on cART presented with a lower CD4 cell count and Burkitt lymphoma histology, there was no significant difference in overall (all cause) mortality. The majority of these patients (88/129) developed an AIDS diagnosis (NHL) at presentation or within 3 months of first diagnosis of HIV so it is reassuring that this very late presentation of HIV did not adversely affect outcome compared to PLWH and the same diagnosis.

P122

Immunological function in HIV-seronegative men who have sex with men (MSM) with Kaposi's sarcoma (KS)

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Background: The development of KS in people living with KSHV infection is associated with immunodeficiency, usually as a consequence of HIV co-infection, allogeneic transplantation, malnutrition or ageing. More recently, KS is also being diagnosed in HIV sero-negative MSM.
Methods: A prospective study of innate and adaptive immune function tests was undertaken in HIV negative MSM with histologically confirmed KS. Measurements of neutrophils, lymphocyte subsets, immunoglobulins and plasma electrophoresis and antibody titres to recall antigens were performed.
Results: Twenty one patients were included (mean age 53) who were diagnosed since 1997. All are alive with a median follow-up of 2.3 years. Two had solitary lymph node KS whilst the remaining 19 had skin KS. The Brambilla staging at presentation was IA (8), IB (1), 4A (8) & 4B (4). Six (29%) had detectable plasma HHV8 viraemia (median 1300 copies/mL). No patients had abnormally low levels of neutrophils, T cell subsets (CD4 and CD8), B cells (CD19) or Natural Killer cells (CD56). No patients had abnormally low levels of Immunoglobuilins (IgA, IgG or IgM), one patient had a small IgG labda paraprotein (too small to quantify). Sixteen patients had quantitative assays of their antibody titres to pneumoccus and tetanus antigens measured. All had good titres of anti-pneumococcal antibodies, whilst 2/16 (12.5%) had low levels of anti-tetanus antibodies that rose following immunisation with tetanus toxoid.
Conclusion: No qualitative or quantitative deficiency of innate or acquired immune system was detected in 21 HIV seronegative MSM who developed KS. These patients are unlikely to develop other opportunistic infections or malignancies and tolerate systemic chemotherapy without an excess of infectious complications.

P123

Multifocal intraepithelial neoplastic disease in HIV-positive women: are we missing opportunities?

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Introduction: Human immunodeficiency virus positive (HIV+) women are at increased risk of intraepithelial neoplasia (IN) of the cervix and are therefore encouraged to undergo regular cervical screening. HIV+ women are also likely to be at increased risk for all multifocal HPV-related disease. It is estimated in the United States that increased risk of anal cancer for HIV+ patients is 24-fold compared to an immunocompetent population, however data is limited for risk of multiple site anogenital cancer in HIV+ women.
Objectives: To determine the prevalence of synchronous IN at multifocal anogenital sites in HIV+ women presenting to colposcopy clinic who were also offered anogenital high resolution examination (AGHRE) with high resolution anoscopy, vaginoscopy and vulvoscopy.
Methods: HIV+ women who underwent AGHRE as well as colposcopy were identified from the colposcopy and HIV clinic databases, and their outcomes determined.
Results: Cervical smear results were available for 594/906 (66%) women in the HIV database over a 10 year period. Abnormal cervical cytology was present in 182/594 (31%).
31 of 182 women with abnormal smears (17%) underwent AGHRE. Targeted biopsies were taken from suspicious lesions.
26/31 women (84%) were found to have biopsy-proven high and/or low grade squamous intraepithelial lesions (LSIL and HSIL) in non-cervical anogenital sites, including 1 anal cancer. The prevalence of multifocal IN disease was therefore 84% in the cohort of AGHRE-screened HIV+ women with abnormal cervical smears. High grade multifocal IN disease was detected in 17/31 women (55%) on biopsy.
Conclusion: Multifocal HPV-related disease when assessed with high resolution anoscopy/vulvoscopy is highly prevalent in our small sample of HIV+ women with abnormal cervical cytology. The majority of women (55%) had high grade multifocal IN disease.
Prospective studies are required to establish long-term outcomes and the relevance of these findings to the prevention of anogenital HPV-related cancers in this group of high-risk patients. It is notable that only 17% of our cohort underwent simultaneous multifocal high resolution examination. Further studies may elucidate if HIV+ women should be offered routine high resolution screening of the anogenital tract for HPV-related intraepithelial neoplasia in the near future.

P124

A retrospective review of cervical cytology outcomes in an HIV-positive cohort

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Background: HIV positive women are reported to have higher rates of cervical human papilloma virus (HPV) infection, associated with an increased risk of cervical intraepithelial neoplasia/invasive carcinoma. Currently NHS guidance stipulates that HIV positive women should undergo annual cytology; screening abnormalities with oncogenic HPV testing as used in HIV negative women is not recommended.
Evidence regarding the impact of successful antiretroviral therapy (ART) on cytological abnormalities is conflicting. We describe in a retrospective study the cytology results and colposcopy outcomes of HIV positive women at a UK centre.
Methods: Data was collected from the HIV clinical notes and the local cytology/colposcopy database.
Results: N=111 female patients currently receive care. The majority (n=102, 92%) are well controlled on suppressive ART (n=87), or not needing it (n=15). Cytology results were available for 101 patients. N=39 (39%) had never had an abnormality detected. Of those with abnormalities (n=62, 61%), n=40 were seen in colposcopy. In the majority (n=43), the highest grade of lesion detected was borderline/mild dyskaryosis on cytology or ≤CIN 1 at colposcopy, classified as low-grade (LG). After the initial LG lesion, >50% had persistent LG changes. For patients with high-grade (HG) lesions, n=19, (≥moderate dyskaryosis on cytology or ≥CIN 2 at colposcopy), n=12 (65%) had further abnormalities post-treatment, with 2 patients requiring further treatment.

Table 1 illustrates the immune status of patients according to grade of cervical pathology.

Table 1: Immune status according to grade of pathology

	Grade of pathology		
	None: n=39	Low: n=43	High: n=19
CD4 <200 at diagnosis (%)	2 (5)	16 (37)	9 (47)
HIV currently controlled (%) (On ART/not needed)	37 (95)	40 (93)	16 (84)
Immune status when highest grade of lesion occurred (%)			
Pre-diagnosis	-	5 (12)	4 (21)
Immune competent (On ART/not needed)	-	25 (58)	9 (47)
Not Competent (Needs ART/just started/failing)	-	11 (25)	5 (26)
Not known	-	2 (5)	1 (5)

Conclusions: Within this generally well controlled HIV cohort almost 40% have never had a cytological abnormality. Of the abnormalities detected, the majority were LG. These are unlikely to regress and the literature suggests they may just reflect persistent HPV infection. The cost effectiveness and clinical necessity for annual screening in immunocompetent HIV patients is not established. The role for HPV screening in this group warrants further study in a clinical trial.

P125

Impact of HIV infection on presentation and outcome of vulval intraepithelial neoplasia (VIN): experience of a tertiary referral centre

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Background: VIN in more prevalent amongst women with HIV infection, with more multi-focal disease and concurrent intraepithelial neoplasia (IN). There is a paucity of data on response to treatment. The aim of this study was to describe differences between HIV infected and non-infected women with VIN.
Methods: We retrospectively identified women diagnosed with VIN from 2007 to 2013, managed in a specialist dermatology clinic, in a tertiary referral centre Data were collected on demographics, HIV status, medical history, presentation, concurrent IN, histology, treatments and outcomes.
Results: 30 women were diagnosed with VIN: 7 were HIV+ve; 5 were of black ethnicity; median age 42 years. Median nadir CD4 count was 116 cells/mm^3, and at VIN diagnosis median CD4 count was 500, and 6 had a supressed viral load. Of the remaining 23: 22 were of white ethnicity; median age 49 years; 4 had a negative HIV test; 9 had an autoimmune disease and 13 had a smoking history.

Table 1 comparing clinical presentation, treatment and outcomes:

	HIV infected (n=7)	HIV negative/unknown (n=23)
>1 concurrent IN: n(%)	5(71)	4(17)
Histology: n(%)	5(71)	15(65)
VIN 3	1(14)	2(9)
SCC in situ / invasive		
Unifocal VIN: n(%)	1(14)	13(56)
Multifocal VIN: n(%)	6(86)	10(43)
Treatment: n(%)	5(71)	6(26)
Imiquimod	1(14)	8(35)
Surgery	1(14)	9(39)
Imiquimod and surgery		
Resolution of VIN:	5(71)	19(82)
Complete/Almost: n(%)		1(4)
Stable disease: n(%)		
Median time to resolution: (months)	17	11
Recurrent disease: n(%)	2(29)	7(30)

Conclusions: Of women with VIN approximately a quarter were known to be HIV positive. Compared to their HIV negative / untested counterparts they are younger, more likely to be of black ethnicity and non-smokers. They are more likely to have: >1 concurrent area of IN; multifocal VIN; and treatment with imiquimod only. Rates of resolution and recurrence appear comparable.

P126

Lymphoma presentation in vertically infected HIV-positive young people

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Background: Lymphoma is more common in HIV-positive individuals and is well-described in adults.Higher CD4 counts and HIV viral suppression appear to protect against lymphoma[1] but data regarding lymphoma risk in vertically infected young people is lacking.We describe cases in our cohort of vertically infected adolescents attending a large HIV centre in London.
Methods: We identified lymphoma cases in vertically infected young people in our HIV cohort who transitioned from paediatric services between 2007-2013.We performed case note review collecting information including:HIV history, lymphoma presentation and lymphoma outcome.
Results: We identified 4 cases of lymphoma (3 large B-cell lymphomas,1 marginal zone lymphoma) in 122 young people attending adolescent services between 2007-2013,giving a prevalence of 3.3%.Of the 4 patients 2 were male and median age at diagnosis was 20(range 18-23 years).Median CD4 count at lymphoma presentation was 205(range 145-300 cells/ mm^3) with a median nadir CD4 of 132 (range 63-151 cells/mm^3).All cases had a history of non-adherence to medication or had defaulted from care prior to lymphoma diagnosis;all had a history of at least 2 episodes of non-attendance in the preceeding 12 months.Median VL at lymphoma diagnosis was 90,000(range <50-155,900 copies/ml),one patient becoming recently undetectable having restarted medication 7 months prior.One and 2 individuals had dual and triple class drug resistance respectively; the fourth had never taken ART consistently and had no resistance mutations. 3 cases presented with acute abdominal symptoms and 2 cases had a new lymphadenopathy.Time from symptom onset to diagnosis was 2(range 1-3 months).Three underwent intensive chemotherapy, the fourth was treated by addressing HIV control; subsequently all have maintained viral suppression.One of the three young people undergoing chemotherapy had sperm/egg storage prior to treatment; one elected to start chemotherapy immediately.Information was unavailable for one case.
Conclusion: We found a high rate of lymphoma (3.3%) in our cohort of vertically infected young people.Although numbers are small,all presented after a period of non-adherence,with low CD4 and non specific symptoms. Successful HIV management may be of particular importance in this group of young people for whom the diagnosis of lymphoma may have a significant impact in terms of time lost from education or work and future fertility.
Reference: [1] Bohlius J et al. Antivir Ther.2009.

P127

What do men who have receptive anal intercourse know about HPV and anal cancer?

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Background: Incidence of anal cancer is increasing worldwide and whilst uncommon amongst the general population it is more common in high-risk populations, including men who have sex with men (MSM) and those who are immunosuppressed. The UK National Screening Committee has suggested screening for high grade AIN, the precursor to anal cancer, amongst these populations may be beneficial but that more evidence is needed. ANALOGY is an ongoing prospective cohort study addressing the feasibility of anal screening in high risk groups using cytology, HPV testing and high resolution anoscopy.
Methods: A self-completed questionnaire was given to HIV+ and HIV- MSM attending their initial ANALOGY study appointment. Participants were asked about their knowledge of HPV, anal cancer and their increased risk of the disease. Their motivation for taking part in the study was also examined. The findings of those recruited to the study since March 2013 are presented.

Results: To date, 103 MSM have been recruited to the study, of whom 77 (74.8%) are HIV+ and 26 (25.2%) are HIV-. Only 50.6% (39) of HIV+ and 23.1% (6) of HIV- MSM knew they were in a group at increased risk of anal cancer. Reasons for taking part in the study varied from altruism to perceiving themselves to be at risk of the disease. A large majority had heard of anal cancer before being approached about the study, however fewer knew there was a link between HPV and cancer. Just over half of participants had previously heard of HPV and a similar proportion had heard of a link between HPV and cancer. The majority (82.5%, 85) of study participants strongly agreed that those at high risk from anal cancer should be offered screening. 98.8% (96) stated they would find a negative result reassuring and 86.4% (89) felt that if pre-cancerous cells are found they should be treated.
Conclusion: HIV+ participants were more aware of their increased risk of anal cancer than those who were HIV-, however there was little difference between the two groups' knowledge of anal cancer and HPV. Almost all agreed that anal screening should be offered to groups at high risk.

P128

Cervical cytology in HIV-positive women: are we overscreening?

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Background: Cervical intraepithelial neoplasia (CIN) and invasive cervical cancer are more common in women with HIV infection and are associated with increasing immunosuppression. Guidelines recommend HIV infected women have yearly cervical cytology. With increased testing and earlier HIV diagnosis our aim was to determine whether the prevalence of CIN has changed over time.
Method: Retrospective case note review of 176 randomly selected HIV positive women currently attending an urban HIV care centre.
Results: Information regarding cervical cytology was available for 151 (86%) and CIN was diagnosed in 27 (15%) (CIN1 N=12, CIN2 N=9, CIN3 N=6).
56 patients were diagnosed with HIV infection between 1992 and 2001 (group 1) and 120 between 2002 and 2012 (group 2). Of these 78.6% (N=43) and 60.8% (N=75) had a nadir CD4 count of <350 cells/uL and 21.4% (N=13) and 39.2% (N=45) had a nadir CD4 count of >/= 350cells/uL respectively.
In group 1 15 (27%) had a diagnosis of CIN (CIN1 N=7, CIN2 N=3, CIN3 N=5) compared to 12 (9.9%) (CIN1= 5, CIN2 N=6, CIN3 N=1) in group 2 (P=0.004).
In group 1 those with a nadir CD4 count of <350 cells/uL 12 (27.9%) had a diagnosis of CIN (CIN1 N=6, CIN2 N=1, CIN3 N=5) in comparison to 6 (8.1%) (CIN1 N=3, CIN2 N=2, CIN3 N=1) in group 2 (N=74) (P=0.0034).
In group 1 those with a nadir CD4 count of >/=350 cells/uL 2 (16.7%) had a diagnosis of CIN (CIN1 N=1, CIN2 N=1) compared to 4 (8.5%) (CIN1 N=1, CIN2 N=3) in group 2 (N=47) (P=0.40).
There were no documented cases of invasive cervical cancer in our sample.
Conclusions: The overall rate of CIN in our sample population is lower than was observed in previous studies. However, it is still two to three times higher than in the HIV negative population.
Between 2002 and 2012 more women were diagnosed with a CD4 count of >/=350 cells/uL than between 1992 and 2001. There is a trend towards lower rates of CIN over time. This is irrespective of CD4 count and could be explained by the small numbers of women with CIN in our sample.
Our data suggests that women should continue to have yearly cervical cytology in line with current BHIVA guidelines.

P129

Pilot of a simple screening method for anal intra-epithelial neoplasia (AIN)/anal cancer in HIV-positive patients

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Background: There is concern regarding the increased incidence of AIN and anal cancer in HIV positive people. There is currently no consensus on the most appropriate screening for AIN. We instituted a basic, non-invasive annual screen comprising a check of symptoms and examination of the peri-anal area.
Method: A questionnaire sticker was placed in the notes of male and female patients attending a nurse-led or doctor appointment. Notes were reviewed for a 2 week period following a departmental meeting to launch the pilot. Notes were checked for presence of sticker, completion of sticker and determination of whether the peri-anal area had been examined in the preceding year.
Symptoms prompted screening for sexually transmitted infections and a digital rectal examination. A pathway for referral to a colorectal surgeon with a specialist interest in AIN was established.
Results: The sticker was present in 19/40 (48%) sets of notes and completed or partially completed in 15/19 (79%) sets. 2 /15 (13%) reported symptoms; one reported itch and the other soreness.
The peri-anal area had been examined in 15/40 (38%) in the preceding 1 year. Of those that had a sticker prompt in place 10/19 (53%) were examined, 3 declined, 1 deferred and in 1 the remainder of the sticker was completed but no comment made on peri-anal examination. Of those with no sticker 5/21 (24%) had been examined. Men were more likely to have had the peri-anal area examined, 12/23 (52%), versus 3/17 (18%) women being examined. Though, in the initial pilot use of the sticker did not result in a statistically significant increase in the number being examined (p=0.06, chi squared) with increased familiarity of its use this is likely to be achieved. None of the patients for whom the screening questionnaire was completed during the pilot required referral.
Discussion: This is a novel screening method that is simple and non-invasive, but requires further evaluation. A substantial proportion of patients with HIV do not receive regular peri-anal symptom review or examination as part of routine care and the sticker prompted this to be undertaken. For women, linking the peri-anal examination to the annual cervical cytology test may improve uptake. The introduction of an annual review form for those using electronic patient records may similarly improve uptake.

Children and Pregnancy

P130

Are we testing all children of HIV-positive mothers?

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Background: National guidelines recommend HIV testing in all children at risk. We assessed compliance by identifying and recording all offspring of HIV positive mothers registered to our service, and ascertained their testing status.
Methods: HIV-positive women previously or currently registered were identified. A retrospective case note review was performed. Their date and place of birth, current residence and testing status was recorded. Data was collected and stored in a secure database and on a separate electronic clinical proforma (Lillie), making it easier to follow up missing data, and record the status of future children.
Results: 111 HIV-positive women were identified, 97% had a record of their maternal status. 64 women had a total of 118 children under the age of 18.

Table 1. Testing status of all children

	Living in the UK	Unknown Residence	Living Abroad
Tested	73/91 (80%)	2/8 (25%)	7/19 (37%)
Untested	15/91 (17%)	3/8 (37.5%)	4/19 (21%)
Unknown	3/91 (3%)	3/8 (37.5%)	8/19 (42%)

Of the 'Tested' children living in the UK, 3(4%) had tested positive, 53(73%) had tested negative and 17(23%) children born to known HIV positive mothers had only an initial negative HIV test, but follow up tests were not performed or unavailable, so their status unconfirmed.
Of the 'Untested' children living in the UK, 6(40%) children were not at risk as their mother had a negative test after their birth. 6(40%) were untested as their mother was thought to have contracted HIV after the child's birth and 2 (13%) were untested as their mother had a negative test antenatally. The parents of 1 child aged 13 have refused testing. Overall 75/82(92%) children 'at risk' (UK, Unknown) were tested.
Conclusion: The majority of children at risk of HIV infection received testing (92%). However some remained untested. Most cases are unlikely to be at significant risk, but cannot be deemed altogether risk free. Those identified with an unconfirmed HIV status emphasised the necessity for enhanced communication between paediatric and adult services, so that children

exposed to HIV in-utero are followed up appropriately. To aid communication we have since changed practice so that children's HIV results are more freely available on the hospital electronic results system. We are actively working towards ensuring all children's HIV status is recorded in their parents' electronic notes.

P131

Reduction in serum cholesterol in patients with perinatally acquired HIV-1 (PaHIV) switching from boosted lopinavir to an alternative once-daily boosted protease inhibitor: an 18-month retrospective study

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Background: Boosted protease inhibitor (PI) based antiretroviral therapy (ART) in children with PaHIV typically includes lopinavir (LPV) due to availability of liquid and paediatric tablets co-formulated with ritonavir (r) and is the preferred PI in current European guidelines. PIs can adversely affect lipids and data from adult studies suggest once daily boosted PIs may have more favourable lipid profiles. Whilst a switch from PI to NNRTI improves lipid profiles in children, data is lacking regarding the optimal PI for those who failed NNRTIs. We describe effects on lipid profiles switching from lopinavir (LPV/r) to atazanavir (ATV/r) or darunavir (DRV/r).
Methods: Retrospective case note audit over 18 months of a single centre observational paediatric cohort switching from suppressive LPV/r to ATV/r or DRV/r based ART, assessing change in lipid profiles, viral suppression and liver function.
Results: 26 patients suppressed on PI based ART switched from LPV/r to ATV/r or DRV/r. 3 were excluded due to incomplete lipid data. 12/23(52%) were male, 23 black African. Median age at switch 14yrs (IQR=2.5), median duration LPV/r treatment 4yrs (IQR=4.75). 15(65%) and 8(35%) switched to DRV/r and ATV/r respectively. Mean total cholesterol 4.83mmol/L (95%CI:4.36-5.30) pre-switch, 4.43mmol/L (95%CI:4.08-4.77) and 4.37mmol/L (95%CI:4.03-4.71) at 2-7 and 11-18months post-switch respectively. ANOVA showed significant decrease in total cholesterol 2-7months post switch (mean reduction: 0.41mmol/L ($p<0.05$)). Downward trend was maintained at 11-18months (mean reduction: 0.46mmol/L ($p<0.05$)). No significant reduction was observed between 2-7 and 11-18months. There was no significant change in CD4 count, triglycerides or HDL. A significant increase in mean bilirubin was noted in those switched to ATV/r (11μmol/L (SD=5) to 51μmol/L (SD=23)). No side effects post switch resulted in discontinuation, however one patient stopped ART >24/12 after switching post a bereavement.
Conclusion: This is the first report of sustained reduction in total cholesterol associated with a switch from LPV/r to an alternative boosted PI in PaHIV. Switching typically reduces daily ritonavir intake by 50%. Approved dosing is available from 3yrs and 6yrs for DRV/r and ATV/r respectively. Our data supports a change to the current European guidelines. The favourable lipid profile conferred by use of ATV/r and DRV/r as well as once daily dosing are preferable to LPV/r in PI-based ART in older children.

P132

Mother-to-child transmission (MTCT) of HIV – almost a thing of the past? A cohort study of HIV-positive women starting antiretroviral drugs in pregnancy

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Background: Where available, antiretrovirals (ARVs) and antenatal HIV testing and care have significantly reduced MTCT. Higher maternal viral load (VL) is linked with higher risk of MTCT, increasing risk of MTCT for women starting ARVs during pregnancy compared to those already suppressed.
Methods: A single-centre, retrospective cohort of women starting ARVs during pregnancy from 2004 till 2013. Demographic, obstetric and virological data, and neonatal outcomes were collected where available.
Results: 60 pregnancies were recorded (in 56 women) in which ARVs were started or restarted from a total of 129 recorded pregnancies. 48% (27/56) were new antenatal HIV diagnoses and in these median gestational age (GA) at diagnosis was 16.1 weeks (range 5.3-37.6). Median GA at ARV commencement was 22.4 weeks (range 8-37.7) with 63% (35/56) starting before 24 weeks and 91% (51/56) before 28 weeks. HIV diagnosis during pregnancy was associated with a later commencement of ARVs (23.9 vs 19.9 weeks, p=0.009). The ARV regimen was available for 58 pregnancies. Treatment was with two NRTIs plus NNRTI (3), or PI (54) or raltegravir (1). Raltegravir was added as a forth agent in 7 patients.
87% (52/60) had resistance genotyping before (14) or during (38) pregnancy, 81% (22/27) for new diagnoses in pregnancy. The rate of any ARV resistance was 12% (6/52): 4 patients had NNRTI and 2 NRTI resistance mutations, 4 were treatment-naïve. This was not associated with treatment failure.
HIV VL at delivery was available in 57 pregnancies with detectable VL in 16% (9/57). Pre-treatment VL >100,000cps/ml during pregnancy was associated with higher risk of detectable VL at delivery (p=0.016). 69% babies were delivered by Caesarean section, 32% as an emergency. There was one late miscarriage at 17 weeks. Median GA at birth was 38 weeks (range 17-42) with 21% born at <37 weeks (10/48). There was one HIV MTCT (1.7% for those starting ARV in pregnancy, 0.8% overall) in a woman who was poorly adherent with ARVs throughout pregnancy with a VL of 216c/ml at delivery following a period of directly observed therapy.
Conclusions: Over 10 years of integrated HIV and antenatal care, there was only one case of MTCT. Initiating ART for prevention of MTCT is complex, requires a multi-disciplinary approach and importantly patient engagement. Antenatal practices and guidelines have changed over the period of this dataset, allowing normalisation of pregnancy when HIV is diagnosed and treated early.

P133

Tenofovir-associated nephrotoxicity in children with perinatally acquired HIV infection: a single centre cohort

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Background: In 2012 Tenofovir disoproxil fumarate (TDF) was approved for use in children over 2 yrs at a dose of 8mg/kg/day and is the WHO recommended first line therapy for >10 yrs/ 35kg at 300mg daily. Whilst post marketing experience of paediatric TDF is limited, prior off licence use occurred due to tolerability, efficacy and resistance profiles. Children on TDF have higher intracellular levels compared to adults, further increased by protease inhibitors (PIs) such as Lopinavir/ritonavir (LPV/r). We describe single centre experience of TDF nephrotoxicity in children age <16yrs.
Methods: Retrospective case note audit of children with perinatally acquired HIV who ever received TDF-based ART. Cohort data was analysed in 2 time periods from 2001-2007 and 2008-2013 reflecting change in PI and didanosine (ddI) use.
Results: From Dec 2001 to Dec 2013, 70 children, 39 (56%) female ever received TDF. Median age at start of TDF was 12 yrs (IQR 10-14). The median length of TDF exposure was 70 months (IQR 24-64). 7 (10%) children, 6 female, ethnicity: black African (2), caucasian (2), mixed race (2), asian (1) developed asymptomatic renal tubular leak with 1 or more of proteinuria (7), hypophosphataemia (4) and hypokalaemia (1), all resulting in TDF withdrawal and biochemical resolution. No patient had a previous history of renal disease or hepatitis co-infection. At baseline, the median values for the 7 children with nephrotoxicity were: age 11.7yrs (range 6.7-12.9yrs), CD4 count 480 cells/uL (range 30-1360), weight 32kg (range 21-43kg) resulting in a median TDF dose of 7.8mg/kg/day (range 6.8-9.3). The median time of TDF exposure prior to renal leak was 24 months (range 9-60).
In 2001-07, 39 children commenced TDF, median age 10 yrs (IQR 9-12), 6 (15%) of whom developed nephrotoxicity; 5/6 receiving concomitant LPV/r with ddI. From 2008-13, 31 children commenced TDF, median age 13 yrs (IQR 12-14), one developed nephrotoxicity on Truvada and LPV/r. Of those receiving TDF with a PI, 21/24 (88%) received LPV/r in the first time period compared to 6/22 (27%) in later years. Nephrotoxicity was not significantly associated with weight, gender, age, PI v non-PI or LPV/r v other PI use.
Conclusion: Although all children with TDF associated nephrotoxicity had biochemical resolution on drug withdrawal, monitoring for renal leak in children on TDF is important, especially with co-administration of PIs. Post marketing surveillance is essential in the paediatric setting.

P134

HIV control in post-partum mothers; a turbulent time

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Background: The management of pregnant HIV positive women can be complex and much has been published on this. There has been less work focusing on the post-partum period. We conducted a service evaluation looking at post-partum women's concordance with treatment and the possible reasons for non-concordance.
Methods: We retrospectively reviewed the case notes of HIV positive women who delivered between 1st January 2000 and 31st December 2011. Planned antiretroviral (ARV) management, actual ARV management, CD4 count and viral load (VL) were recorded at delivery, 1 month and 12 months post-partum. Psychological and social problems in the 12 months post-partum were noted and grouped into categories.
Results: There were 84 pregnancies involving 76 women of whom 27% (n=23) had been diagnosed with HIV during the current pregnancy. 81% of women were Black African, 15% White British and 4% other ethnicity. In 52 pregnancies the women were advised to continue ARVs post delivery; in 32 cases they were advised to stop. In 92% (n=77) of pregnancies the women were concordant with their post-partum management plan. 8% (n=7) of women either stopped treatment within the 12 months post delivery against medical advice or did not agree to re-start treatment when clinically indicated. Of the 46 women who continued ARVs, 24% (n=11) had a detectable VL (>40 copies/ml) during the 12 months and 11% (n=5) had virological failure (VL>400 copies/ml). Psychological or social problems were noted in 74% (n=62) of cases. The most common themes were depression (21%), partner-related concerns including separation (21%), childcare problems (18%), financial difficulties (15%), housing problems (13%) and asylum issues (10%). Other concerns included domestic abuse and drug/alcohol related problems. 27% (n=23) of women missed at least one HIV clinic appointment. 3 women were pregnant again within 12 months of delivery. Of the 7 women who did not adhere to their post-partum management plan, all had psychological or social problems and 71% (n=5) were depressed. 91% (n=10) of the women with a detectable VL had psychological or social problems and 27% (n=3) were depressed.
Conclusion: The variety of psychological and social issues experienced demonstrates the need to continue a multidisciplinary team approach in the post-partum period. Offering appropriate support or referral for the management of these issues may help to improve treatment outcomes in the post-partum period in HIV positive mothers.

P135

Young people's input into a national proforma to detect risks for child sexual exploitation when attending for a sexual health service – meaningful engagement is possible and invaluable

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Background: Child sexual exploitation (CSE) takes many forms with increasing recognition of exploitation by Groups (usually older men) and Gangs (peer on peer violence), including under 18s and under 16s at risk (Children's Commissioner report). Organisations including BASHH have developed proformas to detect abuse / exploitation but these may not address current patterns of exploitation, have user input, and focused on under 16s. BASHH ASIG obtained a Department of Health grant authorised by an inter ministerial group to develop a national proforma for use by all sexual health providers in collaboration with Brook. Initial work aimed to have meaningful engagement with young people into an acceptable proforma to detect risk factors associated with CSE.
Method: 5 focus groups were run by Brook, 1 in collaboration with Redthread, to obtain young peoples' (YP) views : Young carers group (n=21, 16 CSE victims), 6th form College (n=12), volunteers (n=2), young carers (n=13), gang involved YP who were/at risk of CSE (Redthread)(n=20). Additional YP input was provided by a Home Office YP advocate who works with young women at risk of or affected by gangs.
Results: 79 YP (13-22yrs; F=37, M=21, unknown 21). Recurring themes occurred: Confidentiality communicated in a way YP understand; conversational approach; do not push YP into answering questions if they do not want to; reassure YP throughout the process; avoid a scoring format; use open ended questions; where possible, avoid making notes; eye contact and open body language; keep consultation short and precise; give as much time as needed; be calm and polite; it's alright to ask questions about CSE; explain about CSE; adjust language according to preference.
"If the professional has concerns, then they should point out if something sounds unusual, as the person might not be aware that what's happening is concerning" "Need to ask really open ended questions to understand the situation, like "can you tell me a bit about your situation?" "Not snakey shizz"
Conclusion: All groups considered it appropriate to ask about CSE risks in the sexual health setting and highlighted how the interviewer should behave and adapt to YP needs. Meaningful involvement with YP is possible across the spectrum of service users / non-users, including CSE victims and gangs through a collaborative approach between organisations.

P136

HIV-positive African women's experiences of healthcare in the UK during pregnancy: a qualitative study

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Background: Approximately 1500 HIV-positive women access antenatal care each year in the UK; over 75% are black African. During pregnancy, women living with HIV may interact with a variety of healthcare professionals. Little is known about their experiences of healthcare during pregnancy. This is not only an important indicator of quality of care, but may also impact on women's engagement with services in the longer term.
Methods: We conducted semi-structured interviews during pregnancy with 23 pregnant African women with diagnosed HIV recruited from 3 London clinics between 2010 and 2011. Over half (15) were interviewed again after delivery. All interviews were transcribed verbatim and analysed in NVivo 9.0 using grounded theory.
Results: Overall women described the care they received from their specialist HIV antenatal multidisciplinary teams in positive terms, particularly valuing their empathetic approach and willingness to provide practical assistance with social issues such as housing and immigration. Women were wary of interactions with non-specialist staff, although negative experiences were rare. Isolated examples of poor care included inadvertent disclosure of HIV status and refusal to provide dental care. Over half of women interviewed postnatally (8/15) described poor care within maternity services around the time of delivery; this ranged from neglect, including inadequate pain relief and being left alone during labour, to discrimination. Two women described overt discrimination relating to their HIV status, with a further four suspecting their poor care was associated with their HIV-seropositivity.
Conclusions: Women in this study generally described good care from their HIV antenatal care teams and also from non-specialist staff. However, over half of those interviewed postnatally described negative experiences of maternity services around the time of delivery. Some of these experiences may be related to the well-documented pressures within maternity services in general. Of particular concern are the instances of HIV-related discrimination reported by women. Our findings underline the central importance of the multidisciplinary HIV antenatal team in caring for women. However, they also suggest that training and education about HIV should be extended to non-specialist staff, especially in maternity settings, in order to address gaps in knowledge and prevent stigmatising attitudes.

P137

Investigation and management of abnormal liver function in perinatally acquired HIV-1 infection: a single centre audit

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Background: Abnormal liver function tests (LFTs) in children with perinatally acquired HIV (PaHIV) occur not infrequently, however national guidance for the investigation and management of this cohort is lacking. In 2010 a local

policy for investigation of persistent transaminitis was developed and is audited here.
Methods: Retrospective case note audit of all children attending a single centre family clinic from September 2010 to September 2013. Inclusion criteria: PaHIV, raised ALT >40 IU/L and/or bilirubin (SBR) >21 umol/L for >3 months. Data collected; age, sex, ethnicity, BMI, antiretroviral therapy (ART), viral load, CD4 count. Investigations for transaminitis: Hepatitis B/C, CMV, EBV, AST, Gamma GT, autoantibody screen, alpha-fetoprotein (AFP), alpha-1-antitrypsin, copper/caeruloplasmin, ferritin, abdominal USS, urine toxicology, CK, and alcohol or herbal medicine use, and lipid profile and glucose if BMI>25.
Results: 29/130 (22%) had ever had abnormal LFTs for >3 months. 55% female, median age 14 years (IQR 13-16), 69% black African ethnicity.17/29 (59%) had isolated hyperbilirubinaemia due to Atazanavir/rtv (ATZ/r) (16) and sickle cell disease (1) with a median SBR of 67 umol/L (IQR 53-95) and were excluded from analysis. Of the 12 with transaminitis; 58% female, median age 14 (IQR 13-16), median CD4 count 616 cells/ul (IQR 440-1035). 10/12 were on ART, 9 with VL<50 c/ml. Median days of transaminitis; 376 (IQR 255-693) to latest follow up (3) or resolution; spontaneous (7) and post switch from nevirapine (NVP) to ATZ/r based ART (2). 3 patients have ongoing transaminitis due to; fatty liver disease possibly related to ART (1), probable to uncontrolled HIV (1) and unknown (1). Investigations completed in 12 patients: Hepatitis B/C (75%), CMV/EBV (42%), AST/Gamma GT (50%), autoantibody (42%), AFP (50%), alpha-1-antitrypsin (50%), Cu/caeruloplasmin (42%), ferritin (50%), abdominal USS (58%), urine toxicology (0), CK (33%), and history of alcohol or herbal medicines (42%), lipid profile/glucose (100%). Mild elevations of Cu/caeuloplasmin (3/5), ferritin (1/6), CK (2/4) were reported and one USS showed hepatomegaly.
Conclusion: 9% of the paediatric cohort ever experienced persistent transaminitis in 3 years of follow up. Adherence to the investigation guideline was poor, although spontaneous ALT resolution prior to completion was seen in 7 patients. Diagnostic yield was low, with ART implicated in 3 patients; NVP (2) and protease inhibitors (1).

P138

An audit of screening for sexually transmitted infections and group B streptococcus in HIV-positive, pregnant women

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Background: The British HIV Association (BHIVA) recommends routine screening for sexually transmitted infections (STI) in HIV positive pregnant women. We report our experience here, including the detection of *group B streptococcus* (GBS) in a significant number of our patients.
Methods: Patient records of all HIV positive, pregnant women delivering within our trust between January 2011 and June 2013 were identified. Data were collected for demographics, HIV indicators, the performance of STI screening including results, and neonatal/maternal outcomes.
Results: 74 patients were identified, aged between 19 and 47 years. 66% were Black African, 7% White British, 3 % Black Caribbean, 1% 'mixed other' and 23% had no ethnicity recorded. At delivery, 100% were on antiretroviral therapy and 85% had viral load<50 copies/ml. 93% (69/74) had STI screening with 51% (35/69) having repeat screening. Method of testing was variable. 79% (82/104) had a high vaginal swab (HVS) for culture, 73% (76/104) a cervical swab for *Chlamydia trachomatis* nucleic acid amplification tests (NAAT) and *Gonorrhoea* culture. 25% (26/104) were tested via dual NAAT testing in urine for *Gonorrhoea* and *Chlamydia*. 3 cases of *Chlamydia* and 1 *Trichomonas Vaginalis* (TV) were identified. Other organisms included; 35 *Candida albicans* 15 GBS, 1 case of *bacterial vaginosis* and 2 others (1 *strep faecalis*, 1 *staph aureus*.). 100% of *Chlamydia* cases completed appropriate treatment, 2/3 had test of cure (TOC), and the third was diagnosed too close to delivery for this to be possible. No neonatal *Chlamydia* infections were reported. There was no documented treatment or TOC for the TV case - an elective caesarean section was performed and no neonatal complications reported. In the GBS cases 60% (9/15) had documented management as per national guidelines. Of the remaining cases, 83% (5/6) had unclear documented management and in 1 case antibiotics were given pre-delivery. There were no cases of neonatal sepsis due to GBS.
Discussion: The majority of our HIV positive, pregnant patients are screened for STI's during pregnancy. The yield in terms of STI's is low. The method and timing of testing, was variable and a standardised approach would be beneficial. GBS was detected in 18.3% (15/82) of our patients receiving an HVS, similar to the prevalence in the general population. However, we believe that further work should be done to investigate the possible importance of GBS screening in HIV positive pregnant women.

P139

The impact of financial support for replacement infant feeding on postpartum attendance and outcomes for women with HIV

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Background: UK women with HIV are advised to avoid breastfeeding, the cost of replacement feeding can be prohibitive and many are ineligible for public funds. In 2010 we introduced a novel scheme to help with costs of replacement feeding. Funded by the local PCT in partnership with a busy NHS inner-city HIV outpatient service the intervention delivers financial support irrespective of income to all pregnant women with HIV in the PCT. All pregnant women with HIV, living in the borough or delivering their baby at our Hospital are entitled to a total of £530 to support replacement feeding. The scheme is delivered by specialist nursing, midwifery and social care team in the HIV service. The first instalment is of £130 at 30 weeks of pregnancy for pre delivery purchase of equipment and formula feed; support is available at 6 weeks and then every 3 months during the infant's first year of life. We are not aware of similar schemes running in the UK. We report on outcomes including postnatal attendance rates and clinical outcomes based on three years' experience of the scheme. Comparison is made with a period prior to implementation.
Methods: Data was collected and reviewed for two cohorts of women with HIV delivering before (pre) and after (post) implementation of the scheme. "Pre" group: all women delivered Jun 2008-Dec 2009; "post" group: all women delivered Feb 2011-Dec 2011. Numbers of HIV clinician appointments that were attended and not attended was recorded for each woman from delivery to 1 year postpartum. The number of women who discontinued ARVs postnatally was recorded, those with a CD4 count ≥350 were categorised as appropriate discontinuation following BHIVA guidelines.
For those who continued ARVs, HIV VL was recorded as a surrogate marker of adherence. Those with a VL ≥200 at any point until 1 year post delivery were noted. A cut off of 200 copies was chosen to deal with viral load blips.
Result:

	Pre group	Post group	P value
Total number	25	26	
Continued ARVs	15	20	
Discontinued ARVs inappropriately	1	1	
VL >200 whilst on ARVs	8/15 (53.3%)	4/20 (20%)	<0.05
Mean appointments attended	7.16	8.12	0.277
Mean appointments not attended	3.08	1.73	P<0.05

Conclusion: The findings suggest that not only is replacement feeding supportive for women with HIV but that ARV adherence and routine HIV care appointment attendance is also enhanced when compared with women treated in our centre before the introduction of the scheme. DNA rate also reduced after implementation of the scheme.

P140

Pregnancy intentions and outcomes within a large urban HIV clinic

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Background: With the normalizing of life expectancy and low risk of mother to child transmission, more people living with HIV are planning parenthood. We examined the demography and outcomes of seroconcordant (SC) and serodiscordant (SD) couples requesting preconception advice.

Method: Patients attending for preconception advice were recorded on a log since 2010. Retrospective analysis of clinic records was conducted collecting data including demography, medical factors, parity and future conception outcomes. Analysis was conducted using Microsoft Excel.
Results: 57 individual patients and 22 couples (16 SD, 6 SC) were recorded on the log having received preconception advice. The records of 65 HIV positive patients were available for review: 40 women, 25 men. 64% were Black African, 23% European, 11% Asian, 2% South American. Of 40 women, 68% were in SD relationships. The mean age was 34 years (range 23-44 years) with a mean CD4 count of 646 (239-1723). 70% were on anti-retrovirals. The mean number of years from HIV diagnosis to referral was 5 years (0-17 years). 13% had AIDS diagnoses and 30% had other co-morbidities. 25% had gynaecological morbidities, 63% had previous pregnancies, 38% had children and 20% had children with their current partner. Following preconception advice, 38% of women in SC relationships conceived, all by unprotected sexual intercourse (UPSI). 30% of women in SD relationships conceived following preconception advice: 5 self-insemination (SI) and 3 SI/timed UPSI. 38% were referred to fertility. Of 25 men, 80% were in SD relationships. Mean age was 38 years (29-49 years) and mean CD4 count 487. Time from diagnosis to referral was 6 years. 24% had AIDS diagnoses & 48% other co-morbidities. In 32% pregnancies occurred (6 timed UPSI, 1 via fertility, 1 unknown). Since 2010, increasing numbers of couples have additionally been counselled about timed UPSI. Missing data following fertility referral in 21% has limited our results.
Conclusion: Couples affected by HIV are actively seeking parenthood although later in their reproductive lifetime, with many successful conceptions occurring without assisted conception. Since 2010 an increasing number of couples are being advised and successfully conceiving through timed UPSI. In view of reduced chances of conception and funding for assisted conception with older age, conception issues should be considered early after diagnosis, to ensure the best chance of pregnancy.

P141

Provision of family planning care to women living with HIV attending two large London HIV clinics

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Background: Over a third of people presenting for HIV care in the UK are women, the majority of whom are of reproductive age. Current national standards recommend that all women living with HIV have their family planning needs assessed. Where needed, barrier methods in conjunction with additional methods are advised. We present data from an audit of women attending for HIV-related care at two London centres, where women comprise 36% and 60% of the respective clinic populations. We aimed to evaluate the provision of family planning care to women attending for HIV care**.** Our specific objectives were to (i) describe contraception methods used in our clinic population, and (ii) ascertain the proportion of women with a documented discussion about their family planning needs within a 12-month period.
Method: We conducted a retrospective notes review of all women aged 16-60 years of age attending for HIV-related care in March 2013. We reviewed the prior 12 months to ascertain provision of family planning care. We defined a woman as potentially "requiring contraception" if she was not documented to be sexually inactive, trying to conceive or post-menopausal.
Results: In total 321 women attended for HIV-related care in March 2013. Notes were reviewed for 202 (62.9%) women. The median age was 41 years (interquartile range 35-49 years) and the majority were Black African (167/200, 83.5%). Nearly 60% of women (116/202) were likely to require contraception. Of these, 56/116 (48.3%) were documented to be on regular contraception. The majority (35/56, 62.5%) were using condoms alone. Only 17 (30.4%) were using long acting reversible methods, whilst 3 used other methods including progestogen-only pill and sterilisation. Only 5/56 women were documented to be using barrier methods as a second method. Over half of women who may have required contraception were not documented to be using any (60/116). Contraception was offered to only 9 (15.0%) of these women, of whom 3 accepted. A specific discussion about family planning needs in the past year was documented in less than 40% (77/202) of notes.
Conclusion: Our audit suggests that our service needs to improve the provision of family planning care to women of reproductive age. There is a clear imperative to raise awareness among clinic staff. We are establishing robust pathways including incorporating family planning proformas into electronic patient record systems.

P142

An audit looking at the management of HIV-positive pregnant women at two large UK centres

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Background: BHIVA recommends that all HIV positive pregnant women be managed appropriately and consistently to prevent mother to child transmission (MTCT). This audit compared the management of HIV Positive Pregnant Women between 2008 and 2012.
Methods: Retrospective analysis of HIV positive pregnant women attending joint care between 2008 and 2012. Completed data was available on 64 out of 87 pregnancies. Ethnicity, baseline viral load, CD4 count, resistance tests, drug therapy, care-plans, STI checks, gestation ARVs commenced, pre-term labour, mode of delivery, baby PEP and bottle vs breast feeding were all analysed.
Results: Of the 64 women, 37 (57.8%) were from Sub-Saharan Africa, 1 (1.5%) Asian and 1 (1.5%) from Eastern Europe whilst the remainder were of British origin. Of the 64, 51.6% (33) were established on Anti-Retroviral therapy (ARVs) preconception whilst 17 (26.6%) were diagnosed at ante-natal screening. There were a number of combination regimens used including Combivir/Kaletra 25 (39.1%),Truvada/Kaletra6 (9.4% Kivexa/Kaletra 6 (9.4%) and Kivexa/Nevirapine 5 (8%). Of the 33 women who were on ARVs pre conception, 25 (75.8%) of the regimes included a Protease Inhibitor (PI), mainly Kaletra. All 14 (82.4%) of the 17 women who were diagnosed during pregnancy were started on a PI based ARV regime. Preterm labour occured in 6 (9.4%) women. At presentation 11 (17.2%) women had a baseline CD4 count of < 250, 18 (28.1 %) < 350 and 35 (54.7%) < 500. At 36 weeks gestation 67.2% (43) had an undetectable viral load and 18.6% (8) had SVD, whilst 58.1% (25) had a C Section. Indications were obstetric in 10 (40 %) and viraemia in 6 (28%). All patients received IV Zidovudine. All but 2 neonates were bottle-fed, 1 breast feeder had a detailed care plan but left the area. There was only one MTCT during the period audited. Most women, 58 (90.6%) presented before 28/40 of their pregnancy but only 56.2% (36) had their gestation care plans issued before 28/40. STI screening was done before 20 weeks in 56.3% (36). Worringinly 8 (12.5%) did not have any STI screening at all. All women remained on ARVs post -delivery.
Conclusion: The management of pregnant women with HIV infection during pregnancy and delivery adhered to the BHIVA guidance. From 2012 onwards there was a trend, in accordance with guidance for planned vaginal deliveries with undetectable viral load. There are some areas for improvement such as timely issuing of care plans and STI screening in the correct trimester. This audit highlights the diligent care that has been delivered to HIV positive pregnant women at both units.

P143

Improving response to hepatitis B immunisation in young adults with perinatally acquired HIV-1 infection: a complete audit cycle

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Background: Hepatitis B Virus (HBV) infection remains a major public health problem worldwide despite an effective vaccine. Individuals with HIV are at greater risk of acquiring HBV and HIV/HBV co-infection has worse outcomes than mono-infection. HBV vaccine is currently not part of the routine UK immunisation schedule and, although recommended by CHIVA guidelines, is often not routinely given in paediatric care. A single centre audit cycle of HBV immunisation in young adults with perinatally acquired HIV-1 (PaHIV) was completed. After the 2011 audit, enhanced monitoring and follow-up was instituted for HBV immunisation.

Methods: Case notes review of adults with PaHIV in August 2013 and compared to the initial audit of 2011. HBV-infected patients and new patients were excluded. Demographics, CD4 count, antiretroviral therapy (ART), and serology post-immunisation were recorded. Anti-HBs titres of >10IU/l were classified as a response (protective: >100, intermediate: <100 and >10IU/l).
Results: Of 61 patients with PaHIV: 84% were Black African, 57% female, median age 20 years, 43 (70%) receiving ART. 43 (70%) patients completed vaccine recommendations from the 2011 audit. 51 (84%) received at least one dose of primary HBV vaccine, of whom 46 (75%) completed 3 doses. Median CD4 count at first immunisation was 515 cells/μl (IQR 295-710). Of 10 unimmunised (median CD4 215, IQR 70-555), 5 had CD4 <200 cells/μl, and 5 not documented. 56/61 (92%) patients had anti-HBs titres in 2013: 25 (41%) protective, 12 (20%) intermediate, and 19 (31%) non-protective; compared with 45/66 (68%) patients in 2011: 13 (20%) protective, 7 (11%), and 25 (38%) non-protective. 52 patients had a new anti-HBs titre since the 2011 audit.
In 31 patients where dates of vaccine doses were documented, the median interval between doses 1 and 3 was 3 months (IQR 2-6). 21/31 had a titre >10IU/l and 11/31 were >100IU/l. There was no significant relationship between immunogenicity and either the interval between dose 1 and 3, or baseline CD4 count. 22 patients with poor responses were re-immunised with boosters or repeat 3-dose courses. Of these, 7 developed protective titres, and 7 were still undergoing re-immunisation or need titres measured.
Conclusion: This re-audit demonstrates improvement in completing HBV immunisation in PaHIV-infected adolescents since enhanced follow-up was introduced. More than 90% had monitoring of anti-HBs titres and the proportion with serological protection doubled.

P144

Antenatal care and communication between multidisciplinary services for HIV-positive pregnant women

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Background: We have audited adherence to the British HIV Association (BHIVA) guidelines for the management of HIV infection in pregnant women in an urban area of South Wales. We have additionally focused on the communication involved in coordinating care between the multiple services involved.
Methods: Case-note review was completed for all 13 HIV-infected pregnant women presenting for antenatal and/or HIV care between January 2011 and August 2013. Areas of practice evaluated included the use of antiretroviral therapy (ART), routine monitoring and screening, interdisciplinary communication, provision of advice to patients, availability of a comprehensive birth plan and co-ordination of multidisciplinary working.
Results: Over two thirds (69%) of women were on ART for their own health and all but one (92%) were commenced on ART by the recommended 24 weeks' gestation. One patient had a baseline viral load >$30x10^3$ copies/ml and commenced ART at 19 weeks. Just under half (6/13, 46%) of the women required dose changes and/or additional medications for intensification during the course of their pregnancy, in line with BHIVA guidance. 84% of women had undertaken a sexual health screen within a year prior to conception. Two women were known to be infected with Hepatitis B virus, one with syphilis and all were correctly managed. All women had an offer of testing for their partner and other children, 84% of women were provided with breast-feeding advice, and 54% were given post-postpartum contraceptive advice. 100% of women were the subject of a multi-disciplinary meeting, with 92% having a birth plan in place prior to delivery. The mean gestation prior to correspondence between HIV and obstetric/paediatric services was 15 weeks, with a range of 6 to 26 weeks. Information found to be most commonly missing in these letters included recent changes to medications, the relevant medical history of the patient, and social issues to be considered in forward planning. Post-partum, 54% of women were offered a follow-up HIV clinic appointment within the recommended 6 weeks.
Conclusion: There is generally good adherence to the BHIVA guidelines with regard to antenatal care and communication between specialities. There is room for improvement in communication particularly in the content of letters provided and in the follow-up of patients post-partum to ensure continued low risk of vertical transmission and the optimisation of both mother and baby's health.

P145

Achieving high standards for very young people attending a London sexual health service

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Introduction: Young people (<25y) (YP) in Hackney experience a high rate of STIs, unplanned pregnancies and sexual exploitation. We run a dedicated YP clinic (YPC) whilst also ensuring all staff across our general service are competent to manage YP. Local standards inform the following areas: i) assessment of sexual and reproductive needs, ii) vulnerability and competence. We present audit data on these standards for our very young cohort (<16y) seen in both YPC and general clinics.
Methods: We collected data on this group between 1st Jan and 31st Dec 2013. Case notes review was undertaken to audit the following: vulnerability assessment, Fraser Competence, sexual health needs assessment and contraceptive needs. We aimed for 100% attainment in all areas except contraception for which the standard was at 90% of suitable patients. We compared those attending our standard services to those attending YPC using Fishers exact two-tailed test.
Results:

	YPC*	OTHER**	*p*
TOTAL ATTENDANCES (n)	47	163	
MALE (%)	28	15	*0.05*
FEMALE (%)	72	85	
MEAN AGE (years)	14.6	14.6	*n.s.*
AUDITABLE STANDARDS (%)	YPC	OTHER	
VULNERABILITY (100)	93.5	80	*0.03*
FRASER COMPETENCY (100)	85	83.8	*n.s.*
STI NEEDS (100)	97.1	84.8	*0.02*
CONTRACEPTIVE NEEDS (90)	92.3	82.8	*n.s.*

*(*data from 1 clinical site **data from 3 clinical sites)*

Discussion: The age distribution of < 16 YP attending both services was similar but YPC attracted a higher proportion of boys. The vulnerability assessment and assessment of STI occurred more consistently in YPC. The local standards were deliberately very high and, despite not meeting these (other than in offering contraception in YPC), feel these figures represent good practice. A major limiting factor to this data is that we have not delineated between new and follow up appointments as yet, thus cannot comment if assessments were indeed performed on previous visits. We do not have data on STI rates in this group and aim to improve our data collection in 2014.

P146

HIV-infected women cared for and delivered at a district general hospital: a review of a decade

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Background: Increasing numbers of women with HIV are choosing to become pregnant, as there has been a dramatic reduction in the risk of vertical transmission of HIV in the last decade. However, management of HIV in pregnancy still poses a variety of challenges. The aim of this review was to look at the outcomes for HIV positive pregnant women in our hospital over ten years.
Methods: A retrospective case notes review of pregnant HIV positive women attending our centre during the period 2003-2013 was carried out. Data such as patient demographics, risks of transmission, point of HIV diagnosis and management of the pregnancy, delivery and neonate were all documented.
Results: There were 43 pregnancies in 32 women. The majority of patients, 16/32 (50%) were black African; 12/32 (37%) were Caucasians. The median age was 34 years. There were 43 live births and the overall maternal to child transmission was zero percent. Most pregnancies occurred in women who were already known HIV positive 19/32 (59%). 13/32 (41%) women were diagnosed antenatally of whom 10/13 (77%) were diagnosed in the first or second trimester. The majority of women were in a stable relationship 21/32

(66%), and all partners were aware of the woman's HIV status. 19/32 (59%) pregnancies were planned. 22/32 (59%) women were already on antiretroviral treatment for at least six months. The most commonly used protease inhibitor was lopinavir/ritonavir in 12/32 (37%) patients, nevirapine as an NNRTI in 10/32 (67%), lamivudine /zidovudine as an NRTI backbone in 21/32 (54%). HIV viral loads at delivery were undetectable in 42/43 (98%) pregnancies. One patient had a viral load of 2016 IU/ml at delivery due to poor adherence. Mode of delivery was by caesarean section in 38/43 (88%) of which indications were to reduce risk of transmission in 31/38 (81%). 5/43 (12%) were vaginal deliveries. 41/43 (96%) pregnancies were term. The majority of newborns 35/43 (81%) were given zidovudine as PEP and at least one HIV test was done and results were negative. Congenital anomalies were reported in 4/43 (9%) babies. 24/43 (56%) of women accepted a method of contraception after delivery.

Conclusion: Our review confirms that preventing HIV infection in children has become possible in the past decade. The care provided to HIV-positive women and their babies managed at our centre was largely compliant with BHIVA guidelines. Areas for improvement identified by this review include considering increasing the dose of darunavir, and better communication between multidisciplinary team.

P147

One forgotten child is one too many: an audit of HIV positive female patients and their children, which resulted in an improvement to the numbers of children identified and tested for HIV

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Background: "Don't forget the children" was published by BHIVA, BASHH and CHIVA in 2009 and amongst its recommendations were that

- all new patients attending HIV services should have any children identified and tested
- all units should perform a look back exercise to establish the HIV status of any children whose parents attend the service

In response to these recommendations, an audit of all female patients attending the HIV service in Bath took place in 2009 and a re-audit in 2013.
Methods: The audit involved a case note review looking at 2 groups

- "New patients" or patients at the point at which they were diagnosed or transferred into the service (the children they bought with them): 34 female patients in 2009, 57 in 2013
- "Existing patients" or patients who were under the care of the clinic at the time their children were born (the children born since):5 infants in 2009, further 5 in 2013.

Standards included a discussion about HIV testing all children identified and referral to community paediatrics in situations where there is refusal to test.
Results: All infants born to "existing patients" under current follow up, were tested for HIV or referred to community paediatrics where this was appropriate.
However only 80% (24/30) of "new patients" in 2009 were asked if they had children and in only 22% (4/18) of cases, was there documentary evidence that a discussion about HIV testing the children had taken place.
The re- audit in 2013 showed this had improved to 93% (53/57) being asked if they had children with a discussion about testing in 82% (28/34).
Conclusions: Patients new to the clinic were not consistently being asked about whether they had children or whether these children were had been tested for HIV (2009). Discussions within the MDT, following the original audit, led to appropriate retrospective follow up of all patients who had not met the audit criteria and the establishment of a mechanism to collect this data for the future.
A new patient pro forma introduced in 2011 has improved the recording of this information for patients new to the service, as evidenced by the results of the re audit. Management of children of female HIV patients has improved as a result.

Complications of HIV Disease or Treatment

P148

Investigating presentations and outcomes of a joint HIV-renal clinic

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Background: HIV patients are at risk of renal dysfunction either directly from HIV, indirectly from chronic inflammation or from anti-retroviral toxicity.
A joint HIV/renal clinic was set up in 2009 to facilitate timely review and minimize additional follow up appointments. This study aims to investigate the utility of this clinic.
Method: Patients who were seen in the HIV/renal clinic between 2012-2014 were audited. Demographics, HIV history, number of visits, reason for referral and outcome information were collected.
Results: 61 patients, mean age 53 yrs (28-88), mean duration of HIV 161mths (20-335) were reviewed. 39 were taking tenofovir (TDF) for a mean of 54.8 mths (9-122). 47 patients were seen once with a mean number of visits of 1.35 (1-4).

Table: describes the reasons for referral to the clinic

Reason for referral	Frequency
Proteinuria +/- increased creatinine on TDF	35
Proteinuria +/- increased creatinine not on TDF	14
Raised creatinine alone	12

Of those on TDF with proteinuria 5(14.3%) had TDF discontinued at once, 24 continued with monitoring with a further 7 subsequently discontinuing. Mean time on TDF 63.4 mths (24-125) in those discontinuing.
Blood pressure control was the commonest outcome overall, 22/61 (36%), with 10/14 (71%) in the non-TDF proteinuria group. 3 (5%) patients underwent renal biopsy and 3 were referred to urology. In 6 (10%) creatinine rise was attributed to NSAID's, creatine or protein supplements usage.
Conclusions: The majority of patients were seen once, confirming the clinic was acting in a 'one stop shop' way. TNF toxicity was the commonest reason for referral but only a minority (14.3%) needed to discontinue immediately. Optimising BP control was the most frequent outcome suggesting this is an underappreciated cause for renal dysfunction amongst HIV physicians, as were other causes such as creatine & protein supplement usage. Only a small minority required follow up by renal or urology services thus the clinic significantly reduced referral rates to these specialties.

P149

MRI detection of sub clinical structural cardiac dysfunction in HIV-positive men

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Background: Cardiovascular disease is a significant cause of morbidity and mortality in patients with HIV despite viral suppression with anti-retroviral therapy (ART). Cardiac Magnetic Resonance Imaging (CMR) can identify multiple forms of cardiac pathology even in the absence of overt clinical manifestations and is emerging as a powerful tool in detecting pre clinical cardiac abnormalities with the potential to reduce subsequent morbidity and mortality.
Method: A cohort of 168 HIV+ men on ART, age 46.49+/-8.7 years and 34 HIV negative age matched controls with no prior history or symptoms of CVD, were prospectively studied. Baseline demographics, traditional and novel cardiovascular risk factors, gluometabolic indices, HIV parameters and ART history were recorded. In addition parameters of systemic inflammation (high sensitivity CRP) were also recorded. Cardiac MRI was performed using a 3T system and 5 channel cardiac array coil and a standard protocol to assess cardiac structure and function including LV volumes, mass, wall thickness, ejection fraction and diastolic function. Post gadolinium contrast inversion recovery images acquired to detect myocardial scar or visible fibrosis.

Results: There was no statistically significant difference in left ventricular volumes between cases and controls. Patients were found to have significantly higher anteroseptal (AS) wall thickness versus controls (p=0.021), indicative of regional left ventricular hypertrophy. Clinically significant cases of previously undetected myocardial infarction were detected in 7 patients (4%), but not in controls. On multiple regression analysis, factors which contributed to increased AS thickness were; hs troponin (p=0.017),NNRTI based regimens (p=0.019), BMI (p=0.01), family history of cardiac disease (p=0.046) and raised Framingham risk (p=0.035). There was no statistical difference in hsCRP (p=0.341), or adiponectin between the two groups (p=0.969).
Conclusion: Despite HIV viral suppression with ART, early structural cardiac changes have been detected with CMR in asymptomatic HIV positive men. Clinically undetected myocardial infarction was prevalent. Regional left ventricular hypertrophy was linked to traditional cardiac risk factors and NNRTI therapy, but not to inflammatory markers (hs CRP). Exploring the aetiology of these abnormalities may expose novel mechanisms for the increased cardiovascular risk experienced in the HIV population and warrants further study.

P150

Saving 1000's Lives – Identifying depression in adults living with HIV to improve patient outcomes

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Background: The link between HIV and Mental Health is well documented together with the psychological needs of HIV patients. The NHS Wales Saving 1000 Lives Campaign was set up to improve healthcare provision across Wales. One aspect of the campaign is to identify depression in patients attending hospital settings. To assist in this we piloted a standardised questionnaire for HIV patients. These results will also contribute to a larger review investigating links between depression and chronic diseases.
Method: The Saving 1000 Lives "How are you feeling?" questionnaire was given to all patients attending two HIV clinics from May-July 2013. Two screening questions assessed eligibility for 1) Chronic condition and 2) Depression. Participants then completed a Patient Health Questionnaire (PHQ-9), Hospital Anxiety and Depression Scale (HADS) and Distress Thermometer. Clinicians then interpreted the score to assess for either onward referral to psychiatric or counselling services.

Table 1 - Participant demographics

Male	82	87%
Female	12	13%
Heterosexual	29	31%
Homosexual	55	59%
Bisexual	9	10%

Results: This audit shows that more than one third of all our HIV patients have severe anxiety or depression; which may only be apparent using a specific screening tool. Of those identified through screening, more than half have severe anxiety / depression. These patients may require more intense MDT input to ensure continuity of care and HIV viral suppression. The results also highlight the need for appropriate psychiatric services to be available to HIV patients. The use of the 1000's lives questionnaire was well accepted by patients. All new patients are now screened for depression scores for future comparison.
Conclusion: 158 patients completed the screening questions; 94 passed the screening questions and were eligible for the audit, the mode age category was 40-49 years old. Of the eligible 94 patients, 47% of patients (44) had a PHQ-9 score of greater than 10 (moderate to severe depression). 56% (49) patients scored 16 or more as assessed by the HADS screening tool signifying severe depression. Of those with severe depression 53% (26) patients were homosexual, 31% (15) were heterosexual and 14% (7) were bisexual. 13% patients scored 8-10 on the distress thermometer, signalling high levels of distress. This questionnaire identified 38 new cases of depression. 58% of patients felt the questionnaire was either quite helpful or extremely helpful.

P151

"My memory is not what it was" pilot of initial screening for cognitive and mood disorders within an HIV clinic

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Background: The early identification of mood and cognitive difficulties in people living with HIV (PLWH) enables faster and smoother access to the most appropriate and clinically effective interventions. In line with BHIVA and EACS guidance a pilot of initial screening was conducted to gather information about cognitive and mood disorders reported by patients attending an HIV clinic in outer London.
Methods: A brief initial screening tool was developed and administered during medical reviews, to identify patients in need of formal neuropsychological (NP) testing or further assessment for mood disorders. This comprised of three neurocognitive (NC) and depression items taken from existing tools (Aroll 2003, NICE 2009, ECAS 2009, Simoni 2010) and 2 Likert mood rating items, on a two sided proforma. Further assessment was indicated where patients either answered yes to two NC items or two depression items and scored <5 on the Likert scale. Additional data was collected on demographics, nadir CD4 counts and HIV therapy. The tool was administered to patients who had been diagnosed for >6 months attending routine HIV consultations with a doctor or specialist nurse during August 2013.
Results: Seventy-four patients were screened and ranged in age from 29-73 years old (*m=47).* 61% were female and predominately Black African (66%). Median nadir CD4 count was187 cells/μl (range 4-682). 95% of patients were prescribed HIV therapy for between 1-14 yrs. Four patients (5%) required NP assessment, which confirmed cognitive dysfunction that may not have been identified. The majority did not report any NC problems. 93% scored within the normal moderate range for depression, and 86% reported, mild or no symptoms for anxiety, none were referred for further assessment of mood.
Conclusion: The provision of routine screening for NC difficulties and mood disorders provides earlier identification and access to appropriate interventions. This pilot has shown a successful method of introducing quick routine NC and mood screening into a busy HIV clinic, a first step to providing a pathway for more specialised support. We plan to incorporate this tool as part of a yearly health check.

P152

Investigating the mechanisms of tenofovir-induced mitochondrial toxicity in the kidney

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Background: Numerous case reports have described renal proximal tubule (PT) toxicity in patients taking the NtRTI Tenofovir disoproxil fumarate (TDF). Although *in vitro* tests originally suggested that TDF is not toxic to mitochondria, abnormalities in mitochondrial morphology are a characteristic feature of TDF toxicity in animal and human models.
Method: We investigated TDF-induced mitochondrial toxicity in PT derived cells (LLCPK1) and live slices of whole rat kidney. To study mitochondrial membrane potential ($\Delta\psi_m$) and ROS production, we used established fluorescent markers TMRM (tetramethylrhodamine-methyl-ester) and mitosox, respectively, in combination with confocal and multiphoton microscopy. A Seahorse XF-24 analyser was used to measure oxygen consumption. Fluorescence values are expressed as a ratio to baseline signal.
Results: TDF 200 μM caused a rapid increase in $\Delta\psi_m$ in LLCPK1 cells; after 40 minutes the mean TMRM signal in TDF cells (1.4±0.07, n=3) was significantly greater than in control cells (0.9±0.02, n=3, p=0.002). This was followed by fragmentation of mitochondria (<60 min) and subsequently cell death. Similar changes were observed in PT cells in live kidney slices. The NtRTIs Cidofovir 200 μM and Adefovir 200 μM did not cause any change in $\Delta\psi_m$ or mitochondrial morphology in cells. TDF also caused an increase in ROS production in LLCPK1 cells; after 30 minutes, mitosox signal was significantly higher in TDF cells (1.5±0.10, n=3) than in control cells (1.2±0.04, n=3, p=0.02). The rate of oxygen consumption in LLCPK1 cells did not decrease in response to TDF.
TDF contains fumarate, which has been associated with PT toxicity; however, in LLCPK1 cells fumarate alone did not reproduce the effects of TDF on mitochondria.

Conclusions: In summary, our data show that TDF increases $\Delta\psi_m$ and does not decrease oxygen consumption rate in PT cells. These changes are associated with oxidative stress, mitochondrial fragmentation and ultimately cell death. They appear to be unique to TDF, rather than a class effect, and are not caused by fumarate. Future experiments will focus on elucidating the mechanism(s) that underlie these novel observations.
[BHIVA Research Awards winner 2007: Andrew Hall]

P153

Timely histopathology in HIV-related illness may improve outcomes

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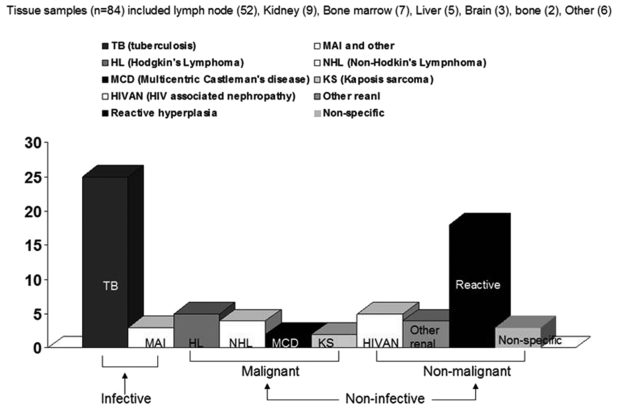
Background: With combination antiretroviral therapy the spectrum of HIV related illnesses have changed dramatically. Clinical findings with other test results often are not enough to confirm diagnosis and tissue examination play important role to achieve favourable outcome. We aim to describe relationship between clinical and histological findings, evaluate the treatment and survivals amongst HIV patients who had organ biopsies.
Methods: We collected information regarding baseline demography, clinical presentation, treatment history, duration of illness, viral load (VL), CD-4 count at presentation and 12 months after in 63 HIV patients who had organ biopsies. The histology slides were reviewed and reported by panel of expert histopathologists in a University Hospital. Statistics by Fishers exact test or Dunn's multiple tests.
Results: Eighty four samples of different tissues were obtained form 63 individuals, mean age were 40 (+/-6.7) years and 62% were black African. Mean CD-4 cell count at presentation was 253 (+/-102) cells/dl and VL was 4.3 (+/-3.1) log copies /ml. Majority (79%) presented with lymphadenopathy and weight loss (OR: 2.1, CI: 1.1, 4.6, p= 0.02), followed by pyrexia of unknown origin (12%) with lymphadenopathy. Thirteen (21%) patients had undetectable VL at presentation. Thirty seven patients (59%) were treatment naïve and 17 (27%) patients had VL more than 100000 copies/ ml.
Histopathological findings were divided to infective and non-infective types. Tuberculosis was the most common infection (83%, p=0.04). Non-infective types included malignant (n=13) and non-malignant (n=33) types (p=0.03). All but four patients (90%) had favourable outcomes (OR: 2.2, CI 1.2, 5.6, p= 0.02) with current VL undetectable and mean CD-4 count of 460 (+/-210) cells/dl. All patients with unfavourable outcomes were late presenters.
Conclusion: We found that readily available clinical characteristics supported by tissue examination could dramatically change the course of the disease, consequently improve the treatment and survival outcomes

Figure1: Different histological findings



P154

Clinically significant extra-cardiac findings in asymptomatic HIV+ men undergoing cardiac MRI

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Background: With the increased prevalence of research based imaging, concurrently there has been an increase in clinically significant incidental findings. HIV patients are at increased risk of having polypathology at a younger age and therefore it may be hypothesised they would have more incidental findings on imaging. It is important to plan for incidental findings when carrying out research on healthy volunteers.
This study assessed the prevalence of clinically significant extra cardiac findings (CSECF) in HIV positive healthy male volunteers undergoing cardiac MRI (CMRI) and to ascertain any risk factors associated with these findings.
Methodology: 169 HIV positive, virally suppressed, clinically well volunteers underwent cardiac MRI scanning to assess the prevalence of subclinical cardiac pathology. As part of a substudy we assessed the prevalence of CSECF from the MRI reports. Associated risk factors were assessed and clinical follow up and eventual outcome was ascertained from patient notes.
Results: Patients had a mean age of 46.5years. 12/169 (7.1%) had a CSECF which warranted further radiological or clinical intervention. Highly significant clinically findings were found in 1.1%, 2 lung cancers and 1 thymoma. Age was the only clinically significant contributing factor (p=0.049), no HIV associated factors were found to be significant.
Conclusions: The prevalence of 7.1% was comparable to the prevalence found in previous studies carried out on an older, sicker general population. This highlights the need for planning for incidental findings when carrying out tomographic screening investigations and also the high rate of clinically significant findings in a seemingly well HIV positive population.

P155

Insulin resistance in HIV: the canary in the cage

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Background: Outside of the UK Type 2 Diabetes (T2D) in HIV patients is reported to be up to four times more prevalent compared to negative controls, associated with age, ethnicity, and obesity, and HIV-specific factors including HIV duration, antiretroviral (HAART) treatment and lipodystrophy. We describe for the first time the phenotype and risk of insulin resistance in a large UK HIV cohort.
Methods: We conducted an analysis of T2D and its risk factors on 329 participants from a large study of cardiovascular risk in HIV. Data was collected from 2005-2007. Individuals were included in the analysis if they had confirmed fasting blood results or confirmed impaired glucose tolerance/ T2D according to international criteria. Participants were categorised as either normoglyaemic or dysglycaemic, and characteristics compared using chi-squared and t-tests.
Results: In this HIV cohort one-fifth have prediabetes, and 5% have T2D. The prevalence of T2D in London in 2006 was 4.6%, however this HIV cohort is considerably younger than the general population T2D cohort. As in the general population, age (P<0.001) and male gender (P<0.05) are associated with dysglycaemia, but not ethnicity. However duration of HIV (P<0.05), HAART treatment (P<0.001), and lipodystrophy (P<0.05) are also associated. In this cohort, age quintiles indicate the prevalence of insulin resistance markedly increases in those aged over 43 (P<0.05).
Conclusions: The high prevalence of insulin resistance in our HIV patients is indicative of an epidemic of HIV-associated diabetes to come – the canary in the cage. Those with insulin resistance and therefore at highest risk of developing T2D in 2006 were aged 43 and over – today this group is aged 50 and over. Further characterisation of the phenotype of insulin resistance and T2D in HIV is required to facilitate a targeted approach to screening and prevention in this ageing population.

P156

Treatment switches following periods of low-level viraemia

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Background: Changes to combination antiretroviral therapy (cART) may be made at low viral loads (VL) without evidence of viral failure or resistance. We studied rates of treatment switch at different VL thresholds and predictors of a switch at VL >50 copies/ml.
Methods: Individuals in the UK Collaborative HIV Cohort (CHIC) Study who started cART between 2000-2011 and achieved VL <50 copies/ml were included. Pregnant women were excluded. Frequency and duration of viraemia episodes in the range 51-1000 copies/ml and rates of treatment switch following VL <50, 51-1000 and >1000 copies/ml were described. A VL measure was said to result in treatment switch (intensification or a change to the 'third' drug in the regimen) if it occurred within 6 months and prior to the next VL. Poisson regression with Generalised Estimating Equations determined predictors of treatment switch at VL >50 copies/ml.
Results: In 14,814 individuals, median (interquartile range (IQR)) age was 37 (32, 44), 77% were male, 56% white, 54% men having sex with men. Median (IQR) baseline CD4 count and VL were 210 (115, 300) cells/mm^3 and 4.8 (4.2, 5.3) $\log_{10}$copies/ml. 4,992 (33%) people experienced 8,150 episodes of viraemia; mean duration 2.9 months. Most (89.8%) viraemia episodes ended in re-suppression, 6.3% resulted in treatment switch and 3.9% had not resolved by follow-up end. Rates (95% confidence interval (CI)) of treatment switch after VL <50, 51-1000 and >1000 copies/ml were 17.4 (17.0, 17.7), 39.0 (36.7, 41.3) and 126.0 (117.8, 134.2) /100 person years. Predictors (adjusted Relative Rate [95% CI]) of a switch at VL >50 copies/ml were VL (1.40 [1.17, 1.67] 101-200 copies/ml; 1.81 [1.50, 2.17] 201-500 copies/ml; 2.51 [1.99, 3.17] 501-1000 copies/ml; 4.18 [3.64, 4.80] >1000 copies/ml vs. 51-100 copies/ml), previous viraemia (≥2 VL measures between 51-1000 copies/ml ≥90 days apart) (1.25 [1.06, 1.47]), time on cART (0.97 [0.95, 0.98] per 6 months), CD4 count (0.98 [0.97,1.00] per 50 cells/mm^3) and cART regimen (0.98 [0.86, 1.12] PI-based regimen; 1.74 [1.51, 1.99] other regimens vs. NNRTI-based regimen). An interaction between calendar year and VL was not significant, but an increase in rates of switching was seen in VL strata <1000 copies/ml in more recent years.
Conclusion: Whilst more likely at high VL, treatment switches were still present at VL between 51-1000 copies/ml. Further work on the implications of these switches for resistance development and long-term outcomes is needed.

P157

Neuropsychological profiles of HIV+ patients undergoing neurorehabilitation

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Background: We provide an inpatient rehabilitation service for patients with HIV related neurological disorders. Many of these patients are late diagnoses or have been lost to follow up and present with HIV encephalopathy and other AIDS defining diagnoses that have led to cognitive difficulties. The neuropsychological profiles of this group of patients have been poorly described in the UK, since the era of HAART. Data from the literature suggests a changing pattern of impairments in the era of HAART.
Methods: We conducted a cross sectional study reviewing the neuropsychological profiles of 69 HIV+ inpatients with cognitive difficulties admitted between January 2011 and December 2013. Neuropsychological evaluation assessed specific domains affected by HIV including: immediate and delayed memory, executive function, language, visuo-spatial abilities, attention and processing speed, using the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS), the DKEFS verbal fluency test and the Trail Making Test (A and B)
Results: Results were compared to historic age matched controls. 95% had impaired information processing speed with 83% being severely impaired in this domain. Non-verbal executive function testing revealed impairments in 72% on switch tasks with 38% severely impaired, and impairments in 78% on verbal executive functions on the DKEFS verbal fluency switching task. Immediate verbal memory impairment was demonstrated in 82% on a list recall task and 64% on a story recall task, with 59% and 46% being severely impaired respectively. Impairment in delayed verbal memory was demonstrated by 78% on a list recall task and 68% on a story recall task with severe impairment demonstrated by 57% and 52% respectively. 53% demonstrated impairments in visuo-spatial function with 42% severely impaired. 49% demonstrated impairments in language functions with 44% demonstrating severe impairments. The results suggest that severe impairment is more prevalent in the domains of information processing speed, executive function and immediate and delayed memory. Language and visuo-spatial abilities were less severely affected.
Conclusions: The results suggest significant memory and executive function difficulties in this cohort, similar to that noted in other cohorts in the era of HAART. This is likely to reflect problems for adherence to antiretroviral therapy and the ability to initiate activities of daily living in the community upon discharge.

P158

Quality of life of HIV-infected injecting drug users in the era of HAART

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Background: Health related quality of life (HRQOL) is reduced in HIV infected individuals, especially in intravenous drug users. The aim of this project was to determine HRQOL between HIV infected drug users (IDU), HIV negative IDU, and HIV infected non-IDU, and to investigate factors influencing it.
Methods: As part of a joint study between adult addiction & HIV services, HIV infected IDU, HIV negative IDU & HIV infected non-IDU were identified. Each individual completed EQ-5D, SF-36 /SF-6D & Hospital Anxiety Depression Scale (HADs) to determine HRQOL. Relevant clinical & substance misuse data was collated. Univariate & multivariate analysis were performed. For the multivariate analysis a general linear model was fitted, this was a backwards stepwise regression incorporating significant factors from the univariate analysis.
Results: 274 patients: 77 HIV positive non-IDU; 82 HIV positive IDU; 115 HIV negative IDU.

	HIV + non-IDU	HIV + IDU	HIV - IDU	Statistical analysis
Age (mean±SD)	42±10	38±7	35±8	p<0.001
HCV positive	7(9%)	53 (64%)	72 (63%)	p<0.001
CD4 (mean±SD)	591±295	317±264		
Anxiety (mean±SD)	5.67±4.34	10.72±4.66	11.14±4.89	p<0.001
Depression (mean±SD)	2.74±3.22	8.18±4.97	8.4±4.6	p<0.001
EQ-5Dutility (mean±SD)	0.87±0.19	0.52±0.37	0.56±0.33	p<0.001
SF-6Dutility (mean±SD)	0.71±0.14	0.55±0.14	0.55±0.13	p<0.001

There was no significant difference between HIV infected and non-infected IDU with age of first drug use, methadone dose, injecting drug use and monthly substance misuse.
EQ-5D multivariate analysis of the HIV infected patients only: HIV VL, anxiety, depression & ART status were significant. SF-6D multivariate analysis of HIV infected patients only: HIV VL and anxiety were significant. EQ-5D multivariate analysis of all 274 patients, anxiety & depression were significant. SF-6D multivariate analysis of all 274 patients: CD4 count, HIV VL, crack, anxiety and depression were significant.
Conclusion: HIV infected IDU have worse clinical outcomes, lower HRQOL and higher levels of anxiety and depression than their non-drug using HIV infected counterparts. Regardless of HIV status, intravenous drug users experience significant anxiety and depression, which deleteriously affects HRQOL.

P159

Hearing impairment and deafness among HIV-infected children and adolescents in Harare, Zimbabwe

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Background: Ear infections are among the most common infections that occur in children. Among HIV-infected children ear infections are recurrent and chronic, which may lead to hearing loss. We investigated the prevalence, cause and severity of hearing impairment among HIV-infected children aged 5-17 years attending for HIV care in Harare.
Materials and Methods: Participants underwent a standardised otoscopic examination of the external and middle ear and pure tone audiometry (PTA). The CD4 count at diagnosis, the most recent CD4 count and WHO Stage were obtained from the clinic database. The association between HIV disease WHO stage and hearing impairment was investigated using multivariate logistic regression.
Results: Three hundred and eighty participants (55% female) and mean age 11 years (SD: 3.3 years) were consecutively recruited. At diagnosis, the median baseline CD4 count was 271 (IQR: 174-358) cells/ μL and only a minority (10%) had WHO stage 3 or 4 disease. The vast majority of participants (n=338; 89% were taking antiretroviral therapy (ART) for a median of 3 (IQR: 2-5) years and the most recent median CD4 Count was 725 (IQR: 497-1000) cells/ μL, with no difference by ART status. Sixty one percent of participants had an abnormal ear examination, the most common cause being chronic otitis media with or without effusion (n=80; 35%) and cerumen impaction (n=86; 37%). Of the 359 participants who underwent audiometry, the prevalence of hearing impairment was 32.3% (95%CI: 27.5%-37.4%) based on a PTA threshold ≥26dB; 75 (19.7%) had mild impairment (PTA threshold 26-40db), 30 (7.9%) had moderate impairment (41-60dB); and 11 (2.8%) had severe impairment (>60dB). Hearing impairment was associated with a recent CD4 count <350cell/μL (OR 2.3, P<0.02), and being aged 8-10 years (OR 2.3, p=0.014) compared to younger age. These associations remained significant after controlling for gender, baseline disease stage and ART status.
Conclusion: There is a high prevalence of hearing impairment among HIV-infected children and adolescents. Low CD4 count remains a risk factor even among those who are on ART. Hearing impairment has a significant impact on educational performance and we recommend that HIV infected children and adolescents, particularly those with low CD4 counts, should have routine evaluation of hearing as part of HIV care to ensure timely management of hearing problems.

P160

Low-dose oral vitamin D replacement may prevent BMD changes in HIV patients

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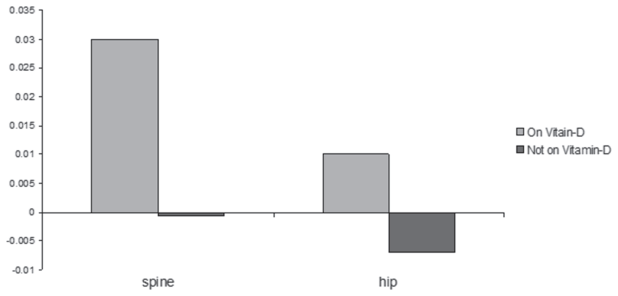
Background: High prevalence of vitamin-D deficiency and abnormal bone mineral density (BMD) has been reported in HIV patients. We aimed to find out the effect of low dose oral vitamin-D tablet (1000 International unit) on vitamin-D level, parathyroid hormone (PTH) level and BMD changes in treatment experienced HIV patients who have vitamin-D deficiency.
Methods: This is a non-randomised open label study. We collected information about demography, viral load, CD-4 count, risk factors for fracture and measured 25(OH) D, intact PTH, inorganic phosphate, corrected calcium, alkaline phosphatase (ALP) and BMD of spine and hip at baseline and after 12 months of follow up. Statistics by one way ANOVA followed by Dunn's multiple comparison tests.
Results: Total 94 patients with mean age 42.8 (+/-7.7) years, 76 (80%) black African, 55 (58%) females, CD4 count 451.7 (+/-184.6) cells/dL, plasma VL 1.6 log (+/-2.3) copies/mL, exposure to antiretroviral 43.2 (+/-30.2) months were included in the analysis. Fifty patients opted to take vitamin-D replacement and 44 patients did not. At baseline serum vitamin-D were 14.7(+/-9.4) ng/mL, PTH (intact) 6.3(+/-5.5) pmol/L, corrected calcium 2.12 (+/-0.9) mmol/L, phosphate 1.06 (+/-0.3) mmol/L and ALP were 95.4 (+/-59.2) mmol/L. There was no difference between the two groups. Patients on tenofovir (n=86) had higher PTH (0.002), on efavirenz (n=74) had lower vitamin-D (0.02), but no difference in BMD of spine or hip. After 12 months patients on vitamin D replacement (n=50) had significant increase in vitamin-D (15.4+/-11 vs. 66.9+/-24, p=0.001), reduction in (PTH 7.0 +/-6.3, vs. 4.4 +/-2.3, p=0.02), improvement in BMD of spine (0.996 +/-0.1 vs. 1.029 +/-0.1, p=0.03) and hip (0.998 +/-0.1 vs. 1.006 +/-0.1, p=0.01). In patients not on vitamin-D replacement (n=44), vitamin-D level increased (14.8 +/-7.1 vs. 37.8 +/-18.6, p=0.01, but PTH and BMD of spine and hip did not change (figure). In multivariate analysis including all significant variables vitamin-D replacement independently associated with increase in vitamin-D level (OR 4.2, CI 2.1, 6.2, p=0.002), decrease in PTH level (OR 1.8, CI 1.1, 4.2, p=0.03) but not with change in BMD of spine or hip.
Conclusion: Low dose oral vitamin-D in HIV patient with vitamin-D deficiency may improve vitamin-D level, normalise PTH level and may prevent BMD changes.

Figure: Mean change in BMD of spine and hip



P161

Mortality among HIV-positive patients in a tertiary centre in the era of HAART

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Background: The introduction of Highly Active Anti-Retroviral Therapy (HAART) has changed HIV from a life-threatening illness to a chronic, manageable infection with progressive improvement in life expectancy and declining mortality. However, deaths in the HIV positive population are still significantly higher than the general population, and some are potentially avoidable.
Methods: We conducted a review of all HIV patients who died between January 2005 and December 2013 in a large teaching hospital in the UK. We identified 62 deaths via hospital clinical coding (ICD10) and data from Public Health England. We analysed the various causes of death and changing trends in mortality during the study period.
Results: Demographic data for the cohort were comparable to national data for ethnicity, route of infection, and hepatitis B/C co-infection. HIV diagnoses spanned more than a 20 year period from early 1991 to 2013. Median age at diagnosis was 39.5 yr (range 23 – 68 yr), with women diagnosed an average of 4.5 yrs earlier than men, and median CD 4 count 109.5 cells/mm^3 (range 2 – 1340 cells/mm^3). Overall, 79% of patients were diagnosed late (CD4 <350 cells/mm^3). Patients who died towards the end of the study period (2011-13) had a 3 fold higher average CD4 count at diagnosis, compared to those who died at the beginning of the study period (2005-6).
At the time of death, median age was 46 yr, median CD4 count 190 cells/mm^3 and 57% were on ART. Overall, 56% of deaths were directly related to HIV, of which 60% were AIDS-defining conditions. When stratified by CD4 count at diagnosis (< 350 or ≥ 350 cells/mm^3), those in the late-presentation group were almost twice as likely to die from an illness directly related to HIV (61% vs 33%). This group also had a reduced life expectancy (3.6 yrs vs 9.8 yrs on average). This included 16 deaths (39% of all deaths in late-presenters) within 90 days of diagnosis. Overall, 39% of deaths were related to a malignancy, of which 48% were AIDS defining.

Conclusion: Almost half of deaths we examined occurring in the era of HAART were not directly related to HIV; this was particularly true of those who presented with a CD4 count >350 cells/mm^3. Patients who were diagnosed with HIV at a late stage also had a shorter average life expectancy, and a high rate of death within 3 months of diagnosis, as has been found in other cohorts. Early diagnosis of HIV is crucial to improve life expectancy.

P162

The clinical implications of the variability in cognitive testing parameters in HIV-infected cohorts

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Background: Neurocognitive impairment (NCI) remains prevalent despite effective combination antiretroviral therapy (cART). A widely used classification criteria defines NCI based on cognitive testing parameters being below 1 standard deviation in at least 2 cognitive domains. Where high variability in cognitive testing parameters exists, such classifications may estimate high rates of NCI.
Methods: We compared variability and the clinical implications of cognitive testing results within three cohorts as follows: 1) HIV-infected subjects on cART entering a phase I study, n=19; 2) unselected HIV-infected subjects on cART, n=103; 3) HIV-uninfected controls provided by the cognitive testing manufacturers using a random effects model to employ a larger database, total n=1030. Plasma HIV RNA was undetectable in both HIV-infected cohorts. Variability was defined by standard score of skewness (SSS) where values greater 2 represent significant skewness. SSS were compared between group 1 versus 3 and 2 versus 3 using t-tests. Cognitive impairment was defined using a composite score of the 5 domains tested (overall z-score <0.5) and a categorical score (as defined in background). Comparison of variability of cognitive testing results with categorical and composite scores were undertaken.
Results: Overall SSS was 0.8, -2.3, 0 for groups 1, 2, 3 respectively (p=0.0001 for group 1 versus 3 and p=0.0001 for group 2 versus 3). In group 2, SSS varied from -2.5 in the domain of monitoring reaction time to -0.8 in identification reaction time. Rates of cognitive impairment are shown in table 1.
Table 1: Detection of clinically relevant NCI using classification criteria

	Composite score		Categorical score		
Group (n)	Y	N	Y	N	Concordance (p values)
1 (19)	1	18	1	18	100% (1)
2 (103)	36	67	37	66	95% (0.884)
3 (1030)	0	1030	0	1030	

Conclusions: We have observed differences in SSS in cognitive testing parameters between HIV-infected cohorts on stable cART and a high variability in cohort 2. Although no significant differences were observed in rates of NCI when calculated using composite or categorical classifications in our study, differences in variability of cognitive testing parameters could be of relevance when utilising such classifications and should be considered when analysing cohort results.

P163

Minimal change in bone density over 12 months in cART-experienced HIV-infected men

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Background: It has been suggested, mainly in clinical trials, that HIV is associated with increased osteoporosis risk. We assessed factors associated with reduced bone mineral density (BMD) at baseline and 12 months in HIV-infected men in our clinic.
Methods: This longitudinal study identified HIV demographics, combination antiretroviral therapy (cART) and osteoporotic factors. Absolute BMD (g/cm^2) at femoral neck (FN) and lumbar spine (LS) was measured by dual-energy x-ray absorptiometry (DXA). Reduced BMD was T-score <-1 and ≥-2.5, and osteoporosis was T-score <-2.5 in men ≥50 years and Z-score <-2 in men <50 years. Linear regression assessed factors associated with BMD at baseline. Logistic regression investigated risk factors for a greater than smallest detectable difference (>SDD) decrease in BMD.
Results: Of 422 men (mean [SD] age 47 [9.8] years, 94% white, 93% MSM, HIV positive for median [IQR] 9.6 [5.0,15.5] years, 90% on cART [78% on tenofovir], 87% with HIV RNA <40 copies/mL), 334 had paired DXAs. Baseline prevalence of reduced BMD and osteoporosis was 51% and 4% at FN and 43% and 11% at LS, respectively. Over 12 months, 32 (10%) and 44 (13%) experienced a >SDD decrease in BMD at FN and LS. Factors associated with BMD at baseline (Table 1a) and with >SDD decrease (Table 1b) are shown.
Conclusions: Although rates of reduced BMD were high, only a minority had a significant decrease over 12 months. This study suggests that HIV-related factors may play a role in bone health. Longer follow-up is needed to further clarify these findings.

	Femoral neck (FN)		Lumbar spine (LS)	
1a) Baseline	Mean difference (95% CI)	p	Mean difference (95% CI)	p
Non-white	0.06 (0.01,0.11)	0.02	0.04 (-0.02,0.10)	0.18
BMI 25 – 30	0.08 (0.05,0.11)	<0.001	0.08 (0.05,0.11)	<0.001
BMI >30	0.10 (0.05,0.11)	<0.001	0.10 (0.05,0.14)	<0.001
Current smoker	-0.04 (-0.07, -0.00)	0.03	-0.04 (-0.07, -0.00)	0.04
Ex-smoker	-0.01 (-0.05,0.02)	0.30	-0.02 (-0.05,0.02)	0.36
1b) 12 months	**OR (95% CI)**	**p**	**OR (95% CI)**	**p**
Older age	0.64 (0.42,0.97)	0.04	1.01 (0.72,1.40)	0.98
Fragility fracture	3.37 (1.31,8.64)	0.01	1.62 (0.64,4.11)	0.31
Higher CD4	0.88 (0.80,0.97)	0.01	0.95 (0.89,1.02)	0.19
Longer cART	0.88 (0.81,0.96)	0.003	0.99 (0.93,1.04)	0.65
Tenofovir use	0.86 (0.70,1.04)	0.12	0.99 (0.85,1.15)	0.84

P164

Cytomegalovirus (CMV) viral load (VL) testing in the HAART era

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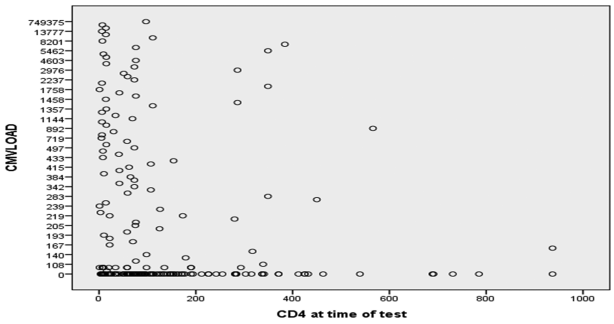
Background: Since the introduction of highly active antiretroviral therapy (HAART), the burden of CMV disease has reduced significantly, with fewer instances of CMV causing end organ disease and death. However, there are no national or European guidelines to guide routine CMV testing and monitoring. We collected retrospective data on all HIV patients who had CMV VL testing in our unit during a 12 month period in 2012 and assessed the correlation between CMV viraemia / end organ disease (EOD) and risk factors, with the aim of formulating departmental guidance on CMV viral load testing.
Methods: All HIV patients in whom plasma CMV VL was measured in 2012 were identified from our database. Data was collected on indication for testing, CD4, HIV VL, concurrent AIDS defining illness, ART, white cell count, nadir CD4 count.
Results: During the 12 month period, 216 measurements of CMV VL were performed in 93 patients. 52% (48) had one test; 17 had two tests, 8 had three tests, 6 had four tests, 12 had >4 tests. 48% (45/93) of patients were on ART. The median CD4 count was 73/uL (IQR 24.8-153.3). Median HIV VL was 777/ml. Overall prevalence of detectable CMV VL was 43% (93/216). The median level of detectable CMV DNA was 414 IU/ml. Prevalence of CMV VL varied by degree of immunosupression: CD4<50 (45%, 42/93), CD4 50-99 (28%, 26/93), CD4 100-199 (13%,12/93), CD4 >200 (14%,13/93). CMV VL was positive in 68/140 (49%) of those with CD4 <100, compared with 25/76 (33%) of those with CD4>100 p<0.05.
CMV viraemia was identified on 93 occasions in 42 patients. In 65/93 episodes the patients had a concurrent AIDS defining illness.

Fig 1. Scatter plot: relationship between CMV VL and CD4



Discussion: 216 CMV DNA tests were done however there were no instances of CMV EOD diagnosed. 2 patients were treated with ganciclovir for CMV viraemia in the ITU setting but with no definitive EOD. All cause mortality at 1 year was 9.7% (9/93). High CMV VL correlated with low CD4 counts and the median CD4 count in patients with CMV viraemia was low (58/μl). In patients with CMV viraemia who were started on ART the median observed time to a negative CMV VL was 43 days (27-71). In the absence of another cause of immunosuppression, chemotherapy or steroids, we suggest that CMV VL testing could be restricted to those with CD4 count <100 who are unwell, or those presenting with end-organ disease. Follow up tests could be restricted to those on treatment for CMV.

P165

Effect of mood disorders and the predictive value of simple screening questions on screening for HIV-related neurocognitive impairment

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Background: The MSM Neurocog study demonstrates high depression/anxiety in HIV+ MSMs aged 18-50. We examine here whether depression/anxiety had a negative impact on neurocognitive impairment (NCI) screening tests. We also describe whether simple screening questions predict NCI test outcome.
Methods: 205 HIV+ subjects were screened for depression/anxiety. 'Depressed' indicated Patient Health Questionnaire (PHQ-9) >15; 'anxious' if Generalised Anxiety Disorder Questionnaire (GAD-7) >10. Subjects underwent NCI screening using the International HIV Dementia Scale (IHDS) and Brief Neurocognitive Screen (BNCS), composed of three tests: TrailMaking A (TMA), TrailMaking B (TMB) and Digit Symbol Testing (DST). A composite z-score was calculated based on the distance of their score from the mean in the 3 tests (normal=within 1 SD of mean). Individuals were determined symptomatic for NCI if they answered yes to self or relative reported reduction in mental functioning.
Results: 2 subjects excluded due to lack of available mood data. Of 203 for analysis, 32 (16%) depressed, 54 (27%) anxious and 27 (13%) had anxiety and depression. On average depressed individuals took longer to complete the TMA (38s vs. 30s, $p < 0.05$), TMB (97s vs. 74s, $p < 0.05$) and DST (45 vs. 54, $p < 0.05$) tests. They also performed worse on IHDS when compared to the non-depressed group (9.8 vs. 11.1, $p < 0.05$). The anxious group performed worse across all four NCI tests (TMA - 36s vs. 30s, $p < 0.05$; TMB - 95s vs. 71s, $p < 0.05$; DST- 47 vs. 54, $p < 0.05$; IHDS- 10.4 VS. 11.1, $p < 0.05$). Individuals who were classified as symptomatic on the screening questions (self/relative reported) were more likely to be anxious/depressed/both (46.2% vs. 14.5%, $p < 0.01$). Despite this, being symptomatic of NCI did not correlate with abnormal z scores. Only 36.8% with abnormal z scores answered yes to either/both screening questions compared to 45% in individuals with normal z scores (not statistically significant).
Conclusion: Among 203 HIV+ MSM 18-50 years, those with depression/anxiety performed worse in NCI screening tests. Depression/anxiety were also shown to be of greater prevalence in those positive for the screening questions. Screening via self or relative reported symptoms was shown to be an ineffective tool in predicting outcome of NCI screening in this cohort.

P166

Bariatric surgery in HIV patients: a systematic review of the literature

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Background: Obesity is unfortunately an increasing problem in HIV patients. HAART is associated with dylipidema, lipodystrophy and insulin resistance placing many HIV patients at high risk of cardiovascular disease. Two years ago a patient in our clinic successfully underwent bariatric surgery. Although the results have been excellent, the post operative period required several adjustments in drug delivery to manage the small pouch. Here we carry out a literature search looking at the issue of bariatric surgery in HIV patients.
Methods: A literature search using the terms "HIV" and "bariatric surgery" was carried out using pubmed. 41 papers were found. Inclusion critertia was bariatric surgery case reports series looking at cohorts of HIV positive patients only. 3 papers were identified giving a total of 15 HIV positive patients. 6 male and 7 female the age range was 28-56.
Results: Preoperative CD4+ count ranged from 238-1626. 10 patients were receiving HAART at the time of surgery. Post operative CD4 count data was reported for 9 patients. 3 patients showed an increase in CD4 and 6 showed a fall, in 3 CD4+ count fell to <350 with the lowest noted to be 226.
3 patients experienced surgical complications, these were a hernia, anastomotic leak and stenosis. Vitamin deficiencies were reported for 3 patients.
Mean percentage weight loss was 31%. Information on other metabolic parameters was provided for 7 showing improvement in triglycerides of -185mg/dL (-739 to +35mg/dL) and total cholesterol of -19mg/dL (-61 to +3mg/dL).
Conclusion: The benefits of surgery are notable in HIV positive patients where cardiovascular risk is greater. While data is limited preliminary reports suggest that bariatric surgery is safe in HIV patients. One area only addressed by one paper was that HAART absorption. From a practical perspective the size of pouch opening (1cm) meant careful switching to liquid preparations. Limited research has shown that Ziduvudine, Lamivudine have been shown to have normal serum concentrations post gastric bypass. Neflinavir has all been shown to have reduced serum concentrations. The MDT approach is therefore recommended for patients undergoing bariatric surgery to ensure that modifications to ART regimes are planned prior to surgery. Although this offers support for the use of bariatric surgery in HIV positive patients, more research is required in this population to fully evaluate the risks and benefits of surgery.

P167

Neuroinflammation is evident on cerebral PET imaging using PBR28 in asymptomatic HIV-infected subjects on stable cART, and is associated with pre-treatment plasma HIV RNA

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Background: Neuroinflammation may contribute to the pathogenesis of HIV-associated cognitive impairment. We undertook cerebral PET imaging with 18kDA translocator protein TSPO radioligand [^{11}C]PBR28 to assess neuroinflammation in treated HIV-infected subjects
Methods: Cognitively healthy, neurologically asymptomatic HIV-infected subjects (cases) on effective combination antiretroviral therapy (viral load <50 copies/mL) and HIV-negative individuals (controls) underwent a cerebral PET scan using [^{11}C]PBR28. Cases had neuropsychological testing and assessment of cerebral metabolites using proton-magnetic resonance spectroscopy ([H^1] MRS). TSPO binding affinity was assessed with both high affinity (HABs) and mixed affinity (MABs) binders eligible. A two tissue compartmental model was used to estimate the total volume of distribution (V_T) and distribution volume ratios (DVR) in regions of interest (ROIs) for each subject. Differences between groups were assessed using ANOVA and associations between HIV clinical markers and V_T were evaluated by correlation analyses.

Results: 8 HABs, and 4 MABs cases (n=12), mean age(SD) 42.7(6.4) years and 6 HABs and 4 MABs age-matched controls (n=10), mean age 41.6(8.6) years were enrolled. Cases had a median(range) CD4 count of 645(350-1240) cells/uL and nadir CD4 count of 196(70-350) cells/uL. The median pre-treatment plasma HIV-RNA of 128639 copies/mL(151 to 1624782). There was a global increase in the mean V_T in cases as compared to controls with significant increase in V_T in the basal ganglia based on the parametric analysis ($p<0.01$). Significant local increase in DVR was found in and parietal cortex ($p<0.01$) and globus pallidus ($p=0.035$). In HIV cases, a significant association between greater [^{11}C]PBR28 binding and poorer performance in visual learning and working memory tasks were observed in the basal ganglia ($p=0.018$) and parietal cortex ($p=0.025$). Greater [^{11}C]PBR28 binding in the basal ganglia was also associated with higher RBG MI/Cr ratio (a marker of glial inflammation) ($p=0.011$) and greater pre-treatment plasma viral load ($p=0.029$). Associations between V_T in brain regions and other HIV clinical parameters including nadir CD4 count($p=>0.1$) were not observed

Conclusion: Evidence of neuroinflammation on cerebral PET is present in neuro-asymptomatic HIV-infected individuals despite effective control of plasma viraemia and is associated with greater pre-treatment viral load but not nadir CD4+ count

P168

Neurological disease presentation in HIV-infected individuals in the effective antiretroviral therapy era

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Background: The combination antiretroviral therapy (ART) era has seen a dramatic decline in the incidence of AIDS-defining neurological disease. Data on the incidence of neurological presentations in the cART era, are however sparse. Here we report neurological presentations in HIV-infected patients referred for specialist out-patient HIV-neurology opinion.

Methods: All patients attending a specialist HIV-neurology clinic over a 3 year period (2010 to 2013) at a large urban HIV-centre caring for over 3500 HIV-infected subjects were included. Neurological diagnoses were recorded and descriptive analyses undertaken.

Results: 80 patients attended the clinic (median age 49, range=27-73). 72 patients (90%) were on ART and 67 (86%) had an undetectable plasma HIV viral load (<50 copies/mL). The median CD4 count was 540 (range= 80-1260) cells/μL and the median nadir CD4 count was 140 (range= 0-590) cells/μL. 21 different neurological presentations were observed including peripheral neurological symptoms (PNS, n=16), headache (n=15), neurocognitive impairment (NCI, n=13), epilepsy (n=9) and AIDS-defining central-nervous-system infections (n=5).

AIDS-defining neurological disease and NCI were managed in accordance with national and European guidelines. In subjects with headache and PNS, ART agents were altered when thought to be contributing to symptomatology. Complex drug-drug interactions were encountered in 3 of the 9 subjects with epilepsy, leading to treatment changes.

Conclusion: Neurological presentations in this cohort of HIV-infected patients were varied. Several conditions, although not directly attributable to chronic HIV-disease required a multidisciplinary approach to ensure optimal management.

P169

Coronary artery calcium score and incidental lung pathology

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Background: As HIV infected individuals' age, clinicians appreciation of the effects of HIV infection on the ageing process and development of comorbidities has increased. Cardiac comorbidity is becoming increasingly important as a cause of morbidity and mortality in HIV individuals and is increasingly screened for using coronary artery calcium scores (CACS) through cardiac CT.

Methods: This evaluation reports extra-cardiac findings in HIV infected patients over 50 years old undergoing Cardiac CT for CACS determination between December 2010 and October 2013. Patient records were retrospectively examined for demographics, co-morbidities, year of HIV diagnosis, smoking and drug history. Incidental findings were categorized into 'non-significant', 'significant-minor' and 'significant-major' findings. Findings were considered 'significant-major' if they necessitated further clinical or imaging follow up.

Results: 353 patients had a CACS determination. Of these 92.9% (331) were male, the median age was 54 years (range 50-78 years) and 80% were Men who have sex with Men. 84% were Caucasian, 7.4% were Black African or Black-Other and 0.5% were Asian. 33% had a documented smoking history. The median CD4 count was 594 cells/μl, 99% were receiving antiretroviral therapy and 23.5% had an AIDS defining illness. The median duration of time living with HIV was 16 years and the median CACS score was 3 (range 0-2327). An incidental finding was noted in 42% (149) of cases of which 122 were pulmonary. The most common findings were atelectasis (28%), pulmonary nodules (26%), emphysema (11%) and pleural abnormalities (5%). Patients with higher CACS scores were more likely to have significant-major pulmonary findings. The commonest non-pulmonary findings included ascending aorta dilatation (5), diaphragm or hiatus hernias (5), rib fractures (4), liver lesions (2) and pericardial effusions (2). 15% (56) had a major significant finding requiring clinician review or follow up imaging, 82% (46) of these were for incidental lung findings and 95% (53) were not previously known.

Conclusions: Incidental lung anomalies are frequent in the HIV population and more common than in non-HIV infected populations. Due to the higher prevalence of lung disease seen in HIV infected individuals in this evaluation, CACS should be considered as not only a useful risk stratification tool for early cardiac disease but has added value in identifying clinically significant extra-cardiac abnormalities.

	AIDS-defining CNS infection	NCI	Epilepsy	Headache	PNS
Number of subjects	5	13	9	15	16
Male, n	3	12	6	8	13
Median Age (range)	46 (27-56)	49 (37-64)	45 (34-66)	49 (36-70)	54 (46-67)
Median CD4 (cells/μL)(range)	360 (90-250)	540 (280-1200)	610 (330-860)	650 (310-1190)	720 (80-1100)
Median Nadir CD4 (cells/μL) (range)	65 (39-130)	80 (10-390)	120 (10-490)	200 (20-440)	220 (10-510)
Undetectable plasma VL (<50 copies/mL), n	5	12	6	14	13
MRI brain findings					
Normal	0	2	2	8	3
WM signal change	1	5	3	2	3
Volume Loss	1	3	1	0	0
Other	0	3	2	0	2

Table 1: Demographic and HIV-related characteristics of subjects with common neurological presentations.

P170

Pancreatic exocrine deficiency: A forgotten prominent, identifiable and treatable cause of chronic diarrhoea in HIV patients

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Background: Chronic diarrhoea significantly decreases the quality of life for HIV positive patients. Pancreatic exocrine deficiency is a demonstrated aetiology which may get overlooked in spite of the availability of a simple diagnostic test (stool faecal elastase (FE) quantification test) and the presence of an effective therapy. Suggested potential risk factors for deficiency are alcohol misuse and Hepatitis C co-infection. We examined the burden of this deficiency amongst our patients who have unexplained chronic diarrhoea
Methods: The study started in April 2013 by assessing all patients complaining of chronic diarrhoea (3 or more loose stools per day for more than 28 days) with FE stool testing. Demographic, clinical and biochemical data was collated on these patients. Therapy with pancreatic enzyme supplementation was given according to test results. Response to therapy was also evaluated.
Results: Ten patients have been tested. All were white British men who have sex with men; median age 49.8 years, median time since HIV-diagnosis 10.2 years. Median length of reported diarrhoea was 24 months (range 8-74 months). Median current CD4 count was 589 cells/mm^3. Two patients were treatment naïve and eight were treatment experienced. Only one from the treatment experienced group was on protease inhibitor containing regimen.
Half of patients tested had evidence of severe pancreatic exocrine deficiency with FE<100mcg/g stool. 75% of patients treated with pancreatic enzyme supplementation had full symptomatic resolution.
None of the patients tested had a history of Hepatitis C co-infection. Patients with low faecal elastase levels had higher alcohol consumption than those with normal values.
Conclusion: Pancreatic insufficiency should be included in the differential diagnosis in HIV positive patients with chronic diarrhoea. Stool FE assessment provides a sensitive, cheap and non-invasive investigation for diagnosis. Amongst patients with chronic diarrhoea in our cohort half had severe pancreatic exocrine deficiency. Rapid symptomatic resolution was achieved in 75% of deficient patients with a trial of therapy. Simple FE testing amongst HIV-infected patients with chronic diarrhoea could reduce persistent symptoms and avoid unnecessary expensive invasive gastroenterological investigations.

P171

Increasing obesity in treated female HIV+ patients from sub-Saharan Africa: Causes and potential targets for intervention

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Background: Nutritional demographics of HIV-infected patients are evolving. As wasting and drug-related lipodystrophy wane, weight gain has become more problematic.
Methods: We prospectively reviewed nutritional demographics of clinic attenders at an urban European HIV clinic during four one-month periods at 3-yearly intervals (2001, 2004, 2007, and 2010) and in two consecutive one-year reviews (2010-11 and 2011-12). Risk-factors for obesity were assessed by multiple linear regression. A sub-study of 50 HIV-positive African female patients investigated body-size/shape perception using numerical, verbal and pictorial cues.
Results: We found a dramatic rise in the prevalence of obesity (BMI >30 kg/m^2), from 8.5% (2001) to 28% (2011-12) for all clinic attenders, of whom 86% were on antiretroviral treatment. Women of African origin were most affected, 49% being obese, with a further 32% overweight (BMI 25-30 kg/m^2), in 2011-12. Clinical factors strongly associated with obesity included female gender, black African ethnicity, non-smoking, age and CD4 count (all P<0.001); greater duration of cART did not predict obesity. Individual weight-time trends mostly showed slow long-term progressive weight gain. Investigating body weight perception, we found that weight and adiposity were underestimated by obese subjects, who showed a greater disparity between perceived and actual adiposity (P<0.001). Obese subjects targeted more obese target "ideal" body shapes (P<0.01), but were less satisfied with their body shape overall (P=0.02).
Conclusions: Seropositive African women on antiretroviral treatment are at heightened risk of obesity. Although multifactorial, bodyweight perception represents a potential target for intervention.

P172

POC diagnostic test for HLA B*5701 using pH-based label-free detection

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Background: Abacavir (Ziagen, ViiV) is a widely prescribed antiviral for patients starting HIV treatment. It has a well-known side effect profile with the risk of a potentially fatal hypersensitivity reaction (HSR) during the first 6 weeks of treatment. Individuals carrying the HLA B*5701 allele are at substantially higher risk than average of developing HSR and genotyping is routinely performed prior to abacavir treatment. The current service has a turnaround of approximately 2 weeks. The objective of this study is to develop and validate a novel point of care (POC) DNA test for the identification of HLA B*5701 type to support prescribing.
Methods: Thermal cycling (PCR) and isothermal (LAMP) detection assays for HLA B*5701 were designed and evaluated for HLA B*5701 genotyping in low buffer mixtures compatible with pH detection measurement using Ion-Sensitive Field Effect Transistors (ISFETs) on microchips. Validation was performed on blood samples from patients recruited who had previously undergone routine testing. Results from the commercial service and the novel assays were compared with a gold standard of sequence-based typing (SBT).
Results: Allele-specific primers for HLA B*5701 were designed for both PCR and LAMP assay, the allele specificity was evaluated by 24 clinical samples previously tested by commercial HLA B*5701 genotyping service (Lab21), amongst which there were 18 reported HLA B*5701 positive and 6 reported HLA B*5701 negative. 2/18 samples reported HLA B*5701 positive failed to amplify by both of our assays and SBT confirmed them not to contain HLA B*5701. One of the two samples contained the B*5702 allele, the closest subtype to B*5701; the other sample did not contain a B*57 allele. The novel HLA B*5701 genotyping assays showed 100% concordance with SBT results. Reaction time for PCR assays was shortened from 1.5 hours (3-step PCR program) to ~43 min in low buffer solution, with ΔpH ~ 0.4 sufficient to allow pH-mediated PCR detection. LAMP generated a greater ΔpH (>1) from positive samples with a shorter time (~30min).
Conclusion: Both novel HLA-B*5701 genotyping assays showed 100% concordance with SBT results. LAMP performed well on clinical samples generating pH well in excess in those required for pH based detection. The assays are suitable for further validation in a prototype device.

P173

The CVD/Bone Study – cardiovascular and bone density markers in HIV-1 infection

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Background: Use of some protease inhibitors (PI) is associated with unconjugated hyperbilirubinaemia (HBR) as a result of inhibition of the UGT1A1 enzyme. HBR may lead to scleral icterus or jaundice but high bilirubin has been shown to confer antioxidant and anti-inflammatory properties, associated with reduced risk of cardiovascular (CV) events. This study aimed to investigate associations between antiretroviral associated hyperbilirubinaemia and CV and bone mineral density (BMD) risk markers.
Methods: This cross-sectional study included HIV-1 infected individuals stable (>6 months) on ART including TDF/FTC or ABC/3TC plus a ritonavir boosted PI. Patients with HBR were compared to patients with normal bilirubin (NBR) for CV markers: Framingham score, carotid intimal thickness (CIT), pulse

wave velocity (PWV), and inflammatory markers (IL-6, D-dimer, and hs-CRP). Markers for BMD were FRAX score, calcaneal stiffness index (CSI) and relevant blood markers.
Results: Of 101 patients assessed, 43 had NBR and 35 HBR (>2.5 times upper limit); the remaining 23 patients had intermediate bilirubin or violated the protocol. Mean age 48 years; 93% were male and 84% Caucasian. PI use differed between the two groups; as expected, atazanavir use was significantly higher in HBR compared with NBR (94% vs. 16%, p<0.001) and darunavir use was significantly higher in the NBR compared with HBR group (79% vs. 3%, p<0.001). 51% of the HBR group had low risk Framingham score, 43% moderate, 6% had high, compared with 58%, 30%, 12%, respectively, in the NBR group (p=0.43). Other CV/BMD measurements follow (median, IQR):

	NBR (n=43)	HBR (n=35)	P-value
CIT (mm)	0.07 (0.06-0.08)	0.06 (0.05-0.07)	0.08
PWV (m/s)	10.2 (9.6-11.4)	10.1 (9.6-11.2)	0.82
CSI (t-score)	-0.5 (-1.3-0.1)	-0.6 (-1.2-0.1)	0.99
IL-6 (pg/mL)	1.5 (1.5-2.1)	1.5 (1.5-1.7)	0.14
D-dimer (ng/mL)	200 (190-330)	220 (190-290)	0.53
Hs-CRP (mg/L)	1.5 (0.6-2.6)	1.2 (0.6-2.0)	0.40
ICAM-1 (ng/mL)	287 (251-329)	289 (236-343)	0.52
VCAM-1 (ng/mL)	416 (353-497)	377 (319-416)	0.03*

Conclusions: Regarding CV markers here was no difference in PWV (the primary endpoint). There was a statistical difference in VCAM which is consistent with published data suggesting a link between HBR/ATV on vascular relaxation. No significant differences were found in BMD markers between patients with high and normal bilirubin levels.

P174

Anaemia – an audit of practice in the HAART era at a single HIV clinical centre in Northwest London

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Background: Anaemia is a strong risk factor for disease progression and death in HIV infection independent of CD4 count. Many patients remain anaemic despite highly active anti-retroviral therapy (HAART). Such patients may need additional treatment and/or further investigation to detect underlying co-morbidities. There is little data on the prevalence of anaemia among patients receiving HAART in the United Kingdom.
Aims/Objectives: To determine the prevalence of anaemia in a cohort of HIV positive patients receiving HAART at one centre in Northwest London. To improve diagnosis, management and prevention of anaemia in such individuals via early recognition and referral.
Methods: Sample selection: Single episode attendees over 3 month period were pulled out from clinic data base (n=393). Patients who had full blood count (n=371; 187female, 184male) within the audit period were screened for anaemia based on World Health Organisation criteria: Hb<12.0g/dL (non-pregnant female);<13.0g/dL (male). Serum Ferritin, Red blood cell folate, vitamin B12 levels were recorded. Demographic details, CD4 and viral load and drug therapy were obtained. Investigation of anaemia was compared with National Institute of Clinical Excellence(NICE) guidelines.
Exclusion criteria: (i) patients with latent anaemia (n=25) defined as normal Hb >12.0g/dL female; >13.0g/dL male and abnormal red blood cell indices (ii) individuals not receiving HAART (n=5).
Results: Overall prevalence of anaemia was 17%(n=64). Mild to moderate anaemia was more common in females 63%, Blacks 64%. Microcytic hypochromic and normocytic hypochromic anaemia suggestive of iron deficiency were present in 31/64 (51%) cases; normocytic, normochromic anaemia in 24/64 (38%). Ferrtin checked in patients with microcytic hypochromic or normocytic hypochromic anaemia 6/30 (20%) was found to be low in 3/6. 1 patient with macrocytic anaemia, 4/24 patients with normocytic anaemia and 7/31 with microcytic hypochromic or normocytic hypochromic anaemia had either a vitamin B12 or folate check. Two of these patients had a low folate level. 22% of patients received potentially myelotoxic drugs.
Conclusions: The prevalence of anaemia surprisingly high for this UK population.
1) Greater awareness of the risks of anaemia in such patients is required.
2) Check ferritin, vitamin B12 and folate in patients with anaemia.
Referal to Dietitians and Haematologist for further investigation of persistent anaemia.

P175

Does sarcoidosis present differently in patients with and without HIV infection?

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Background: CD4 lymphocytes play a pivotal role in the immunopathogenesis of both sarcoidosis and HIV. The immunopathological features are of non caseating granulomata consisting of CD4 T-cells and macrophages surrounded by CD8 T lymphocytes. HIV infection is characterised by progressive depletion of CD4 cells resulting in immunodeficiency and poor inflammatory responses to antigen. Sarcoidosis was uncommon in HIV+ individuals in the pre HAART era. Since its introduction, increasing numbers of patients with sarcoidosis and HIV infection have been reported. The clinical presentation and natural history of sarcoidosis in patients with HIV however, remains poorly described.
Methods: This was an observational retrospective cohort study of patients with biopsy proven sarcoidosis at KCH between January 2003 and December 2012. A total of 116 patients were identified with biopsy proven sarcoidosis. Patients without a documented HIV test were excluded. A total of 16 patients were eligible, of which 4 were HIV+.
Results: Of the HIV- patients, 58% (7) were male 42% (5) female. HIV+ patients 75% (3) were male and 25% (1) female. The mean age at diagnosis of sarcoid in the HIV- and HIV+ groups was 41 and 45yrs.
58% (7) of the HIV -patients had skin involvement at presentation compared with 25% (1) of the HIV+ patients. 100% (4) of HIV+ patients had pulmonary manifestations as a presenting feature, compared with 33% (4) of the HIV- group. All HIV+ patients were receiving antiretroviral therapy with an HIV RNA <40 copies/ml at sarcoid diagnosis. The mean CD4 cell count at sarcoid diagnosis was 545 cell/mm3 (range 193-666) and mean interval from initiating antiretroviral therapy to diagnosis of sarcoidosis was 51 months (range 19-78).
Conclusions: Patients had broadly similar patient demographics with regard to age and sex at the time of sarcoid diagnosis. The interval range from initiating anti-retroviral therapy to diagnosis of sarcoid was long enough to suggest that IRIS was not the cause.
Although numbers were small, differences were demonstrated in presentation between the HIV+ and HIV- groups, where respiratory involvement was more common in those with HIV infection.

P176

Neurocognitive function in patients with high bilirubinaemia receiving ritonavir-boosted protease inhibitors

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Background: Use of some protease inhibitors (PI) is associated with unconjugated hyperbilirubinaemia (HBR), from inhibition of the UGT1A1 enzyme. Bilirubin elevations may lead to scleral icterus or jaundice. In addition, HBR can lead to antioxidant and anti-inflammatory effects that may be relevant to neurocognitive (NC) impairment in HIV infection. This study aimed to analyse correlations between antiretroviral associated HBR and NC impairment.
Methods: This cross-sectional study included HIV-1 infected individuals stable (>6 months) on antiretroviral regimens including TDF/FTC or ABC/3TC plus a ritonavir boosted PI. Patients with HBR were compared to patients with normal bilirubin on NC data collected using CogState. Aspects of NC function assessed included visual motor function (CHASE), executive function (GML), psychomotor function (DET), visual attention, (IDN), visual learning and memory (OCL, CPAL), and working memory (ONB). An overall composite score was calculated for each subject. Two-tail P-values were calculated using the Mann-Whitney U test.

Results: Overall, 101 patients were assessed of which 43 had normal bilirubin (NBR) levels and 35 had high bilirubin (>2.5 times upper limit); the remaining 23 patients had intermediate bilirubin levels or violated the protocol. Mean age was 48 years; 93% were male and 84% Caucasian. PI use differed between the two groups; atazanavir use was significantly higher in HBR compared with NBR (94% vs. 16%, p<0.001) and darunavir use was significantly higher in the NBR compared with HBR group (79% vs. 3%, p<0.001). NC results were as follows (mean, SD):

	NBR (n=43)	HBR (n=35)	P-value
CHASE – mps	1.14 (0.31)	1.26 (0.33)	0.08
GML – ter	58.5 (29.0)	50.9 (15.8)	0.10
DET – lmn	2.57 (0.11)	2.53 (0.08)	0.14
IDN – lmn	2.75 (0.09)	2.73 (0.06	0.11
OCL – acc	0.94 (0.11)	0.98 (0.07)	0.05*
CPAL – err	102.3 (55.3)	98.0 (68.7)	0.50
ONB – acc	1.22 (0.23)	1.34 (0.13)	0.03*

Composite z-scores of all NC assessments did not differ significantly between the two groups (P=0.655).
Conclusions: No significant differences were found in global neurocognitive scores between patients with HBR and NBR. Statistically significant differences in component tests may warrant further consideration regarding clinical significance.

P177

Iatrogenic Cushing's as a recognised complication of concomitant ritonavir and steroid use: A systematic review of cases and recommendations for clinical practice

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Background: Iatrogenic Cushing's syndrome (ICS) is a recognised complication in HIV patients in whom concomitant ritonavir and glucocorticoids (metabolised via the CYP450 pathway) are being administered. A structured approach for identifying and managing potentially affected individuals has not been established. We aimed to describe the management of ICS in a large HIV cohort and develop management guidelines.
Methods: Retrospectively patients with ICS were systematically identified through the clinic database. Relevant search terms including cortisol, triamcinolone and fluticasone were employed. Additionally, all cortisol results from patients with HIV tested in the biochemistry department from 2012-2013 were reviewed. From a case note review we documented presenting features, investigations and subsequent management.
Results: Nine patients with features of ICS were identified. Six of these were secondary to inhaled fluticasone, of which two were in combination with salmeterol, and three secondary to triamcinolone use. The commonest presenting symptoms were fatigue and weight gain. Five patients had cortisol levels measured following which three had short synacthen testing (SST) Two patients had a SST without a prior cortisol measurement. Five patients with evidence of adrenal suppression were managed together with the Endocrinology team. In some cases the fluticasone was stopped or changed to an alternative inhaler prior to all patients receiving hydrocortisone replacement. In two cases there was documented evidence of discussion regarding the risk of adrenal crisis. In two patients the HPA axis recovered and did not require further systemic steroids. All patients seen in the Endocrinology clinic had repeat assessment of their ACTH reserve with a gradual reduction in steroid replacement dose. Correspondence with their primary care physician was sent in all patients, one patient did not disclose HIV status. None of these cases were flagged using clinical incident reporting systems.
Conclusion: Using a systematic approach we identified patients with ICS and found evidence of heterogeneity in clinical practice. Early identification of potential 'at risk' individuals through liaison with primary care physicians and patients should improve clinical outcome. The HIV and endocrinology teams have developed clear guidelines for ICS management. We have produced a patient information leaflet to highlight this.

P178

Causes and investigation of anaemia in patients with HIV

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Background: Anaemia is a well-known negative prognostic indicator in patients with HIV. Multiple studies have shown increased mortality rates in those with anaemia and more severe anaemia correlates with higher mortality. As such anaemia should be thoroughly investigated in patients with HIV. We have previously presented an audit into the correlation between mortality rates and anaemia in our patient cohort (BHIVA 2012) and found that our concordance with departmental protocol was suboptimal. As such we have performed this audit to assess deviation from departmental protocols and uncover the causes of anaemia in our population.
Methods: Blood tests for all 1211 patients in our centre were reviewed and those with a result demonstrating anaemia according to WHO standards (13g/dL men, 12g/dL women, 11g/dL pregnant women) during 2012 were investigated. Patients were excluded from the audit if they had been previously investigated for anaemia or had not been reviewed by a physician during 2012. We obtained information on gender, lowest haemoglobin, lowest CD4 count and highest viral load during 2012. All test results during 2012 were reviewed in order to determine concordance with the departmental investigation protocol. Clinic letters of all anaemic patients without exclusions were reviewed to assess the cause of anaemia as determined by the clinician reviewing the patient.
Results: 170 patients were identified as anaemic, of whom 153 met the entry criteria for the audit. On average 56% of recommended investigations were completed with simple blood tests (FBC 100%, LFTs 100%) being frequently ordered but other investigations often missed (blood film 40%, reticulocyte count 24%, ESR 14%). Causes of anaemia in our cohort reflect both the diversity of the HIV positive population such as Sickle Cell anaemia and G6PD deficiency and more common causes such as menorrhagia and malignancy. 27 patients (18%) did not have a cause for their anaemia mentioned in clinic letters and this was more common in those with mild anaemia.
Conclusion: Slightly less than 50% of recommended investigations into anaemia were not performed showing poor adherence to departmental guidelines. 18% of patients did not have a cause for their anaemia listed in clinic letters. Our detailing of causes of anaemia in our population may be of help to others investigating their own patients.

P179

Evidence of premature atherosclerosis in HIV-infected individuals with low cardiovascular disease risk factors

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Background: Subclinical atherosclerosis has been observed among HIV-infected patients with high cardiovascular risk factors using ultrasound measurements of carotid intima-media-thickness (C-IMT). Compared to C-IMT, carotid wall imaging by cardiovascular magnetic resonance (CMR) allows three-dimensional assessment of the carotid artery wall. This study evaluates the use of CMR in the assessment of HIV-infected individuals with low measurable traditional cardiovascular disease (CVD) risk factors.
Methods: Carotid CMR was performed in 33 HIV-infected individuals (cases) (19 male and 14 female), and 35 HIV-negative (controls)(20 male and 15 female). Exclusion criteria included former or current smoking, hypertension, hyperlipidemia or family history of premature CVD. Cases were on stable combination antiretroviral therapy (cART) with plasma HIV-1 RNA <50 copies/mL for more than 6 months. Using three-dimensional computer modelling, the arterial wall, arterial lumen, and total vessel volumes were calculated for a 4cm length of the carotid artery. The wall/outer-wall ratio (W/OW), an index of vascular thickening, was compared between the study groups.
Results: Cases had a median CD4 cell count of 690 cell/mL (range: 210-1390). Mean age; years(SD) was 45.2(9.7) for cases and 46.9(11.6) for controls. Framingham coronary 10-year risk scores were similar in both groups (mean (SD); 3.97%(3.9) for cases; 3.72%(3.5) for controls). Wall volume and total vessel volume increased with age in both study groups. W/OW was significantly increased in cases compared with controls (36.6% vs 32.5%, *P*=0.0001); this was significantly more marked in HIV-infected females (36.4%

vs 31.3%, *P*=0.0002). HIV status was significantly associated with increase in W/OW after adjusting for age (beta coefficient=4.36, *P*=0.0001). There were no associations between antiretroviral type and W/OW.
Conclusions: In a selected cohort of treated HIV-infected individuals with low measurable CVD risk factors, we have observed evidence of early subclinical atherosclerosis, suggesting a premature ageing phenotype, particularly in HIV-infected women. Further work to elucidate any clinical implications of these findings is justified

P180

Cause of death in HIV-infected Intravenous drug users in the era of HAART

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Background: The advent of HAART transformed HIV into a chronic disease, and new causes of death have emerged in HIV infected individuals. HIV infected intravenous drug users (IDU) have worse clinical outcomes that their non-drug using counterparts. The aim of this research was to describe and categorise the cause of death in HIV infected IDU's in the era of HAART.
Methods: From the patient registry of a large single adult HIV clinic, HIV infected IDUs who died post introduction of HAART (1996) were identified. Relevant clinical & demographic data was collected from the city coroner's records, electronic patient results & management systems and pharmacy records & dispensing systems.
Results: Of 2977 individuals registered for care between 1/1/1996 & 31/12/2012, 548 (18%) reported IDU. 244/548 IDU (45%) have since died.
Information on the cause of death (from the city coroner) was available on 156. 65% male; 100% Caucasian; 60% HCV co-infected. Mean age at time of death 38 years; Mean time since HIV diagnosis 8.8 years. Cause of death: 34.6% HIV; 21.8% liver disease; 8.3% medical/non-HIV related (med); 28.8% overdose (OD); 6.4% violence/accidental (V). On HAART at time of death: HIV related death 44%; liver related death 44%; Med/non-HIV related death 46%; OD 45%, Violent/accidental 60%; p=0.92. Virologically suppressed if on HAART at time of death: HIV related 13%; Liver related 40%; med 33%; OD 52%; V 67%; p=0.03. Mean CD4 count at time of death: HIV related 119; liver 239; med 408; OD 386; V 196; p<0.001. Number of hospital admissions in the year preceding death: HIV 3.17; liver 2.47; Med 1.38; OD 4.10; V 1.8; p<0.001. Number attended HIV clinic appointment in the year preceding death: HIV 5.8; liver 6.59; med 5.77; OD; 4.02, V 4.10; p=0.39. Number of missed HIV clinic appointment in the year preceding death: HIV 3.72; Liver 3.85; med 3.15; OD 3.11; V 2.70; p=.0.7.
Conclusion: Individuals who died of HIV related deaths had more advanced disease at time of presentation & death, and were less likely to be on effective ART. Effective engagement with HIV services could result in fewer deaths in HIV infected IDU's.

P181

Psychological screening coverage and symptom prevalence in routine HIV outpatient care, newly-diagnosed patients and referrals for treatment advice

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Background: BHIVA and the British Psychological Society recommend monitoring patients' mental health at HIV diagnosis, annually, and at treatment initiation and switch. We estimated symptom prevalence and screening coverage for these symptoms in HIV outpatients.
Methods: We retrospectively reviewed EPR, which at our centre includes free text fields as well as "tick box" prompts for screening for depression (first 2 questions of PHQ-9), anxiety (first 2 questions of GAD-7), and cognitive impairment (3 questions, recommended by EACS guidelines [Simioni et al 2010]). 150 patients were sampled in 3 groups: the first 50 new HIV diagnoses in 2013, the last 50 referrals for advice on starting/switching treatment prior to 31/07/13, and 50 consecutive patients seen for routine HIV care in July 2013. For these patients, notes were reviewed for all visits from Dec 2012 to Dec 2013. The proportion screened and the proportion with recorded symptoms for each condition (depression, anxiety, cognitive impairment) were determined for the whole sample and within each group.
Results: The number of visits in 1 year was median 3 (range 1-9) in newly-diagnosed patients, 6 (1-13) in treatment advice patients, and 3 (1-10) in routine patients. In total, 97/150 (64.7%) of patients had been screened for depression; 40 were symptomatic (41.2% of those screened [n=97]; 26.7% of the total [n=150]). Anxiety symptom screening was recorded in 73/150 (48.7%) and 36 were symptomatic (49.3% of those screened; 24.0% overall). Cognitive impairment symptom screening was recorded in 47/150 (31.3%) and 15 were symptomatic (31.9% of those screened; 10.0% overall). Newly-diagnosed patients and referrals for treatment advice were no more likely to be screened than patients attending routine HIV clinics, even after adjustment for number of visits (p>0.10 for all comparisons). Referrals for treatment advice were more likely to be symptomatic in all 3 symptom areas (of borderline statistical significance, p=0.050 to 0.065), although this effect was not seen after adjustment for number of visits.
Conclusion: Although EPR are unlikely to record all mental health screening activities, and they are a likely improvement on paper notes, these data highlight a need for improved coverage of psychological symptom screening. Symptoms were more likely to be recorded in those referred for treatment initiation/switch, possibly because of more opportunities to elicit symptoms.

P182

Falls and falls-related fracture in HIV+ adults over 45 years: a systematic review

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Background: Falls and falls-related fracture are common in older adults, occurring in the context of key risk factors (RFs). We conducted a systematic review to estimate the prevalence of falls/fracture RFs in studies involving HIV+ individuals aged $\geq$ 45 years in the ART era.
Methods: Studies from 01/01/1996 to 30/06/12 were identified using predefined search criteria of 3 electronic databases, together with a hand journal search. English-language observational, interventional and epidemiological studies were included if the mean age of participants was $\geq$ 45 years $\pm$ 1 standard deviation and/or if 25% of the participants in the major study group were aged > 45 years, an estimate of the incidence or prevalence of falls or falls-related fracture was reported, and the study was carried out in a high-income country. Peripheral neuropathy (PN), neurocognitive dysfunction (NCD), Parkinsonism (Pk), cardiovascular disease (CVD) and low bone mineral density (LBMD) were deemed relevant RFs.
Results: The search generated 25624 unique citations. Of these, 25368 fell outside the scope of the review (21875: irrelevant to falls/fracture RFs in HIV+ adults; 1452: non-English language; and 2041: non-systematic studies/letters). Following detailed review of the remaining 256 manuscripts, a further 229 were excluded (145: age criteria not met; 61: low-income setting; 23: unclear/unrelated outcome measure). 27 studies were included in the final review (19 observational and 8 interventional). No Pk studies were includable. 4/27 studies included HIV- controls. RF prevalence/incidence-rate was derivable from 8/27. Herein, all were found to exceed those in similar general population-based studies [NCD (11.5-74%), PN (58-63%), CVD (2.8-3.5/1000 person-yrs) and LBMD (31-51%)]. Moreover, RF frequency/severity in HIV+ adults exceeded controls in all 4 relevant studies (2 NCD studies, 2 CVD studies). ART was considered in 19/27 studies. ART had a negative impact on falls/fracture RFs in 13 studies via a number of heterogeneous endpoints, although net benefit was seen in 3 studies.
Conclusions: Certain falls and falls-related fracture RFs (NCD, PN, CVD and rBMD) appear to occur more frequently/severely in HIV+ older adults in the ART era. This may translate into an increased falls/fall-related fracture risk. Data are limited by heterogeneity in study quality, participant characteristics and outcome measures. Age-restricted HIV+ cohort data may determine the true risk of falls/FRF.

P183

Interpreting BHIVA guidelines: clinical response to eGFR < 75mL/min in HIV patients on ART

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Background: A number of cohort studies have identified associations between antiretrovirals (ARV) and progression of chronic kidney disease (CKD). The BHIVA guidelines make recommendations regarding the use of specific ARVs in patients with CKD: *"the nephrotoxic potential of both tenofovir (TDF) and atazanavir (ATV) is low with normal renal function but in patients with CKD and impaired renal function (eGFR<75ml/min) alternatives should be considered."* The aim of this study was to consider how clinicians respond to eGFR below 75ml/min.
Method: All patients with HIV on ART who had an eGFR of 50-74ml/min between Oct 1st and Dec 31st 2012 were identified using the electronic results reporting system (lab reported MDRD calculation). The prescribing database was examined to see if treatment was switched after this result. We performed notes review in patients if receiving TDF or ATV where treatment was not changed.
Results: 23 patients on ART had eGFR 50-74ml/min when results corrected for ethnicity. 20/23 (87%) received TDF, ATV or both. 18/23 (78%) on TDF-based regimen. 2/23 (9%) on ATV/r with Kivexa backbone.
3 patients switched treatment within 1 year of the reported eGFR result. 2 were due to declining renal function and TDF/FTC backbone was stopped. The notes for the remaining 17 revealed switch considered in only 1 other patient, whilst increased creatinine was attributed to increase in muscle bulk in a further 2 patients.
Conclusion: Looking here at a snapshot, we did not see significant changes in ARV in patients with reduced eGFR despite BHIVA guidance. This may be due to a lack of perceived clinical significance across the 50-74 ml/min range as the MDRD calculation tends to underestimate true GFR. The CKD-EPI equation is thought to be more accurate for eGFR values >60ml/min and may be adopted in future studies. In this preliminary study we did not investigate other markers of renal dysfunction such as proteinuria. We cannot comment on the change in eGFR over time. Whilst this data is thus interesting, a prospective study is warranted to look at clinical reaction to persistent eGFR<75ml/min or deterioration to this level with no other cause. Then perhaps conclusions can be drawn about the clinical interpretation of the BHIVA guidelines relating to CKD and we may gain a better understanding if clinicians are missing significant renal disease that might benefit from treatment switch.

P184

Old habits die hard: high mortality in individuals who acquired HIV via injection drug use in a medium-sized UK cohort

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Background: The BHIVA audit on mortality (2006) describes the commonest causes of death in HIV-infected adults in the UK as "Classical AIDS" conditions, malignancies, liver disease and cardiovascular disease (CVD). A quarter of all HIV-related deaths were considered to be as a result of late diagnosis. The epidemiology of our cohort differs from national data with 27% acquiring their infection via sex between men, 24% via injection drug use (IDU) and the remainder by heterosexual sex (mostly UK-born). The purpose of this audit was to assess causes of death in this cohort in order to inform prevention interventions and resource allocation.
Methods: Data from adults with HIV who died between 01/01/2011-31/12/13 was collected from case notes in conjunction with electronic systems and registry office data and was collected according to the 'Coding of Death in HIV' proforma with additional data of interest.
Results: There were 17 deaths over the study period of which 13 were male. Eleven were in the lowest quintile of social deprivation. The median age at death was 46 (39.5 for females). The median number of years since HIV diagnosis was 19 (range 0-30). The median CD4 count closest to the time of death was 135 cells/mm^3 and 9 had an undetectable viral load. The table lists the frequencies of causes of death.

	Total (n=17)	IDU (n=12)	HCV (n=9)
HIV/AIDS	4	3	1
Liver	3	2	2
Respiratory	3	2	1
Drug overdose	3	3	3
Road traffic accident	1	0	0
Renal	1	0	0
Neurological	1	1	1
CVD	1	1	1

Twelve acquired HIV via IDU; 2 were actively injecting, a further 4 using non-injection drugs,10 were prescribed opiate substitution and 9 had chronic hepatitis C (HCV) infection. Of the 4 that died due to HIV, 1 was diagnosed 5 months previously, 3 had been diagnosed for 6-27 years, 1 had both poor attendance at clinic and poor adherence and a further 1 had reported poor adherence alone. There was no post-mortem undertaken for 16 patients.
Conclusion: The majority of those that died in this cohort had a history of drug use. Late HIV diagnosis was not a significant feature in this series neither was malignancy nor antiretroviral toxicity. Holistic care for HIV-infected individuals with a history of drug use should include robust links with substance misuse, harm reduction and mental health services, primary care and other specialist services in order to reduce mortality from preventable causes. Responsibility for co-ordinating this care should be agreed at a local level.

P185

Obesity in HIV-infected patients and the role of dieticians in its management

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Background: The improved survival with combination of antiretroviral drugs puts HIV infected patients at risk of obesity and its complications similar to that of UK general population. We investigated the impact of engagement with HIV dieticians on management of obesity amongst a group of patients after one year of follow up.
Methods: measurements of patients' body weight in kilogram and their height in meters are routinely recorded on the hospital's electronic system on each clinic visit that automatically calculates body mass index (BMI). We identified patients with obesity grade 2 and more (BMI of more than 35 kg/m^2) amongst HIV infected patients who attended our centre between 1st November 2012 and 1st November 2013. They saw HIV dietician to discuss the hazards of obesity and the benefits of weight reduction. They received information on diet and life style changes. We excluded information on pregnant women, those who did not see an HIV dietician at least twice, and those who transferred their care or defaulted their clinic appointments during the study period. Based on the number of appointments patients had with the HIV dieticians, we calculated the projected number of their annual dieticians' appointments.
Results: BMI values of 1,185 patients were reviewed; 96 (8%) had BMI over 35 Kg/m^2. Information of 31 (32%) patients was excluded. Of the remaining 65 patients with median age of 42 (IQR 37, 47) years, 50 (77%) were women. Significantly higher proportion of women (90%) were of Black ethnicity compared with that of 46% for men ($p<0.001$). After a median of 7 months (IQR 4,8), six (9%) patients lost a median of 5.2 Kg (IQR 2.0, 8.7) to reach BMI less than 35 Kg/m^2. Those patients had a median of 7.0 (IQR 5.5, 13.5) annual dieticians' visits compared to a median of 3.4 (IQR 1, 5) annual visits for those who did not loose significant weight ($P=0.001$). Of 59 patients with paired BP measurements during the study period, 17 (28%) managed to reduce their systolic BP by at least 10 mmHg; 12 with diet and life style changes, and five also with antihypertensive medications; all had less than 1 unit reduction on their BMI. An extra four patients had more than 10 mmHg reduction in their diastolic BP.
Conclusion: Morbid obesity is a common problem that may grow as our cohort ages. More frequent interaction with HIV dieticians for diet and life style change seemed to be beneficial for significant weight reduction after one year.

P186

MSM Neurocog: Role of peripheral CD8 T cells in neurocognitive screening test outcome

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Background: Studies have suggested CD8 lymphocytes may be a possible marker for inflammation, a contributing factor to HIV related neurocognitive impairment (NCI). The recent observation of inversion of CD4:CD8 ratio (<1) being associated with markers of age-associated disease in virally suppressed individuals with immunological recovery strengthens the rationale for investigating the role of CD8 T Cells in NCI. The MSM Neurocog Study looked at some simple screening tests for NCI in a cohort of HIV+ MSM. We investigated the relationship between CD8 counts and CD4:CD8 T cell ratio inversion with the outcome of these screening tests.
Method: Data from the MSM Neurocog cohort was retrospectively analysed. Individuals who scored highly on screening tests (PHQ9>15 and/or GAD7>10) were excluded. Patients were screened for potential NCI by using the International HIV Dementia Scale (IHDS) and Brief NeuroCognitive Screen (BNCS). Those patients that screened positive for potential NCI were compared to those with normal scores on IHDS & BNCS testing. Data was analysed using SPSS 22 software (IBM Statistics). The mean current, peak and nadir CD4 and CD8 T cell values were compared using Mann Whitney U and independent t-testing between groups, along with the CD4:CD8 ratios, to ascertain whether there was any difference in parameters in those presenting with NCI.
Results: 144 males, aged 18-50years were included in the analysis. 20 patients screened positive for potential NCI. There was no significant difference between the groups *sexuality (p=1.00), and* risk factors for NCI. Baseline factors were similar between normal and abnormal groups. Numbers on HAART & the mean CSF penetration effectiveness (CPE) scores for both groups were similar (*p=0.079 & p=0.082).* We were unable to identify any significant difference between current, nadir or peak CD4 and CD8 counts. CD4:CD8 ratios, CD4:CD8 ratio inversion (<1). The number of detectable vs. undetectable pVL's and peak pVL were also similar between both groups.
Conclusion: We were unable to demonstrate any significant difference in CD8 T cells or CD4:CD8 T cell ratio inversion in the group with abnormal NCI screening tests. Plasma biomarkers of NCI in HIV infected subjects may have diagnostic and prognostic utility. Future, prospective, longitudinal work with large numbers of NCI subjects may be warranted to further investigate the role or peripheral CD8 T cells role as a marker of NCI.

P187

The impact of starting or switching to rilpivirine on alanine aminotransferase (ALT)

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Introduction: Rilpivirine (RPV) is licensed as part of combined antiretroviral therapy (cART) for treatment of HIV-1 infection. Anecdotally we had noted a number of cases of ALT rise when switching patients to RPV-based ART; we performed a retrospective cohort analysis to investigate this.
Methods: All individuals starting/switching to RPV-based therapy were identified, HCV coinfected patients and those with baseline ALT >90IU/L were excluded. Eligible subjects had at least one ALT measurement before, and two after, starting RPV. Baseline ALT, VL and CD4 were defined as latest available result within one year of starting RPV and follow up ALT collected 1 month, 3 months and 6 months after RPV initiation. The latest available VL and CD4 results were also collected ALT results at each time point were compared to baseline values within starter and switcher groups using Wilcoxon test for matched pairs.
Results: 134 patients were included in the analysis, 24 initiating RPV-based 1st line cART and 110 switching from another regimen. Mean age was 41 (range 20-67 years), 75 % Caucasian, 81 % MSM. Median baseline CD4 was 415 (310;575) in those initiating, and 570 (440;790) in those switching to, RPV. Amongst those starting RPV first-line all achieved viral suppression (<50 copies/ml) maintained after a median of 286 days; amongst switchers 96% and 94% were undetectable at baseline and after a median of 274 days, respectively. Median ALT increased in both groups (table 1); this was statistically significant at months 1, 3 and 6 compared with baseline in switchers but only at month 3 in starters. In the switch group mean ALT rise was 9.4 IU/L at month 3. ALT results described by ACTG grade will also be presented.
Conclusions: RPV is a well-tolerated drug and an increasingly popular switch option for individuals with ART-related tolerability or toxicity problems. We demonstrated a significant ALT rise after RPV initiation, particularly in those switching from another regimen. Careful monitoring of liver function after initiation of any drug is recommended but may be particularly important for RPV. Larger studies and cohort analyses amongst co-infected patients are warranted.
Table 1:

	Baseline	1 month	3 months	6 months
Start (n=24)	29 (21,51)	31 (26,45) P=0.793	36 (26,54) P=0.167	35 (25,51) P=0.066
Switch (n=110	28(22,42)	32 (23,43) P=0.003	32(24,54) P=0.007	31 (24,44) P=0.004

P188

A rare cause of fever and lymphadenopathy – Rosai Dorfman disease in an HIV-positive Ugandan woman

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Background: A 49 year old Ugandan woman was originally referred to the rheumatology team with a 2 year history of arthralgia and weight loss.
Methods and Results: Laboratory investigations showed raised ESR, polyclonal hypergammaglobulinaemia, equivocal ENA and a positive ANA test (1/80). Examination showed large volume axillary lymphadenopathy. A diagnosis of undifferentiated connective tissue disease was made with a plan to start steroid treatment. Lymph node biopsy revealed sinus histiocytosis with massive lymphadenopathy (Rosai-Dorfman disease (RDD)).
Immunohistochemistry highlighted infiltration of the lymph node by histiocytes, lymphocytes and plasma cells, with the histiocytes showing strong positivity for lysozyme, variable positivity for S100 protein and CD68 and emperipolesis (lymphophagocytosis)- a characteristic feature of RDD.
Subsequent investigations for HIV-1 were positive with a baseline CD4 174 cells/uL (4%) and viral load of 163,967 copies/ml. HHV8 and CMV levels were undetectable but EBV was detected at 2960 copies/ml. She was initiated on HAART and has made good clinical response.
Discussion: To our knowledge this is the fifth reported case of RDD in HIV. RDD was first reported in 1969, it is a rare disease that presents with massive bilateral, painless cervical lymphadenopathy, fever, night sweats and weight loss. Extra-nodal disease occurs frequently and there is no established treatment. Surgery and steroid therapy is advocated to alleviate compressive lesions. However, the majority of cases are self-limiting.
The aetiology of RDD is not fully established but immune deregulation has been identified to cause cytokine and histiocyte activation with migration and accumulation of monocytes and histiocytes. This functional activation has been postulated to be triggered by different stimuli, including viral infections such as EBV, HHV6 and haematological malignancies. Similarly, HIV could also be implicated in the pathogenesis. Immunohistochemical profiles have shown activated macrophages stimulated by T lymphocytes after an immune stimulation.
RDD is a rare cause of lymphadenopathy, which may represent an HIV-associated disease. This case further supports the national British HIV Association guidelines for HIV testing patients in from prevalence areas with systemic symptoms.

P189

Cardiovascular risk assessment in a South East Asian cohort with HIV infection in Sri Lanka

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Background: Cardiovascular (CV) disease represents a significant cause of morbidity and mortality in South Eastern populations. In Sri Lanka, coronary artery disease is the leading cause of mortality accounting for 34% of deaths

in 2011 compared to 17% in the UK. It has been well described that HIV patients are at higher risk of developing CV disease. CV risk assessment plays an integral role in the management of HIV patients. This is even more crucial in South East Asian patients with HIV who already are at increased risk.
This study aimed to determine the prevalence of CV risk factors in a HIV cohort from Sri Lanka. The 10 year risk of coronary heart disease was calculated using the Framingham score and the 5 year risk using the DAD score. The two scores were compared when evaluating CV risk in this population.
Method: Clinic notes of all patients over the age of 18 that attended the local HIV clinic between 1/12/2011 to 1/12/2012 were screened. Data was collected on patient demographics, CV risk factors, and HIV clinical information. Data was obtained from their last clinic visit. Framingham and DAD scores were calculated.
Results: 394 patients were identified. The average age was 42 years, and was largely male (61%) and heterosexual (79%). The prevalence of CV risk factors was: 5% family history of CV disease, 7% hypertension, 9% diabetes, 24% smokers and 30% dyslipidemias. Average CD4 was 464 (343- 639) and 63% (247) patients were on NNRTI based therapy. 5% (20) patients and 0.5% (2) patients were on a Lopinavir or an Abacavir containing regime respectively. The risk stratification of the patients using the Framingham and DAD score are shown in the table below.

	Framingham Score	DAD score
Low Risk	265 (67%)	297 (75.5%)
Intermediate Risk	35 (9%)	5 (1%)
High Risk	3 (1%)	1 (0.5%)
Missing data	91 (23%)	91 (23%)

Conclusion: There was a high prevalence of CV risk factors for a relatively young population, especially dyslipidemias. This may affect ARV choice to achieve a more favourable lipid profile. Few patients were on ARV regimes that would contribute independently to CV risk. Overall the CV risk estimation was low using either calculation. There was a disparity with the 2 scores in stratifying low and intermediate risk groups. Both scores don't include variables that maybe more useful in assessing CV risk in South East Asians e.g. waist circumference. More research may need to be done to identify the best scoring system to accurately reflect CV risk in this population.

P190

Ischaemic hepatitis – an unusual case of severe acute hepatic injury in an HIV-positive man

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Background: Abnormal liver function tests are a frequent diagnostic problem in HIV positive patients, especially those who are acutely unwell. We present a case of a less familiar cause of severe hepatitis that occurred in an HIV positive man. We also discuss the diagnosis and aetiology of the condition.
Methods: Case note and literature review.
Case: A 72-year-old HIV positive man, stable on antiretroviral therapy, presented with a 6-day history of dyspnoea. He had a background of congestive cardiac failure, hypertension and chronic obstructive pulmonary disease (COPD). On admission, he was in atrial flutter with fast ventricular response but not hypotensive (BP 110/90; usual BP 150/100). He had evidence of pulmonary congestion. He was cardioverted with Amiodarone and sinus rhythm was maintained. The next day however, he developed severe transaminitis, which peaked at day 3 with AST 7770, ALT, 4194, LDH 18180, bilirubin normal, INR 2.9. There was a metabolic acidosis (pH 7.30, with lactate 4), and acute kidney injury (creatinine 229; baseline 100). There was no history of drug or toxin ingestion and acute viral hepatitis serology (A to E), including CMV and EBV, was negative. Abdominal ultrasound excluded hepatic vein thrombosis. Echocardiogram showed moderate biventricular failure and coronary angiogram showed severe three-vessel disease. A diagnosis of ischaemic hepatitis was made, based on the absence of infective or toxic causes and the characteristic pattern of liver injury and recovery. He made a good recovery with supportive therapy and was discharged with optimised medical treatment for cardiac failure.
Discussion: Ischaemic hepatitis, or 'shock liver', is a cause of transaminase elevation greater than 100 times the upper limit of normal. It is usually considered to be the result of profound hypotension. This case highlights the point that relative and transient hepatic hypoperfusion, in the absence of overt hypotension, can be adequate to cause a dramatic liver injury. It also emphasises the complementary roles of three contributing pathophysiological mechanisms: i) hypotension/'forward failure' (caused by tachyarrhythmia superimposed upon poor left ventricular function), ii) congestive cardiac failure/'backward failure' (causing hepatic venous congestion), which lowers the threshold for liver ischaemia when perfusion falls, and iii) arterial hypoxaemia (background COPD). The treatment in this case was optimisation of cardiac function.

P191

A case report of DRESS syndrome associated with raltegravir

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Drug reaction with oesinophilia and systemic symptoms (DRESS) syndrome or drug induced hypersensitivity occurs between 1 and 6 weeks after drug administration therapy and is characterised by skin rash, fever, lymphadenopathy and multisystemic involvement including hepatitis, nephritis and pneumonitis.
DRESS syndrome has been previously described in association with anti-HIV drugs such as abacavir, nevirapine and efavirenz. There have only been three reported cases of this syndrome in association with raltegravir, an integrase inhibitor that is being increasingly used in HIV-1 infection.
We report a case of DRESS syndrome in a 57 year old man who presented with advanced HIV disease and was initiated on antiretroviral therapy with a raltegravir based regimen. Two weeks later he developed marked eosinophilia, lymphadenopathy, rash and a fulminant hepatitis.
In clinical trials only a few patients on raltegravir discontinued for adverse events and the overall tolerability was excellent in both treatment-experienced and treatment-naive patients. Raltegravir has not been linked convincingly to serum aminotransferase elevations during therapy or to episodes of acute, clinically apparent liver injury. Our case report is one of the few reported cases of DRESS syndrome developing in association with raltegravir therapy. Raltegravir should be considered in cases of drug induced hypersensitity

Education and Training

P192

HiV-Link: A mobile phone-based expert consultation platform for HIV/AIDS care in Ethiopia and Uganda

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Background: Two thirds of the world's HIV burden is in Sub-Saharan Africa while only 3% of the world's trained healthcare workers reside there. Non-physicians and healthcare workers are increasingly employed in initiating and monitoring therapy and addressing complications. It is essential that these individuals receive expert support to maximize therapeutic outcome. In contrast to the rudimentary healthcare infrastructure, cellular phone technology and coverage is relatively wide spread and provides a unique opportunity to support medical care providers in the field through remote consultation and mentoring. Parallel pilot studies were conducted to explore the feasibility of mobile phone-based asynchronous expert consultation for HIV/AIDS care in Ethiopia and Uganda.
Methods: A web-based platform whereby queries via SMS are processed and archived was developed. 146 physicians, nurses and healthcare workers signed up for expert clinical consultation via HiV-Link in Ethiopia (n=38) and Uganda (n=108). Expert consultants for the Ethiopia project were 3 physicians experts based in Addis Ababa and 2 in US, whereas 5 physician experts based at Mbale Regional Referral Hospital supported by 5 physicians from the UK provided consultation for the Ugandan project.
Results: 66 (45.2%) used the system at least once; 323 patient case queries were texted to the HiV-Link system. Expert response times were <12 (30.9%)

and 12-24 hours (60.7%). The breakdown of queries was similar in both Ethiopia and Uganda. 58% questions focused on treatment advice; 19.6% on general HIV information, 18.4% on drug side effects. 96% of system users support continuation and expansion of the initiative to other disease states.
Conclusions: These pilot studies demonstrate that an easy-to-use system linking widespread mobile phone availability in rural Africa to a centralized website permits rapid and clinically useful exchange of information and advice. It also is instructive to medical and government authorities on areas of greatest need for continuing medical education. Although this pilot was within the setting of HIV, it should be expanded to other disease areas in anticipation of similarly positive outcomes.

P193

A national evaluation of HIV nurses' knowledge, attitudes and practices towards 'treatment as prevention' (TasP)

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Background: There is now strong evidence supporting the use of TasP and current British HIV Association treatment guidelines recommend that clinicians should discuss the evidence for the effectiveness of antiretroviral treatment as prevention with all patients with HIV. Nurses are involved in all aspects of service delivery and it is essential that they have the knowledge, skills and confidence to address the potentially complex issues that TasP may raise for patients. In the UK, there is a lack of information about HIV nurses' views on TasP and on their related training and support needs. The study aimed to evaluate self-perceived knowledge, attitudes, skills and practices of nurses working in the field of HIV in the UK in relation to TasP.
Methods: Ethical approval was obtained. A mixed methods research design was adopted comprising 2 phases: an on-line survey followed by in-depth telephone interviews. The on-line survey was disseminated to the NHIVNA membership {n=244} via email. The response rate was 33% (n=81). Ten interviewees were then purposively selected from those who volunteered, to represent the diversity of the NHIVNA membership. The interview schedule was designed to follow up on key findings emerging from the survey and to enable complex topics to be explored in more depth. The survey was analysed using descriptive statistics. The interview data was analysed thematically.
Results: The study revealed considerable diversity and lack of clarity in nurses' understanding of the scope of the term 'TasP'. Overall, nurses saw it as their role to facilitate discussion with patients around TasP, as part of a multidisciplinary and partnership approach to care provision. Nurses feel skilled and competent in terms of general communication around sexual health and risk behaviour, but less confident to discuss TasP in the context of more complex patient scenarios. Many potential benefits of TasP were identified, including as a possible empowering and motivational tool, but several concerns were also expressed about the possible negative consequences of TasP, e.g. challenges with long term treatment adherence and the potential for changes in sexual risk taking.
Conclusion: Deficits in nurses' knowledge and confidence regarding TasP were identified and need to be addressed proactively at national level, with opportunities for continuing professional development made readily accessible. Further discussion and recommendations will be made on presentation.
Discussion: The discussion will identify areas for further research and will make recommendations for service innovation and development of educational resources.
Acknowledgements: This study has been conducted by NHIVNA with support from a grant from Gilead Sciences.

P194

Are integrated sexual health centres a detriment to genito-urinary medicine training?

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Background: The 2010 Genito-Urinary (GU) Medicine Curriculum comprises a syllabus of 20 clinical GU and 18 clinical HIV competencies, suggested knowledge- and skills-based competencies in the fields of Epidemiology and Public Health, along with additional generic targets from the Medical Leadership Competency Framework. Sexual and Reproductive (SRH) Healthcare competencies included in the GU medicine syllabus are "Contraception" and "Obstetrics and Gynaecology (O&G) for GU trainees" – ie apportioned 10% (2/20) of the GU syllabus and 5.3% (2/38) of the combined GU and HIV syllabus. In an Integrated Sexual Health Centre setting GU trainees may spend a disproportionate amount of time dealing with SRH presentations.
Method: An audit was carried out in a city centre Integrated Sexual Health Centre of clinic consultations over a 2 week period. In the first 2 years of GU training in this centre 6 out of 7 clinics undertaken per week were general walk-in clinics or integrated booked clinics for GP referrals and reviews – representing 85.7% of clinical work. 55 consultations were analysed for reason for attending and consultation content.
Results: 19 of 55 consultations were male patients attending with GU complaints. Of the remaining 36 female consultations – 13 presented with a purely GU complaint and 10 had a purely SRH complaint. 8 patients who presented with an SRH complaint accepted opportunistic asymptomatic STI screening. Five women presented with both a GU and an SRH complaint meaning in total there were 60 clinical "episodes" to analyse.
Overall there were 37 "episodes" (61.7% of episodes) where a GU problem was discussed/diagnosed/managed and 23 "episodes" (38.3% of episodes) where the consultation was purely of an SRH nature. Eight of those SRH consultations included an asymptomatic STI screen being carried out but it could be argued that there is limited educational value in doing this.
Conclusion: 38.3% of "episodes" and therefore clinical exposure involved subjects which encompass only 5.3% of the total required syllabus competencies. It appears that for GUM trainees training in integrated sexual health centres there may be markedly less exposure to key GU and HIV consultations than for their colleagues training in stand-alone GU centres. There may be a need for the curriculum to evolve in parallel with more trainees training in integrated centres in the future.

P195

Epidemiology and public health training for genitourinary medicine trainees – fulfilling the curriculum

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Background: Epidemiology and public health are important components of the specialty training curriculum for genitourinary medicine (GUM). Some competencies are part of daily practice but others are difficult to demonstrate specifically, although the knowledge base is summarised in the GUM Diploma syllabus. There is limited opportunity to undertake a research or fellowship programme to gain additional expertise.
Methods: We present a locally developed program designed to reflect on the curriculum and explore public health issues relevant to sexual health. The program consisted of a series of interactive small group sessions, led by a specialist registrar, and facilitated by a local GUM or public health consultant. Five of the sessions were structured around the text 'Sexual Health – A Public Health Perspective' (Wellings K, Mitchell K, Collumbien M, editors, Open University Press, 2012).
Results: Mapping of the curriculum components with the local program will be presented. Topics included local epidemiology, sexual violence, young people and other vulnerable groups, unintended pregnancy, sexual health promotion and epidemiological methods of researching and evaluating sexual behaviours and interventions. A significant proportion of the curriculum competencies were covered. Stronger links with local public health consultants have been developed, and our understanding of the new local commissioning arrangements for sexual health has improved, with the topic presented in greater depth at our regional trainees study day.
Other outcomes of the program have included arranging teaching for the multidisciplinary team in motivational interviewing techniques. In our area of high deprivation, with higher than average rates of teenage and unwanted pregnancies and late HIV diagnoses, sexual health education in schools was highlighted as an area of need by the Public Health Consultant lead for the City. We are planning a review of sexual health education in local schools, in conjunction with local authority sexual health commissioners.
Conclusion: We felt this program substantially met the requirements for public health within the curriculum and will have an impact on local services. In the absence of a national program we would encourage others to develop an equivalent program locally.

P196

Community, scientific and medical collaboration to develop a new generation of activists: results of a four-day workshop

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Background: HIV care across the UK is undergoing significant changes with new NHS structures and reduced budgets. Patient voice and experience are key to ensuring these changes are able to be adopted. People living with HIV wanting to help ensure these changes are fit for purpose need technical and advocacy skills if they are to fully participate in the arrangements that facilitate them yet formal training is rarely provided.
Methods: As a strategy to expand the increasing demand for community involvement in the NHS the CAB organised a 4 day residential training course to train advocates in knowledge (trial design, methodology, statistics, immunology, virology, treatment guidelines NHS structures) and practical skills (collating patient views, negotiating in meetings, public speaking, etc). Applications were invited through the UK-CAB and other patient networks. Candidates knowledge and confidence was self-assessed before and after training.
Results: 12 people were selected to attend with broad demographics in terms of age (range <30->65), sex (5F/7M) race (6 African, 4 Caucasian, 1 South Asian, 1 Caribbean), geographical region (6 from London 6 from outside London) and years since diagnosis (range 3->20 years). None had a previous formal medical background. Training was provided by a mix of HIV activists and clinical specialists. Post-training questionnaire results demonstrated a general increase in knowledge across all areas covered. All participants indicated their knowledge had increased in a majority of the topics assessed. All participants indicated that their confidence levels for taking part in complex discussions had increased.
Conclusion: Securing and growing the pool of knowledgeable and confident HIV community advocates is vital for the continuance of meaningful community representation. Future challenges include; the development of new care pathways, budget reductions, committee representation, and input to MRC trial design and management. This can only be achieved by provision of high-quality training and knowledge sharing between HIV clinicians, researchers, scientists and community activists.
This residential weekend proved successful as a means to increasing the number of knowledgeable and confident HIV advocates within the UK. Further workshops, e-learning modules, and training days are now being developed.

P197

What factors influence whether a patient consents to having medical students involved in his/her sexual health consultation/examination?

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Introduction: Access to doctor-patient consultations is one way that medical students gain experience. We wished to explore factors that influence a patient's decision for Genitourinary Medicine (GUM) consultations and examinations which are, by nature, extremely intimate. We aimed to identify ways to improve patient experience and increase learning opportunities for students.
Method: A prospective audit of patient notes was performed (October 2013 - January 2014) and an anonymous questionnaire distributed following the patients consultation. Demographics were collected and analysis was performed using SPSS statistical software and chi-squared statistical tests (Fisher's or Pearson's tests as appropriate).
Results: Notes of 75 patients were reviewed and 69 questionnaires completed. There were no significant factors associated with an increased admission to the history-taking part of the consultation. The same student was significantly more likely to be allowed into the patient's examination if s/he presented with symptoms (50% consenting if asymptomatic vs 80.4% if symptomatic p=0.038), had no casual sexual partners in the previous 3 months (55% consented if they had recent casual partners vs 82.5% if they had not p=0.023) and if the student was of white descent (56% consented if student was of non-white ethnicity vs 85.7% if they were white p=0.01). Patients were more likely to allow students to observe his/her examination if s/he had a pre-booked appointment (56.3% consenting in drop-in vs 92.9% in pre-made appointment, p<0.001). 37.5% of patients reported having a student present during the examination was a positive experience, 62.5% were neutral. Most (80.6%) patients would like to be asked permission for student to be present at the time of appointment by the doctor. 97.1% would be likely to agree to a student being present at future consultations.
Discussion: Our study found no significant factors influencing whether a patient consented to a student's presence during history- taking but a number of significant factors influenced whether the same student was permitted to attend the examination. Interestingly, most of the appointment sessions were attended in the afternoon by the same student directly following a morning placement at a drop-in session. Student confidence may therefore have played a role. A larger study to look at the significant factors found in which the questionnaire data is linked to the prospective audit data would be valuable.

P198

What do GUM clinicians think should be included in modern GUM undergraduate medical teaching – a qualitative interview study

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Background: Genitourinary Medicine (GUM) in the UK is undergoing significant change, including increasing integration with Sexual and Reproductive Health (SRH) services and a growing HIV caseload. Traditional GUM teaching in undergraduate medicine concentrated on the management of individual sexually transmitted infections (STIs). Yet, arguably, changing practice within GUM should be reflected in its teaching. I undertook a qualitative study to gather views of GUM clinicians regarding what should be included in this teaching.
Methods: 8 GUM Clinicians and 2 SRH clinicians from UK participated; all were directly involved in undergraduate GUM teaching, some were module leads. Semi-structured interviews were conducted (ranging from 25 - 70 minutes) discussing what learning outcomes (LOs) should be included in a model undergraduate GUM module, what teaching methods be utilised, teaching time required and when in the undergraduate curriculum this should be delivered. Interviews were recorded and transcribed. Data was analysed by content analysis method: transcribed interviews were re-read a number of times to identify significant words and phrases, which were coded into separate categories of LOs.
Results: Interviewees suggested important skill and attitudinal GUM LOs, even above knowledge. Requisite skills included sexual history taking, HIV risk assessment and testing, and male and female genital examination. Recommended attitudinal LOs were developing an open and non-judgemental approach to sexual health issues and acknowledging sexual health as an important component of general well-being. A few clinicians raised the intriguing point that sexual health teaching should also enable self-reflection and development of personal life skills. Proposed knowledge LOs included traditional competencies in the diagnosis and management of STIs, public health aspects of GUM, and principles of HIV care and contraception. Interviewee responses were discussed in depth. Respondents recommended a mixture of teaching methods, but agreed that experiential learning was beneficial. They preferred the teaching to be delivered in the latter years of the curriculum.
Conclusion: This qualitative study looked in depth at clinicians' views regarding important themes for inclusion in an undergraduate GUM curriculum: additional to traditionally taught competencies in management of common STIs, participants suggested other important LOs, including necessary skills and attitudes.

P199

Trichomonas vaginal TMA testing – When is the best time to test for cure?

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Background: Routine *Trichomonas vaginalis* (TV) testing with transcription mediated amplification (TMA) was introduced in our urban genitourinary clinic for targeted use in January 2013.

Methods: Between January and November 2013 all patients who tested positive either on wet mount microscopy or TMA were recalled as per protocol for a routine 'test of cure' (TOC). We reviewed all cases of TMA-positive TV that had a subsequent TOC with TV TMA.
Results: A total of 120 patients had positive TV TMA tests. Twenty-nine were excluded from analysis as no TOC or treatment data were available leaving 91 patients who had a positive TV test with at least one subsequent TOC. We chose to analyse those patients who underwent TOC within 8 weeks of treatment for the initial infection. Of these 81 patients the median time to TOC 15days (range 7 – 56).
61 (75%) had a negative TOC, leaving 20 (25%) with a positive TMA TOC.
16 of these 20 had wet mount microscopy (WMM) completed of which 5(31%) were wet film-positive at TOC suggesting persistent infection/treatment failure or early re-infection. 8 of the 20 who had a positive TMA TOC were not retreated at the time of testing and 4 (50%) of these 8 tested negative on further testing despite no treatment, suggesting that initial TOC might have been falsely positive due to slow clearance of RNA target in the genital tract after treatment.
Treatments used for first line therapy in the 20 patients that remained positive included metronidazole 2g stat (n=10), tinidazole 2g stat (n=1), metronidazole 400mg bid 5 days (n=5), 4 were unknown due to lack of documentation. Only 1 had a documented risk of re-infection.
On subsequent TV TOC, 3 patients remained TMA-positive. WMM was negative in 2 patients the remaining 1 had tested WMM positive initially, negative at the second WMM and positive again at the third suggesting a possible re infection by the time of the third TMA test.
Conclusions: TV TMA remains a relatively new diagnostic tool in GU services; the optimal times for repeat testing with TMA for TV, chlamydial and gonococcal infections have not yet been defined. Persistent TMA-positive results in this case series might represent persistent infection/treatment failure, persistence of non-infectious RNA target or re-infection from the same/different partner. A high rate of failed PN was evident for TV infection. Further study is warranted.

Epidemiology and Surveillance

P200

A cross-sectional, multi-country, non-interventional EpidemioLogical study to investigate the popuLation and disease characteristics, barriers to care and quAlity of life for women living with HIV: ELLA Study

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Background: Global HIV-1 prevalence estimate is currently 33.4 million infected with women comprising >50%. According to CDC reports, women experience a higher HIV mortality rate when compared to men. The ELLA study describes factors associated with barriers to care(BACS) for HIV+ women and associations between access to care and disease stage, treatment effects, emotional health, and quality of life.
Methods: ELLA is a large cross-sectional, non-interventional epidemiology study, conducted across 4 geographic regions. Eligible women(≥18 yr) completed self-administered BACS Scale, Health Status Assessment, Symptoms Distress Module and Reproductive Choices Questionnaires. Healthcare providers documented medical history, HIV infection/comorbidities data, and clinic attendance records. The focus of this abstract is to present ELLA demographic data and HIV disease characteristics.
Results: 1931 women enrolled from 30 countries. Demographic differences were observed between regions. Results from the overall group: Mean age was 40 yrs(16.9%>50 yr), 55.3% lived with a partner and 48.1% were part of a serodiscordant couple. 47.7% of women had <12 yr of education. 36% were unemployed(83.6%>12 months). 83.0% acquired HIV through heterosexual sex. 88.2% were on ART with 57.5% having a VL<50 c/ml. Mean CD4 was 540.5 c/uL. The most commonly reported co-morbidities were: anxiety/depressive disorders(18.2%); HCV infection(14.7%) and lipodystrophy(12.4%).
Conclusion: Women from the WEC region reported higher rates of viral load suppression and a higher CD4 cell count when compared to other regions. Serodiscordance was common in this trial where most women obtained HIV-1 infection through sexual transmission. In Western Europe/Canada region >40% of women reported birth in a country different than their current country of residence.

	Western Europe/ Canada (WEC)	Central/ Eastern Europe (CEE)	Latin America(LA)	Asia	p-value
Numbers enrolled	760	532	519	120	
Mean±SD Age (yrs)	44±10.8	33.2±9.8	42.2±11.1	37.7±8.4	<0.0001
Born in country of residence (%)	57.4	95.3	88.2	100	<0.0001
Transmission: Heterosexual sex(%)	85.1	69.7	96.7	68.3	<0.0001
Serodiscordant couple(%)	59.5	40.8	39.1	53.6	<0.0001
< 12 years education (%)	39.7	45.9	57.8	63.3	<0.0001
Most recent VL <50c/mL (%)	75.0	40.6	52.2	46.7	<0.0001
Mean±SD most recent CD4 count (c/uL)	613±284.4	477.8±250.1	529.1±300.0	399.2±212.7	<0.0001
Currently on ART (%)	92.5	83.7	87.3	85.8	<0.0001

P201

Event-level case-crossover analysis of drug use and sexual risk in men who have sex with men in England

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Background: Men who have sex with men (MSM) in the UK report higher rates of drug use than the overall population. Co-occurrence of this recreational drug use with sex is common. Event-level case-crossover studies from MSM in the United States consistently point to associations between sexual risk and specific drugs (including amyl nitrates, crystal methamphetamine, and alcohol use), but drug use patterns and contexts differ across locations and cultures. This is the first event-level case-crossover analysis to assess whether drug use predicts unprotected anal intercourse (UAI) with MSM in England and in the UK generally.
Methods: MSM in England were recruited to a longitudinal web-based survey through websites and community organisation partners. Throughout 2011 and early 2012, MSM reported up to five sexual encounters with another man, including situational and behavioural variables. Conditional logistic regressions (CLRs) models captured whether, within respondents, drug use by self or partner predicted UAI. Drug use was measured as a binary variable for any of several drugs and for specific drugs, as a continuous variable for number of drugs reported. Other situational variables tested were place of sex, partner relationship, and HIV serodiscordance.
Results: Of 2,141 respondents reporting at least one encounter, 306 respondents reported 1,238 encounters eligible for CLRs. 36.4% of encounters included UAI, 43.1% of encounters included drug use by the respondent, and 28.1% of encounters included drug use by partner. Respondent drug use predicted UAI both when measured as a binary variable (OR 1.79, p<0.001) and continuously (OR 1.46, p<0.001), as did drug use by partner. Specific drugs predicting UAI included amyl nitrates (OR 1.79, p<0.001) and erectile dysfunction medications (EDMs) (OR 2.51, p<0.001). In multivariate models including other situational variables, drug use by self remained statistically significant in all forms, though drug use by partner did not.

Discussion: The first case-crossover analysis of its kind for UK MSM, this study suggests that drug use by self predicts sexual risk, and that this effect persists after controlling for other key situational variables. Though analyses for specific drug may have been underpowered, poppers and EDMs were strong predictors of UAI. Future research should address specific links between these drugs and sexual risk, as well as interventions to reduce drug use or manage drug-related sexual risk.

P202

Monitoring rates of repeat testing following a chlamydia diagnosis before and after a change in National Chlamydia Screening Programme case management guidelines

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Background: Young adults who test positive for chlamydia are at increased risk of subsequent infection. The English National Chlamydia Screening Programme (NCSP) recommends that sexually active under-25 year olds are tested for chlamydia annually or on change of sexual partner. In August 2013 the NCSP revised its case management guidance to recommend that all individuals who test positive for chlamydia should be offered repeat testing around three months after treatment completion.
Methods: Baseline repeat testing rates (the proportion of diagnoses where another test was recorded within 7-14 weeks) among 15 to 24 year olds were calculated for each local authority and PHE centre for January to March 2013, using routinely collected data on all chlamydia tests in England. The proportion positive at repeat test was also calculated. Repeat testing rates from community testing settings were calculated independently to those carried out in genitourinary medicine clinics (GUM), due to differences in patient identifiers between data systems. 130/326 local authorities where <80% of community test records had a valid postcode of residence were excluded, as repeat tests could not be reliably identified.
Results: From January to March 2013 the repeat testing rate for England was 13% for tests in community settings and 12% in GUM clinics. Positivity at repeat test was higher in GUM (18%) compared to community settings (11%). Both measures varied substantially by local authority. Repeat testing rates by local authority ranged from 0% to 34% for tests in community settings and 0% to 64% in GUM clinics. The proportion positive at repeat test by local authority varied from 0% to 30% for tests in community settings, and from 0% to 40% in GUM clinics.
Conclusions: A baseline for monitoring repeat testing practices and repeat positivity rates in England by local authority has been established. Our estimates are likely to be underestimates, as individuals could not be matched across community and GUM settings. However the repeat testing rates give local areas an indication of the scale of repeat testing and repeat positives. Further investigations are required to understand reasons for repeat diagnoses. Repeat testing rates for the period following introduction of the revised guidance will be compared to baseline rates to explore the early impact of the recommendations for repeat testing.

P203

Improving intelligence for sexual health needs assessments: progress with the roll-out of STI surveillance in primary and community care in England

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Background: Primary and community care settings have an increasing role to play in the delivery of sexual health services. Assessing local sexual health needs and priorities therefore requires routinely collected, comprehensive data from these services. To meet this need, Public Health England (PHE) has expanded the collection of the Genitourinary Medicine Clinic Activity Dataset (GUMCADv2) to cover all commissioned Level 2 (non-GUM) sexual health services. We present data on reporting coverage, data quality and reported service activity to date.
Methods: We extracted GUMCADv2 data from January 2012-September 2013 to assess coverage of data submissions. 2012 data were also analysed to measure the completion of reporting for each data variable and to assess the number of STI codes reported. A 60% completion level was used as a standard measure for acceptable data quality.
Results: By the end of September 2013, 41% (300/736) of Level 2 services had submitted at least one GUMCADv2 data extract. Coverage was highest within East Midlands PHE Centre (90%) and lowest within North East (10%). Young People's Services were most likely to submit data and GPs least likely. 245 (33%) services submitted data in 2012, of which 30% submitted all required quarters. 280 (38%) services submitted data in 2013, of which 73% submitted all quarters. 21 services that began submitting data in 2012 have since closed. Age and gender were well recorded data variables; all services had >94% completion for age, and 97% of services had >90% completion for gender. Poorly recorded variables included country of birth and sexual orientation where only 52% and 58% of services reached the 60% completion target, respectively. 91% of services achieved >60% completion for ethnicity and 98% achieved the target for patient residence. For chlamydia, gonorrhoea, syphilis and HIV, the inclusion of Level 2 services reporting SHHAPT codes increased the total number of diagnoses reported in 2012 by 10%, 5%, 1% and 2%, respectively. The number of sexual health screens increased by 8%.
Conclusion: Although data submissions have increased each quarter, overall coverage of reporting remains below 50%. In particular, GPs have a poor level of coverage despite the availability of a bespoke data extraction tool. Further engagement with commissioners and the specification of GUMCADv2 in local contracts is vital. Recent changes in service configurations have interrupted continuity of data collection in some areas.

P204

Are HIV-positive patients at increased vulnerability to violence from their partner

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Background: A US study reported lifetime intimate partner violence (IPV) in 73% of their HIV positive patients with 20% reporting current abuse. Rates were highest among African-Americans and in men-who-have-sex-with-men (MSM). A recent UK study found higher IPV rates amongst HIV positive women compared with the general population. Numerous African studies report similar findings. The UK study found associations between IVP and younger age, black individuals born outside of Africa and mental health problems. There is limited data about the experience of IPV in HIV positive men and HIV positive MSM, in addition to patients of non-black ethnicities.
Methods: 500 patients attending HIV clinics between January 2014 and April 2014 in two large UK level 3 sexual health services completed a questionnaire designed using a validated tool for assessing current experience of IPV (emotional, physical, sexual). The rate of IPV with confidence intervals was calculated. Multivariate analysis was used to identify known risk factors helping to predict IPV in this population. In addition, data for women and men was analysed separately.
Results: Preliminary results suggest that IPV was most prevalent in HIV positive young women who were in a heterosexual relationship. HIV positive MSM were at higher risk of IPV than HIV positive heterosexual men. Risk factors for IPV were numerous. Initial results of our study, powered by a good response rate from all sectors of the HIV positive population, suggest over 40% of female patients have experienced IPV, most commonly lifetime abuse rather than recent. Patients most likely to encounter IPV were female heterosexuals and MSM. Disclosure of IPV to health professionals was consistently poor and emotional abuse was the most frequent abuse experienced. Over 95% of participants felt enquiring about IPV in a HIV clinic setting was appropriate. At this present time there is no strong link between IPV, medication compliance and income. However, pattern is beginning to emerge between IPV and drug/alcohol dependency. Full results will be available by the conference.
Conclusions: Rates of IPV in HIV positive patients were higher than published rates in HIV negative people. Healthcare professionals working with patients with HIV should screen for IPV and direct patients to organisations concerned with assisting people at risk of IPV.

P205

High rates of STIs and HIV among men who have sex with men reporting seroadaptive behaviours, England, 2012/13

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Background: HIV transmission in men who have sex with men (MSM) is a major concern in England. The sexual health (SH) of high risk MSM is mostly managed in SH clinics. Behavioural data collected during a clinic pilot among HIV-negative MSM are used to describe seroadaptive practices and identify heterogeneity in HIV risk to facilitate better targeting of HIV prevention services.
Methods: In 2012 and 2013, HIV-negative MSM attending five SH clinics self-completed questions on sexual behaviours in the last three months, which were categorised into six mutually exclusive hierarchical seroadaptive behaviours: no unprotected anal intercourse (UAI) (lowest risk), UAI with one negative partner, insertive UAI only, serosorting (UAI with HIV-negative partners), seropositioning (receptive UAI with negative and insertive UAI with HIV-positive/unknown status partners) and (receptive UAI with HIV-positive/unknown status partners (highest risk sex (HRS)). Univariate analyses explored associations between demographics and seroadaptive behaviours using the χ^2 test. Prospective patient-level demographic and clinical data routinely collected from SH clinics up to June 2013 were used to calculate the incidence of acute STIs including HIV (per 100 person-years (py) with 95% confidence intervals (CI)).
Results: Of 1,116 MSM, 43% were aged 25-34 years, 84% were white and 63% were UK-born. In the previous three months, 44% reported no UAI, 8% reported UAI with one negative partner, 6% insertive UAI only, 10% serosorting, 13% sero positioning and 18% HRS. HRS was reported by 20% of 15-34 year olds compared to 10% of ≥50 year olds (p=0.03), and 28% of Asian-born compared to 19% of UK-born MSM (p=0.002). Serosorting and seropositioning were most common among African-born MSM (22% and 30%). Among 615 re-attenders, 18% were diagnosed with acute STIs including HIV. Prospectively, the incidence of acute STIs including HIV was 135/100py (95%CI 104-175). Incidence was 127/100py among MSM self-reporting no UAI and increased non-significantly to 216/100py and 159/100py among those reporting seropositioning and HRS, respectively.
Conclusions: Nearly one in five men reported receptive UAI with HIV-positive/unknown status partners, although most reported no UAI. Among MSM reattending, high rates of acute STIs including HIV were reported even among those who previously reported no UAI. Behavioural data are an important component of any risk assessment tool that could be used to stratify MSM to enhance prevention measures in clinical settings.

P206

Tailoring HIV testing in a setting of late HIV diagnosis – is the tide turning? Re-audit of late HIV diagnosis after expanding HIV testing

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Background: Local audit data (1) showed that 70% of newly diagnosed HIV patients in our hospital were diagnosed late (CD4 <350 cells/ml), with nearly half having CD4 <100 cells/mm3. We mapped patients' previous hospital attendances and identified Outpatients Department (OPD) as the main setting for missed opportunities for HIV diagnosis and therefore the focus of our HIV testing intervention.
Methods: Firstly, we identified barriers to expanding HIV testing: lack of infrastructure (no electronic lab request methods and lab staff shortages), and clinician-led barriers. Secondly, we conducted a feasibility audit of opt-out HIV serology in OPD with a willing lead clinician in ENT. Thirdly, we set up rapid walk-in HIV testing, delivered by an HIV Testing Facilitator using *Orasure*. Patients attending OPD (and the general public) were informed by posters, promotion cards, and by HIV-trained health care workers, to proactively offer HIV tests, emphasising patients with clinical indicator conditions (ICs).
We re-audited our yearly data on newly HIV diagnosed patient data with regards to CD4, VL and presence of IC at diagnosis.
Results: Total HIV serology tests carried out in OPD during 2013, compared to 2010 increased by 167%**.** 1 patient was diagnosed HIV+ from ENT.
After 30 weeks, 154 patients had a rapid HIV test: 127 attending OPD and 27 from the general public. 3/154 patients tested HIV+, two were a new diagnosis while a third HIV positive patient was previously diagnosed but not linked into care. The ethnicity profiles of the attendees were: White British (36%), Black African (23%), Pakistani (17%), Indians (5%) and others (27%). Female to male ratio was 1:1.2. During 2013, 39 newly diagnosed HIV patients were identified, compared to 91 in 2010. Baseline CD4 count ranged from 64 - 1143 cells/mm^3, only 35% had CD4 counts<350 and 5% less that 100. The ethnicities of those identified were similar to previous, with 50%Black Africans.
Conclusion: We showed that HIV testing in OPD is feasible and rapid HIV testing in OPD had a high yield of positivity. Rates of late HIV diagnosis decreased significantly over time albeit in the context of an overall decrease of total new HIV diagnoses. HIV testing may be expanded in a variety of hospital settings.

P207

Monitoring partner notification outcomes through national STI surveillance in England

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Background: Partner Notification (PN) services are offered at all Genitourinary Medicine (GUM) clinics in England. The British Society for Sexual Health and HIV (BASHH) set standards for auditing PN outcomes in England. These are; 0.6 contacts per index case for chlamydia and at least 0.4 contacts per index case in large conurbations or 0.6 contacts elsewhere for gonorrhoea. The objectives of this analysis were to describe the coverage and new case finding effectiveness of PN services at GUM clinics in England for 2012, and to compare PN ratios for each sexually transmitted infection (STI) to the relevant national standards.
Methods: Annual (2012) data from the Genitourinary Medicine Clinic Activity Dataset (GUMCADv2) were used to determine the number of contacts of patients diagnosed with chlamydia, gonorrhoea, HIV and syphilis presenting at GUM clinics and, of those, the numbers tested and diagnosed with the STI. The PN ratio (contacts/diagnoses) and the proportion of contacts diagnosed for each STI were also determined, and results were stratified by geographical areas (15 administrative Public Health England Centres).
Results: The number of PN contacts (PN ratios) reported for chlamydia, gonorrhoea, HIV and syphilis were 52,640 (0.54), 11,220 (0.44), 1,713 (0.41) and 1,830 (0.61), respectively. The proportion of chlamydia, gonorrhoea, HIV and syphilis contacts tested for the STI were 87.9%, 85.7%, 81.8% and 73.5%, respectively. Positivity for chlamydia, gonorrhoea, HIV and syphilis among contacts tested was, 32.4%, 33.2%, 9.5% and 15.0%, respectively. For HIV, no contacts tested positive in three of the areas (Anglia and Essex, Thames valley and, Devon, Cornwall and Somerset) while the highest positivity was reported in London (22.3%). Only three (20%) areas achieved the standard for chlamydial PN while for gonorrhoea, 11 (73%) areas achieved the standard for large conurbations and none of the areas achieved the standard for small conurbations.
Conclusion: This analysis confirms that PN is an effective case finding intervention, including for HIV. Compliance with national standards for gonorrhoeal PN is good but could be improved for chlamydia. GUMCADv2 can contribute to monitoring PN effectiveness and outcomes in England.

P208

Monitoring STI risk behaviour and partner notification outcomes through routine national surveillance: a pilot study in England

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Background: Surveillance for sexually transmitted infections (STI) in England is performed using the Genitourinary Medicine Clinic Activity Dataset (GUMCADv2). This allows longitudinal linkage of patient-care episodes, but

only basic clinical and demographic data are collected. Recent outbreak investigations in England have highlighted the impact of dense sexual networks, club drug usage and suboptimal partner notification (PN) on STI incidence. A pilot was designed to determine the feasibility and acceptability of routinely collecting data on sexual risk behaviour, drug use and PN outcomes through GUMCADv2. The pilot is in progress and the objective of this analysis is to describe the initial findings from behavioural data collection.
Methods: Using national guidelines for sexual history-taking, an electronic proforma was designed to collect data on sexual partnerships, alcohol and drug use before/during sex, history of STI diagnoses and PN outcomes. A convenience sample of 7 sexual health (SH) clinics was enlisted in the pilot, with rolling admission from September 2013–January 2014. Each site collected behavioural data for 4–8 consecutive weeks on all new patient-care episodes then, where applicable, PN outcome data for 4 additional weeks. A descriptive analysis of the data from the clinics which submitted pilot extracts as of January 2014 is presented.
Results: To date, two clinics have submitted pilot data for 934 new/rebook attendances. This included behavioural data on 83% of 321 level 2 SH service attendances and 48% of 1,383 GUM clinic attendances. Information on 1,275 recent sex partners was reported. Two or more recent partners were reported by 15%, 26% and 40% of heterosexual female, heterosexual male and homo/bisexual male patients, respectively and 28% reported not using a condom at last sex. Being under the influence of alcohol (12%) or recreational drugs (4%) during recent sex was also reported. The most commonly reported drug was cannabis followed by cocaine and ecstasy.
Conclusion: These preliminary data demonstrate the feasibility of collecting behavioural data from SH services. This could improve the evidence-base on specific behaviours associated with poor sexual health outcomes and enable the development of clinic-based risk assessment tools for triaging patient management.

P209

Depression, STI risk behaviour and use of sexual health services in Britain: Findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3)

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Background: Depression is associated with increased sexual risk behaviour in studies focusing on adolescents and originating mainly from the US. However, few studies have investigated whether such associations persist across the life course, or examined associations between depression and use of sexual health services.
Methods: The third National Survey of Sexual Attitudes and Lifestyles (Natsal-3), in 2010-12, was a probability sample of 15,162 people aged 16-74 resident in Britain. We selected two mutually exclusive groups for comparison with the general population: (1) those reporting treatment for depression in the past year, and (2) those scoring above a cut-off for depressive symptoms (>=3), using a validated two-question patient health questionnaire (PHQ-2), but not reporting depression treatment. This paper used logistic regression, adjusting for age and marital status, to investigate the associations between depression (treated or symptomatic) and risky sexual behaviour and sexual health service use in Britain.
Results: 1,331 participants reported depression treatment (5.2% of men; 11.8% of women), while 954 participants (6.7% of men; 6.4% of women) had depressive symptoms but reported no treatment. Among men, compared to those not reporting treatment or symptoms, treated depression was associated with reporting an STI diagnosis in the past 5 years (adjusted odds ratio (AOR) 2.03 (95%CI 1.16-3.54)), whilst having depressive symptoms but no treatment was associated with paying for sex in the past five years (AOR 1.59 (1.01-2.49)). Among women, treated depression was associated with reporting at least two sexual partners without condom use in the past year (AOR 1.92 (1.44-2.57)) and having concurrent sexual partnerships in the past five years (AOR 1.83 (1.43-2.33)). Women treated for depression were more likely to report attending a sexual health clinic in the past year (AOR 1.77 (1.23-2.42)), but men with treated depression or depressive symptoms were no more likely to report sexual health clinic attendance.
Conclusion: Depression was strongly associated with sexual behaviours that increase the risk of poor sexual health, and women but not men with depression were more likely to report accessing sexual health services. Clinicians should consider the sexual health of patients with depression as part of holistic healthcare. Patients may benefit from collaboration between primary care, where most depression is managed, mental health, and sexual health services.

P210

Chlamydia infection and control among young adults in Britain in 2010–2012: Findings from the third British National Survey of Sexual Attitudes and Lifestyles (Natsal-3)

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Objectives: Increased testing of sexually active young people (SAYP) for *Chlamydia trachomatis* (CT) has been an important achievement, particularly in England, in recent years. We describe and compare factors associated with CT infection, testing and diagnosis among SAYP.
Methods: The third National Survey of Sexual Attitudes and Lifestyles (Natsal), a probability sample survey in Britain undertaken in 2010-12, included 3,111 sexually experienced 16-24 year-olds. The prevalence of current CT infection (from urine samples collected for Natsal), self-reported recent (in the last year) CT diagnosis and testing for CT were calculated for behavioural and demographic subgroups. Factors associated with infection, diagnosis and testing were investigated using logistic regression.
Results: SAYP reporting more sexual partners (SP) had higher CT prevalence (e.g. prevalence among those with 2+ new SP in the last year was 5% in men and 6% in women, versus 2% of men and women with no new SP (OR men:2.87, 95%CI 1.08-7.63; OR women:2.73, 1.26-5.93)). 52% of infections in young women, and 37% in men were in those with only 1 SP in the last year, although ~80% of infections and diagnoses in men were among the 25% with 10+ lifetime SP. CT infections were found among SAYP tested and untested for CT; 41% of men and 57% of women with prevalent CT infection reported a recent test. Similar factors were associated with infection, previous diagnosis and testing, with some exceptions: among men, 20-24 year olds were at higher risk of infection but had lower levels of testing than 16-19 year olds; women living in more deprived areas were at higher risk of infection but testing rates were similar to those from less deprived areas. While testing rates were higher among those at most risk, 51% of men and 26% of women who had unprotected sex with 2+ SP in the last year had not been recently tested.
Conclusion: In 2010-12, high proportions of SAYP reported CT testing, and appropriately, this was greatest among those at higher risk. A notable proportion of SAYP with increased risk of infection remained untested, a proportion of infections remained undiagnosed, and new infections were found among SAYP previously tested for CT. Within ongoing efforts to increase annual screening, approaches that result in additional testing among SAYP living in deprived areas, those with new and/or multiple SP and among men aged 20-24, are likely to identify more infections and may be worth consideration.

P211

What is the distribution of HCV genotypes among HIV-positive individuals?

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Background: HIV/HCV co-infection is a growing concern. Co-infected individuals may experience rapidly progressing liver disease and have a poorer response to interferon based therapy. The sentinel surveillance of blood borne viruses collects laboratory data irrespective of test result. Here we describe the HCV genotypes circulation among HIV/HCV co-infected individuals using data from 19 sentinel laboratories in England.
Methods: Demographic and HCV testing data were extracted for HIV positive individuals between 2008 and 2012. Service type and age at first test was recorded. Ethnicity was assigned using name analysis software. Duplicate records, reference testing, under 16's were excluded.
Results: Overall 1,500,469 individuals were tested for HIV across all settings; of whom 0.9% tested positive (n=14,930). Two thirds of all HIV positive individuals were male (9,877/14,626) and where known, three quarters were of

white ethnic origin (76.1%; 5,455/7,172). Overall, 67.7% (10,105/14,930) of HIV positive individuals were tested for HCV, of whom 6.3% (n=638) were anti-HCV positive. HCV-RNA testing was undertaken for 81.3% (n=519) of these individuals, of whom 75.5% (n=392) were positive indicating an active infection; median age was 38.3 years (IQR 30.9-44.8 years) and 84.2% (320/380) were male.
HCV genotype information was available for 71.2% (n=279) of all HCV-RNA positive individual. Overall, the median age of individuals with a known HCV genotype was 38.3 years (IQR=30.2=43.8 years), 85.5% were male (n=230), and where known 92.5% were of white ethnic origin.
Genotype 1 infections were the most prevalent (59.1%; n=165), followed by genotype 3, genotype 4 and genotype 2, representing 26.2%, 12.5% and 2.2%, respectively. Median age varied slightly with HCV genotype from 37.4 years (IQR 30.1-41.8 years) among individuals with genotype 3 to 42.2 years (IQR 36.9-44.7 years) among genotype 2 individuals; however these results were not statistically significant. HCV genotype distribution did not vary significantly by gender (χ^2=1.75; p=0.63) but did vary by ethnic group (χ^2=19.56; p=0.02).
Conclusion: During 2008 and 2012, a total of 392 were identified as being HIV/HCV co-infected and having an active HCV infection. Among these individuals 279 had a HCV genotype recorded, most of whom had genotype 1 infections. The comparatively high proportion of circulation genotype 1 infections has implications for the treatment of HIV/HCV co-infected individuals.

P212

Changing trends of first presenters to an HIV service in Ireland over a decade: A stimulus to review screening strategies

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Background: Late presentation increases HIV related morbidity and mortality. It has a negative impact on outcome for the individual, cost implications for the health system and public health implications pertaining to onwards transmission of virus.
The primary aim of this study was to identify proportions of late presenters (LPS-CD4 count<350 cells/mm3) and advanced presenters (CD4 <200 cells/mm^3) to care at 3 time points (2002, 2007, 2012) over a decade. The secondary aim was to identify factors associated with late presentation.
Methods: A retrospective cohort study was performed. First presenters to care in 2002, 2007, 2012 were included. Basic demographic data and CD4 count at presentation was collected. Wilcoxon and x^2 tests were used to compare variables.
Results: 635 patients were included in the study, 220 from 2002, 215 from 2007 and 200 from 2012 (65% male, mean [SD] age 33 [10] years, 48% Irish, 35% African, mean CD count 451 [276] cells/mm^3).
269 (42%) were LPS with no significant difference in proportion of LPS observed over time (99 (45%) in 2002, 92 (43%) in 2007 and 78 (39%) in 2012, p=0.23).
132 (21%) met criteria for advanced HIV (CD4<200 cells/mm3) (47 (21%) in 2002, 45 (21%) in 2007 and 40 (20%) in 2012 p=0.81)
Significant trends observed during the study period include an increase in male first presenters (51% in 2002 vs. 80% in 2012, p<0.001) reflecting the significant increase in diagnoses in MSM (18% in 2002 vs. 60% in 2012, p<0.001). A decrease in presenters from SSA (52% in 2002 versus 17% in 2012 (p<0.001) was observed likely reflecting changing immigration patterns. Proportion of late presenters in the MSM risk group decreased during the study period (35% in 2002 vs. 21% in 2012, p=0.09). In 2012 MSM were the least likely group to be LPS (21% MSM, 66% Hetero, 66% IDU, P=0.006).
Conclusions: A substantial proportion of first presentations to HIV services were late presenters (42%).
Screening programs and education interventions targeting MSM are facilitating earlier diagnosis. However, the significant increase in HIV diagnoses in this group indicates a need to focus on more effective HIV prevention strategies.
There is a need to increase awareness of HIV among health care providers and for more widespread screening including other risk groups.
In line with international standards we have commenced an opt out HIV screening for all individuals presenting to our emergency departments.

P213

2013 RITA data in a UK city centre GUM clinic – a valuable tool in guiding local services

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Introduction: The Recent Infection Testing Algorithm (RITA) has been used by our GUM clinic since November 2009 in all new HIV diagnoses. We review RITA data on a 6 monthly basis, and although the test has limitations it can be used to estimate the local incidence of recently acquired HIV infection.
Methods: Data was collected retrospectively for all new HIV diagnoses in 2013 from a UK city centre GUM clinic using the SOPHID database. Paedatric and transfers from other clinics inside and outside the UK were excluded. Data collected included basic demographics, RITA results, baseline resistance, genotype, CD4 count, HIV viral load and evidence of other STIs.
Results: 70 new diagnoses of HIV in 2013; 38 (54%) in MSM and 24 (46%) in heterosexuals. 61 (87%) had RITA tests. 19 (27%) had results consistent with recently acquired infection. Clinical case note correlation for all new diagnoses is ongoing. Demographics: Mean age 36 years (range 24-53), 15 (79%), male 4 (21%) female. Of the 15 males, 14 (93%) MSM. Recent infection rate in MSM 14/38 (37%). 13 (68%) genotype B. 12 (64%) had baseline resistance. Mean viral load at diagnosis: 2.91 million copies/ml (range <20 - 36 million). All acute STIs at diagnosis were in the MSM population: 4/14 (29%); 2 *Chlamydia Trachomatis*, 2 *Neisseria Gonorrhoea*. No hepatitis C or LGV diagnosed at presentation.
Conclusion: Our results highlight the need to continue developing local, innovative strategies for regular testing and transmission prevention, especially amongst MSM, where our recent infection rate has been consistently higher than the national average (23% in 2011). In 2013, these included community outreach services in the form of a local sauna clinic, expanding our scope for national HIV testing week and a dedicated student LGBT sexual health clinic. Additionally, we have developed a pathway for treatment of early HIV infection involving an MDT consensus approach and tailored patient information leaflet. Phylogenetic analysis on recent infections enables us to identify sexual networks and collaboration with third sector organisations helps us to target our resources where most required. Regular review of RITA data is a valuable tool in strategic development at both a population and individual level in our service.

P214

How accurate are data on sex worker status in genitourinary clinics in England? Results of a cross-sectional survey on the identification and coding of sex worker attendances

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Background: Sex workers (SWs) are thought to be at increased risk of sexually transmitted infections (STI) and to experience barriers to accessing prevention and treatment services. Since 2011, SW data has been gathered routinely in England as part of the Genitourinary Medicine Clinic Activity Dataset (GUMCAD), a national STI surveillance system. For each SW attendance at a genitourinary medicine (GUM) clinic, healthcare workers must code and report it to GUMCAD. The aim of this study was to explore variation in the identification and recording of SW attendances in 2011, as there are no specific guidelines available to clinics.
Methods: In July 2012, a short online survey was sent to all 208 GUM clinics. Responses were linked to GUMCAD data on SW attendances in 2011. Variations in the identification and coding of SWs and discrepancies between SW attendances reported by clinics and recorded in GUMCAD were explored.
Results: A response rate of 36% was achieved with 75 GUM clinics responding; of these, 92% (n=69) reported SWs attended their clinic in 2011. The majority of clinics with SW attendances asked a specific question to identify SWs (61%) and had dedicated space on their patient pro forma to record SW status (65%). Clinics that did not use a specific question ascertained SW status through self-disclosure or referral from other professionals (e.g. outreach workers), and those that did not have dedicated space for SW status in their pro forma recorded it as a note in patients' clinical history. Of the 69 clinics reporting SW attendances in 2011 through the survey, 19 (28%) had not reported these to GUMCAD. Using logistic regression, non-reporting of SW-related attendances to GUMCAD was associated with no

dedicated space to record SW status in patient pro formas (OR:2.86, 95% CI:1.01-8.17, p<0.05), but not with using a specific question to identify SWs, nor with total number of visits or patients attending the clinic.
Conclusion: There is considerable variation across GUM clinics in the identification and reporting of SW attendances. The sharing of best practice to develop guidelines for ascertaining SW status in a consistent, sensitive way may be useful for clinicians, especially in clinics seeing small numbers of SWs. Having dedicated space for recording SW status in clinic pro formas increases the accuracy of reporting SW-related attendances to GUMCAD and should be encouraged.

P215

Infection risk and vulnerability among people who inject drugs and report same-gender sexual partners: analyses of data from a large cross-sectional survey in England, Wales and Northern Ireland, 2011–2012

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Background: Infection risks among people who inject drugs (PWID) are known to vary by gender and there is also evidence of differences in risk by sexual orientation. However in the UK, risks among PWID who report same gender sexual partners have rarely been examined.
Method: An annual unlinked-anonymous survey recruits PWID through drug services; participants provide a biological sample and complete a short questionnaire. Since 2011, dried blood spot samples and additional data on risk behaviours have been collected. Current injectors (injected during preceding 28 days) recruited during 2011-12 who reported having sex during the preceding year were included in the analyses. Those reporting same-sex partners were compared to those reporting only opposite-sex partners separately for men and women.
Results: Overall, 1,591 men (incl. 81 men who reported sex with men [MSM], 5.1%) and 569 women (incl. 56 women who reported sex with women [WSW], 9.8%) were included in the analyses. The mean age of the men was 34 years and for the women 31 (age did not differ between those reporting same gender partners and those not). Of the MSM, 35 (43%) reported both male and female sexual partners, as did 40 (71%) of the WSW. Among the men, MSM were less likely to have injected opiates (81% vs. 89%, p=0.038) and to have been imprisoned (69% vs. 80%, p=0.021), and were more likely to report 10+ sexual partners (33% vs. 4.9%, p<0.001) and having transactional sex (37% vs. 5.8%, p<0.001). Among the women, WSW were more likely to have injected stimulants (63% vs. 46%, p=0.020), to report 10+ sexual partners (20% vs. 6.6%, p=0.002), to have ever had a voluntary confidential test for HIV (91% vs. 80%, p=0.041) or hepatitis C (93% vs. 83%, p=0.050), to report imprisonment (64% vs. 49%, p=0.029) and recent homelessness (54% vs. 36%, p=0.009). Among the men, MSM had a higher HIV prevalence (7.4% vs. 0.6%, p<0.001); none of the WSW had HIV. The anti-HBc and anti-HCV prevalence were not significantly different (but among the women, WSW had a raised anti-HCV prevalence, 55% vs. 42%, p=0.061).
Discussion: Among PWID, infection risks and vulnerabilities are different for both WSW and MSM, indicating that these groups are at elevated risk of infections through both drug use and sexual activities. Targeted interventions to reduce risk among WSW and MSM who inject drugs are needed. Those providing services need to be aware of the elevated risks among PWID who report same gender sexual partners.

P216

Age distribution in men who have sex with men attending genito-urinary medicine services in England: implications for targeted HPV vaccination

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Background: The UK began vaccinating adolescent girls against human papillomavirus (HPV) in 2008 and we expect to see a herd immunity effect in heterosexual men in the next few decades. However, such a strategy is unlikely to protect men who have sex with men (MSM) that are more likely to develop anal cancer as a result of HPV infection, compared to heterosexual men. There is decreased effectiveness of the HPV vaccination with increased sexual experiences and acquisition of HPV. We investigated the age of men identifying as MSM attending GUM services to inform the feasibility of targeted HPV vaccination in sexual health services.
Methods: The Genito-Urinary Medicine Clinic Activity Dataset (GUMCAD) was searched for men aged 15-70 who had attended a GUM clinic in England from 1st January 2010 to 31st December 2012 and disclosed same sex contact. We calculated the numbers of attendances and age at first presentation of disclosing sexual contact with another male for each geographical area in England.
Results: A total of 203,839 MSM were identified. Median age at first presentation was 32 years (IQR 25-42). 85.0% were of white ethnicity, 4.0% Asian, 3.8% black, and 7.2% other. 29% of those disclosing same sex behaviour were aged less than 26 years old. 85.0% of all MSM disclosed same sex contact only, with the remainder reporting bisexual behaviour. The proportion of male attenders disclosing same sex behaviour was highest in London and the South East (22.3% and 12.6% of all male attendances at a GUM clinic respectively), with London seeing 53.5% of all MSM attendances in England. Median age of first presentation varied by geographical location from 28 to 34 years of age, with the highest median age being in London (34 years, IQR 25-45).
Discussion: A substantial number, but still a minority, of first time-attendances at a GU clinic by men disclosing same sex behaviour are by MSM under the age of 26 years i.e. the group likely to benefit most from HPV vaccination. However, GUMCAD data has limitations for study of attendance patterns, for example, when men attend more than one clinic. The older age of "first attendance" at clinics in London suggests a greater proportion of these patients may have attended elsewhere previously. Further analyses are needed to determine potential strategies for targeted HPV vaccination of MSM.

P217

Comparative study of STI prevalence as an indicator of increasing risk-taking sexual behaviour in new HIV diagnoses in MSM over a 10-year period

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Introduction: *Human Immuno-deficiency Virus* (HIV) causes significant morbidity and mortality. Substantial work has been conducted to address on-going transmission. Despite this the incidence of HIV continues to increase. This study reviews sexually transmitted infection (STI) prevalence within this population, as a surrogate bio-marker of sexual risk, and potential cause for this.
Method: A retrospective case note study of all newly diagnosed HIV positive men who have sex with men (MSM) between 2000 - 2002, and 2010- 2012, was performed. Data was collected and compared to record changes in age, number of sexual partners in the preceding 12 months, and types and rates of STI infection (preceding or current).
Results: There were 25 new HIV cases between 2000 and 2002, and 66 new cases between 2010 and 2012. The average age of those diagnosed between 2000 – 2002 was 34.91 years, and 32.60 years for those between 2010 – 2012. The cohort of 2000 – 2002 positive patients had an average of 5.7 sexual partners in the preceding 12 months as compared to 6.8 in the latter cohort. STIs identified in 2000 - 2002 cohort included: 1 case of previously treated *Syphilis;* 1 new case, and 3 cases of resolved *Hepatitis B,* 1 *Chlamydia trachomatis*, 13 Neisseria *gonorrhoea*, 8 genital *warts*, and 1 *Herpes simplex virus (*HSV). In the 2010 – 2012 cohort there were 11 cases of previously treated *Syphilis* and 10 new cases, 2 cases of resolved *Hepatitis B* and 1 case of *Hepatitis C* co-infection, 37 cases of *Chlamydia*, 42 *Gonorrhoea*, 15 *warts*, 2 *Pthirus pubis*, 1 *Lymphogranuloma venereum,* and 5 *HSV.*
Conclusion: This study substantiates Public Health England (PHE) data which shows not only increasing rates of new HIV infections in MSM but also increases in STIs such as *Syphilis*, *Chlamydia*, *Gonorrhoea* and *HSV.* Interestingly the average age of the newly diagnosed HIV positive group has reduced, the number of sexual partners has increased, and those with STIs prior to HIV infection has increased from 60.9% to 71.2%. This therefore suggests that there is greater sexual risk taking behaviour accounting for the significant rise in newly diagnosed HIV within this co-hort.

P218

Continued late diagnosis of HIV in general clinical practice: review of newly diagnosed cases in a large acute London trust (2009–2013)

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Background: Late diagnosis of HIV (CD4 cell count <350 cells/mm^3) is a predictor of morbidity and mortality; 47% of UK diagnoses in 2012 were late despite ongoing interventions. We explored trends in late diagnosis by clinical setting over the last 5 years.
Method: We collated demographic and clinical data from all newly diagnosed HIV patients in a large trust for 2009-13. Setting was categorised as routine (sexual health or antenatal) or non-routine (A&E, primary care, in-patient etc.). A regression model was developed to explore trends in late diagnosis, presented as adjusted odds ratios (aOR) with 95% confidence intervals (CI).
Results: Data were available for 667 (of 715) new cases; most (482, 72%) were made in routine settings with a small increase in the proportion in non-routine settings over time (21% to 31%); 273 (41%) were diagnosed late with no change over time. Late diagnosis was more common in non-routine settings (116/185, 63%) than routine (157/482, 33%), OR 3.5, 95%CI 2.4-5.0. Late diagnosis was more common in heterosexuals (aOR 2.1, 95% CI 1.3-3.4), those ≥40 years old (aOR 2.5, 95% CI 1.8-3.4) and black Africans (aOR 3.4, 95% CI 1.6-6.9). Controlling for these other factors, diagnosis in non-routine settings was still significantly more likely to be late (aOR 2.6, 95% CI 1.8-3.8).
Conclusion: Five years after new guidelines were introduced there is still a need for better implementation with more testing in general clinical settings.

P219

A retrospective review of pelvic inflammatory disease in a sexual health centre

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Background: Neisseria gonorrhoeae (GC) and Chlamydia trachomatis (CT) are known to cause Pelvic Inflammatory Disease (PID) with prevalences of 14% and 39% respectively in cases of acute salpingitis in the UK. BASHH guidelines recommend that first line treatment for PID covers both GC and CT. Local audits looking at prevalence of PID in our sexual health centre were carried out in 2005 and 2011. This study sets out to compare rates of GC and CT causing PID over these years.
Method: A retrospective case note review was carried out for all patients who were given a diagnosis of PID. Information was collected on demographics, presentation and investigations. In 2005 data was collected over a 4 month period whilst in 2011 data was collected over a 1 year period. In 2005 detection of GC was based on culture and microscopy whilst nucleic acid amplification testing (NAAT) was used for CT. In 2011 dual NAAT testing was being used in addition to culture and microscopy.
Results: In both cohorts, no significant changes were observed in the demographic or presenting symptoms. Sixty per cent of patients diagnosed with PID were 16-25 years old. The two most common symptoms patients complained of were lower abdominal pain and abnormal discharge. The most common finding during clinical examination was adnexal tenderness. In 2005, the prevalence of CT among women diagnosed with PID was 1.4% compared to 6.2% in 2011. GC was not found in either cohort.
Conclusion: In our sexual health centre, despite no changes in the demographics and the clinical diagnosis, the prevalence of chlamydial PID has increased whilst the gonococcal PID prevalence has remained at zero. The low rates of gonococcal PID seen in our cohorts reflect both national and other local data. In 2008 BASHH national audit found Chlamydia trachomatis contributed to 14.5% cases of PID whilst 1.3% of cases were attributed to Neisseria gonorrhoeae. In a London GUM clinic rates of GC were 0 in 2006 and 1.9% in 2009 in their PID patients. Whilst further studies are needed to answer the question of why we are not seeing gonococcal PID, first line treatment with an intramuscular injection may not be suitable in our cohort of patients.

P220

Characteristics of MSM diagnosed with a rectal sexually transmitted infection (STI)

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Objective: To assess demographics and behaviours of MSM diagnosed with a rectal STI in an urban sexual health clinic between 01/01/13 and 30/09/13. We also analysed documentation by clinicians, and diagnostic tests requested.
Methods: Retrospective review of case notes and electronic patient records.
Results: 95 MSM were diagnosed with a rectal STI in this interval, and notes analysed for 85(89.5%). Median age was 31 (range 18-63) years. 43 patients were White British, 19 White Other, 6 Black Caribbean, 5 Asian. 44/85(51.8%) were diagnosed with *Chlamydia trachomatis*, 53/85(62.4%) with *Neisseria gonorrhoea*, and 3(3.5%) with *Lymphogranuloma Venereum*. 15/85 (17.6%) had >1 rectal STI concurrently. 11/85 (12.9%) presented with a rectal STI on more than one occasion during this period. 26/85 (30.5%) had an STI at another site at the time of diagnosis. 32/85(37.6%) had known HIV and 3/53 (5.7%) had a new HIV diagnosis. 4/85 (3.4%) patients had a new syphilis diagnosis.
Information regarding recreational drug use was documented in 42/85 (49.4%) cases, and was reported in 21(50%) of those asked.19/85 were asked specifically about drug use during sex, and 2/19(10.5%) disclosed this.
74/85 (87%) were asked about condom use, and 59/74 (79.7%) reported unprotected anal intercourse, 23 of whom had a known HIV diagnosis.
Hepatitis B (HBV) status was analysed in 71/85(83.5%); of these 52 had a serological response to vaccination, and 13 were vaccinated.
51/53 (96.2%) previously HIV negative had a HIV test. Hepatitis C (HCV) status was tested in 41 patients (49.4%), all of whom had a negative result.
Only 55/85 (64.7%) were retested at a later date to ensure infection resolution.
Conclusion: It is evident from the data that rectal STIs are associated with high risk behaviours including recreational drug use and unprotected sex. Patients often had multiple STIs, including new HIV diagnoses. Ongoing risk-taking behaviour is evident from 12.9% patients returning with a further rectal STI in this 9 month period.
Areas documented well by clinicians included HIV and HBV assessment, as well as enquiries with regards to condom use. There is an opportunity to improve assessment of HCV risk factors, including drug use, particularly in the context of sex.
This study highlights the ongoing importance of sensitive and detailed history taking to optimise clinical and prevention interventions for this vulnerable population.

P221

Retrospective case note analysis of accuracy and completeness of GUMCAD coding may be used to inform potential HPV vaccination strategy in men who have sex with men in GUM services

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Aim: There is increasing interest in whether providing vaccination against human papillomavirus (HPV) to men who have sex with men (MSM) is feasible in the UK for under 26 year olds. Hepatitis B virus (HBV) vaccination is a useful surrogate marker, as both vaccines require 3 doses at similar time points. The Genito-Urinary Medicine Clinic Activity Dataset (GUMCAD) includes codes for HBV vaccination. This study looked at completeness of HBV vaccination data recording in GUMCAD at a London sexual health service.
Methods: Notes were reviewed for the first 75 men aged less than 26 years self-reporting same sex behaviour, and therefore coded as such in GUMCAD, attending the clinic from 1st January 2012. Self-reported sexuality was compared to the gender of partners recorded in the clinical notes. Other parameters collected were HBV vaccination status and number of visits in 2012, HIV testing and subsequent coding.
Results: Patients were 61% white, 17% black and 20% other. For 43% of patients this was the only visit with 28% attending 3 or more times in 2012. 71% of patients self-reported as homosexual: 7% of these had only female partners and 3% had male and female partners recorded in notes. Of those

reporting as bisexual: 29% had only male partners and 14% only female partners. 8 records had incomplete HBV data, 35/67 (52%) were eligible and 9 of these patients received HBV vaccination. 32/67 (48%) had had a clear vaccination history or active HBV infection. Looking at the first visit alone, 41/67 (61%) of patients were managed correctly. We found 33 vaccine doses were given in total to all patients over the 12-month period. Only 10 of these (30%) were coded on GUMCAD. 85% of patients received an HIV test with 100% of HIV codes present.

Discussion: Self-reported sexuality may misrepresent true sexual behaviours. 28% of MSM attended clinic 3 times or more over a 12-month period. Only 61% of MSM at first visit were correctly identified for potential vaccination, suggesting there may be significant challenges to delivering HPV vaccination via this route. Of those who accepted HBV vaccination, only a third returned for all 3 doses. HIV coding remains robust in this dataset. GUMCAD may not give an accurate picture of HBV vaccine uptake and self-reported sexual orientation. If coding is also poor in other centres enhanced prospective surveillance is required to inform on future HPV strategy.

P222

Comparison of retention and treatment outcomes between non-Muslims and Muslims in HIV Clinic Cohort

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Background: Uganda has a mixed religious population; 12.1% are Muslim. Whilst Muslims in Uganda regular perform religious fasting, there is little evidence from Uganda on the effects of religious practices on retention and treatment outcomes. Recent case conferences exploring patient antiretroviral treatment (ART) failure highlighted a case of first line treatment failure in a Muslim patient in which periods of religious fasting may have contributed to poor drug adherence. The objective of this study was to compare retention rates and treatment outcomes between Muslims and Non-Muslims in the clinic cohort.

Methods: We categorized all ART naïve patients in the Clinic Cohort who commenced first line ART between January 2011 and January 2012 by self reported religion (Muslim and non Muslim). We then performed a cross sectional analysis of retention in care and switch to second line treatment (constituting treatment failure) at 31st December 2012.

Results: 505 patients were included in this study: 80 Muslim and 425 Non-Muslim. There were no significant differences in baseline characteristics (Muslim cohort: 73.8% female, median age 32.1 (IQR 26.5-39.1), 41% in WHO Stage III and IV, median CD4 count of 258 (IQR 176-258): Non-Muslim Cohort, 63.2% female, median age 33.1 (IQR 27.1-40.7), 56.6% in WHO Stage III and IV, a median CD4 count of 230 (IQR 121-390). There was no difference in lost to follow up, mortality and transfer to another clinic (p=0.371). There was no difference in number of people switching to second line treatment by the end of the study period; 4 (5%) Muslim and 27 (6.3%) Non-Muslim, p=0.664.

Conclusions: We found that there were no differences in retention rates and treatment outcomes between Muslims and Non-Muslims. However, we are concerned about the effect of fasting on adherence, and so have designed a patient education programme to help our patients to fast safely. Further qualitative studies may help us to understand adherence patterns to ART during fasting.

P223

Typologies of risk in sexual encounters reported by MSM in England

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Background: Event-level analyses among men who have sex with men (MSM) have demonstrated that a constellation of situational and behavioural factors predict sexual risk between different encounters for the same respondent. Previous event-level analyses, however, have not tested whether discrete classes of behavioural and situational characteristics exist in sexual encounters, and whether these discrete classes differentially predict sexual risk.

Methods: MSM in England were recruited to a longitudinal web-based survey through websites and community organisation partners. Throughout 2011 and early 2012, MSM reported up to five sexual encounters with another man. A multilevel latent class (LC) model was specified using manifest indicators for place of sex (private, sex-on-premises venue or cruising location), relationship with partner (regular and steady, regular and non-steady, and anonymous/opportunistic), HIV seroconcordance (same perceived status, unclear status, different perceived status), and number of substances consumed by respondent. Encounters were clustered by respondent. Unprotected anal intercourse (UAI) was tested as a distal outcome using pseudo-draws. LC solutions were tested sequentially until an optimal solution was found.

Results: 6,742 encounters were reported by 2,142 respondents. A three-class solution was chosen, with scaled relative entropy of 92.4%. A four-class solution was unstable, and a three-class solution fitted data better than a two-class solution. Class 1, covering 31.5% of encounters, reflected sexual encounters at home with regular, steady partners and little substance use. Class 2, with 61.8% of encounters, reflected little substance use and non-steady or anonymous partners. Class 3, defined by polysubstance use, covered 6.7% of encounters. Probability of UAI for class 1 encounters was 41.5%, for class 2 encounters 23.0%, and for class 3 encounters 52.9%, with overall differences statistically significant (p<0.001).

Discussion: This study uses an innovative quantitative methodology to capture how underlying classes of situational and behavioural factors predict sexual risk. The resultant three-class model demonstrated excellent fit to the data and produced an interpretable, meaningful typology of situational variables, with substantial variation between classes on sexual risk. Future research should consider the qualitative and quantitative pathways involved in these latent classes and sexual risk outcome.

P224

Characteristics of antiretroviral treatment-naïve patients with HIV-1 B and non-B subtypes in western Sydney

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Background: Historically, subtype B has predominated in Australia where transmission is primarily through men having sex with men (MSM). However, the prevalence of Non-B subtypes is increasing. Western Sydney has relatively high number of migrants from regions with higher HIV prevalence. This study aimed to evaluate differences between treatment naïve HIV-1 infected patients with B and Non-B subtypes.

Methods: Antiretroviral naïve HIV-1 infected patients of Western Sydney Local Health District between January 2003 and July 2011, whose HIV-1 subtype data were available, were included in this retrospective study and case note review. Demographic details, risk factors, clinical stage, CD4 count and viral load at baseline were included in the analysis.

Results: We identified 186 antiretroviral naïve HIV-1 infected patients of whom 53 (28.5%) were females. 94 (50.3%) were subtype B (13 females, 81 males). 86% of males were infected with subtype B whereas 75% of females were infected with Non-B subtype. 79 (84%) Subtype B patients acquired HIV within Australia, of whom 58 (73.4%) were born in Australia. Acquisition of Non-B Subtypes (78 known): 26 in Australia, 35 in Africa and 16 in Asia-pacific.

Patients carrying B subtype were mainly MSM (63.8%) compared with only 5.4% MSM in Non-B subtype. Heterosexual transmission was significantly more common in Non-B subtype (86%) compared with subtype B (20.2%). Injecting drug use and bisexual men were significantly associated with subtype B.

We identified the following: subtype C 39 (42.4%), CRF01_AE 25 (27.2%), CRF02_AG 13 (14.1%), A, D and G were all 2 (2.2%) each respectively. Other recombinant forms were 7 (7.7%). Baseline resistance data were available for 181 patients of which 22 (11.8%) had drug resistant mutations. This included 14 (14.9%) in subtype B and 8 (8.7%) in Non-B subtype.

Non-B subtypes were significantly less likely to have a high viral load (>10,000 copies/ml) at baseline compared with subtype B (OR 0.41, (95%CI 0.2 -0.8) p=0.007).Mean and median CD4 counts, symptomatic status and clinical stage at baseline were similar in both groups.

Conclusion: There are a significant number of patients infected with HIV-1 Non-B subtypes in Western Sydney with female gender, heterosexual transmission being more common. Non-B HIV-1 subtypes had a significantly lower viral load at baseline There were low rates of transmitted drug resistance mutations within western Sydney non- B subtype HIV- infected cohort.

P225

Making every contact count – the public health role of sexual health services

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Background: The links between alcohol and substance misuse and sexual risk taking are well established. Increasingly, evidence suggests that this is also the case for people with mild mental health disorders such as depression and anxiety. Improving the identification of and support for these problems is therefore likely to have an impact on sexual health.
Sexual health clinics provide access for users who are less likely to use mainstream services and have been described as more vulnerable. Services have a role in wider Public Health to highlight and treat non-sexual health-related public health concerns such as smoking.
We undertook a pilot study to determine the feasibility of implementing a composite self-screening tool in the sexual health service to determine prevalence of smoking, domestic violence and mild mental health disorders, as well as alcohol. We present preliminary results but anticipate results on more than 500 patients by the end of January 2014. Alcohol use is reported in a separate paper.
Methods: A self-screening tool was administered to all consecutive patients attending a London Sexual Health clinic. Validated questions about smoking, domestic violence and mental health were used such as the Whooley questions for mental health.
The results of the screening test were viewed by the clinician during the consultation. Those with mild disorders needing additional support were identified and signposted to appropriate on-going services. Patients deemed as vulnerable or those having complex needs were managed as per clinic protocols. Additional data regarding sexual risk behaviour and demographics was collected from patient notes.
Results: 72 patients attended the clinic during the study, 61% female (n=44), 39% male (n=28) aged 17-60 (mean=29). 42 (58%) completed and returned questionnaires (38 female, 4 male). 13 (31%) reported low mood, 7 (17%) domestic violence issues, 5 (12%) smoking, and 5 (12%) reported illicit drug use. 5 (12% of respondents) requested further support for these issues. Of the 7 reporting domestic violence issues, 2 reported adverse sexual outcomes (1 recent unprotected sex with a casual partner, 1 STI in the past year), compared to 3 of the 13 complaining of low mood, 2 of the 5 smokers and 2 of those reporting illicit drug use.
Conclusions: High levels of need across a range of non sexual health problems were identified in clinic attendees. Robust pathways of support are needed to signpost people requiring more help appropriately.

P226

Can we use partnership information to assess STI risk? A survey of clinic attenders

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Background: STI risk is generally assessed in terms of individual behaviour such as number of partners. However STIs are acquired within partnerships and the "riskiness" of a partnership may not correspond with conventional measures of individual risk. We undertook a pilot study to assess the feasibility of assessing partnership characteristics for use in a future sexual health risk assessment tool.
Methods: Following piloting, GUM clinic patients attending two centres completed a confidential paper questionnaire linked with consent to STI results. This explored demographic characteristics and partnership characteristics, including how met, age gap, partner role in social network, use of social media, concurrency and likely partner concurrency
Results: 718 patients (422 female, 270 heterosexual male, 23 men who have sex with men (MSM)) completed the questionnaire. Completion was high for all variables including self and partner concurrency questions (>98%). 40.6% of current or most recent partnerships were unlikely to have involved overlapping sexual partners, similar for women and heterosexual men but lower (30.4%) among MSM.
Conclusion: Questions about self and partner concurrency, and about social networks, are acceptable to clinic attenders. Depending on their predictive value in larger populations, these may be useful in self-assessment of risk that goes beyond individual behaviour.

P227

Development of Positive Voices: the national survey of people living with HIV

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Background: To better understand the behaviours and healthcare needs of people living with HIV, PHE in collaboration with UCL have developed a new web-based patient survey, "Positive Voices". We present the results of formative work undertaken with patients and HIV clinic staff to evaluate the acceptability and feasibility of this survey.
Methods: The qualitative methods (June 2013 - January 2014) consisted of (i) semi-structured interviews with clinic staff conducted on-site at 23 HIV clinics to assess the feasibility of delivering the survey (ii) three patient focus groups to assess the acceptability of the survey, and to identify barriers and incentives to completion (iii) cognitive interviews to develop the questionnaire.
Results: Overall, clinic staff were enthusiastic about the survey and keen for their patients to be involved. Implementation issues raised included impact on staff workload, lack of computer access for patients in clinic, and recruiting to include stable patients who attend infrequently. Staff also raised concerns about ensuring patients' confidentiality, as was accessibility of a web-based survey, as certain patients would be unlikely or unable to take part.
In focus groups, patients felt the survey was an opportunity to "have a say" in improving HIV services. It was important that the survey is "user-friendly," and that the purpose and objectives were stated at the outset, and given an option to decline to take part. Potential barriers include lack of internet access, fear of indirect disclosure, and breach of confidentiality/anonymity. Patients felt they would be would more likely complete the survey if they felt it would benefit them (i.e. improve services), and if personally invited. Monetary incentives, like a prize draw or vouchers, drew a mixed reaction.
Cognitive interviewing did not highlight any major problems with the questionnaire; respondents' reports related to the visual layout and question flow, clarification of wording, and improving answer options.
Conclusions: As a result of the qualitative work, two recruitment methods were conceived to be tested by clinics in the pilot study, and a Freephone option was introduced. Greater emphasis was placed on improving the visual layout of the questionnaire, and a prize draw will be tested as an incentive versus a control in the pilot study. Positive Voices will be piloted across 30 HIV clinics between March – June 2014 with an estimated 4000 invited participants.

P228

Sex over 45: Are we doing it safely? A survey on condom use

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Background: The incidence of STIs in older adults is increasing as the population is living longer. However, condom use tends to decline with age.
Methods: A paper-based questionnaire was completed by patients aged over 45 attending GUM and HIV clinics. Questions included: did participants use condoms when having sex with a new partner; had the participant had a new sexual partner within the last year. Results were compared with NATSAL-2.
Results: 94 participants aged 45-80 completed the questionnaire. Of these, 47.9% always used condoms with a new sexual partner. In contrast, 56.4%

and 53.5%, (men and women respectively) 16-44 year-olds in NATSAL-2 reported condom use "at first sex" with a new partner. Overall, 46% were HIV positive.

Table 1: Results from NATSAL-2

Age	Men	Women
16-19	68.0%	67.4%
21-24	61.7%	61.3%
25-34	49.9%	45.6%
35-44	38.1%	28.8%
Overall ages 16-44	56.4%	53.5%

Table 2: Results from this study

Age	Men and women
45-55	46.5%
56 – 65	55.0%
66 – 75	47.8%
Over 75	50%
Overall ages 45-80	47.9%

Conclusion: Condom use with new sexual partners was less common in the older group, but was still higher than expected. In NATSAL-2, condom use showed a steady decline in men and women from ages 16-44. Our results did not continue this downward trend. However, a large proportion of our sample was recruited from HIV clinics – a population which regularly receives safe sex messages. If emerging NATSAL-3 data in those aged 45-74 mirrors this small sample, there may be a case for condom promotion in older adults.

HIV/STI Testing and Diagnosis

P229

A targeted HPV vaccination programme leads to increased engagement of young MSM with sexual health services and increased STI screening and diagnosis: Evidence from the first year

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Background: We have offered routine quadrivalent HPV vaccination to MSM under 28yo since November 2012. Routine sexual health care is recommended at each visit and after completion. We sought to establish if this programme had any effect in terms of increased attendance for STI testing and diagnosis in this population.
Methods: All MSM under 28yo in the first year of the programme were reviewed for attendance rates, STI screening rates and STI diagnoses. These were compared with all MSM under 28yo attending the service in the previous two years.
Results: Compared to the two previous years, in 2012-13 there was a large increase in total attendances, STI screens performed and gonorrhoea diagnosed in MSM <28yo (Table), following the introduction of the HPV vaccination programme. Comparing 2010-11 to 2012-13, this equated to a 15% rise in the average STI screening rate from 1.47 to 1.88 screens/patient/year ($P<0.05$) and a 450% increase in the gonorrhoea diagnosis rate from 0.06 to 0.27 cases/patient/year ($P<0.0001$). 64/66 (97%) of the gonorrhoea cases were in MSM in the vaccination programme. 42 of these 64 (66%) were asymptomatic and attended the service for HPV vaccination and screening. 47 of 64 cases were extragenital infection only. There was a 20% rise in the rate of diagnosed chlamydia from 0.08 to 0.10 cases/patient/year but, as with other STIs, the change was not statistically significant.

Attendance and diagnoses in MSM <28 years old 2010-2013

Year	Total attendances	Total number of individuals	Total new patients	Total STI Screens	Gonorrhoea cases	Chlamydia cases
2010-11	551	174	102	257	10	14
2011-12	652	221	132	348	35	22
2012-13	793	247	136	464	66	25

Conclusions: Following the introduction of HPV vaccination for young MSM, there was a large increase in number of STI screens performed and gonorrhoea cases diagnosed in this group. A catch-up HPV vaccination programme is acceptable to young MSM and provides an effective concurrent framework for increasing STI screening, diagnosing untreated STIs and facilitating increased engagement and safer sex interventions in this high-risk group of patients.

P230

Acceptability of home HIV sampling and testing: a user survey

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Background: Home HIV sampling has been shown to be both feasible and acceptable and offers another strategy to reduce undiagnosed HIV and late diagnosis. In addition, home HIV **testing** will be legal in the UK from April 2014. We undertook a survey of users of a home sampling service to assess their experience and to gauge acceptability of home testing.
Methods: From Jan – Sept 2013 we piloted a national home HIV sampling service. Clients request a 4th generation HIV dried blood spot test on-line. The completed test is posted back to the laboratory. Negative results are communicated by text and positive results are given by phone with support and the offer of referral to HIV services. We contacted those who had given consent to ask them to complete an on-line survey to assess their experience of the ordering and results management process and to ask about the acceptability of home testing. Those who had ordered but not returned a test were contacted to ascertain why.
Results: 9,868 tests were requested and 6,230 (63.1%) were returned. 925 (14.8%) of those who returned a test completed the survey. 92.7% were MSM, 82.0% were white British and the peak age range was 25-39 (48.7%). 32.1% had never tested before and 25.1% had not tested in the last year. Most heard about the service via social media sites (32.8%) or word of mouth (20.8%). The commonest reasons for using the service were "didn't want to attend an STI service" (52.0%) and "clinic opening times are inconvenient" (47.7%). Responses to questions about acceptability of the service are given in Table 1. 138 of those who ordered but didn't return a kit responded to the survey (3.7%). The main reasons for not returning the kit were "not important enough for me to test immediately" (25.9%), "didn't like the testing method" (25.9%) and "I was worried the test might be positive (22.2%). Despite this 89% would use the service again.

Table 1:

Question	Testers	Non-Testers
I would use the service again	97.0%	89.0%
Would you recommend the service to a friend you expected to test **negative?**	Yes=96.6%	Yes=88.3%
Would you recommend the service to a friend you expected to test **positive?**	Yes=65.8%	Yes=67.7%
I would prefer a home test with immediate results	68.7%	69.6%

Conclusions: We have demonstrated the acceptability of home HIV sampling and high levels of user satisfaction. This cohort showed high levels of acceptability of home HIV testing, which suggests there may be reasonable demand for this when the legislation is changed.

P231

Marginal costs of extragenital screening by Aptima Combo 2 in women – a cost benefit assessment

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Background: Well validated NAATs are available for extragenital (EG) screening for the detection of *Neisseria gonorrhoeae & Chlamydia trachomatis*. This screening is not universally performed in all UK clinics in women, and cost/benefit has been challenged.
Method: We have looked at the marginal added costs associated with EG screening by Aptima Combo 2 in 1313 women attending 01/01/12 – 30/06/12 who had additional samples taken directed by sexual history. Cost data from Pathway Analytics was utilised. It was presumed that the baseline cost without EG samples was £81.81 (T4 code). The local laboratory cost per additional site screened was £18, balanced by 205 patients attracting a TT code (£70.24). The small amount of additional sampling time was not costed as these patients have the same time slot and personnel as those without EG tests.
Results: On genital only screening, 5.4% of tests were positive giving a cost per case detected of £1498. Of 1520 EG tests, 33 (2.17%) were positive, 1 dual site *N gonorrhoeae*, 1 rectal dual infection. 10 women had isolated EG infection.
The cost of the extragenital tests was £27360, offset by £14400 for 205 TT codes, with a residual cost of £12960.
The marginal additional cost of detection of a single EG site infection was £393. The cost of detecting one patient with any isolated extragenital infection (including multiple infections) was £1296.
Discussion: : This clinic lies within the highest quintile for STI prevalence & the EG detection rate compares well with the genital detection rate in clinics in a lower quintile. The marginal cost per EG infection detected compares favourably with the cost of detecting a genital infection in the same cohort. Although the addition marginal cost of detecting one female with only EG infection is £1296, this still compares favourably with the cost of detection of a genital infection (£1498).
Missed EG infections may lead to suboptimal treatment, missed treatment failures, and where there is isolated EG infection - lack of treatment and missed opportunities for partner notification.
Natsal data shows that 75% and 15% of women have oral and anal sex respectively, with anal sex having increased sine the previous survey.
Conclusion: In this clinic, when the marginal costs are assessed, the cost of detection of EG infections compares well to the cost of detecting genital infection. It may be feasible to reduce this cost by combining samples from multiple sites for a unitary test.

P232

Testing the patients' patience: are current commercial chlamydia and gonorrhoea point-of-care tests acceptable to service-users and will they impact on treatment?

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Background: Routine *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoea* (GC) tests in the UK use nucleic acid amplification tests (NAAT) with average results taking 48 to 72 hours to become available to clinicians. Current commercially available point-of-care tests (POCTs) provide a result in 90 minutes with a sensitivity and specificity comparable to NAATs. It has been proposed that POCTs have the potential to streamline the patient journey in genito-urinary medicine (GUM) clinics by facilitating timely treatment in those diagnosed with CT/GC and reduce complications.
The practical benefits and acceptability of these tests to GUM clinic attendees have not been extensively evaluated in the UK. This study assesses the duration service-users are prepared to wait in clinic for POCT CT/GC results and identifies associated patient outcomes.
Methods: In late 2013, service-users attending two level 3 GUM services in England were surveyed using a questionnaire. They were asked the maximum period of time they would be willing to wait that day for a POCT CT/GC result after their appointment. Individual CT/GC rates, treatment received and subsequent outcomes were analysed and compared to their original maximum waiting time.
Preliminary results: 200 patients were surveyed, of which 161 gave CT/GC NAAT samples. Of those tested, 48 were willing to wait 0-20 minutes, 55 patients 21-40 minutes, 33 would wait 41-60 minutes, 16 individuals would wait 61-90 minutes and 9 patients (6%) would be prepared to wait over 90 minutes in clinic for their result.
20 patients received CT/GC treatment at consultation, 2 had positive CT results from a different department and 18 were treated before results were available. Of these, 8 patients were CT/GC NAAT negative, 5 of which had had treatment for signs of CT/GC and 3 attended as contacts of CT. Of the 8 who were NAAT negative but treated for CT/GC, none would wait 90 minutes or more if a POCT were available.
22 patients tested CT/GC positive, 12 were treated at their consultation, 8 were treated at a later date, and 2 individuals did not receive treatment. None of these CT/GC positive patients were prepared to wait 90 minutes or more for a POCT result.
Data from a further 1000 participants are being analysed in time for conference.
Conclusion: 90-minute POCTs do not appear acceptable to the majority of GUM clinics attendees and would not improve treatment rates nor reduce unnecessary antibiotic prescribing.
NRES REC approval number 13/NE/0306

P233

Extragenital screening in women – is TMA value for money?

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Background: Transcription mediated amplification (TMA, Aptima Combo II) is currently unlicensed for the detection of chlamydia and gonorrhoea at extragenital sites. Accumulating evidence suggests TMA has high sensitivity and specificity for pharyngeal and rectal infection. We have offered pharyngeal and rectal TMAs to all patients presenting since April 2009 reporting receptive oral or anal intercourse.
Methods: The TMA and culture results of heterosexual women receiving extragenital screening between 01/01/12 and 30/06/12 were retrospectively reviewed.
Results: 1315 women were screened (1520 extra-genital samples), 79 tested positive for at least one infection at one site. 62 (4.7%) patients had genital chlamydia. 9 (0.7%) patients had genital gonorrhoea.
33 positive results were extragenital (detection rate 2.17%) with 10 patients having isolated extragenital infection.
Rectal chlamydia detection rate was 3.8%. Of the 8 patients with rectal chlamydia, 7 had co-existing genital infection.
14/1309 (1.1%) patients had pharyngeal chlamydia, 5 had isolated pharyngeal infection.
6/211 (2.8%) patients had rectal gonorrhoea, 1 had isolated rectal infection.
5/1309 (0.4%) patients had pharyngeal gonorrhoea, 3 had isolated pharyngeal infection.
There were no positive extragenital gonorrhoea cultures and no cases of extragenital dual infection.
Conclusion: Detection rates for extragenital chlamydia (both sites) and rectal gonorrhoea exceeded that of genital gonorrhoea.
Without extragenital screening we would have failed to treat 10 women with isolated pharyngeal or rectal infection, i.e. 12.7% of all women testing positive.
Regarding the 8 women with rectal chlamydia, 7 could have been suboptimally treated with azithromycin and one would have been missed.
This has implications for onward transmission, enhanced transmission of other STIs, and missed opportunities for partner notification.
Failure to screen women extragenitally may reinforce the misconception that these sites are not as significant in STI transmission and encourage risk taking behaviour.

P234

Frequency of HIV testing among community samples of gay and bisexual men in the UK

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Background: Men who have sex with men (MSM) remain the group most at risk of acquiring HIV in the UK, and an estimated one in five HIV-positive MSM is undiagnosed. HIV testing guidelines recommend at least annual testing, with more frequent testing (up to every three months) recommended for those at higher risk of HIV acquisition. Mathematical modelling suggests that increased HIV testing in combination with improved access to treatment could reduce incidence, but little is known about how frequently MSM in the UK actually test for HIV.
Methods: We examined data from 2992 HIV-negative/untested MSM in comparable cross-sectional surveys in Edinburgh, Glasgow and London in 2011 and a Scotland wide online questionnaire of MSM between November 2012 and February 2013. The frequency of HIV tests in the previous two years (less than 4 vs. 4+ tests) was measured. In the online survey, MSM who reported testing 'every 3-6 months' were coded as having had 4+ tests in the previous two years.
Results: The mean age of the sample was 34.1 years (range 18-83, SD=11.63). Most identified as gay and 84.8% reported anal intercourse (AI) in the previous 12 months; 16.1% reported 10+ AI partners. Overall, 1512 MSM (50.5%) reporting having had an HIV test in the previous 12 months. Frequent HIV testing was reported by 510 MSM (18.2%). In multivariate analysis adjusting for age, survey and sexual behaviour, the odds of frequent testing were significantly lower for men in London (AOR=0.54, 95% CI 0.41-0.71) and the online survey (0.77, 0.61-0.98) compared with Glasgow/Edinburgh and for men aged 36-45 years (0.53, 0.39-0.73) and 46+ years (0.61, 0.44-0.84) compared with those aged ≤25 years. The odds were higher for men reporting a sexually transmitted infection (STI) (1.71, 1.30-2.25), 10+ sexual partners (1.49, 1.11-2.00) and 10+ AI partners (2.33, 1.67-3.25) in the previous 12 months.
Conclusion: Half of the MSM in our community based sample reported a recent HIV test, but fewer than one in five reported frequent HIV testing. Although the likelihood of testing was raised among men reporting more sexual/AI partners and STIs, there were significant regional and demographic differences between frequent and non-frequent testers. Regional differences in the roll out, uptake and effectiveness of HIV testing campaigns should be considered alongside efforts to increase the frequency of testing, as should the potential impact of the introduction of self testing kits for HIV in the UK.

P235

'Legion' of medical students participates in largest hospital-based HIV testing week initiative – breaking down testing barriers in the doctors of tomorrow

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Background: Local HIV prevalence in NE London is 6-8 per 1000. Health care staff attitudes have been identified as a 'barrier to HIV testing'. The TestMeEast pan-Trust campaign delivered opt-out testing across 6 hospitals in OPD (outpatient department) and ED (emergency department) as part of HIV Testing Week (HTW). Aim: to test 500 patients/day=2500 by enthusing staff and engaging medical students to deliver opt-out HIV testing.
Methods: Medical students in years 1-5 were invited to take part in HTW via: weekly student newsletter; University Facebook Page and posts endorsed by the Medical School Dean; Sexpression group and student union Vice-President. Participation was entirely voluntary and not a course requirement. Participating students were required to attend a 1 hour HIV/GUM Consultant-led teaching session prior to HTW covering 'frequently asked questions' (FAQs) about HIV testing and consent. Student availability for HTW was taken from a self-completed Doodle poll factoring in educational commitments. A rota to cover all six sites (OPD, ED, entrance foyers) was constructed to ensure students worked alongside trained GUM staff. Medical students offered opt-out HIV testing to patients throughout the week and advised hospital staff on FAQs. Students' knowledge, attitudes and behaviours towards HIV testing pre/post-initiative were assessed through questionnaires.
Results: 1584 students attend the medical school. 133/1584 indicated their enthusiasm to take part in HTW by attending training (8.4%). 118/133 (88.7%) students participated in HTW by spending a ≥ 4 hour session working with OPD/ED patients to deliver opt-out testing.
HTW Student participation (n) by medical school year (N) (%):

Year	n/N(%)
1	17/337(5%)
2	19/273(7%)
3	35/313(11%)
4	26/316(9.2%)
5	18/345(5.2%)
Total	118/1584(7.4%)

40/118 (30.1%) students attending training completed a questionnaires exploring knowledge, attitudes and behaviours towards HIV testing prior to training session. 16 post-initiative questionnaires have been returned to date.
Conclusion: 7.4%(118/1584)of the medical student body participated in HTW by attending training and volunteering. Despite other educational commitments, both pre-clinical and clinical years showed enthusiasm for HIV-related learning and advocacy. Students made a very significant contribution to the workforce to achieve the campaign aim and may represent an underutilised resource in HIV testing initiatives

P236

Viral hepatitis testing patterns among HIV-positive individuals in the UK Collaborative HIV Cohort (UKCHIC) study

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Introduction: BHIVA guidelines recommend screening HIV positive individuals for hepatitis B surface antigen (HBsAg) and hepatitis C antibody (anti-HCV) at diagnosis and annually thereafter for those who are not infected or immune. We investigated adherence to these guidelines.
Methods: UK CHIC is an on-going observational study of individuals attending for care at selected HIV centres. Individuals attending any of 11 centres from 2004 onwards were included. Logistic regression identified predictors of ever testing for HBsAg or anti-HCV. Patients were eligible for annual testing if at the start of each year if they had no prior evidence of HBsAg, immunity to hepatitis B or anti-HCV.
Results: Of 31,605 individuals, 26,157 (82.8%) had a HBsAg test result recorded and 27,894 (88.3%) had an anti-HCV result. CD4, viral load, calendar year, ethnicity and exposure were all associated with testing (Table1). The proportion of patients tested increased from 2004 to 2011 (HBsAg, 54.3% -88.3% and anti-HCV, 57.4%-94.1%). For both HBsAg and anti-HCV, a significant interaction between calendar year and exposure was identified with the increase in testing among men who have sex with men (MSM) being greater than the increase in any other exposure group ($p<0.0001$ for HBsAg and anti-HCV models, results not shown). Annual testing of eligible individuals increased from 20.5% in 2004 to 29.7% in 2011 for HBsAg and from 25.6% to 55.7% for anti-HCV.
Conclusion: Most HIV positive individuals are now screened for hepatitis B and C at least once. There is evidence of increasing testing over time especially among MSM. Despite a modest increase in the proportion of eligible patients who are tested each year, annual testing remains low.

Table 1: Factors associated with HBsAg and anti-HCV testing

		HBsAg AOR[1] (95% CI[2])	Anti-HCV AOR[1] (95%CI[2])
Age[3]	(per 10 years)	0.98 (0.95-1.01)	0.96 (0.93-0.99)
CD4[3]	(per 100 copies/mm^3)	0.98 (0.97-0.99)	0.97 (0.96-0.98)
Viral load[3]	(per log cells/ml)	1.04 (1.02-1.06)	1.06 (1.04-1.08)
Calendar year	(per year)	1.40 (1.39-1.41)	1.55 (1.53-1.57)
Ethnicity	White	1	1
	Black African	0.88 (0.81-0.95)	0.88 (0.81-0.96)
	Other	0.71 (0.37-0.76)	0.75 (0.70-0.80)
Exposure	MSM	1	1
	Injecting drug users	0.97 (0.83-1.15)	1.83 (1.53-2.19)
	Male heterosexual	0.76 (0.69-0.84)	0.93 (0.83-1.03)
	Female heterosexual	0.72 (0.66-0.79)	0.98 (0.89-1.08)
	Other	0.25 (0.21-0.31)	0.27 (0.22-0.32)

[1]Adjusted odds ratio [2]Confidence interval [3]At baseline

P237

Using GeneXpert within the clinic to test for gonorrhoea and chlamydia reduces the time to treatment

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Background: Rapid diagnostics permit prompt recognition and treatment of infections. We introduced the GeneXpert system (Cepheid, CA, USA) within our clinic. The machine processes Chlamydia (CT) and Gonorrhoea (NG) samples in 90 minutes by real time PCR. We present the results of a pilot where GeneXpert was used to process samples from individuals attending outreach or specialised clinics.
Methods: Asymptomatic attenders whose samples were processed using the GeneXpert system were compared with 'standard of care' users whose samples were analysed off site in the hospital laboratory. All patients with a positive GeneXpert NG and/or CT result were matched with a control of the same gender, infection diagnosed and date of attendance. The same criteria were used to match the first 30 asymptomatic attenders with negative GeneXpert results with 30 'standard of care' patients with negative results. We retrospectively obtained information from the clinic notes including demographics, site of infection, date attender informed of diagnosis and date treated.
Results: Up to 4th January 2014, 163 asymptomatic individuals underwent GeneXpert sample processing. Of these, 27 had positive results (4 CT, 20 NG, 3 both CT/NG). The majority (25/27; 93%) were MSM of median age 33y (interquartile range [IQR]: 28-38 y). For patients with positive results, the median time from testing to treatment was 2 days (IQR: 1–6 days) for GeneXpert and 10 days (IQR: 7-11 days) for the matched group. Median time from testing to informing attender was 1 day (IQR: 1-3 days) vs. 7 days (IQR: 6-9 days) (GeneXpert vs. matched) and from informing to treatment was 1 day (IQR: 0-2 days) vs 1 day (IQR: 1-4 days) respectively. For 30 attenders with negative results, the median time to informing of negative results was 1 day (IQR: 1-2 days) for GeneXpert and 14 days (IQR: 14-19 days) for the matched group.
Conclusion: The introduction of on-site diagnostics using GeneXpert significantly reduced the time from testing to treatment compared to standard of care. This is due to informing attenders of their results more rapidly. There was no change in the time to treatment following notification of their infection. The introduction of GeneXpert within services has the potential to reduce the prevalence of CT and NG in the community by reducing the time that individuals are infective.

P238

The use of **Treponema pallidum** polymerase chain reaction (PCR) in the diagnosis of early syphilis

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Background: Syphilis is a sexually transmitted infection caused by *Treponema pallidum (TP)*. Primary and secondary syphilis are diagnosed clinically with confirmation by dark ground microscopy and/or serology. Polymerase chain reaction (PCR) is validated for the direct detection of TP and may enable earlier diagnosis. The use of TP PCR is currently being piloted by Public Health Wales (PHW). In this study we present a preliminary evaluation of its clinical utility in genitourinary medicine (GUM) clinics.
Methods: From January 2011, ano-genital and/or oral swabs were taken from patients with suspected early syphilitic lesions in GUM clinics across Wales. Swabs were transported in viral transport medium and the Tpp47 membrane gene of TP was targeted. Clinical and epidemiological data, treponemal serology and other relevant test results were collated via case note review.
Results: Forty-eight patients with a total of 63 swabs were included. Forty-seven patients (98%) were male and thirty-two (67%) were men who have sex with men (MSM). 8/48 (17%) patients were HIV-infected. 31/63 (49%) samples were taken from penile ulcers. The turnaround time from swabbing to receipt of a positive result was 24-48 hours. 18/63 (29%) swabs (taken from 12 patients) were PCR positive and in 11/12 (92%) patients, corresponding clinical features and baseline serology were consistent with early syphilis. Primary syphilis was diagnosed in 11/12 (92%) cases and secondary syphilis in 1/12 (8%) cases. One patient with a positive PCR result had negative serology resulting from concurrent flucloxacillin treatment. One of eight HIV positive patients had a positive TP PCR result with positive treponemal serology. Three patients with negative PCR results had syphilis serology consistent with previously treated syphilis. Of those patients with negative TP PCR results, 48% had a positive herpes simplex virus (HSV) swab.
Conclusion: Despite use in a high-risk group, only 29% of TP PCR results were positive. In all but one of these cases, both clinical information and serology supported a diagnosis of early syphilis. Almost half of PCR-negative patients had HSV infection. In the majority of clinics dark ground microscopy is no longer performed with variable serology turnaround times. The use of syphilis PCR to reduce time to diagnosis, treatment and initiation of partner notification is promising but a larger PHW study is necessary and is ongoing with the aim of including 1000 samples for analysis.

P239

When the diagnosis is clear, what is the benefit of sending an HVS?

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Background: Culture and microscopy of high vaginal swabs (HVS) is a simple test frequently used in the investigation of vaginal discharge. Current clinical guidance, endorsed by BASHH, states they are of 'limited diagnostic value' outside a GU setting unless the patient is high risk for complicated disease. Current BASHH guidelines recommend a fungal culture to investigate uncomplicated vaginal discharge within specialist services. This study aims to review the benefits an HVS offers in the management of cases of uncomplicated vaginal discharge.
Methods: This study involved a retrospective review of 100 consecutive diagnoses of *bacterial vaginosis* (BV) and 100 consecutive diagnoses of *Candida* in women attending two sexual health service sites from August 2012. Data was collected over a 4 month period. Diagnoses were identified using SHHAPT coding. Case notes were reviewed to identify the microscopy result from the initial clinic visit, whether an HVS was sent and if so, whether this correlated with the microscopy result.
Results: Of the 200 cases reviewed, 176 women were diagnosed and treated on the day of attendance based on immediate microscopy together with clinical assessment. Of these 168 (95%) had an HVS. Four cases had documented justification including pregnancy, recurrent symptoms and refusal of examination. The results from the HVS correlated with the immediate microscopy in only 59% of cases. Of the patients diagnosed via microscopy who also had an HVS, 29% were negative, indicating delayed microscopy is less sensitive than immediate. Three cases of atypical organisms were identified; on follow up all reported spontaneous resolution of symptoms. Seven women who presented with no change in discharge had an HVS. As they were diagnosed on this result alone, the HVS was of no benefit.
Conclusion: Despite the fact that 95% of women had an HVS, no results contributed to patient management. There appears to be no benefit in taking an HVS from women presenting with a first episode of vaginal discharge when the diagnosis is clear from clinical assessment and direct microscopy. The results often cause confusion leading to additional contact with well women

and over-treatment. During the study period at least 171 unnecessary samples were sent to the laboratory at a cost of £1949.40. Education on how to restrict this investigation to cases that would benefit could save the trust £6000 a year. The education has been delivered and its effect will be audited.

P240

Does community-based point-of-care HIV testing reduce late HIV diagnosis? A retrospective cohort study

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Background: 47% of people diagnosed with HIV in the UK are diagnosed late. The aim of this study was to investigate if patients diagnosed in community settings have higher baseline CD4 counts than those diagnosed in GUM clinics and to record access to care rates.
Methods: We undertook a retrospective review of baseline CD4 counts for patients receiving a reactive HIV point of care test in community testing clinics in England & Wales between January 2008 and October 2012. Eleven HIV clinics with whom there was an agreed referral pathway were contacted to confirm which patients had accessed care and to request their baseline CD4 count. Soundex codes were created for each patient and sent to Public Health England (PHE) to ascertain if those who could not be linked to an HIV service had accessed care elsewhere. Baseline CD4 counts of those diagnosed in the community were compared with mean HIV clinic and national baseline CD4 counts for the relevant year of diagnosis.
Results: 214 people received a reactive HIV result in the study period. 36 (16.8%) already knew they were HIV positive and used the service to re-engage with care. 74 (41.6%) were confirmed as new diagnoses and accessed HIV hospital care a median of 2 days following their reactive result. Clients diagnosed in community settings had a mean baseline CD4 count of 468 cells/mm^3. This was significantly higher than those diagnosed in GUM clinics (mean baseline CD4 397 cells/mm^3, $p=0.014$) and when compared with PHE national average (336 cells/mm^3, $p<0.001$). Men who have sex with men (MSM) diagnosed in the community had significantly higher baseline CD4 counts than GUM clinic ($p<0.001$) and national averages ($p<0.001$) and were significantly more likely to be diagnosed at a baseline CD4 >350 cells/mm^3 ($p<0.001$). 104 patients (49%) could not be confirmed as accessing HIV care. The odds of MSM being confirmed as accessing care were almost four times higher than those of heterosexual clients, and this was significant even after adjusting for ethnicity, age and sex (odds ratio=3.84, $p=0.015$).
Conclusions: HIV testing in community settings identifies patients at an earlier stage of infection than testing in clinical settings. The low rates of confirmed access to care are worrying, but not dissimilar to previously reported studies, and demonstrate that robust care pathways, which are culturally appropriate, must be integral to the design of community HIV testing services.

P241

"A Great way of doing it from the comfort of my home": expanding opportunities for HIV testing through home sampling

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Background: A significant proportion of HIV+ MSM remains undiagnosed. Work by Public Health England suggests that the majority of HIV transmission occurs from those unaware of their diagnosis: a significant barrier to reducing HIV incidence. In this report we present the findings of an internet-based HIV home sampling project, aiming to increase access to HIV testing in those at risk.
Methods: The target population was gay/bisexual men in London. The service was advertised online by gay men's health charity GMFA. Men were directed to an online risk assessment, including health promotion information. On completion, men could order a free HIV saliva sampling kit, utilising the laboratory based Dr Thom service. Those with reactive results were informed by a Health Adviser. Negative results were sent by text. Data presented are for December 2012 - November 2013 with 95% confidence intervals (CI). A service evaluation was undertaken in the initial users.
Results: 1,216 of the 2,060 people accessing the service were eligible. Most men were 20-39 years old (69.7%) and of White ethnicity (71.3%). Unprotected anal intercourse in the preceding 14 weeks was reported by 39.6%. Tests were requested by 786 (68.7%); 647 were despatched and 67% returned. Eight of these 422 were reactive (1.9%, 95% CI 0.97-3.7%). Four of the latter were confirmed as new HIV+ diagnoses (1.0%; 95% CI 0.4-2.4%) and attending HIV services. One individual was previously diagnosed and in HIV care. Two were negative on subsequent testing. One individual was referred to services but attendance was not confirmed. Thus the positive predictive value (PPV) was at worst 62.5% (95% CI 24.7-91.9%) and at best 75% (95% CI 35.1-96.1%). The evaluation showed that the majority of users found the service easy and convenient, but 25% said they would not have used the service if it involved a blood sampling technique.
Conclusions: Home saliva sampling offers an attractive and cost-effective method to increase HIV testing, thereby improving HIV diagnosis. The proportion with reactive results is similar to pilot projects in acute care and community settings but with minimal investment in staff costs. The majority of those with reactive results were confirmed as entering into care. The PPV compares favourably with other studies of routine HIV testing using saliva in the UK but warrants careful guidance for service users with reactive results, especially as home HIV testing may become more common in the near future.

P242

Cost-effectiveness analysis of HIV testing in non-traditional settings – the HINTS study

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Background: Outside sexual health, there are few data describing the costs incurred by routine HIV testing programmes, as recommended by UK guidelines. Within the HIV Testing in Non-traditional Settings (HINTS) research study, an HIV test was offered, mostly by dedicated research staff, to 16-65 year olds attending one of four clinical settings in London: an Emergency Department, an Acute Care Unit, Dermatology Outpatients, and Primary Care (where tests were offered by GPs, associated with incentivising payments).
Methods: Data on all costs required to deliver and manage the HINTS research study were collected and analysed. Costs were calculated to deliver the screening programme overall, and per true negative, false reactive and true positive HIV test result. Demographics of the clinic populations and data from the Survey of Prevalent HIV Infections Diagnosed (SOPHID) were used to model the total number of undiagnosed HIV-positive individuals attending each setting over a one year period. We then estimated the costs per new HIV diagnosis using different test offer and test uptake rates, whilst applying the modelled undiagnosed HIV prevalence.
Results: Each new HIV diagnosis within the HINTS study (with an overall offer rate of 51% and an uptake of 67%) cost £18,970. Assuming all patients attending were offered a test over one year, and applying the same test uptake rate as observed in HINTS, the cost per new diagnosis would fall to £4,470. In the best scenario, assuming 100% coverage and 100% test uptake, the cost per new diagnosis delivered within the HINTS settings would be £2,960.
Conclusions: Delivery of universal offer testing programmes in such settings is likely to be highly cost effective if future healthcare costs and QALYs are incorporated, and real world costs will be significantly lower (as compared to those of a research study with all its attendant extra costs). However, opportunity costs may need to be factored in depending on the model adopted, as well as potentially less favourable coverage and uptake. Furthermore, given this is opportunistic testing, it is probable that diagnoses will be made at an earlier disease stage with all the associated cost benefits thereafter.

P243

High yield, but variable coverage, of HIV testing for HIV indicator conditions across the UK

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Background: UK guidance recommends the routine offer of an HIV test to patients presenting with a range of HIV "indicator conditions" (ICs). The prevalence of undiagnosed HIV in such populations is being assessed by prospective studies. In one such study, a pre-implementation audit was undertaken to assess baseline IC-driven HIV testing activity in the participating centres. We present the UK data.
Method: Each centre undertook a case note review of up to 200 sequential patients presenting for the care of six ICs. The look-back preceded the implementation of the prospective studies. For each audit, the following data were collected: number of patients presenting to the centre for care of the IC; number offered an HIV test; proportion accepting the test; number newly diagnosed with HIV infection. By applying the observed prevalence of newly diagnosed HIV amongst tested subjects to the total IC population, an estimate was made of the total number of HIV-infected subjects and thus, the "missed" population by non-offer of a test.
Results: 12 audits were undertaken across six sites for six different ICs, involving 2312 patients. Results are below:
Conclusions: Where adequate numbers had been tested, the prevalence of newly diagnosed HIV was high, and well in excess of the cost effectiveness threshold of >0.1%. The testing rate varied between ICs (3.6% – 78%) and was notably low in cervical and anal cancer, and oesophageal candidiasis. Uptake of the offer of a test by patients was uniformly extremely high. Thus, the likely barrier is with clinicians. The calculated number of missed diagnoses must be treated with caution, as there is likely to be bias in the populations where test offer rates were low, but undoubtedly patients are being denied an opportunity for timely HIV diagnosis if not offered an HIV test in these contexts.

Indicator Condition (IC)	No. of patients with IC	No. of patients offered an HIV test (% of total)	No. accepting HIV test (%; where offered total known)	No. of patients newly diagnosed with HIV infection (% [95% CI])	*Inferred total number of HIV+ patients [95%CI]*	*"Missed" diagnoses [95%CI]*
Lymphoma	373	154 (41.2%)	153 (99%)	13 (8.49% [5.40-13.0%])	*32 [20-48]*	*19 [7-35]*
Hepatitis B/C	682	535 (78%)	532 (99%)	4 (0.75% [0.29-1.71])	*5 [2-12]*	*1 [-2-8]*
Cervical cancer	43	2 (4.7%)	2 (100%)	0	-	-
Anal cancer	190	7 (3.6%)	7 (100%)	0	-	-
Oesophageal candidiasis	524	U/K	90	8 (8.89% [4.35-16.8])	*47 [23-88]*	*39 [24-80]*
Tuberculosis	500	337 (67%)	331 (98%)	8 (2.42% [1.15-4.78])	*12 [6-24]*	*4 [-2-16]*

P244

How useful is extra-genital sampling in men and women?

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Background: Patients attending our sexual health services are routinely screened for genital *Neisseria gonorrhoea* (GC) and *Chlamydia trachomatis* (CT) using the Roche cobas nucleic acid amplification test (NAAT). In addition to genital specimens those reporting anal or oral sexual risks underwent sampling from these sites. Given the cost of the additional tests the purpose of our service reviews was to determine how many positives were identified that would otherwise have been missed and the cost per additional case identified in heterosexuals and MSMs.
Method: We analysed the results of all patients who had pharyngeal and/or rectal swabs taken for CT or GC NAATS over a six month period. Of those that were positive we identified their genital results to determine if the additional sampling identified positives that would have otherwise been missed. We reviewed the case notes of those testing positive to identify sexuality and number of sexual partners in the prior 6 months.
Results:
Over a six month period 2786 patients underwent extra-genital swabbing.
Of these; 462 patients had rectal and pharyngeal swabs,
2,274 had only pharyngeal swabs
50 had only rectal swabs.
Of the positives: 56% were from females who averaged 2.4 partners in the previous 6 months.
44% were male of whom the majority (86%) were MSM's thay averaged 3.49 partners in the previous 6 months.
A negative genital CT result was found in: 33% of pharyngeal CT positives.
50% of rectal CT positive.
A negative genital GC result was found in: 60% of pharyngeal positive and
58% of rectal GC positive.
Of those positive on both rectal and pharyngeal samples a negative genital CT result was found in 16% (1) female and 2 (100%) of males.
Of those positive on both the rectal and pharyngeal samples a **negative** genital GC result was found in 33% (3) male patients, all MSMs.
Conclusion: Our results demonstrate that a number of GC and CT positives would have been missed with genital sampling alone.
We will present data that will show the cost per case identified and whether there is useful linkage between partner numbers in the 6 months prior.
We aim to identify the cost issues of discrimination on the patients history of sexual partner numbers and whether sampling from the rectum and pharynx in certain cases appears to be justified.

P245

Opt-out testing for HIV is flawed: it's time for change

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Background: Despite recommendations from the British HIV association (2008), and the National Institute for Health and Care Excellence (2011), few UK centres have implemented effective and sustainable HIV testing programmes in high prevalence areas (>2 per 1000). We present results from an opt-out HIV testing strategy amongst General Medical admissions in an area of HIV prevalence 10-14 per 1000.
Methods: Over a 9 month period medical teams were asked to offer routine HIV testing to all medical admissions regardless of age, ethnicity or perceived risk. The Trust's electronic patient record system (EPR) was configured to prompt the user to test and record the reason for refusal. Post-take ward round lists highlighted patients who had not been offered a test. Pre-test discussion was limited to an explanation of the test and the positive post-test pathway. Data was collected on demographics, test offer and acceptance, and the number of confirmed positive results. Previous hospital contact was noted. Our trust agreed to designate the testing strategy as a local commissioning for quality and innovation payment (CQUIN).
Results: This resource intensive initiative increased testing uptake from 23.6% to 57.5% at the end of the CQUIN. Post-CQUIN testing uptake fell back to baseline despite the continued use of EPR prompts. There were 11/2208 confirmed new positives over the 9 month period = 0.5% positivity rate: 8

males (6 men who have sex with men), 3 females, median age 39 years. 4 patients were Black African, 4 White British, 1 White other, 1 Chinese and 1 Black Other. 6/11 patients had prior contact with medical services at our hospital in the last 10 years. 89% of new positives were late presenters (CD4 counts < 200). 8/11 patients had either clinical indicator diseases for HIV or AIDS-defining conditions and would likely have been tested for HIV independent of the CQUIN.
Conclusions: We have a duty of care to diagnose HIV patients early to reduce onward transmission and improve patient outcomes. We have failed to achieve this in the UK through ineffective HIV testing strategies. We therefore propose using the concept of 'notional' consent where HIV information is visible at the time of admission phlebotomy and HIV testing is performed as part of routine blood tests without the need for pre-test counselling. We are planning this initiative in A & E in the coming year.

P246

#TestMeEast@EuroHIVTestingWeek: a celebrity-endorsed, newsworthy NHS campaign across six hospitals to test 2500 patients (500/day) based in outpatients (OPD) and emergency departments (ED): the results

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Background: HIV Testing Week (HTW) is an annual community-led drive to increase HIV testing in at risk populations[1]. Past campaigns focused on community settings using mostly rapid tests. HIV prevalence in East London is 6-8/1000 with high rates of late diagnosis (28%)[2]. We focused our hospital-based campaign in six hospitals where non-HIV staff delivered opt-out HIV testing to patients bled in OPD clinics and ED. Campaign aim: to test 2500 patients (500/day for 5 days).
Methods: During HTW (25-29 November 2013) opt-out HIV testing (serology) took place across six hospitals in OPD and 2 ED's within the largest NHS Trust. Inclusions: Patients ≥16yrs having routine/emergency bloods. HIV/GUM staff, 118 trained medical students and community volunteers supported non-HIV staff with testing. We engaged celebrities to endorse TestMeEast via simultaneous coverage on Twitter, national and international news broadcasts and BBC radio. HIV testing rate was derived as percentage of patients having full blood counts (FBC) also tested for HIV. Refusal v's 'not offered' not ascertained. Electronic patient data collected and analysed via Stata. Results were given on a 'no news is good news' basis. A facilitator arranged linkage to care and contact tracing.
Results: During HTW: 10,386 patients attended as OPD/day case/ED. 4137 had FBC's. HIV testing rate: 2402/4137(58%).Median age 49 yrs. 43% M; 47% F; 10% unknown.
96% of campaign target achieved =2402/ 2500.
There were 8 HIV positive results:
3 New diagnoses: A) HIV1 Ab+'Seroconverter'(ED): South American M, 20-25, MSM. HIV neg test 5/12 ago -pt report.
B) *HIV2 Ab+: Haematology pt (OPD) Black African F, 40-45 CD4 700 mm^3, VL 0 log U/mL.
C) *HIV1 Ab+: Hepatitis clinic pt (OPD). Eastern European M, 45-50, MSM CD4 412mm^3 VL 22953 log U/mL
*linked to care
5 Known positives: 1 F, Black African, Dx 2009; Asylum- seeker, lost to follow up since diagnosis. Informed GUM clinic and GP to relink. Remains unlinked. 4 Black African/Caribbean (2M;2F) all attend HIV clinic VL<40, retested during HTW.
Conclusions: -The campaign tested 96% of target over 5 days with a high testing rate of 58%.
-3 new diagnoses were made-all early infections enabling early linkage to care and partner testing.
-A celebrity-endorsed, media campaign engaged medical students, staff and patients in normalizing hospital HIV testing.
-HIV Testing Guidelines not universally followed in OPD clinics eg Hepatitis

P247

Use of dual testing for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* within a population-based survey in Britain: Findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3)

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Introduction: Nucleic acid amplification tests (NAATs) make it possible and relatively inexpensive to test for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* infections in a single reaction – dual testing. 2010 Guidance in England and Wales recommends testing for *N. gonorrhoeae* only where the positive predictive value is >90%, usually requiring confirmatory testing. Use of dual testing for screening purposes, such as in the National Chlamydia Screening Programme (NCSP), which targets sexually active men and women under-25 years old, requires careful consideration of age-specific pathogen prevalence to limit false-positives.
Methods: During 2010-12, we undertook the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3), a probability sample of 15,162 men and women aged 16-74 years resident in Britain. Urine was collected from 4,550 participants aged 16-44 years who reported at least one sexual partner ever. We applied a diagnostic algorithm to test for *C. trachomatis* and *N. gonorrhoeae* using a screening test (Aptima Combo 2 dual testing assay) and a confirmatory test (Aptima monospecific assays), which had different nucleic acid targets, for all positive and equivocal results. Data were weighted to account for unequal selection probabilities and non-response.
Results: 100 urine samples screened positive for *C. trachomatis*, of which 96 were confirmed, and 3 samples were equivocal, of which 2 were confirmed. Overall, 95% (98/103) of positive or equivocal dual tests were confirmed for *C. trachomatis*, giving a weighted prevalence of 1.3% (95% CI 1.0-1.6) in those aged 16-44. For *N. gonorrhoeae*, 18 samples screened positive (4 confirmed) and 8 were equivocal (0 confirmed); 15% (4/26) of positive or equivocal dual tests were confirmed. All 4 samples with confirmed *N. gonorrhoeae* were from people aged 20-24 years and were co-infected with confirmed *C. trachomatis*. The weighted prevalence for *N. gonorrhoeae* was <0.1% (0.0-0.1) in those aged 16-44.
Interpretation: These data highlight the low proportion of positive and equivocal tests that confirmed when using dual tests to screen for *N. gonorrhoeae* within a population-based survey, and emphasise differences in the epidemiology of *N. gonorrhoeae* and *C. trachomatis*. Clinicians and policy makers undertaking asymptomatic screening for *N. gonorrhoeae* in community-based low-prevalence settings should use confirmatory assays and carefully weigh the potential benefits and harms of using dual testing.

P248

HIV risk perception and testing in groups identified in the BASSH/BHIVA UK national guidelines for HIV testing 2008: findings from the National Surveys of Sexual Attitudes and Lifestyles (Natsal)

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Background: Timely testing for early diagnosis of HIV is critical for both treatment and prevention. National sexual health strategies have aimed to increase the uptake of HIV testing and BASHH/BHIVA HIV testing guidelines 2008 identified groups to whom HIV testing should be routinely offered.
Methods: The third National Survey of Sexual Attitudes and Lifestyles (Natsal-3), was a probability sample survey of 15,162 people aged 16-74 undertaken in 2010-2012, in Britain. Participants were asked to rate their HIV risk considering their present sexual lifestyle (greatly at risk, quite a lot, not very much, not at all). We compare reported HIV testing and risk perception in participants aged 16-44 who reported at least one sexual partner ever in Natsal-3 (n=9,084) with those from Natsal-2 (n=9,716), which was undertaken in 1999-2001.
Results: Between Natsal-2 and Natsal-3 reported HIV testing increased from 9% to 28% in women, and from 9% to 17% in men. HIV testing was higher in those attending specific services and in targeted groups (Table). 24% of

women and 31% of men rated themselves at some risk of HIV, which was lower than in Natsal-2 (30% of women and 39% of men). Self-perceived risk was higher in all targeted groups and settings than in the general population, with the exception of antenatal services, reaching 77% in men who reported having had sex with a man (MSM). Those who rated themselves as at some risk were more likely to report an HIV test in the past 5 years (32% vs 26% for women, 21% vs 15% for men). HIV testing was reported in 40% of the 3% of women, and 32% of the 4% of men, who rated their risk as 'greatly' or 'quite a lot'.

Conclusion: Uptake of HIV testing has increased over the past decades, and both perception of risk and the proportion reporting testing are highest in targeted groups. However, many who perceive themselves to be at risk did not report a recent HIV test, including among MSM. Greater promotion of HIV testing in most at-risk groups is required both for individuals' and public health benefit in order to reduce onward transmission.

P249

Comparison of the Roche Cobas Ampliprep/Taqman HIV 1 test V2.0 assay to Siemens HIV 1 RNA 3.0 bDNA analyser, the VERSANT 440 Molecular system

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Background: Several commercial assays are currently available for monitoring of HIV-1 viral load (HVL) in HIV infected patients. Following a change of assays at Imperial College Healthcare NHS Trust a study was performed comparing the previously used assay, Siemens (Versant bDNA) 440 molecular system, with the newly introduced assay, the Roche Cobas Ampliprep/Taqman HIV-1 test V2.0. 5378 clinical samples from 2556 known HIV-1 infected patients attending sexual health clinics across a number of centres were assessed.

Methods: Samples from these 2556 patients were initially tested using the bDNA assay with subsequent samples tested using the Roche assay. In total 5378 samples were tested in the period between 17/7/12 to 19/7/13. A separate prospective analysis of 48 samples with Roche results that were discrepant compared to the bDNA was undertaken, introducing additional centrifugation steps in order to ascertain whether our initial Roche results were spurious and evaluate the reproducibility of the assay.

Results: 78% (n1991) of patients, including patients both on and off therapy, had an HVL of <50copies per ml (cpm) using the bDNA assay, 95.5 % (n 1902) of these had a subsequent Roche viral load of less than 250cpm, 89% (n1778) had a subsequent Roche VL of <50cpm and 11% (n213) had a subsequent result of >50cpm on the Roche assay. Of the 213 patients with a subsequent HVL of >50cpm on the Roche assay, 154 (72%) had HVL measurements in the range 51-500cpm, 19 (9%) had a HVL between 501-1000 cpm and 40 (19%) had a HVL of >1000cpm. Repeat HVL results obtained from "discrepant" samples following additional pre-analytical manipulation steps had a coefficient of variation (CV) of 0.18 versus 0.68 when the pre-analytical manipulation was absent.

Conclusion: Overall the two assays showed good concordance of results with 89% of patients previously undetectable on the bDNA assay having a HVL of less than 50cpm on the Roche. This HVL value is currently used in our trust as a trigger for patient review. However the transition from the Siemens bDNA assay to the Roche Taqman V2.0 did lead to an increased frequency of reported quantifiable HVL in patients who had previously been undetectable, including a small cohort of patients with significantly raised HVL on the Roche assay. The introduction of additional centrifugation steps prior to sample separation led to the rectification of spurious HVL results on the Roche assay and better assay reproducibility.

P250

Facilitators and barriers related to voluntary counselling and testing for HIV among young adults in a southern province of Sierra Leone

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Background: Voluntary counselling and testing (VCT) is a widely recognized HIV intervention that has been implemented successfully throughout sub-Saharan Africa and in other parts of the world. However Sierra Leone's 2008 Demographic Health Survey found that only 13% of women and 8% of men age 15–49 years had ever had an HIV test. The goal of this study was to examine the current prevalence of HIV testing in one city in Sierra Leone and to identify barriers to accessing VCT services among 18–35 year olds.

Methods: We interviewed a population-based sample of 285 residents of a southern city in Sierra Leone, about their attitudes toward and experience of VCT. Using a health geographic information system, a random sample of 150 residential buildings were selected. A questionnaire was adapted from a World Health organisation research tool, and consisted of four sections, one each for socio-demographic characteristics, HIV knowledge, VCT knowledge and attitudes, and HIVstigma. Structured interviews were undertaken at the homes of participants, using the questionnaire.

Results: In total, 33% of the participants (44% of women and 25% of men) reported having been tested for HIV at least once. More than 85% of those not previously tested, indicated a willingness to be tested in the near future, suggesting that there are many barriers to actually accessing HIV test. The untested group were significantly more likely to report fear of testing positive, losing a job, being abandoned by a partner or family, and social stigma, compared to the previously tested group. They also felt that HIV testing is pointless because of the unavailability of treatment. More than 90% of participants expressed a high desire for increased privacy, and the majority reported a preference for VCT at a facility far from home where no one would know them.

Conclusion: Given that the HIV prevalence among adults in Sierra Leone appears to have increased over the past decade an evidence based approach to HIV prevention and treatment is critical. This study suggests that young adults in urban areas express willingness to be tested but social barriers to actually seeking VCT remain. While many participants indicated a sense of responsibility to care for those with HIV and ensure their human rights, HIV stigma is still a concern. Community outreach efforts to de-stigmatize HIV may have a side benefit of increasing follow through on invitations to participate in the VCT process.

P251

Assessing HIV testing in hepatitis: an audit of HIV testing uptake in a specialist hepatology clinic in an area of high prevalence for hepatitis B and C

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Background: HIV testing is recommended for those diagnosed with hepatitis B and C (HBV/HCV). Our hospital is based in a high prevalence area for HBV, HCV and HIV. Patients diagnosed with HBV and HCV are seen in a specialist Hepatology clinic. To increase uptake of HIV testing in this clinic, an HIV test was added to electronic blood test 'sets' requests. Aim: audit to assess uptake of HIV testing in HBV and HCV in the Hepatitis clinic.

Methods: We performed a retrospective electronic notes review of patients attending Hepatitis clinic for the period 1st September 2012 to 31st August 2013. Patient clinical and demographic data was recorded in Excel.

Results: 596 patients with liver disease attended the clinic during the audit period. 54.2% (323/596) were female. Mean age was 41. Ethnicity was diverse: 28.4% (169/596) black African; 15.4% (92/596) Eastern European; 13.8% (82/596) Pakistani; 8.9% (53/596) Bangladeshi; 7.0% (42/596) white UK. 60.7% (362/596) were GP referrals. 47% (280/596) were new attendees compared to follow-up. Clinic diagnoses included: 60.7% (362/596) HBV; 12.1% (72/596)

HCV; 26.7% (159/596) other including alcoholic liver disease and autoimmune liver disease. Uptake of HIV testing in the clinic during the audit time period is shown in the table below. A documented HIV test at any time is also included. There were 4/596 (0.7%) HIV positive patients. No patient was diagnosed with HIV in the Hepatitis clinic. There were 1.2% (7/596) documented refusals.

Cause of liver disease	Total N	HIV test in clinic n (%)	HIV test ever n (%)
HBV	362	205 (56.6%)	289 (79.8%)
HCV	72	40 (55.6%)	52 (72.2%)
Other	159	66 (41.0%)	86 (53.4%)
Total	596	311 (52.2%)	427 (71.6%)

76% (213/280) of new patients had a documented HIV test result compared to 67.7% (214/ 316) of follow up. For HBV, 84.7% (133/157) of new patients had an HIV test result, compared to 76% (156/205) follow up. For HCV 74.3% (26/37) of new compared to 74.3% (26/35) follow up.

Conclusion: Nearly 80% of patients with viral hepatitis attending specialist Hepatology clinic had an HIV test at some point, although only 56.5% were tested via the clinic. New patients appear more likely to have had an HIV test, which may reflect the more recent introduction of HIV testing electronic blood 'sets'. The Hepatology team continue to support HIV testing, and aim to increase HIV testing in their clinic.

P252

HIV testing in an asylum seeker initial accommodation centre

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Background: HIV testing at induction centres for asylum seekers has not previously been undertaken. Point of care HIV testing was implemented in one centre for a one year pilot study. We wanted to assess whether offering testing was possible, acceptable to patients and effective.

Methods: All asylum seekers entering an initial accommodation (IA) centre are entitled to receive a healthcare assessment. Between October 2011 and October 2012, patients at one IA were offered a POCT HIV test if they were from a country with >1% prevalence of HIV. A small grant from the Department of Health was used to cover test costs.

Results: Number of health assessments completed **1519**

Number of patients identified as coming from a country with HIV prevalence >1% **361 (24%)**

Number offered HIV test **214 (59%)**

Number of HIV tests done **187 (87%)**

Number of reactive POC tests **14 (7%)**

Number of confirmed positive HIV tests **14**

Number of newly diagnosed HIV patients **9 (5%)**

10/14 patients were initially assessed at a local HIV clinic (5 new/ 5 previously diagnosed).

Of those newly diagnosed who transferred to local HIV care 4/5 had a CD4 count <350 1/5 had a CD4 count <200. All accessed clinic within 2 days of diagnosis and all those requiring treatment commenced in a timely manner.

6/10 referred to local HIV care were dispersed elsewhere within 12 months.

4/10 remained in care locally at 12 months since diagnosis/referral.

Conclusion: Our experience shows that HIV testing is possible in an asylum seeker induction centre. HIV testing was acceptable to the majority of asylum seekers who were offered the test. The use of POCT helped to ensure patients were aware of their diagnosis prior to dispersal and also resulted in a speedy referral to HIV care. This testing strategy also helped with engagement in care for those already diagnosed with HIV.

A high prevalence of HIV was found suggesting that this is a highly cost-effective strategy for finding new HIV diagnoses. This service can be delivered and sustained with no extra resources except the test costs.

P253

National HIV Testing Week: normalising HIV testing for at-risk communities through a yearly community/clinical campaign

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Background: With undiagnosed HIV infection remaining a key barrier to realising the public health benefits of Treatment as Prevention, renewed efforts to increase testing amongst risk groups remains vital. Following a successful pilot in 2012 (which led to the creation of European HIV Testing Week), 2013 saw the expansion of National HIV Testing Week (NHTW) as a major media campaign which: supports HIV prevention within clinical, statutory and community organisations; communicates a clear annual message around the benefits of regular HIV testing; reduces barriers to testing with innovative and increased testing opportunities.

Methods: Utilising the 32 local delivery partners within HIV Prevention England and the extensive support of other clinical, statutory and community organisations, NHTW was a national media campaign employed to support a wide range of testing initiatives. Targeted promotion for both African and MSM communities used a range of mediums, including TV, social media, print, outdoor and web-based advertising, alongside customisable small-print media. National press work and celebrity endorsements also extended the reach of the campaign. Targeted community HIV testing and a national postal testing service were also provided to improve access to HIV testing during the week.

Results: Headline results for the reach and engagement of the campaign:

- Over 300 organisations from across England endorsed NHTW.
- Over 120 NHS centres ordered resources or ran additional HIV testing services.
- Over 400,000 items of small print media ordered.

Over 100 additional testing sessions from HPE partners in the week.

Additional campaign extension from councils in South west London (Croydon & Kingston).

- 12 Celebrity endorsements
- 447 mentions of NHTW in media publications – over three times the coverage of 2012.
- Social media (targeted to MSM and Africans): 21,00 likes across all campaign pages/accounts with a combined reach of over 2.2 million, with 101,000 people actively engaged.

Conclusion: NHTW provides an engaging and flexible context to frame a wide range of testing initiatives. Support and momentum around the annual campaign should continue to be built upon, with a continued emphasis on innovation and lowering barriers to HIV testing for at risk communities.

P254

Routine HIV testing in acute medical admissions in a high prevalence area reduces morbidity and mortality of HIV: A full cycle audit

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Background: Our audit in 2011 of ward diagnosed HIV inpatients (IP) showed high levels of AIDS defining illnesses (ADI) with preventable mortality. Routine testing in Acute Medical Unit (AMU) was recommended. This re-audit was carried out after implementation of this policy in July 2011.

Methods: A prospective clinical database started in 2005 of all HIV+ inpatients was used. Audit A and Audit B analysed all IP HIV+ diagnoses from January 2005 to April 2010 and July 2011 to January 2014 respectively. In Audit B patients were categorised as **Screened** (tested via routine AMU testing) or **Targeted** (tested due to clinical suspicion). We used the Fisher exact and t tests for statistical analysis.

Results: There were 88 new HIV+ IP diagnoses in Audit A and 25 in Audit B. In Audit B 13/25 (52%) were identified via Screening and 12/25 (48%) via Targeted testing. In Audit A, B Targeted and B Screened there were 53%, 58% and 61% male, 71%, 83% and 69% Black African/Caribbean, 11%, 8% and 31% UK heterosexuals, and 11%, 8% and 8% MSM respectively. The table shows baseline CD4, ADI, mortality, and length of stay (LOS).

		Audit B [n=25]			
	Audit A [n=88] n (%)	Targeted [n= 12] n (%)	Screened [n=13] n (%)	Audit A vs. B Targeted P value	Audit A vs. B Screened P value
CD4 <350	82 (93)	11 (92)	7 (54)	1.0	**0.0008**
ADI	67 (78)	9 (75)	2 (15)	1.0	**0.0001**
Mortality	7 (8)	0 (0)	0 (0)	0.5904	0.5937
Mean LOS, days (SD)	26.8 (20.9)	23.4 (11.4)	10.9 (8.1)	0.5830	**0.0081**

Conclusions: Patients who were diagnosed through screening in Audit B had significantly higher CD4 counts, fewer ADIs and reduced length of hospital stay compared to those in Audit A. However, patients who had targeted tests continued to be diagnosed late with high morbidity. There have been no deaths in newly diagnosed HIV+ patients in Audit B compared to 7 in Audit A. More UK heterosexuals were diagnosed in the screened group compared to those targeted for testing in Audit B or Audit A. Routine HIV testing in AMU has resulted in earlier HIV diagnosis with reduced morbidity and mortality, including those not generally perceived to be high risk.

P255

Comparative performance of commercial plasma HIV-1 RNA load assays at low copy numbers

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Background: The source and significance of low-level viraemia during ART remain controversial. The aim of this study was to compare the analytical performance of the new Qiagen Artus RGQ assay vs. the Roche Taqman v.2 test with a focus on samples with low HIV-1 RNA copy numbers.
Methods: Plasma samples from patients attending for routine care between Jan and Dec 2013 were separated within 4-6 hours of collection and stored at -80°C in separate aliquots for this comparison. All aliquots had a single freeze thaw cycle prior to analysis on the Taqman and Artus automated platforms. The two assays have a lower limit of quantification (LLQ) of 20 and 45 copies/ml, respectively. The evaluation also included an external quality assessment panel and dilutions of the 3rd WHO standard for HIV-1 RNA.
Results: 173 samples from 151 patients were included in the evaluation. HIV-1 RNA was detected by both assays in 83 samples. Linear regression of the 67 (39%) samples with both results above the Artus LLQ (>45 copies/ml) demonstrated good correlation between the two assays (R^2=0.92); 97% of the paired samples fell within the 95% levels of agreement by Bland-Altman analysis, with a mean difference of 0.14 $\log_{10}$ HIV-1 RNA copies/ml. Two outliers (subtype C and CRF01_AE) were above the agreement threshold, whilst another of unknown subtype was below. Concordant HIV-1 RNA results <45 copies/ml were obtained for a further 87 (50%) samples, including 37 which had a detectable results by Taqman and 12 detectable by Artus. A total of 13/173 (7.5%) samples from treated patients gave discrepant results, with Taqman viral loads between 47 and 407 copies/ml but <45 copies/ml by Artus. This discordance was reduced to 11/173 when using 50 copies/ml as the cutoff. Conversely, 6/173 samples (3.4%) were <45copies/ml by Taqman but with Artus results in the range 63 to 185 copies/ml.
Conclusion: Analytically the new Artus HIV-1 RNA test was overall comparable to the Taqman assay while reducing the detection of low-level viraemia by 4%. Additional clinical validation is needed to confirm this.

P256

Is there a need to adopt commercial tests for herpes diagnosis?

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Background: UK laboratories rarely use externally standardised commercial tests for the diagnosis of herpes simplex virus (HSV), opting instead for in-house diagnostic tests. In-house tests are internally validated by laboratories, and are often accepted if they demonstrate equivalence or any superiority to viral cultures. Questions have been raised over the diagnostic value of in-house tests. The only commercial test for HSV diagnosis available on a large platform is the Becton Dickinson (BD) ProbeTec HSV 1 & 2, however, there has not been a direct comparison between this test and in-house alternatives.
Method: 150 patients presenting to a UK level 3 sexual health service with an external anogenital lesion consistent with a clinical diagnosis of HSV will have an in-house swab (tested on a Roche light-cycler using bespoke primer set) for HSV followed by a BD ProbeTec HSV 1 & 2 swab. Swap order was determined by the advice of the ethics board. The paired test results for each subject will be compared. Two-sided 95% score confidence intervals (CIs) will be used to estimate the positive and negative predictive values of the in-house test with the BD ProbeTec HSV 1 & 2.
Results: Data collection is ongoing. Results thus far show that both the in-house test and the BD Probetec detected 33 HSV positive samples out of 97. However there are two discordant results, one which is positive for the BD ProbeTec, but negative for LightCycler and one which is negative for the BD ProbeTec, but positive for LightCycler. Further analysis of lesion stage is likely to show it to be an important contributory factor.
Conclusions: Swab ordering is likely to bias against the BD test, hence its equivalent performance suggests it may be an intrinsically better test to a sexual health setting. Having demonstrated equivalence we could now perform an RCT to formally evaluate the relative performance of the two tests.

P257

Should we offer men who have sex with men triple site testing for sexually transmitted infections routinely irrespective of their sexual history?

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Background: Current national guidelines recommend testing for sexually transmitted infections (STIs) in different sites according to the sexual history. Due to the high prevalence of infections found in men who have sex with men (MSM), our clinic policy changed to offer all MSM triple sites testing. This included chlamydia and gonorrhoea NAAT tests in urine, pharynx and rectum, irrespective of sexual history.
Methods: Case note review of patients attending an inner city sexual health clinic over a three month period was carried out. We included those MSM who had triple site testing. Information gathered included demographics, sexual behaviour and STIs diagnosed.
Results: There were 633 MSM seen during the period, of which 502 (79.3%) had triple site NAAT testing for chlamydia and gonorrhoea. The median age was 29 years (range 17 – 88). 378 (75.3%) were White British. 89 (18%) were HIV positive; 377 (75%) were HIV negative and 36 (7%) had unknown HIV status. 486 (97%) have reported anal sex. 70 (14%) reported insertive anal sex only and 100 (21%) reported receptive anal sex only.
There were 170 (34%) patients diagnosed with STIs. Rectal bacterial STIs were diagnosed in 86 (51%) patients; 9 (5%) reported insertive anal sex only and 26 (30%) of those with rectal STIs reported consistent condom use. There were 6 (4%) patients newly diagnosed with HIV.
Conclusion: The lack of reported receptive anal sex did not preclude the presence of rectal STI. Routine triple site NAAT testing for chlamydia and gonorrhoea in MSM are deemed acceptable in our cohort. Clinicians should encourage more open and honest sexual history. Computer-assisted personal interviewing could be used to overcome some of the barriers. Appropriate testing, timely treatment and on-going safer sex education are paramount in this population to reduce the burden of STI and HIV transmission.

P258

Sexual health in men who have sex with men in a rural setting: is this a population at high risk of acquiring human immunodeficiency virus?

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Background: Men who have sex with men (MSM) account for the greatest number of new Human Immunodeficiency virus (HIV) diagnoses in the UK,

with a significant amount reporting sexual behavior putting them at high risk of acquiring HIV infection. There is currently no risk stratification tool in place to assess risk for MSM with regard to HIV infection and other sexually transmitted infections (STIs). We researched the MSM population attending sexual health clinics across Cornwall; assessing sexual health behavior for risks, and looked at the frequency of STI testing and diagnoses over a two year period.
Methods: Notes were reviewed of all MSM who presented to Cornwall sexual health clinics in 2011. Patients were assessed for sexual health risk using a local risk stratification tool, including unprotected anal intercourse and number of partners in the last six months. Each patient's notes were reviewed over the following two years from the initial consultation, recording details of new consultations, STI tests performed and new diagnoses made. Patients already diagnosed with HIV or those attending for follow up were excluded.
Results: 151 patients were included in the study, of which 125 patients (82.8%) returned to the clinic over the 2 year period of follow up. 89 patients (58.9%) returned for further testing for STIs. Of these patients 108 patients (71.5%) were deemed to be at high risk of acquiring HIV using the risk stratification tool on their first appointment in 2011. Over the two years of follow up 58 (38.4%) patients were diagnosed with an STI, with Chlamydia (39.2%) and Gonorrhoea (23%) being the most common diagnoses – followed by HIV (16.2%). 12 patients (9.6%) followed up have been diagnosed with newly acquired HIV since their first consultation in 2011.
Conclusions: MSM in Cornwall are likely to have a higher incidence of HIV diagnosis than previously estimated. Their sexual behavior also appears to put them at higher risk when compared to other areas of the country due to a number of reasons pertinent to a rural community.[1] Work needs to be done to raise HIV awareness in these areas with improved patient education and consider recall of high risk patients for frequent STI testing.
Reference: (1) Desai M *et al.* Audit of HIV testing frequency and behavioural interventions for men who have sex with men: policy and practice in sexual health clinics in England. *Sex Transm Infect* 2013; 89: 404-408.

P259

National audit of baseline HIV resistance testing among newly diagnosed adults

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Background: In 2005, the British HIV Association (BHIVA) recommended baseline testing for transmitted resistance in all patients newly diagnosed with HIV, with the most appropriate sample being the one closest to the time of diagnosis. In 2011, the guidelines were updated with an auditable target – 90% of patients should have a resistance test within 3 months of first diagnosis. We audit baseline resistance testing among adults diagnosed with HIV between 2005 and 2010 in England, Wales and Northern Ireland (EW&NI).
Methods: Adults (aged ≥15) newly diagnosed with HIV in EW&NI between 2005 and 2010 were reported to PHE as part of national HIV surveillance (data to the end of June 2013). New diagnoses were matched using pseudo-anonymised information to the UK Resistance Database held at the MRC (data to the end of May 2012). An individual's first test was assumed to be their baseline (using sample date), with all tests post-antiretroviral therapy (ART) excluded from analyses.
Results: Between 2005 and 2010, 40,453 adults were newly diagnosed with HIV in EW&NI. 19,165 (47%) matched to a person on the Resistance Database with one or more resistance tests (before starting ART), with no significant difference in matching over the 6 years. Of these, 86% were tested within 3 months of diagnosis, increasing over time from 72% in 2005 to 95% in 2010 ($p<0.001$). Median time to resistance test from diagnosis decreased significantly from 22 to 7 days over time ($p<0.001$). In 2010, men who have sex with men received a resistance test in a significantly shorter period following diagnosis compared to heterosexuals and people who inject drugs ($p<0.001$).

	2005	2006	2007	2008	2009	2010
New HIV diagnoses	7,423	7,042	6,898	6,834	6,240	6,016
Resistance test (pre-ART)	3,043	3,449	3,332	3,485	3,107	2,749
Resistance test w/in 2 weeks	41%	49%	53%	61%	66%	70%
Resistance test w/in 1 month	56%	67%	71%	79%	82%	86%
Resistance test w/in 3 months	72%	81%	85%	90%	92%	95%

Conclusion: The findings of this audit indicate that of all patients newly diagnosed with HIV that had a baseline resistance test before starting ART, the majority were tested within 3 months of diagnosis. However, due to low matching rates between data systems true uptake of testing for transmitted resistance could range from 40% to 86%, highlighting the importance of improving quality and completeness of data for public health monitoring and auditing of BHIVA standards.

P260

Risks and benefits of the introduction of HIV self-testing in the UK: lessons from Kenya, Malawi and South Africa to inform a public health approach

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Introduction: In the UK, HIV rapid tests are available through unregulated internet sales and are used for home HIV self-testing (HIVST). In April 2014, legislation is due to change to permit over-the-counter sale of approved HIVST kits. The approval of OraQuick (OraSure Technologies) by the US FDA in July 2012 and the publication of results of community-based HIVST in Malawi and a study with health care workers in Kenya have added to a growing momentum for scale-up of HIVST as a public health tool in the UK. In April 2013,WHO and Liverpool School of Tropical Medicine hosted the first International Symposium on the legal, ethical, gender, human rights and public health aspects of HIV self-testing. The meeting issued a consensus statement and outlined an operational research agenda. Since then, additional data of direct relevance to the UK situation has emerged.
Methods: In order to obtain lessons of relevance to the UK setting we reviewed published data and present interim results from unpublished HIVST studies (in Kenya, Malawi and South Africa). The focus of this review is on target populations, ethical and legal debates, accuracy in testing, linkage of newly diagnosed HIV-positive individuals to care and treatment and the potential for coercive testing and social harms.
Results: Data from elsewhere indicate that, in the UK, a range of target populations are likely to benefit from HIVST. In particular HIVST lends itself to repeat testers, testing among MSM and among those who are less willing to access facility-based services, especially men. Data on potential legal implications of disclosure and criminalisation have not hindered scale-up elsewhere, with ethical debates focusing on autonomy and responsibility. While supervised HIVST in research contexts has reported high accuracy, video data of simulated self-testing shows that testing by intended users at home is associated with high error rates, potentially leading to lower sensitivity. Of concern were confusion over instructions for use, errors in procedural steps and mistakes in interpreting faint positive and invalid results. Lower sensitivity in the hands of intended users could result in increased unsafe sex if used for point of sex testing by those with false negative results or in the window period. Data on linkage to care are limited. In Malawi home initiation of ART linked to HIVST has shown significant impact on ART uptake.
Conclusion: The international response and lessons learned from scaling up HIVST in other countries will directly inform introduction into the UK. Public health and HIV services need to work together to minimise potential harms. Key determinants of a successful UK public health HIVST programme will include: effective pathways to ensure access to confirmatory testing; strategies to increase accuracy and acceptability including clear messaging

about the meaning of reactive and non-reactive results; and effective linkage to prevention and care services.

P261

Acceptability of HIV testing of children amongst paediatricians

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Background: It is recommended that clinicians have a high index of suspicion for children who could be at risk of HIV infection, to facilitate early detection, appropriate initiation of treatment and reduce early mortality. The UK National Guidelines for HIV Testing 2008 provide a list of paediatric patient groups who should be considered for HIV testing. This project assessed the acceptability of testing these groups amongst paediatricians.
Methods: A questionnaire was sent to 205 clinicians working within general or specialist paediatrics, 73 of these responded. Questions included an analysis of clinician demographics and an evaluation of the patient groups who were considered suitable for HIV testing.
Results: We assessed the opinion of clinicians', who were mostly consultants working in general paediatrics (66%), speciality paediatrics (33%) and infectious diseases (ID) (1%), as to which paediatric patient groups they would consider testing for HIV. These groups are in line with the UK National Guidelines as those likely to be at risk of HIV infection.

Paediatric patient group	Respondents who would offer a test
Infants born to mothers who have **refused** an **HIV test in pregnancy**	38 %
Infants and children who are presented for **fostering/ adoption** where there is any risk of **blood-borne infections**	82 %
Infants and children **newly arrived in the UK** from high-prevalence areas	72 %
Infants and children with **signs** and **symptoms** highly associated with an HIV diagnosis, for example aseptic meningitis	86 %
Infants and children being **screened** for a **suspected immunodeficiency**	85 %
Infants and children in cases where there has been **sexual abuse**	73 %
None of the above	1 %

Table 1 – The patient groups which clinicians would offer HIV testing [Groups derived from the criteria recommended in the UK national guidelines]
Conclusion: The results suggest that acceptability to test children at risk of HIV within general and non-ID paediatrics is favourable (on average 63% of respondents would offer testing). Disappointingly one patient group included in the Children's HIV Association (CHIVA) standard of care were least likely to be tested; these were infants born to mothers who refused an HIV test during pregnancy. It is clear that paediatricians must remain vigilant to infants who could be at risk regardless of the aetiological derivative and the widespread HIV stigma. Greater awareness of National Guidelines and standards may contribute to improved rates of HIV testing.

P262

Making a case for supplementary NAAT testing with a different target

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Background: The 2012 BASHH guidelines state that in most GUM clinics positive NAAT results from genital specimens should be regarded as evidence of gonorrhoea. The testing algorithm in the lab utilises the Roche Amplicor PCR platform without a supplementary test with a different nucleic acid target. Data on positive GC cases were analysed to support a case for supplementary testing.
Methods: Data was extracted on all positive GC results received from the CPA accredited lab including type and site of tests done within a seven-month period from April-October 2013. Further demographic information was then extracted from notes in cases where patients had both GC culture and PCR performed.
Results: Within the period there were 176 positive GC cases. 108 (68.8%) of these only had a culture taken so were excluded from further analysis. 55 (31.2%) cases had both a PCR and culture done. Of these 31 (56.4%) had a positive culture and PCR and were included in the analysis. There was no case (0%) with a positive culture and negative PCR. 24 (43.6%) cases had a positive PCR and negative culture. 9 cases were included for analysis after exclusion of 12 (50.0%) cases that had been treated with potentially GC susceptible antibiotics between the PCR test and culture, 2 (8.3%) cases from rectal specimens and 1 (4.1%) case which had no culture specimen.

Comparison data: Table 1.

PCR POS	Culture NEG	Culture POS	
Female Gender	8 (88.9%)	18 (58.1%)	p=0.09
Any symptoms present	2 (22.2%)	20 (64.5%)	p=0.03
White Ethnicity	9 (100%)	28 (90.3%)	p=0.4
Mean Age (range)	23 (17-23) yrs	23 (16-46) yrs	p=0.31
Mean days btw tests (range)	12.2 (7-21)	10.2 (0-26)	p=0.13

Discussion: Use of culture for testing may miss a high percentage of positive gonorrhoea cases, however increased testing of asymptomatic low prevalence populations in GUM settings may increase the false positive rate of NAAT testing. Contamination, undocumented antibiotic use from other sources and sampling error may also influence results. The difficulty in determining if cases were false positives or culture failures means the clinic-testing algorithm needs to be re-evaluated and supplementary tests with a different NAAT target implemented to confirm positive cases.

P263

The forgotten demographic: **Chlamydia trachomatis** testing behaviour in older age groups

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Background: Since 2008, the National Chlamydia Screening Programme (NCSP) has resulted in increased testing for *Chlamydia trachomatis* in 15-to-24-year-olds. However, the potential effect of increased testing in the older ages, due to greater awareness of Chlamydia, has not been documented. Before 2012, Chlamydia testing in those aged >24 years was recorded nationally only in the Genitourinary Medicine Clinic Activity Dataset (GUMCAD). While NCSP does not test those aged >24 years, this age group also has a burden of infection and contributes to transmission.
Methods: We used GUMCAD data for 2008-2012 to study trends in Chlamydia testing in those aged 25-44, and data from the Chlamydia Testing Activity Data set (CTAD) for 2012 to quantify testing outside of GUM. GUMCAD and CTAD record age, sex and postcode of the individual tested, with test venue an additional field in CTAD. The annual number of tests per head of population ("coverage", at Local Authority level), was calculated for males and females aged 25-44, with logistic regression used to test for a significant increase in testing. To assess if there is a significant amount of testing occurring outside GUM, coverage calculated from CTAD for 2012 was compared with that from GUMCAD using a logistic general linear model with gender (male and female) and age class (25-29, 30-34, 35-44 years) as explanatory variables.
Results: There was a general increase over time in testing in GUM in older age groups and particularly from 2008-2011 (Table 1). Furthermore, there were significant levels of testing in older ages (25-44 years) outside GUM, particularly for females (Logistic GLM $t=13.821_{5,3402}$, $p < 0.0001$).

Table 1: Logistic regression analysis of GUMCAD coverage using year as an explanatory variable and 2008 as the reference year

	Factor	Odds Ratio	95% CI	Chi^2	p-value
Year:	2009	1.489	1.140-1.953	8.4	<0.005
	2010	1.560	1.197-2.042	10.7	<0.005
	2011	1.695	1.306-2.212	15.4	<0.0001
	2012	1.396	1.065-1.837	5.8	<0.05

Conclusion: There is sizeable amount of Chlamydia testing in those aged >24 years. Furthermore, a significant proportion of this population, particularly females, are testing outside GUM, and these data have been poorly surveyed in the past. The introduction of CTAD is timely and will allow this demographic group to be captured by surveillance efforts so that a more-thorough analysis of chlamydia transmission dynamics will be possible.

P264

SPIT (Saliva Patient Initiated Testing for HIV) Study: Feasibility and acceptability of repeat home-based HIV saliva testing using self-sampling amongst men who have sex with men

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Background: The high infectiousness of acute HIV infection amongst men unaware of their status contributes disproportionately to onwards transmission. In an attempt to reduce new infections amongst high risk MSM, frequent repeat HIV testing is encouraged. We assessed the feasibility and acceptability of offering oral self-sampling to high risk MSM in an open one year prospective study.
Methods: 50 HIV negative men attending a specialist clinic for young MSM in London were recruited between May and December 2012. Eligible participants were given 6 Orasure sampling kits and trained to self-swab and return samples via post. Test results were delivered via patient chosen method. A questionnaire was completed at enrolment and at 12 months. Data collected included participant demographics, HIV testing and sexual risk characteristics. The primary outcome was the number of HIV tests taken during the study period. An analysis of HIV testing frequency and sexual risk behaviour was undertaken. Change in HIV test frequency in the study year compared to the year before recruitment was assessed using a paired sample dependent t-test. Differences were considered significant if p value <0.05.
Results: 35/50 participants did not send in any swab samples over the study period. Of the 15 who did send in a swab, 10 sent in 1, 4 sent in 2 and 1 sent in 4 swabs. Nine participants were lost to follow-up, and 1 man seroconverted to HIV; he had not sent in any swabs and tested positive through clinic attendance. Of the remaining 41 participants, 40 tested for HIV at least once during the study period, with a median of 2 (IQR: 1-3) tests, which was significantly higher than the testing seen in this group in the year prior to recruitment (1, IQR: 1-2, p=0.04). There were no significant changes in sexual risk behaviour. Number of sexual partners in the previous three months remained unchanged and eleven men (26.8%) had at least 1 STI diagnosis over the study period, a similar proportion to the pre-study period.
Conclusion: There was poor uptake of self-sampling for HIV testing, although the group did show a significant increase in HIV testing compared to baseline. Exploring perceptions of self-sampling in this group may help explain the lack of uptake of this testing approach.
[BHIVA Research Awards winner 2011: Sarah Fidler]

P265

HIV testing in the ED is effective and sustainable

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Background: There is little UK data on effectiveness, sustainability and cost of HIV testing programmes. In 2011 we introduced a routine HIV testing service for patients aged 16-65 attending the Emergency Department (ED). We evaluated the effectiveness of quality improvement (QI) interventions to improve testing rates, sustainability and cost.
Methods: Throughout 2013 data was collected on ED attendances, HIV testing rates, test requesters, test outcomes and transfer to care (including CD4 and RITA results). Utilising QI methodology a cross specialty team designed and reviewed interventions and outcomes weekly. Interventions included: including nurses offering the test, HIV serology added to doctors' and nurses' common request set, local champions, staff badges promoting testing, weekly top tester award, newsletters with patient stories and personalised feedback on testing rates. Cost data included laboratory and equipment costs and staff time (ED and GU).
Results: Testing rates increased significantly from 16% to 33% (peak of 50%). Statistical process control showed sustained increases following several of the interventions. Of the 30 reactive HIV tests, 19 were new (0.3%). The remainder were: 1 patient chose to attend elsewhere, 5 known positives, 2 weakly reactives confirmed negative and 3 were not contactable (2 overseas visitors). Of the 19 all transferred to care; median CD4 count was 353 cells/uL (range18-1161). Eight patients (42%) were likely to have recently acquired their infection. The pre-confirmatory cost per new HIV diagnosis was £1663.63 for laboratory and equipment costs alone, £1886.31 with the addition of ED staff testing time and £2035.26 when adding the implementation team's time. Opportunity costs were estimated as minimal, however coverage fell when surrogate ED performance measures indicated it was busy.
Conclusion: Routine HIV testing in an ED is feasible and effective. QI methodology was successful in producing a sustained increase in testing. However given the increased number of diagnoses with increased coverage (suggesting lack of targeted testing) further sustained improvement is required, and is likely to result in more diagnoses. Maintaining a consistent high level of testing in a department with many transient staff and competing pressures continues to be a challenge, however this programme is likely to be highly cost effective and therefore worth significant investment to improve coverage and support sustainability.

P266

Testing for rectal gonorrhoea in men who have sex with men: can we better target cultures?

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Background: Antibiotic resistance in gonorrhoea (GC) is rising worldwide, particularly amongst men who have sex with men (MSM). In our own large urban integrated sexual health unit we have continued to attempt culture for rectal GC in all men disclosing receptive anal sex, while relying on nucleic acid amplification testing (NAAT) for primary diagnosis. We wanted to see if we could better target culture testing while maintaining adequate surveillance.
Methods: We conducted a retrospective case control study among MSM who underwent rectal GC culture at any of our services during the calendar year 2012. A case was defined as a patient with confirmed isolate of *Neisseria gonorroheae* on rectal sampling. Controls were selected as the next two patients negative for rectal GC by culture, irrespective of the result of any other GC cultures or NAAT (Abbott RealTime PCR). We identified how many rectal GC cultures were conducted and how many of those were positive. Clinical and demographic data were then extracted.
Results: In total 1703 rectal GC cultures were undertaken, of which 53 (3.1%) were positive. Cases were younger than controls (27.6 years vs 31.9 years, p=0.018). All cases were positive for GC by NAAT. Among cases, 22 (41.5%) had rectal symptoms, and 27 (50.9%) reported recent GC exposure. Among controls, just five (4.7%, 95% CI 0.67% to 8.73%) reported symptoms and four (3.8%, 95% CI 0.16% to 7.44%) reported GC exposure. Overall 39 (73.6%) of the cases had rectal symptoms and/or were a contact of GC, in contrast to seven (6.6%, 95% CI 1.87% to 11.33%) of the controls. In the same time period, 2044 rectal GC NAAT tests were taken of which 140 (6.4%) were positive.
Conclusion: A rectal isolate was only obtained in around 40% of NAAT positive cases. In 2012, limiting rectal culture test only to MSM with rectal symptoms and/or recent GC contact would have yielded nearly three-quarters of the positive cultures we obtained. If culture tests are omitted at first visit, reactive testing can also be done in those positive by NAAT. Just 7% of MSM attending the clinic would be eligible for initial GC culture, reducing culture

tests to around 180 from 1700, while maintaining reasonable antibiotic surveillance.

P267

Sexually transmitted infection (STI) screening in an inner London HIV outpatient unit: positivity, partner notification (PN), and public health

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Background: HIV positive individuals with acute STIs are more likely to transmit HIV during sex. Within the UK in 2012, 20% of new HIV diagnoses had concurrent acute STIs. Asymptomatic sexual health screening (SHS) should form part of the routine HIV care. PN of STIs may help reduce numbers of those with undiagnosed HIV.
Aims:
1 Determine characteristics and prevalence of positive STI in asymptomatic.
2 Evaluate HIV transmission risk based on the level of HIV viraemia.
3 Examine the time to treatment and partner notification (PN) for STIs diagnosed.
Method: Retrospective audit of asymptomatic STI screens done in the HIV outpatient clinic in the first quarter of 2013. Comparison made with asymptomatic screens done in local GUM clinic. Data was sought from clinic database.
Results: 352 STI screens where performed. There were 58 (16.5%) positive infections in 53 HIV infected patients. Local GUM clinic data from asymptomatic screening shows an infection rate of 6% by comparison (P<0001). Of positive STIs in the HIV clinic:

- 87.9% (51) were diagnosed in men having sex with men (MSM)
- 55.2% (37) were rectal
- 48.3% (28) were chlamydia, 39.7% (23) were gonorrhoea and 12.1% (7) were syphilis.
- PN was initiated in 78% (45), and completed in 64% (37).
- 56.9% (33) of patients with STIs had a detectable HIV viraemia
- STIs diagnosed on separate occasions indicated 65.5% (38) with a VL of <1,000 and non-detectable, 8.6% (5) VL <10,000, 10.3% (6) VL <100,000 and 15.5% (9) VL >100,000.
- STIs took an average of 8 (7-10) days to diagnoses and 16 (9-19) days to treat.

Conclusion: Rates of STIs among HIV positive asymptomatic screens is significantly higher than rates seen in local GUM clinics over the same time period. Most infections occurred in MSM, in the rectum, and in those with detectable viraemia. Although HIV positive MSM may be sero-sorting, we must consider the risk of onward HIV transmission. PN is often incomplete, a missed opportunity for STI treatment and crucially a chance to reduce the pool of undiagnosed HIV infections. Resources must be allocated to improve PN in those group, and consideration given to early HAART in those with STIs who are at risk of transmitting HIV to their partners.

P268

An audit of HIV testing in acute medical patients with HIV clinical indicator conditions: are guidelines being ignored?

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Background: National guidelines state HIV testing should be considered in all general medical admissions and routinely recommended to those patients presenting with certain HIV clinical indicator conditions. A delay in diagnosis has significant impact on morbidity and mortality: up to a third of all HIV-related deaths are a consequence of late diagnosis. A retrospective audit was performed in a busy London Trust to assess rates of testing in acute medical patients comparing adherence to local guidelines over 2 time periods.
Methods: Retrospective data analysis was performed using electronic records of patients admitted with 1 of 6 clinical indicator conditions for HIV infection, generated by ICD-10 coding. Data was collected for all patients admitted to the Trust medical division within two discrete time periods (January 2012 and January 2013). Data collected included demographics (age, gender), clinical indicator condition, whether HIV test had been performed during admission (and result) and whether an HIV test was performed in the 2 years preceding admission.
Results: There were 1153 (676 (Jan 2012); 477 (Jan 2013)) patients admitted and coded as having one of the 6clinical indicator conditions. Average age overall was 67.9 years (range 17 – 10 years). There were 607 females (51%) and 546 males (49%). Demographics will be presented in full.

	January 2012		January 2013	
Indication for HIV Test	No. tested/No. admitted	%	No. tested/No. admitted	%
Hepatitis (B or C)	10/39	26%	7/41	17%
Bacterial pneumonia	41/289	14%	44/311	14%
Aseptic meningitis & encephalitis	2/7	29%	4/11	36%
Nonspecific gastroenteritis & colitis	16/165	10%	2/16	13%
Blood dyscrasia	17/126	13%	18/105	17%
Pyrexia of unknown origin	12/50	24%	12/33	36%
Total	98/676	14%	87/477	18%

Of note, 2.2% (4/185) of all patients tested received a positive test result and thus first diagnosis of HIV. 145/968 (15%) of patients not tested in the defined periods had been tested in the previous 2 years.
Conclusion: Our audit reveals that HIV testing rates in this large London Trust are low. Overall, rates for patients presenting with the specified clinical indicator conditions increased from only 14% in January 2012 to 18% in January 2013 despite a number of initiatives within the Trust to increase awareness around HIV testing. The high prevalence of HIV positive results despite low testing rates demonstrates the need for urgent novel interventions to improve offer and uptake, particularly of targeted testing.

P269

Is offering STI & HIV self-sampling kits to men who have sex with men (MSM) in a London sauna a feasible and acceptable way to widen access to testing?

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Background: Diagnoses of bacterial STIs and HIV in MSM in England continue to rise and around 20% of MSM with HIV are unaware of their diagnosis. Novel ways of offering testing could be important in controlling infection if uptake is sufficient. Self-sampling might be acceptable to some men, particularly those who find traditional services unappealing. We implemented a pilot sauna-based, self-sampling STI screening service for MSM to explore the feasibility and acceptability of this approach as a model for increasing access to testing.
Methods: Sauna cashiers were asked to offer a specially designed self-sampling kit, (Oraquick mouth HIV swab, a urine collection kit and pharyngeal and rectal swabs for *Chlamydia trachomatis* and *Neisseria gonorrhoee* nucleic acid amplification tests), to every man attending the sauna over a five week period until 150 kits were distributed. Men could either return completed kits to a secure collection bin on site, or mail them back to the laboratory. We determined kit uptake; return rate; previous testing history; adequacy of samples returned; infections diagnosed; clinical follow up of men testing positive.
Results: An estimated 10600 men attended the sauna over the 5 week period, and 150 test kits were distributed. Fifteen (10%) completed kits were returned by ten different men (median = 46 years). Eight kits were posted back and seven left on site. One man had never previously tested for STIs and HIV. All returned kits contained adequate samples from all sites, apart from one unprocessable pharyngeal sample. No bacterial STIs were detected. One Oraquick test was reactive with confirmed positive serology in a man who already knew he was HIV positive.
Conclusion: Uptake of kits and return rate was low despite daily contact with sauna staff from the clinical team. No new infections were diagnosed and we did not reach previously untested men. Kit completion was excellent and men

were contactable for clinical follow up. As the health care costs associated with undiagnosed HIV are so high it is possible that even finding a small number of new HIV infections could justify this approach. Nonetheless, further work with staff and service users, needs to explore the reasons for low uptake, distribution of kits, and to determine health care cost savings.

P270

Gonorrhoea test-of-cure – can we improve?

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Background: Current BASHH Guidelines for Gonorrhoea (GC) testing recommend offering test of cure (TOC) as part of the routine follow-up for all patients who test positive for GC at two weeks after completion of treatment to identify emerging resistance. The auditable standard is 100%. It was noted within our service that 'did not attend' (DNA) rates for these TOC appointments are especially high amongst heterosexual men. The aim of this service evaluation was to determine the DNA rate and devise a pathway aimed at improving service delivery and reducing DNA rates.
Methods: 100 notes of male patients who attended the clinic in 2012 with SHHAPT code 'B' were reviewed. Of these 9 notes were incorrectly coded; the patients did not have GC. Of the remaining 91 notes data collection included: demographics, site of GC infection, GC culture & NAAT results, co-infections, partner notification (PN), reasons for incomplete PN and whether TOC occurred.
Results: Table below

	Had TOC N (%)	DNA TOC N (%)	Urethral (U) GC N (%)	Extragenital infection N (%)
Heterosexual	21(40.4)	31(59.6)	52 (100)	0
MSM	23 (59.1)	16 (40.9)	25 (64.1)	14(35.9)

Conclusion: The majority of heterosexual men and a large proportion of MSM DNA their TOC appointments which is a waste of financial resources for the GUM service - both in unused appointment time and in staff resources used in attempts to recall these patients. In both groups urethra was the most commonly infected site. We recommend that due to high risk MSM patients should continue to be booked for TOC; in addition our postal kits only cater for vulvo-vaginal or urine specimens so are not appropriate for extra-genital sampling. As a result of this service evaluation we are now piloting offering heterosexual male patients a postal self-testing kit for their GC TOC follow-up along with telephone compliance check and PN review. We are hoping this will prove cost-effective by reducing DNA rates and improving uptake of GC TOCs in this population.

P271

A case series of ocular syphilis in heterosexual men

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Background: Since the late 1990s, early infectious syphilis has become re-established in several large UK cities. One of the most important manifestations of syphilis is ocular disease, with syphilis infection able to result in damage to any part of the eye and cranial nerves. Here we discuss 3 cases presenting within a six week period to our regional eye hospital. Whilst most of the cases of early syphilis presently diagnosed are in men who have sex with men, all of these cases were in men reporting only female partners. All cases were treated with oral prednisolone, then procaine penicillin and probenecid for 17 days.
Case 1: A 33 year old man presented with rapid onset of visual loss in the right eye. He had pre-existing poor vision in the left eye following an accident. He was found to have uveitis and his RPR was positive, titre >1:128 and his HIV test was also positive.
Case 2: A 53 year old man presented with rapid onset of visual loss in the left eye and on examination was found to have uveitis and acute zonal occult outer retinopathy. His RPR was strongly positive; titre >1:128 and his HIV test was negative.
Case 3: A 75 year old man presented with progressive visual loss in his right eye over a few days and at diagnosis was able to detect only gross movement and light. He was noted to have uveitis and chorioretinitis. His syphilis serology was positive with an RPR titre of >1:128 and his HIV test was negative.
Conclusion: Genitourinary physicians remain vigilant to ocular presentations of syphilis; however all of these cases were referred on from our ophthalmology colleagues who correctly considered syphilis in their differential diagnoses. It was notable that all these cases were of early infectious disease in heterosexual men presenting within 6 weeks of each other, one of whom tested HIV positive. These cases remind us of the importance of considering syphilis as a possible diagnosis for inflammatory ocular disease in all cases, even those considered low risk such as older heterosexual men.

P272

Dental effects of the 'second coming' on HIV testing

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Background: HIV infections continue to rise yearly despite publicity campaigns for both the public and health professionals. The benefits of early diagnosis are undeniable for both the individual and society in reducing new infections, morbidity and mortality. Many HIV positive patients present to other healthcare professionals in the years prior to diagnosis but opportunities for testing continue to be missed. Grand rounds target large groups of non HIV clinicians but do not appear to change behaviour. We developed a bespoke training programme for a dental hospital to target a non-traditional area of HIV presentation.
Methods: An interactive teaching presentation focussing on oral and dental presentations of HIV was developed. Referral pathways and support systems were emphasised for those with positive test results to reduce the anxiety of delivering a positive test result. The teaching session was delivered to a selected group of trainees and technicians in late April 2013. The number HIV tests requested before and after the teaching was assessed. A second presentation was given detailing the impact of the first session to the specialists. The number of HIV tests requested were then re-assessed following the second visit.
Results: Following the first session, there was a clear increase in the number of HIV tests carried out but this rise tailed off in subsequent months. At the second visit the results of the initial teaching on HIV tests performed was fed back.

Month	Teaching Intervention	No. Tests	No. Positive Tests
Nov 12	-	0	0
Dec 12	-	0	0
Jan 13	-	0	0
Feb 13	-	2	0
Mar 13	-	1	0
Apr 13	First teaching session	4	0
May 13	-	8	1
Jun 13	-	4	0
Jul 13	-	7	0
Aug 13	-	2	0
Sep 13	-	3	0
Oct 13	Follow up teaching	10	0

The remaining data on testing rates after the second visit is awaited but will be available for the meeting. The overall HIV positivity rate over the 12 month period was 2.4%
Conclusion: Bespoke teaching sessions relevant to clinical specialities appear to be an effective way to increase HIV testing. We have targeted a tertiary referral centre for dentistry with good effect. We intend rolling this programme out to dental hygienists and community dentists in the area who could send a standardised letter to the patient's GP advising appropriate tests including HIV testing.

We await final data on whether the programme has been successful in the long term to increase HIV testing in this setting. We aim to repeat this programme for other specialities in the near future and to evaluate and present these results.

P273

If it's good for the goose it's good for the gander: are we missing rectal Chlamydia trachomatis (CT) infection in women by performing selective screening?

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Background: BASHH guidelines recommend that all MSM who engage in receptive anal intercourse (RAI), are screened regardless of risk. There is little data on the prevalence of rectal CT in women and national guidelines do not advocate routine screening in those who report RAI. The aim of this study was to compare the prevalence of rectal CT amongst high and low risk women and to investigate whether rectal CT would have remained untreated if screening had focussed on purely high risk individuals.
Methods: The patient records of women undergoing rectal screening for CT between Nov 2012 and Oct 2013 were reviewed retrospectively. Demographics, symptoms, condom use, indication for testing, CT results and treatment were entered into excel. We defined high risk as anal symptoms, sex work (SW) or sexual assault (SA). Samples taken for test of cure were excluded.
Results: 96 results have been analysed so far: the median age was 27.4 years (range 16-63). Condom use specifically for RAI was documented in 73 cases; 8 always used a condom, 66 sometimes/never. The indications for testing were: symptoms 10, SW 1, SA 20 and other/none 67. Rectal CT prevalence in high risk women was 4/29(13.8%) and 2/67(3.0%) in low risk women. 4/6(66.7%) had concurrent genital CT but 2/6(33.3%) had isolated rectal infection: both were SA, one of whom had vaginal and anal penetration. 2 cases were initially treated with azithromycin but subsequently re-treated with doxycycline once the rectal CT result was known.
Conclusion: The prevalence of rectal CT was very high amongst high risk individuals, but even amongst those with no definite indication for screening, the prevalence was 3%. Consistent condom use was unexpectedly low. Had strict selective screening taken place, 2 cases of rectal CT would have been missed, although both patients would have received azithromycin which could be considered suboptimal treatment due to a higher failure rate than doxycycline. The case of isolated rectal CT despite both vaginal and anal exposure demonstrates that rectal CT can be missed if women only undergo screening via genital sampling. We recommend that if women reporting RAI receive treatment for CT that doxycycline should be preferentially used and given the moderately high prevalence of CT even in low risk women, combined with the risk of isolated rectal CT, all women having RAI may well benefit from rectal screening. Further data and statistical analysis will be presented at the conference.

P274

Getting results: are HIV results being followed up?

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Background: Clear guidance on appropriate communication of HIV results and subsequent referral for treatment is of growing importance. This study examines all non-negative HIV tests taken in a large teaching hospital over a six year period. Location of HIV test request and communication and follow up of test results were reviewed.
Methods: Data for all patients with positive, equivocal, and other inconclusive HIV results (e.g. insufficient or incorrectly labelled) from 1/1/07-31/12/12 were generated by the hospital Virology service. Data was collected using a standardised, electronic proforma. All patients with at least one CD4 or HIV viral load result, on a date after the original HIV test result, were regarded as informed and followed up by the hospital. Paper notes were accessed for the remaining patients to determine if the result had been communicated and followed up.
Results: 1258 patients had a non-negative test result requested by a hospital department. 132/1258 subsequently tested HIV negative. Of the remaining patients 1075/1126 (95%) tested positive for HIV. In 5% of cases, results were either equivocal, or the sample was insufficient or incorrectly labeled. The majority of tests were carried out in the GUM clinic 675/1126 (60%), 312/1126 (28%) were carried out as Inpatients. 47/1126 as Outpatients, 43/1126 in ANC, 36/1126 in A&E and 13/1126 in Occupational Health. The majority (995/1126; 88%) of patients were informed and followed up by the hospital with 29/1126 being aware of their HIV status before taking the test. 5/1126 (0.4%) were informed of a positive result but did not return to the hospital and are not known to have been followed up elsewhere. 2/1126 (0.2%) had a HIV positive result but could not be contacted. In a further 2/1126 (0.2%) follow up is ongoing. All 4 patients had been tested in the GUM clinic. Other losses to follow up include 5/1126 (0.4%) who left the country, 3/1126 (0.3%) who disengaged from care and 2/1126 (0.2%) who died shortly after diagnosis. 20/1126 (2%) had an equivocal result that was not repeated and 17/1126 (2%) had an insufficient sample which was not repeated.
Conclusion: The majority of patients had their HIV test result communicated to them and were followed up appropriately regardless of location of testing. Clear guidelines on communication and follow up of non-negative HIV test results are needed, particularly where tests are equivocal or blood samples are insufficient or mislabelled.

P275

Can visible anogenital warts be used as a surrogate marker of recent (3 months) HIV-related high-risk sexual behaviour?

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Background: Ano-genital warts (AGW) in men who have sex with men (MSM) are common and may be a risk factor for HIV acquisition. We explored the feasibility of using visible measuring external AGW to identify MSM at high risk of HIV acquisition in Lima, Peru.
Methods: 600 MSM (300 with AGW) were recruited between 4/2012 and 2/2013 from a community-based setting in Lima, Peru in a prospective cohort study to examine the effect of AGW on incident HIV infection. Participants completed a self-administered questionnaire on sexual behaviour, and underwent physical examination. Here we report on the base line survey. Logistic regression was used to assess the association between sexual behaviour and AGW.
Results: The median age of study participants was 24 years, with 83.8% reporting sex exclusively with men, and 47.9% self-identifying as gay. During the past three months, 70% of participants had at least one episode of anal sex without a condom, and nearly half reported current STI symptoms (41.2%) including burning while urinating, penile lesions, genital warts, and anal lesions. Upon physical exam, the majority of AGW were limited to anal only (60%). A first experience of anal sex at age 19 years or older (aOR=2.9, 95%CI 1.5-5.6) and self-reporting of current STI symptoms (aOR=3.4, 95%CI 2.2-5.1) were associated with prevalent AGW. Those who reported receptive role during anal sex were less likely to have AGW (aOR=0.55, 95%CI 0.35-0.89). An upwards trend for increased AGW risk was identified with an increasing number of episodes of unprotected anal sex, albeit not significantly (p=0.4).
Conclusions: Prevalence of AGW was associated with later age at first anal sex, and STI symptoms. Further research should examine the apparent protective role of receptive anal sex against AGW, with a larger sample size. Objective tools to measure HIV-risk behaviors are needed, and STI co-infection including HPV related manifestations may be a good proxy.

P276

Confirmatory tests for oropharyngeal gonorrhoea in GUM clinics

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Background: Nucleic acid amplification tests (NAATs) with culture form the basis of gonorrhoea (GC) testing in the UK. BASHH recommends NAATs for

oropharyngeal GC with confirmatory testing on a different nucleic acid target. In this study, BD Viper NAATs and GC culture were performed on men who have sex with men (MSM) and other high risk groups. Reactive NAATs were further tested at the Reference Laboratory using PorA pseudogene and Opa gene as targets.
Objective: To analyse the performance of BD Viper NAAT for oropharyngeal GC in our patient population and to develop a confirmatory algorithm.
Method: Retrospective notes review of all reactive oropharyngeal GC NAATs from August-October 2013. Data on clinical presentation, tests, co-infections and treatment was collected. Confirmed positive was defined as culture positive and/or ≥2 NAAT targets positive.
Results: Of 1073 oropharyngeal samples, 126 from 123 patients (12%) were positive by BD Viper NAAT-113 (92%) MSM, 10 (8%) female commercial sex workers (mean age 33 and 29 respectively). 23% (28/123) were previously infected with GC and 12% (15/123) co-infected with HIV. Of the 126 initial NAAT positive samples, 42 (33%) were confirmed as positive, 75 (60%) unconfirmed, 7 (5.5%) insufficient and 2 (1.6%) inhibitory. One patient had positive GC pharyngeal culture but negative NAAT. Of the patients with confirmed positives, 15/42 (36%) had GC detected in oropharynx only; 27 (64%) had GC at other sites (11/42 (26%) urethral; 8/42 (19%) rectal; 7/42 (17%) urethral and rectal). 93% (39/42) had pharyngeal GC culture performed but only 8% (3/39) were positive. 52% (22/42) were treated on initial visit and 48% received treatment on average 11 days from testing. Of 73 patients with unconfirmed results, 26% (19/73) had GC detected at other sites (8/73 (11%) urethral, 11/73 (15%) rectal; 2/73 (3%) urethral and rectal). 17% were treated on initial visit; 6% treated despite negative confirmatory tests. Overall, the performance of BD Viper NAAT for oropharyngeal GC has a sensitivity of 97.7%; specificity of 92.7%; positive predictive value of 35.9% and negative predictive value of 99.9%.
Conclusion: Our data show that oropharyngeal GC culture alone would have missed 92% of positive diagnoses. Conversely, 59% of patients would have been over treated if NAATs were not further confirmed. Rationalising confirmatory tests where GC is not isolated from other sites would improve the cost effectiveness of the testing algorithm.

P277

Targeted hepatitis C screening: re-audit and cost analysis

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Background: Targeted rather than universal screening for Hepatitis C (HCV) is recommended in sexual health. A series of audits with interventions were undertaken in our service to improve adherence to recommended national BASHH clinical guidelines. An initial audit in 2011 observed inappropriate over screening within the sexual health department, yet some groups such as ex-prisoners were overlooked. Subsequently new departmental guidance was introduced outlining criteria for screening based on BASHH guidance, with staff education. In 2012 a re-audit demonstrated greater, but not complete, adherence to guidance and cost savings. A new electronic record proforma was then developed with risk factors and prompts for hepatitis screening .This further re-audit assesses the impact of the electronic proforma on HCV screening.
Method: 100 patient records were reviewed from 01/04/2013. Risk factors and screening for HCV according to guidance were documented. Cost analysis was based on a HCV Antibody screening test cost of £12.95 and on 7024 first attendees in 2012.
Results: 25 had an identifiable risk for screening, 7 had more than one risk identified.
National BASHH standard; 90% of those with identifiable risk should be tested for HCV (91% achieved compared with 84% in 2012 & 71% in 2011).
Local Standards; Risk assessment completed in 100% of all first attendees (99% achieved, but 22% not asked about history of sexual assault / abuse). 100% screening for HCV should be due to identifiable risk (99% achieved compared with 92.3% 2012)
Other findings; 91% consented to screening bloods (68% 2012, 62% 2011). 53% had appropriate bloods taken without HCV (43% 2012, 28% 2011). 22% had appropriate bloods taken with HCV screening (16% 2012, 24% 2011). 2.2% had bloods taken, but a missed opportunity for HCV screening (4.3% 2012, 15.8% 2011). 1% had HCV screening with no risk identified (6% 2012, 1% 2011).
Estimated cost savings of £10,006 per year compared to previous clinical practice in 2011 and £61,854 compared with universal screening.
Conclusion: Introduction of the new proforma had reduced inappropriate testing and missed opportunities for testing and uptake of blood screening had improved. We plan to provide educational session on enquiring about previous sexual abuse and assault with notes review following this to assess impact on documentation.

P278

HIV testing in patients with cervical intraepithelial neoplasia grade 2 and above: a clinical indicator disease

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Background: Cervical intraepithelial neoplasia grade 2 and above (CIN2+) was designated a clinical indicator disease in 2008 by the British HIV Association (BHIVA), the British Association of Sexual Health and HIV (BASHH) and the British Infection Society. Until recently HIV testing had not been recommended by the British Society for Colposcopy and Cervical Pathology (BSCCP) due to a number of concerns including potential workload implications and the possibility of deterring some women from attending. We sought to determine what proportion of patients with CIN2+ attending a large urban integrated sexual health unit were offered or had already been tested for HIV.
Methods: The Scottish National Clinical Colposcopy Information Audit System was used to identify all patients with CIN2+ attending the colposcopy service of an integrated sexual health unit over a 1 year time period from 1st July 2012 to 30th June 2013. The patient's National Sexual Health (NaSH) record was reviewed to establish the most recent HIV test at the service prior to their attendance for colposcopy.
Results: CIN2+ was found in 98 of 393 women attending colposcopy. Of these: Four were known to be HIV positive. Of the remaining 94; 34 (36%) had already been tested for HIV in the last 3 years, 34 (36%) had been offered and declined an HIV test, and 26 (28%) did not been appear to have been offered a test at any stage. All tests had been offered or undertaken as a part of a sexual health screen prior to colposcopy.
Table 1 shows the breakdown of the time intervals between colposcopy appointments and the patients' most recent HIV test.

Table 1.

At colposcopy	0-4 weeks	4-12 weeks	12-52 weeks	1-2 years	2-3 years
1	1	11	18	1	2

Of those patients that declined tests 18 gave reasons including a fear of needles, claims to be tested elsewhere, and deeming themselves at low risk.
Conclusion: Under 40% of eligible patients managed for high-grade CIN in our integrated sexual health unit have been tested for HIV, with a high proportion having declined an offered test prior to colposcopy. HIV testing was rarely undertaken at the time of colposcopy. We need to improve on uptake of HIV testing for this client group; we support the recent BSCCP statement of providing information to all colposcopy patients regarding HIV testing but in our unit are keen to adopt a more robust targeted approach where clients diagnosed with CIN2+ are given specific information and recalled for testing. We plan to trial this approach.

P279

Abstract withdrawn

P280

Awareness of national HIV testing guidelines amongst paediatricians

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Background: This project aimed to evaluate the awareness of several UK National Guidelines for HIV Testing amongst paediatricians. The importance of early detection of HIV infection is to prevent the presentation of infants and children with advanced HIV disease. It is recommend that clinicians have a high index of suspicion for children who could be identified as being at risk thus the awareness of current related guidelines was assessed.
Methods: A questionnaire was sent to 205 clinicians working within general or specialist paediatrics. Questions included an analysis of clinician demographics and their awareness of current guidelines associated with HIV testing of children.
Results: Respondents were mostly female (60%) and were at consultant level (63%). The majority of respondents worked within general paediatrics (66%), the remaining being speciality paediatricians (33%) and infectious diseases clinicians (1%).

Table 1 - The proportion of clinicians who were aware of the publication of guidelines related to HIV testing in children.

Guideline	Percentage of respondents
UK National guidelines for HIV testing	60%
Don't forget the Children	18%
Guidelines for testing looked after children	35%
None of the above	33%

Conclusion: The results overall were disappointing. As many as 33% of paediatricians (63% of them consultants), who participated in this project were unaware of any of the three key guidelines for HIV testing of children and only 60% were aware of the UK National Guideline for HIV Testing 2008.
In order for guidelines to be integrated into clinical practice, clinicians must be willing to keep up to date evidence-based recommendations of such guidelines and be willing to adapt their clinical practice accordingly. This could be addressed through a number of techniques including schemes such as:

- Organising workshops to raise awareness of relevant Guidelines led by an infectious diseases specialist.
- Revalidation penalties or financial incentives based on adherence to current guidelines.

Those who participated were provided with links to the relevant guidelines and thus it may be inferred that the distribution of this questionnaire has contributed to increased awareness.

P281

A reduction in HIV late presenters in the North East – an impact of the BHIVA testing guidelines?

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Background: HIV prevalence in Newcastle is 1.75/1000 (2011) and previous audit data has shown late diagnosis to be a continuing problem. Late diagnosis is a major factor attributing to AIDS-related death as well as increasing onward transmission. This audit aims to assess the proportion of late diagnoses and previous missed opportunities for diagnosis in newly diagnosed HIV patients. This will demonstrate the impact of the 2008 BHIVA National Guidelines for HIV Testing.
Methods: A retrospective case note audit was completed in ID and GUM departments to determine the number of patients newly diagnosed with HIV in 2013. Baseline CD4, viral load, presence ofAIDS defining illnesses and previous indicator diseases using 2008 testing guidelines were documented. Patients with CD4<200 or AIDS at diagnosis were classed as having advanced disease. Data collected using the same methods from 2007-12 is included for comparison.
Results: In 2013, 13 patients (mean age 36, range 21-56) were diagnosed in ID and 17(mean age 34, range 17-52)in GUM. Of the 13 diagnosed in ID, 4 (31%) had advanced disease (mean age 43, range 30-56). Their median CD4 count was 36 (range 5-95). Of the 17 diagnosed in GUM, just one (6%) had advanced disease (aged 44), with a CD4 count of 134. Overall in 2013, 5 patients (17%) presented with advanced disease, compared with 23% in 2012 and 34% in 2011.
Conclusions: The reduction in patients presenting late from 34% to 17% in the last two years is reassuring and may be a consequence ofBHIVA 2008 testing guidelines. However, the proportion of patients with previous indicator diseases that should have prompted HIV testing was 33% (compared with 36% in 2012), showing there are still many missed opportunities for HIV testing.

P282

Outreach initiatives encourage HIV testing in hard-to-reach communities

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Background: In order to reduce the number of undiagnosed HIV infections in the UK, HIV testing should be available to people in a range of settings and community services can offer this in places that are more accessible and acceptable to patients than traditional healthcare settings. Naz Project London (NPL) began outreach testing for HIV with the aims of challenging key barriers such as HIV and homophobic stigma and discrimination.
Methods: Volunteers at NPL were trained to undertake rapid HIV testing along with pre- and post-test counselling. HIV testing has been offered in a variety of settings as part of testing campaigns and initiatives such as Latin American Stop HIV Campaign, National HIV testing Week and health and well-

	ID 2013	GUM 2013	ID 2012	GUM 2012	ID 2011	GUM 2011	ID 2010	GUM 2010	ID 2009	GUM 2009	ID 2008	GUM 2008	ID 2007	GUM 2007
New HIV Diagnosis	13	17	18	34	38	20	42	24	32	11	46	14	35	26
Advanced Disease %	31	6	39	15	50	5	52	5	53	27	59	21	63	31
Gender M:F %	77:23	88:12	78:22	97:3	76:24	90:10	67:33	95:5	72:28	100:0	54:46	79:21	57:43	81:19
MSM %	46	76	17	82	42	80	12	68	38	91	35	79	17	54
White British %	62	88	71	94	61	75	64	77	59	82	54	79	37	65
Black African %	0	12	29	3	21	15	31	4	34	18	43	14	49	15
Median CD4 Count at Diagnosis	357	459	246	506	187	501	195	389	188	347	169	419	159	388
CD4 Range at Diagnosis	5-572	134-885	11-900	39-979	0-955	15-894	0-1145	162-851	0-833	109-1019	4-1042	38-953	0-671	61-809
Previous Indicator Disease %	38	29	33	38	58	55	50	23	50	9	35	29	50	50
AIDS at or Prior to Presentation %	8	0	22	0	29	0	26	0	25	0	28	0	31	0

being fairs. Demographic data and reasons for testing and testing through NPL were collected.
Results: Over a 5 month period 114 men and 92 women travelling from 21 boroughs in London underwent rapid testing for HIV. 78% were heterosexual, 19% MSM and 2.4% bisexual. Median age was 35-44(range 18-65). Those testing represented diverse ethnic origins: Latin American 71.3%, South Asian 12.1%, Black African 3.9%, White 9.7%, Black Caribbean 1.5%, Mixed race 1.5%. 3/206 (1.5%) tested positive and all were confirmed with HIV Ag/Ab lab testing. Two individuals are engaged in care at HIV centres and continue to access support at NPL. One woman was visiting the UK when she tested and left the country shortly after. 54.8% had never accessed UK sexual health services before. 68.9% tested because they had had unprotected sex and believed themselves to be at risk of HIV. Reasons for accessing NPL rather than elsewhere: volunteer speaks native language, no appointment necessary, outreach setting accessible and access to other services such as counselling, casework, peer support groups.
Conclusion: The high HIV positivity rate seen and high number of people reported to have attended a sexual health clinic is of concern and a sobering reminder of the unmet need for HIV testing in community settings. Access to GUM clinics and also primary care is restricted for many because of language and cultural barriers, yet clients were prepared to travel across London to access this service. Trained NPL volunteers are of diverse ethnicities and have huge insight into the problems faced by these communities. They are therefore able to reach at-risk individuals and mobilise them for HIV testing in ways that traditional settings have often failed in the past.

P283

HIV testing in critical care – time for universal screening on admission?

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Background: There are currently no accepted national guidelines for HIV testing in the critical care setting. National guidance recommends universal testing in areas with HIV prevalence of greater than two per thousand in general medical admissions. In 2010 our hospital introduced such a testing strategy. Concern about capacity and consent are often raised by Critical Care physicians as patients often lack capacity on admission. Studies suggest similar outcomes in Critical Care of HIV positive patients compared to non-infected patients warranting early detection.
Methods: We audited all unplanned admissions to our tertiary critical care unit (CCU) over a four week period. We collected baseline demographic data and matched admitting diagnoses to the British HIV Association (BHIVA) indicator diseases for testing.
Results: Fifty-three patients were included of which five (9.4%) had social risk factors for HIV such as intravenous drug use or men who have sex with men. In addition 32% (18) of all unplanned admissions presented with a BHIVA indicator disease including 20% (10) presenting with respiratory indicator. However, out of the 23 tests indicated only 14 (60%) were carried out with an overall test rate of 20% of new admissions. One new diagnosis was made as a result of this testing giving a positivity rate of 7% per patients tested, 4.3% per indicated tests and 1.8% per total admissions. This patient survived to discharge from the CCU and then hospital after an early diagnosis of severe *pneumocystis* pneumonia (admitting diagnosis severe community acquired pneumonia). Three of the fourteen tests performed were on strong clinical suspicions of HIV and 4 in order to perform renal dialysis.
Conclusion: We plan to introduce universal testing on our Critical Care Unit and re-audit. Critical Care and Genitourinary specialists are currently working on guidance and pathways to ensure success.
Initial results suggest recommending universal testing for HIV on admission to Critical Care in areas with significant HIV prevalence to aid early diagnosis, effective management and so earlier discharge from Critical Care. Critical Care and HIV specialists should create guidance for staff to support decision making to test and act upon results

P284

Do patients adherent on PREP exposed to HIV have sero-conversion symptoms and falsely reactive HIV tests?

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Background: Truvada is licensed for use as pre-exposure prophylaxis (PrEP) for the reduction of HIV in the US. In the UK, PrEP is only widely available via enrolment to the PROUD study for men who have sex with men (MSM). Participants are randomised to immediate daily Truvada for two years or deferred Truvada for the last year only.
Case: Patient M presented to his local GUM clinic reporting a significant increase in unprotected passive anal intercourse in the previous 6 months. He was enrolled in the PROUD study and was randomised to the immediate Truvada. At baseline he had a HIV negative POCT and serum test. At his 3 month PROUD visit he was unwell complaining of flu like symptoms and malaise for 5 weeks; rectal pain, bleeding and constipation for 2 weeks and 8kg weight loss. He reported passive anal intercourse 8 weeks previously with several known HIV positive partners. An HIV POCT test was performed which was p24 Antigen and Antibody reactive (Determine HIV-1/2 Ag/Ab Combo). He also had rectal gonorrhoea. At this stage Patient M was advised to discontinue taking his Truvada immediately.
The following day, a serum HIV test collected on the same day as the reactive POCT was negative using the Abbott Architect Framework and confirmed by Biomerieux Vider. An HIV RNA (Abbott PCR) was <40 copies/ml. Samples taken on the same day as the reactive HIV POCT were analysed for Tenofovir and Emtricitabine levels and these were consistent with the patient's report of 100% adherence.
Conclusions: There are two possibilities: firstly that he was sufficiently exposed to HIV to have a positive Determine but PrEP prevented an established infection, or alternatively the Determine result was falsely reactive. The manufacturers report a false positive rate of 2/1623 for antibodies, but there is very little data on false positive for both p24 Antigen and Antibody together. Sensitivity of POCTs in seroconverting MSM is 96% compared to 98% for a 4th generation test. Confirmatory HIV testing in MSM on PrEP is needed to inform decisions about continued treatment.

P285

Socio-economic factors and late diagnosis of HIV in 2011–2013 in the Royal Free cohort

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Background: Late diagnosis of HIV in the UK continues to be a major problem, with 47% diagnosed with CD4<350 cells/μL in 2012. Little is known about the association with socio-economic factors.
Method: Data were collected from April 2011 via a patient registration form. Deprivation index (DI) was calculated using postcode. For 203 newly-diagnosed individuals, we assessed associations between socio-economic factors and late diagnosis (CD4<350 within 3 months of diagnosis).
Results: 92 (45%) were diagnosed with CD4 <350 (29% with CD4<200). Late diagnosis was associated with being female or heterosexual male, older age, black African ethnicity, not self-prompting for an HIV test and reporting non-UK infection ($p<0.1$). Late diagnosis tended to be higher among those with poorer housing and education status but there was no effect of employment or DI. All effects were largely explained by gender/acquisition and age, except for test-seeking behaviour (Table).

		N	CD4<350	Unadjusted OR	P*	~ aOR	P*
Gender/	MSM	101	30.7%	1	**.0002**	1	**.0007**
mode of	Other men	42	61.9%	3.7(1.7-7.8)		3.3(1.5-7.0)	
acquisition	Women	60	58.3%	3.2(1.6-6.1)		3.0(1.6-6.0)	
Age	<40 years	92	35.9%	1	**.0189**	1	**.0806**
	>40 years	111	53.2%	2.0(1.2-3.6)		1.8(1.0-3.2)	
Ethnicity	White	102	37.3%	1	**.0065**	1	.23
	Black African	55	63.6%	3.0(1.5-5.8)		1.9(0.8-4.5)	
	Other	46	41.3%	1.2(0.6-2.4)		1.0(0.5-2.1)	
Housing	Owner/rent	102	42.2%	1	.37	1	.73
	Other	42	54.8%	1.7(0.8-3.4)		1.0(0.4-2.2)	
Education	University	64	37.5%	1	.27	1	.48
	Other	64	51.6%	1.8(0.9-3.6)		1.2(0.6-2.6)	
Employme	Employed	116	42.2%	1	.44	1	.83
-nt	Unemployed	34	44.1%	1.1(0.5-2.3)		0.9(0.4-2.1)	
High DI	No	149	45.6%	1	.70	1	.76
	Yes	54	42.6%	0.9(0.5-1.7)		0.9(0.5-1.8	
HIV test	Self	81	30.9%	1	**.0035**	1	**.0852**
prompt by	Other	76	56.6%	2.9(1.5-5.6)		2.2(1.1-4.4)	

*v-squared; ~adjusted by logistic regression for gender/acquisition and age only

Conclusion: It is encouraging that there appears to be little effect of socio-economic status on late diagnosis once age and gender/acquisition are accounted for, although we cannot exclude a modest effect. Strategies to increase regular HIV testing remain a priority.

P286

HIV testing in primary care

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Background: Almost 100,000 people live with human immunodeficiency virus (HIV) in the UK and approximately a quarter are undiagnosed.
Patients diagnosed late have a mortality rate of 40 per thousand compared to 5 per thousand in those diagnosed early. In 2011 47% of HIV diagnoses were made at the late stage and sadly, many of these late presenters had recently seen healthcare professionals.
It is vital that patients with HIV are diagnosed at point of contact with the healthcare system.
This was recognised in the 2008 UK national guidelines which recommend encouraging, expanding and developing routine HIV testing. More specifically, in areas of high prevalence (over 2 in 1,000) HIV testing was recommended for all patients.
Methods: Accident and emergency notes, medical clerkings and computer databases of blood orders were analysed to determine the number of patients offered an HIV test. Patients were excluded from the study if a previous diagnosis of HIV had been made or if testing had been offered within the last 3 months with no evidence of high risk behaviour since. Data was collected over a week at a large district general hospital in an area of high HIV prevalence (2.35-5.47 per 1,000) and interventions were then introduced for 3 months.
The primary intervention was education. This included weekly clinical governance meetings, junior doctor teaching, hospital wide medical teaching and opportunistic teaching targeted the on call doctors each morning.
Posters were distributed on the acute admission ward to raise awareness amongst healthcare professionals and patients and the admission clerking proforma was rewritten so that HIV test results were compulsory unless a specific reason for their absence was stated (i.e. refusal or known HIV positive) Additionally, the information technology department assisted with making the HIV test easier to order.
Data was collected over a subsequent week and the results compared to the initial data set.
Results: In the first audit cycle only 4/250 patients (1.6%) were offered an HIV test. Following interventions 29/261 patients were offered tests (11.1%), an improvement of almost 700%.
Conclusion: HIV testing can be greatly improved with appropriate interventions. However, even following intervention the results in this study still did not meet national guidelines. With time restraints and stigma is it time for HIV testing to be an opt out system?

P287

HIV testing in a district general hospital

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Background: The 2008 UK National guidelines for HIV testing describe various indicator conditions that should trigger the offer of an HIV test, in order to decrease the proportion of people living with undiagnosed HIV as well as decreasing the numbers diagnosed late. We designed two audit projects. The aim of Audit 1 was to determine the number of medical inpatients in a district general hospital who had an indicator condition present and how many of these patients were tested. Audit 2 aimed to look at how many missed opportunities for HIV testing there were leading up to each new diagnosis of HIV.
Methods: In Audit 1 case notes of medical inpatients in a district general hospital were analysed for the presence of an indicator condition and evidence of HIV testing was checked on the laboratory system. In Audit 2 a retrospective case note analysis of all patients with a new diagnosis of HIV over a 1 year period was performed using secondary care notes. The number of presentations to clinical services, the presence of potential indicator conditions and CD4 count were collected and analysed.
Results: Of 174 medical in-patients identified 63/174 (36.2%) had at least one indicator or potentially AIDS defining condition present, 12/174 (6.9%) had 2 present and 5/174 (2.8%) had 3 or more present. Furthermore, 3/174 (1.7%) had what would have been a potentially AIDS defining illness if they had gone on to have a positive HIV test. Of those with an indicator condition, 11% were tested. In Audit 2, there were 14 new HIV diagnoses in 2010 and 9 out of 14 of these had presented with an indicator condition prior to diagnosis. One patient presented 5 times with various indicator conditions prior to being tested and eventually was diagnosed with a CD4 count in single figures. 50% had a CD4 count of less than 200 at diagnosis.
Conclusion: Audit 1 showed that only a small minority of people with an indicator condition for HIV were offered an HIV test. The second audit highlighted numerous missed previous opportunities for testing in newly diagnosed HIV patients, resulting in late diagnoses for the majority of patients. In one particular case the diagnosis could potentially have been made 9 years earlier. The findings demonstrated by both audits indicate a need to educate non-specialist clinicians about the existence and importance of the national HIV testing guidelines.

P288

How many doctors does it take . . .?

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Case history: A 62 year old British Caucasian male presented to the Medical Admissions Unit with worsening confusion over the past 3-4 months, on a background of subtle cognitive decline over 8 years and 16kg weight loss over 2 years. He was visibly cachetic on admission with MMSE of 20/30 and normal neurological examination.

His GP had performed preliminary investigations. Mild pancytopenia prompted a haematologist to perform a bone marrow examination that revealed no evidence of myelodysplasia. MRI brain showed non-specific tiny hyperintense foci in the white matter parenchyma thought to be vascular in origin.

In the first 30 days of admission to hospital, he was investigated by numerous specialities including acute physicians, stroke physicians, neurologists, gastroenterologists, and chest physicians. His extensive list of investigations included repeat MRI brain, CT brain, EEG, LP, carotid dopplers, CT chest/abdomen/pelvis, bronchoscopy, upper endoscopy, sigmoidoscopy, and autoimmune, paraneoplastic, and syphilis antibody screens. There was no clinical improvement with trimethoprim after eliciting a history of foul smelling urine. All investigations were non-diagnostic, and during this time, the patient experienced continued neurocognitive decline to an MMSE of 12/30, personality changes, and unsteady gait.

A CT chest showing two small pulmonary nodules led to differential diagnoses of primary lung cancer and tuberculosis, for which the chest physicians prompted an HIV test. HIV infection was confirmed with VL 240,600 cp/mL and CD4 count 59/ml. Repeat CSF examination was negative for HSV1, HSV2, EBV, CMV, VZV, enterovirus, polymovavirus, cryptococcus, and mycobacterium, with HIV RNA 2128 c/mL.

The patient was started on HAART (Lamivudine/zidovudine + Lopinavir/ritonavir). His pre-HAART MMSE 12/30 improved to MMSE 30/30 within 2 months, and his weight of 52.5kg improved to 77.9kg within 4.5 months. Selection of ARVs that cross the blood-brain barrier increases the likelihood of resolution of the neurocognitive decline and contribute to the positive outcome in this patient.

HIV-associated neurocognitive disorder and wasting syndrome are well-documented complications of undiagnosed, untreated HIV infection. All medical specialities should be vigilant for these late complications and institute prompt testing for HIV, even in the low-risk patient demographics group.

P289

Attitudes of general practitioners to the introduction of routine human immunodeficiency virus testing in United Kingdom primary care

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Background: An estimated 24% of human immunodeficiency virus (HIV) -infected people in the United Kingdom remain unaware of their status; therefore increasing the uptake of testing is a priority. General practitioners (GPs) are ideally placed to do this. National guidelines (2008) recommend routine testing of patients in high-risk groups or patients presenting with HIV-related symptoms. There are currently no primary care guidelines on HIV testing. The aim of the study was to explore current practice and perceptions of routine HIV testing in Liverpool GPs.

Methods: Postal surveys were distributed to a random sample of 137 GP partners working for the former Liverpool Primary Care Trust, stratified according to practice. Data was entered into SPSS. Follow up semi-structured interviews were conducted among a sample of volunteer GPs who completed the survey or participated in the study pilot. Themes were identified inductively using grounded theory.

Results: 44 GPs completed the survey (response rate 32%), with a median age of 41-50 years and a median of 11-15 years qualified as a GP. 86% of respondents were happy to do an HIV test as part of their practice. 55% had done at least one HIV test in the past year. 43% described themselves as 'not at all knowledgeable' about HIV and 27% did not think they were prepared enough to offer HIV counselling and testing. 50% of GPs had not heard of the 2008 National HIV testing guidelines. Only 14% of GPs thought that HIV testing should routinely be offered to everyone aged 18-44 years. Barriers to routine HIV testing were identified as: lack of training and knowledge; too busy with insufficient time; concerns about time and skills for pre-test counselling and concerns regarding patient acceptance of widespread testing. Interview respondents felt that they should be offering testing more often, but worried about offending patients. Patients rarely requested HIV tests themselves. Suggestions for overcoming barriers to routine testing included GP education, offering financial incentives and a national public health campaign.

Conclusion: Results highlighted a mismatch between perceived comfort of GPs with discussion of HIV testing and actual levels of HIV testing; despite a majority of GPs stating they were happy to offer HIV testing, a significantly smaller proportion had actually carried out testing. Knowledge relating to HIV among GPs in Liverpool needs to be updated. Primary care guidelines on HIV testing are desirable.

P290

Active recall of men who have sex with men (MSM) for an HIV/STI testing: a feasible and effective strategy?

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Background: In the UK, men who have sex with men (MSM) bear a disproportionate burden of HIV and other sexually transmitted infections (STIs) and are advised to test regularly. Active recall using short message service (SMS) reminders to increase HIV/STI retesting among all asymptomatic MSM attending a service has had mixed results. This study assesses the feasibility of using SMS reminders to increase reattendance for HIV/STI testing among HIV negative MSM at greater risk of HIV and STIs.

Methods: From August 2012, MSM attending a central London clinic and reporting unprotected anal intercourse in the past 3 months were offered an SMS reminder for repeat HIV/STI testing at 3 months. Using a before and after study design, reattendance at 3-5 months after initial visit was compared for three groups: eligible MSM attending between 1st Sept-1st Dec 2012 and listed to receive SMS reminders, a concurrent control group of eligible MSM not listed to receive SMS reminders and a historical control group of eligible MSM attending the service between 1st Sept-1st Dec 2011. We calculated odds ratios for reattendance in the SMS group compared to the two control groups and assessed demographic and behaviour variables as confounders using Mantel-Haenszel analysis.

Results: Of 687 eligible MSM attending in the intervention period, 4.5% (31/687) were listed to receive an SMS reminder. The odds ratio for reattendance was 1.1 (95%CI 0.5- 2.4) in the SMS group compared to concurrent controls and 2.3 (95%CI 1.0-4.9) compared to historical controls. Adjusting for age and risk behaviour (history of injecting drugs, sex with a high risk partner, paying for sex in the past 3 months) had no significant impact on the odds ratio of reattendance in the SMS group compared to concurrent or historical controls. As clinician factors were thought to be the main barrier, a mandatory field in the electronic patient record relating to recall was introduced in August 2013. Although more patients were consented to recall (492/1250, 39%) in the 3 months from August 2013, only 44 (9%) were actually placed on the recall list.

Conclusion: The failure to offer and then to send SMS reminders needs to be addressed before the acceptability and impact on re-attendance can be reliably assessed. Further refinements to ensure that all patients who consent are placed on the recall list have been implemented and impact will be reassessed once effective implementation has been achieved.

P291

The comparative performance of vaginal specimens in detecting chlamydia and gonorrhoea infection: a meta-analytic review

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Background: Due to their high specificity and sensitivity nucleic acid amplification tests (NAATs) are the recommended tests for chlamydia (CT) and gonorrhoea (NG). Recent evidence indicates that vaginal specimens may

be better than endocervical or urine samples at detecting CT and NG in women. The aim of this study was to compare the performance of vaginal to traditional specimens in assessing the CT and NG infection status of women.
Methods: We conducted a systematic review of published literature using EMBASE and Ovid MEDLINE databases. Inclusion criteria: (1) samples were collected from the vagina and at least one other urogenital site, (2) the sample sites were tested with >1 NAAT for CT and >1 NAAT or a NAAT and culture for NG, (3) a sensitivity estimate of vaginal specimens compared to the patient infection status (PIS) could be calculated. The quality of the included studies was assessed using the QUADAS 2 tool.
Results: The search resulted in 233 publications, 9 of which were included (8 CT, 5 NG). The low number of studies meeting the inclusion criteria and their variable quality prohibited calculation of pooled summary estimates. With the exception of one study, high sensitivity estimates across the measured urogenital sites were reported. Vaginal specimens performed similarly to endocervical and urine specimens for both CT (sensitivity ranges: vaginal 65-100%, endocervial 59-97%, urine 57-100%) and NG (sensitivity ranges: vaginal 94-100%, endocervial 85-100%, urine 84-94%).
Conclusion: Using strict inclusion criteria to ensure high quality evidence, we found that vaginal specimens performed similarly to endocervical and urine specimens for both CT and NG. Based on the available evidence, and given the acceptability and lower cost of vaginal samples, they appear to provide an appropriate alternative to traditional methods. However, there is a lack of studies that have attempted to explicitly answer this research question whilst taking into account the inherent biases in estimating sensitivity, particularly for NAATs. Further research with large numbers of women would be required to compare the performance of different urogenital sites.

P292

HIV testing: the indications, obstacles and resource implications within an urban GP practice in Central Manchester

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Background: HIV is now a treatable medical condition. The majority of people on treatment remain fit and well. Despite this, there are many barriers to implementing primary care HIV testing in line with National Guidelines. When combined with the stigma and fear of patients about requesting or accepting the tests, many HIV cases are diagnosed too late. This has major implications both for patients and the health service. The diagnosed HIV prevalence in this area is 5.48 per 1,000 people, which stands well above the guidelines for testing.
Methods: In this study, using GP notes, we analysed the current HIV testing policy at an urban GP practice looking at why and where the tests were initiated. A survey involving staff questioned practitioner attitudes towards increasing HIV testing, and investigations where made into the practicalities of the tests (where/the costs of tests etc).
Results: Of 10 000 current and past patients, 169 were found to have had a test of their HIV status recorded in the GP notes. 56% of these tests were carried out at the practice itself, others were undertaken at hospital or in local GUM clinics. 34 patients were known to be HIV positive. This revealed a known prevalence of 3.4 per 1,000 people, which is lower than might be expected from local figures. Of these HIV positive patients, only three tests were ordered on the basis of clinical indication.
The survey revealed gaps and anxieties around how to counsel and follow up patients, and how to maintain confidentiality.
The price of the tests was identified from Manchester Royal Infirmary virology department.
Conclusion: Our results suggest that an education campaign is required and could be undertaken to target both staff and patients, one that encourages closer links between GPs and GUM services. This would important benefits, notably an increase in the numbers of people being tested. It might also improve continuity and quality of care for HIV positive patients.

P293

Development and validation of SeqScape software for semi-automated sequence editing of HIV-1 genotypic resistance testing data

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Background: The sequencing editing stage of population sequencing for HIV genotypic antiviral drug resistance testing is subjective, causing inter and intra-laboratory variation. The detection of mixed bases which could reflect the presence of minority species is particularly affected. As population sequencing methods have yet to be standardised across laboratories, sequence editing methods should be optimised for the assay being used to ensure accurate and sensitive detection of mixed bases. Semi-automated sequence editing programs provide opportunities to reduce the labour and time taken for sequence editing and to standardise methods, improving the reproducibility of results.
Method: In this study 79 clinical and EQA samples were used to compare base calling accuracy in SeqScape software with the local gold standard (Sequencher software) and quantitative allele-specific PCR.
Results: The concordance rate for base calls was 99.6% (51574/51763) between the Sequencher and SeqScape methods from 37 samples. All discrepant base calls (189/51763) were mixed nucleotide positions, with 82% of these called as mixed bases in Sequencer and pure bases in SeqScape. Expert review of these bases categorized all as subjective low level mixed bases, thought to be below the accepted mixed based threshold of 20-25% for population sequencing. A further 42 samples were compared for base calling accuracy using Sequencher, SeqScape and quantitative allele-specific PCR at the NNRTI K103 position. Base calling accuracy was 100% comparing Sequencer and SeqScape; however for 9 samples a K103KN mixture was detected by allele-specific PCR (quantification range 1–93%) which was not detected using population sequencing. Review of the population sequencing chromatogram traces demonstrated that there were no significant peaks above background in these samples, suggesting the lack of sensitivity of population sequencing was due to PCR amplification bias rather than base calling inaccuracies.
Discussion: : A semi-automated sequence editing method can be employed in HIV-1 genotypic resistance testing assays to reduce intra-laboratory variation, reducing subjectivity and increasing reproducibility. However, there remain a small proportion of base calls involving mixed nucleotide positions which remain subjective and require expert manual review.
[BHIVA Research Awards winner 2011: Erasmus Smit]

P294

Evaluation of introduction of microscopy to an inner-city sexual and reproductive health clinic

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Background: Our Sexual and Reproductive Health (SRH) service launched a level 3 Genitourinary Medicine (GUM) clinic in November 2012, with a view to forming a fully integrated GUM/SRH service. Initially only patients with recurrent vaginal discharge were referred for in-house microscopy. We continued to send High Vaginal Swabs (HVS) on most of these patients, as had been done previously. We present an evaluation of paired microscopy and HVS diagnoses in these patients.
Methods: Retrospective electronic case notes review of all patients receiving microscopy in-house between November 2012 & August 2013. We searched our electronic paper record (EMIS) for the microscopy data code and any matching HVS results. Data were collected and analysed using Excel.
Results: 154 microscopy visits in 134 women were reviewed. 24 visits were excluded (23 no HVS sent, 1 had rectal microscopy). 130 paired HVS and microscopy results evaluated (in 115 patients). Of 115 patients, 113 (98%) heterosexual. Mean age 31 (range 15-55). 48 (37%) were negative on both microscopy and HVS.

	Microscopy Only	Microscopy and HVS	HVS Only	Total
TV	4	4	0	8
BV	50	9	2	61
VVC	8	15	4	27
Group B Strep	0	0	2	2
GNICD	2	0	0	2

Using combined diagnoses as reference standard, microscopy was 100% sensitive for *trichomonas vaginalis* (TV), 97% sensitive for bacterial vaginosis (BV) and 85% sensitive for vulvo-vaginal *candida albicans* (VVC). This compares to 50%, 18%, and 70% respectively for HVS. Using HVS alone would have missed 4 (50%) of the TV cases and 50 (82%) of the BV cases. Using microscopy alone would have missed 2 (100%) cases of Group B Strep, 2 (3%) cases of BV and 4 (15%) cases of VVC. GNICD were seen on microscopy on 2 occasions. Neither of these 2 women had *gonorrhoea neisseria* proved on HVS or endocervical NAAT. In 2 other cases *chlamydia trachomatis* was found on endocervical NAAT.

Conclusion: The use of microscopy increased the diagnosis of TV by 100% and BV by 455%. Although many of the patients with BV would have most likely been treated clinically, the patients with TV would not have received a diagnosis or adequate partner notification without microscopy. Group B strep is a commensal in up to 18% of women and may not be clinically relevant. Our evaluation shows that we can have confidence in the accuracy of near-patient microscopy in our service. As we move towards full integration of our SRH and GUM services these data will help us to decide which tests to perform in which women.

P295

Do the subsets of the differential white blood cell count correlate with initial HIV diagnosis and its clinical presentation?

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Background: Full blood count is a common, inexpensive laboratory test used worldwide. In the UK it is routine for the differential white cell count to be reported as well as the total count, however, this is not the case in all countries. There are very little contemporary data regarding the levels of white cell subsets at diagnosis of HIV, and their relationships to clinical presentation. This study aimed to explore any associations between these subsets, standard HIV parameters and clinical presentation in a mixed population at a UK centre.
Method: Electronic patient record systems were reviewed to identify patients newly diagnosed with HIV during 2012. The data were exported to SPSS version 20 for analysis.
Results: 63 patients (54:9 M:F) were diagnosed at our centre in 2012. 37 (58%) White British, 13 (21%) Black African, 13 (21%) other ethnicity. The mean age was 36 years (range 16-63).
HIV parameters:
Mean absolute CD4 = $368x10^6$/L (27-1152), mean CD4 % = 20.9 (19-47). Mean viral load = 272 copies/ml (40-4167730), mean viral load log = 4.6 (1.6-6.63).
Correlations between HIV markers and white cell subsets:
Correlations (using Spearman's rho) were found between most subsets and the absolute CD4 cell count at diagnosis (Neutrophils 0.357, $p<0.001$; Lymphocytes 0.648, $p=<0.001$, Basophils 0.304, $p=0.017$; Monocytes 0.408, $p=0.001$). A correlation was found between viral load at diagnosis and monocyte count (0.277, $p=0.031$).
Opportunistic infections (OIs):
Differences between patients with an OI (8 [13%]) at presentation and those without were found using the T-test for the monocyte:lymphocyte ratio (ratio is higher in those with OIs [mean difference= 0.0938, $p=0.038$, 95% CI=0.005-0.181]), and the Mann-Whitney U Test for the lymphocyte count ($-2.364x10^9$/L lower in those with OIs, $p=0.018$).
Conclusions: A number of significant correlations between CD4 count (at diagnosis) and the white cells subsets were found. Lymphocyte subset was significantly lower (consistent with previous studies) and monocyte: lymphocyte ratio significantly higher in those with an OI than those without. A comparison with a matched HIV-negative cohort may be warranted to explore these associations further and develop a predictive model which may prompt practitioners to request an HIV test.

P296

Post exposure prophylaxis for HIV following sexual exposure (PEPSE) access audit

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Background: The provision of PEPSE is now a frequent reason for attendance at GUM/HIV clinics. Many patients initially present to A&E for the commencement of PEPSE and face a number of barriers to obtaining PEPSE such as waiting times and having a sexual history taken. An audit to assess the patient experience of accessing PEPSE was conducted.
Method: All patients already taking PEPSE or requesting PEPSE between the 7th May 2013 and 16th December 2013 were invited to complete a questionnaire to evaluate their experience. An anonymous questionnaire was offered to patients at the end of their clinic appointment.
Results: There was a 100% acceptance rate for the questionnaire. 28 patients completed the questionnaire, 25 (89%) were able to access PEPSE at first attempt, 16 from our GUM clinic, 9 from A&E, 2 from SARC and 1 from another GUM clinic. 11 accessed PEPSE as they were advised to by a health professional, 3 were advised by a sexual partner, 7 based on advice from the internet and 7 based on word of mouth advice or had previously accessed PEPSE. 7 patients accessed PEPSE in the morning, 13 patients in the afternoon and 8 accessed PEPSE in the evening/night. The time delay in receiving PEPSE ranged from 10 minutes to 4 hours in GUM, (average wait 1 hour 50 minutes) 30 minutes to 5 hours in A+E (average wait 3.5 hours) and 6 hours in SARC (average 6 hours). 27/28 patients were given information on side effects, 2 patients were not informed about the full 28 day course by A+E. All patients who accessed PEPSE from GUM reported staff were caring and supportive.
Conclusion: Patients who initially accessed PEPSE from A&E experienced more of a delay than those attending GUM. PEPSE provision training for Emergency Nurse Practitioners who are permanent staff in A&E would assist in reducing the delay in A&E. All patients stated they would recommend PEPSE to a friend, suggesting that PEPSE was fairly well tolerated in this cohort. There is still a need to increase general awareness of availability of PEPSE to help reduce potential HIV transmission. This audit highlighted that most patients were able to access PEPSE without significant delays and emphasised the important role that A&E plays in PEPSE provision out of hours.

P297

Analysis of hepatitis C antigen testing in an urban sexual health clinic

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Background: If Hepatitis C virus (HCV) is diagnosed, and therapeutics initiated, in the acute setting, there is increased treatment success and therefore decreased long term complications and a reduction in onward transmission.
Diagnosis of acute HCV infection has been limited by seroconversion delay to HCV antibody positivity of up to 1 year, and the costs of HCV RNA testing, which becomes positive earlier. A cheaper HCV antigen assay is now available, which is positive in 52% of patients at the time of first positive RNA test, vs only 20% having a positive antibody at this time.
This assay has been available to us since 01/02/13. Its use is recommended in the following: MSM using recreational drugs, especially with sex; group or traumatic sex participants; those with rectal STIs or new syphilis; those with HCV positive partners; those with previous HCV; in investigation of abnormal LFTs in the HIV clinic.
We analysed the demographics of those tested, indications for testing and results.
Method: Retrospective case notes review of patients undergoing HCV antigen testing between 01/02/13–31/08/13.
Results: 88 HCV antigen tests were carried out on 81 patients. Notes were analysed for 75(93%).

Characteristics of Patients undergoing HCV antigen test

Characteristic	N = x/75 (%)
Male	69(92)
MSM	61(81.3)
Heterosexual	14(18.7)
HIV positive	44(58.7)
New HIV diagnosis	2(2.67)
Ethnicity:	37(49.3)
White British	18(24)
White other	6(8)
Black Caribbean	8(10.7)
Black African	
Recreational Drug Use	24(32)
Injecting Drug Use	10(13.3)
Concurrent STI	33(44)
Rectal *Chlamydia*	15(20)
Rectal *Gonorrhoea*	12(16)
New Syphilis Diagnosis	6(8)
Unprotected Anal Intercourse	41(54.7)
Traumatic Sex	4(5.4)
Group Sex	9(12)
HCV positive partner	3(4)
Occupational Exposure	1(1.3)
Deranged LFTs	7(9.3)
Prison inmates	6(8)

8/75(10.7%) had a positive HCV antigen result. There was one false positive and one equivocal result, both of which were negative on HCV RNA analysis. 4 patients had a new HCV diagnosis. In one case HCV antibody was negative on original testing. 3 patients with known HCV were both antigen and antibody positive. 9 patients were antigen negative, but antibody positive, indicating cleared HCV infection.

Conclusion: 57/75(76%) patients had one or more documented indication for HCV antigen testing. 1 patient had a HCV diagnosis made in the acute phase, which may otherwise have been missed. This test is acceptable, predominantly appears to be used appropriately, and may aid our diagnosis of acute HCV in a cost effective manner.

P298

Has the introduction of a multiplex PCR for herpes simplex viruses and **Treponema pallidum** impacted the patient journey for those diagnosed with primary syphilis?

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Background: Rapid and accurate diagnosis of syphilis is important to ensure patients and contacts receive timely treatment and reduce ongoing transmission. However the diagnosis of primary syphilis is a challenge because of the delayed serological response and the expertise required in reading dark ground microscopy (DGM). We introduced a multiplex polymerase chain reaction to simultaneously detect herpes simplex virus (HSV) type 1 and 2, and *Treponema pallidum*(TP) DNA (HSV-TP PCR). This test has been used in all patients presenting with genital ulceration since July 2013.

Objective: To determine the utility of this new test to diagnose primary syphilis.

Methods: Between July and October 2013, 47 patients were diagnosed with syphilis. Clinical, demographic and diagnostic data were collected using the local syphilis failsafe database, SHHAPT coding, clinical notes/proformas and results in the electronic patient record. Combined TP IgG/IgM antibodies were screened using an automated chemiluminiscence immunoassay (Architect, Abbott). Reactive samples were further tested using TP particle agglutination (TPPA) and Rapid Plasma Reagin (RPR) tests. An anonymous web form was developed to support data collection and analysis.

Results: The majority of the patients were male (45/47, 96%) with a mean age of 40yrs (18-70), the largest ethnic group was white ethnicity (18/47, 38%) and 33/45 (74%) were men who had sex with men; nearly three quarters (35/47, 74%) had a previous diagnosis of a sexually transmitted infection and 21/47 (45%) were HIV positive. The new HSV-TP PCR test was performed on samples from eight patients who were subsequently diagnosed with syphilis and 6/8 (75%) gave a positive result for TP DNA. One patient (highlighted with the asterisk below) was diagnosed solely with the HSV-TP PCR test since TP serology tests were initially negative.

Patient	DGM	HSV-TP PCR			TPPA	RPR
1	-	+	-	-	+	+
2	Not done	-	-	-	+	+
3 *	Not done	+	-	-	-	-
4	Not done	-	-	+	+	+
5	+	+	-	-	+	+
6	Not done	+	-	-	Not done	+
7	Not done	+	-	-	+	+
8	Not done	+	-	-	+	+

Conclusions: In the analysis of the first three months of the use of the multiplex HSV-TP PCR test, one patient was identified before serological diagnosis. Further work is required to determine the impact of this new test on the patient journey and the cost-effectiveness of its public health impact.

P299

New HIV diagnosis and disclosure evaluation

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Background: Increasing HIV testing has necessitated an evaluation of the new HIV diagnosis pathway. Receiving a positive HIV test result can be traumatic for patients. A self administered questionnaire was devised to ascertain patients' use of community support groups, availability of appointments, disclosure to employers and willingness to discuss disclosure with staff.

Methods: A convenient sample of patients attending an outpatient based HIV clinic was legible for recruitment. Participants needed to be diagnosed HIV positive within the last 5 years. The questionnaire was piloted on 5 staff and 10 patients. Data collection was between September and December 2013. Completed questionnaires n=37.

Results: The total number of patients diagnosed in the investigating clinic was 25 (68%). The location of those diagnosed elsewhere was not requested, however 5 patients were diagnosed by their GP, 2 at THT and 5 at unknown locations. The details of community support groups were given to 76% of patients. Only 8% of patients contacted THT within 2 weeks of diagnosis, no other support group was used. An appointment to see an HIV specialist within 2 weeks of diagnosis, was received by 76% of patients. Of those not receiving an appointment within 2 weeks, 3 were from the investigating site, 1 was from a GP and 3 were initially diagnosed elsewhere. Nearly 70% of patients discussed their new HIV diagnosis with friends within 2 weeks of diagnosis. However, only 40% of patients have disclosed their HIV status to their employer. Just over half of the patients felt comfortable discussing their diagnosis with anyone, 35% of patients felt they could ask any clinician for advice on disclosing their diagnosis; whilst the same percentage felt they would ask certain clinicians for advice on disclosure. 20% of patient had a negative view of asking staff for advice on disclosure.

Conclusion: This was a small study not designed to provide statistically significant results. These results can question the use of community support groups for the newly diagnosed in the investigating locality. The results suggest greater standardisation of information and appointments given to the newly diagnosed. Generally the clinic was viewed positively when providing support for discussing the HIV diagnosis to friends, sexual partners and employers, however further investigation and staff training needs to occur to examine the negative views of asking clinicians for advice on disclosure.

P300

An audit on **Trichomonas vaginalis:** should testing be part of asymptomatic screening?

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Background: *Trichomonas vaginalis*(TV) is a prevalent sexually transmitted infection in the UK. The British Association for Sexual Health and HIV(BASHH)

have set guidelines for the care of patients diagnosed with TV. However, both BASHH and The International Union against Sexually Transmitted Infections (IUSTI) recommend testing for TV only based on clinical suspicion and/or symptoms. Furthermore, test of cure is not routinely recommended. Cobridge genito-urinary medicine(GUM) clinic in Stoke-On-Trent is a busy community based sexual health service serving a diverse city population and testing for TV is offered as part of asymptomatic screen.
Objectives: To audit adherence to BASHH guidelines on the Management of TV 2013 in caring for patients who were treated for TV in Cobridge. As TV is tested routinely, it was of particular interest to assess the prevalence of asymptomatic TV, the value of asymptomatic TV testing, and to ascertain any relevant medical and/or socio-demographic features in terms of TV risk.
Method: A pro forma was developed and a retrospective notes review was performed for all patients who were treated for TV infection between the period of 1st August 2012 to 31st July 2013.
Results: A total of 3665 female patients underwent sexual health screening in Cobridge during the audit period and 37 patients tested positive for TV. The positivity rate of TV infection in this cohort of patients was 1.0%, which is higher as compared to 0.8% positivity rate in a study in north England and 0.23% positivity rate in a recent study in London. 73% of patients had symptom(s), 16% were truly asymptomatic and 11% presented as contacts or described themselves as asymptomatic. Data collected demonstrate an 81% sensitivity rate for wet mount microscopy compared to culture, similar to a study in London. 97% of patients were given Metronidazole 400mg BD for 5 days or 2g STAT dose as first line, which met the performance standard set by BASHH. Only 81% were documented to have received written information about their diagnosis and treatment. All patients were offered test of cure. 84% of patients were offered a consultation with health advisers. The 'look-back interval' was four weeks. 0.65 contacts per index patient were reported as attended by patients and 0.35 contacts per index patient were confirmed as attended by clinic.
Conclusion: TV remains a prevalent STI in the UK and therefore should be tested as part of routine screening regardless of presence of symptom(s).

P301

Sexual health screen offer in HIV-positive patients – are we following the guidelines? A re-audit

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Background: An annual offer of a full sexual health screen and the outcome should be documented in the Human Immunodeficiency Virus (HIV) case notes, including if declined. This follows in line with the British Association of Sexual Health and HIV (BASHH) guidance on management of the Sexual and Reproductive Health (SRH) of people living with the HIV (2008). The first audit conducted in June 2013 in sexual health services recommended to continue to improve the Sexually Transmitted Infection (STI) screening offer in all HIV positive patients.
The current audit focused on whether there had been an increase in the percentage of HIV positive patients being offered STI screening since the last audit.
Aim/Objective: The aim of the audit was to demonstrate compliance with the above standards and to find whether a substantial improvement had occurred since the last audit in June 2013.
Methods: 201 HIV positive patients attending the sexual health department (from June- August 2013) were studied. Retrospective analysis of 201 cases was undertaken. Patients were sub grouped based on their age, gender, ethnicity, sexuality and state of relationship.
Results: There had been a significant increase in the percentage of HIV positive patients who were offered STI screening (38% to 64%) since the first audit. Out of 129 (64%) patients, screening was undertaken in 31 (24%) cases. 98 (76%) patients declined screening. Out of 31 patients, 2 had positive STI result. 50% of patients were sexually active. 50% of patients were in a regular relationship, 20% were not sexually active and 4% had a casual partner in last 3 months.
Conclusions: This re-audit was conducted 3 months after the presentation of first audit. It has shown that there was improvement in STI screening offered by clinicians to HIV positive patients.

P302

HIV testing: are we doing enough?

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Background: The 2008 BHIVA testing guidelines were published with an emphasis on normalisation of HIV testing. They recommend that all patients who present to a health care setting (HCS) with a HIV clinical indicator disease, should be offered HIV testing, as well as those in high-risk groups. More than 5 years after the introduction of these guidelines, we conducted an audit to evaluate if opportunities for testing were still being missed.
Methods: A retrospective review was carried out of the case notes and hospital records of all patients newly diagnosed with HIV in the year 2012 in an inner city GUM clinic. Healthcare visits in the 2 years prior to diagnosis or since the last HIV test were identified. Interviews were also carried out during clinic appointments to identify any non-documented healthcare visits. These are still ongoing and further data will be provided at the conference. Information collected also included demographic details, nature of HCS they presented to and details of their symptoms.
Results: A total of 100 patients were identified, of whom 51 had a healthcare visit within the 2 years leading up to their diagnosis. Of these 51 patients, 20 had presented with a HIV clinical indicator disease. Whilst some of these 20 patients had declined testing, 13 were identified as having at least 1 missed opportunity for diagnosis and some more than 1. Of these 13 patients, 62% presented with a CD4 count of $<350mm^3$ and 30% with a CD4 count of $<200mm^3$ at diagnosis. Of those who did not have a clinical indicator disease but had attended a HCS, ($n = 25$), majority (23) had another risk factor which should have triggered testing. Of these 23, four were later diagnosed on ITU. No specific demographic groups were found to be at increased risk of missed opportunities and no statistically significant difference was found for missed opportunities between the different HCSs. No opportunities were found to have been missed within the settings of sexual health clinics.
Conclusion: It is clear that several years after the introduction of HIV testing guidelines, opportunities are still being missed and patients continue to be diagnosed late. In our audit, missed opportunities were clearly observed more commonly outside of an HIV clinic setting. As late diagnosis is the most important predictor of mortality and morbidity, it is extremely important that we continue to raise awareness and educate our colleagues in other specialties about the importance of HIV testing.

P303

National HIV testing week – a celebration!

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Introduction: The second National HIV Testing week was held in November 2013. We aimed to build on the success of our testing efforts in 2012
Method: Staff from one 3rd sector organisation, supported by volunteers from the sexual health clinic (GUM), provided HIV point of care testing (POCT) between 11am & 8pm at gay bars and clubs. They provided virtual outreach online. The organisation providing HIV prevention services to Black Africans were trained by staff from GUM to provide HIV POCT for the first time. They offered testing from contraception (CaSH) clinics, supported by CaSH staff, and a number of African community venues. Testing was offered at more than 40 sessions across the city
Results: 126 people were tested. 90/126(71%) were from Most At Risk Populations (MARPs). This improved on 2012 when 94 individuals were tested, of whom 51% were MARPs. 61(48%) were MSM, with 5 reporting sex with men and women. 27 (21%) were Black African, of whom 16 were male. 2 "other" had partners who were MARPs. Word of mouth/outreach or the presence of testers in a venue proved the most effective way of recruiting. 31% of MSM learnt of testing via the internet. 33/54(61%) MSM had tested for HIV previously, however, 13/33 (39%) had tested >12 months ago. Therefore, 34/54(63%) had never tested, or tested >12/12 ago. 68% did not know about PEP. 26/57(46%) had attended GUM previously but of those who recalled when they had last been seen, none had been seen in the preceding

year. 22/27(81%) of Black Africans had tested previously. However, 12/22 (55%) tested >12/12 ago. Therefore, 17/27(63%) had never tested or >12/12 ago. 22/27(81%) did not know about PEP. 16/25(64%) had not previously attended GUM. There were no HIV positive results. >95% of people tested were given advice on PEP, repeat testing, STI screening & offered condoms
Media: There were news bulletins on 3 local radio stations. BBC regional news had NHTW as lead story. NHTW articles featured twice in the local paper. NHTW featured in the hospital trust news & screensavers. We held a publicity event which included the local Health & Wellbeing Board and Director of Public Health
Discussion: : Preparation for NHTW improved communication between staff working in traditional GUM and CaSH clinics, and 3rd sector organisations/ local council. Working together for NHTW mirrored the city's vision for an integrated sexual health service. We tested more people from MARPs and accessed people not attending traditional GUM services

HIV Treatment and Pharmacokinetics

P304

Switch from NNRTI plus FTC/TDF to E/C/F/TDF maintains HIV suppression and is well tolerated

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Background: Concerns with current and/or long-term side effects or dosing complexity of antiretroviral (ARV) regimen may prompt patients to request ARV switches. We report the Week (W) 48 results of a prospective, randomized, open-label, ongoing Phase 3b trial of a regimen switch to the single-tablet regimen elvitegravir/cobicistat/emtricitabine/tenofovir DF (E/C/F/TDF) from non-nucleoside reverse transcriptase inhibitor (NNRTI) + emtricitabine/tenofovir DF (FTC/TDF) regimens in virologically-suppressed HIV-1 subjects.
Methods: Subjects suppressed on NNRTI + FTC/TDF regimens for ≥ 6 months were randomised (2:1) to switch to E/C/F/TDF or remain on their baseline NNRTI regimen. Eligibility criteria included CrCl ≥ 70 mL/min, no documented resistance to FTC and TDF, exposure to no more than 2 prior ARV regimens, and no history of virologic failure. The primary endpoint was the proportion of subjects who maintained HIV-1 RNA < 50 c/mL at W48 by FDA snapshot algorithm (12% non-inferiority margin).
Results: A total of 434 subjects (93% male, 22% non-white) were randomized and treated (291 E/C/F/TDF; 143 NNRTI). At randomisation, 74% of subjects were on efavirenz (EFV)/FTC/TDF STR; 31% enrolled in the study due to concern with current or long-term side effects of their ARVs. E/C/F/TDF was non-inferior to NNRTI regimens, as 93% and 88% respectively maintained HIV-1 RNA < 50 c/mL at W48 (difference 5.3%, 95% CI -0.5%, +12.0%). Virologic failure rates were 1% with no emergent resistance detected in either group. Grade 2-4 drug-related adverse events (AEs) occurred in 5.5% E/C/F/TDF and 1.4% NNRTI. AEs leading to discontinuation were low (2.1% E/C/F/TDF vs 0.7% NNRTI). Median changes in CrCl (mL/min) at W48 were, as expected, -11.6 and -0.2 respectively. Small decreases from baseline in total, LDL, and HDL cholesterols were experienced by those switching from EFV-based regimens. Decreases from baseline at W48 in rates of neuropsychiatric symptoms, e.g. vivid dreams (-15%, p <0.001), dizziness (-11%, p <0.001), anxiety (-9%, p =0.008), and insomnia (-10%, p =0.004), were reported after switching to E/C/F/TDF (HIV Symptom Index questionnaire). HIV Treatment Satisfaction scores were higher for subjects who switched to E/C/F/TDF (p <0.001).
Conclusions: Switching to E/C/F/TDF from NNRTI + FTC/TDF regimens was associated with high rates of virologic suppression, no resistance development, and favourable tolerability with improved treatment satisfaction.

P305

Week 144 efficacy and safety data: Elvitegravir/Cobicistat/ Emtricitabine/Tenofovir DF (Stribild) demonstrates durable efficacy and differentiated safety compared to Atazanavir boosted by Ritonavir plus Emtricitabine/Tenofovir DF at week 144 in treatment-naïve HIV-1-infected patients

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Background: In this randomized, double-blind, active-controlled Phase 3 trial in treatment naïve patients, elvitegravir/cobicistat/emtricitabine/tenofovir DF (STB) was non-inferior to atazanavir boosted by ritonavir (ATV + RTV) + emtricitabine/tenofovir DF (FTC/TDF) at Week 48 with durable efficacy and a favorable safety profile through Week 96. We report Week 144 data.
Methods: Key eligibility criteria included HIV-1 RNA ≥5,000 c/mL and Creatinine clearance ≥70 mL/min. Virologic success (HIV-1 RNA <50 c/mL) at Week 144 was assessed per FDA snapshot algorithm. Adverse events and laboratory data were collected prospectively. Bone mineral density (BMD) was assessed by DEXA scan in a subgroup of patients. Study sites included 6 recruiting United Kingdom clinics.
Results: 708 patients were randomized and treated. Through Week 144, high rates of virologic success were maintained (STB 78% vs ATV+RTV+TVD 75%, difference 3.1%, 95% CI -3.2% to 9.4 %). Virologic success was similar in patients with HIV-1 RNA >100,000 c/mL (75% vs 72%) and those with CD ≤ 350 cells/μL (76% vs 74%). Mean (±SD) CD4 cell increases (cells/mm^3) were +280 (±159.8) vs +293 (±211.5). Emergent resistance was infrequent in both groups (2% vs 1%). Drug discontinuation due to adverse events (AEs) was low and comparable (6% vs 8%). Renal discontinuation occurred in 5 (1%) vs 8 (2%) patients; of those, 2 vs 6 patients discontinued after Week 96, including 3 ATV+RTV+TVD patients with proximal renal tubulopathy (PRT). No cases of PRT occurred in STB group. Mean changes from baseline in creatinine (μmol/L [mg/dL]) at Week 144 were 10.6 vs 7.1 [0.12 vs 0.08] and were stable since Week 48. STB had smaller mean decreases (%) in BMD (hip: -2.83 vs -3.77, p=0.23 spine: -1.43 vs -3.68, P=0.018).
Conclusions: At Week 144, STB, the only INI based single tablet regimen for HIV, demonstrated high rates of virologic suppression regardless of baseline viral load and CD4 cells, with low rates of resistance and a favorable safety profile with no new renal safety signals. These results support the durable efficacy and long-term safety of STB.

P306

Simplification of PI+RTV+FTC/TDF to E/C/F/TDF maintains HIV suppression and is well tolerated

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Background: Antiretroviral (ARV) regimen simplification can improve treatment adherence and quality of life. Reported are Week (W) 48 results of a prospective, randomized, open-label, Phase 3b trial of a regimen simplification to the single-tablet regimen elvitegravir/cobicistat/ emtricitabine/tenofovir DF (E/C/F/TDF) from ritonavir-boosted protease inhibitor (PI + RTV) plus emtricitabine/tenofovir DF (FTC/TDF) regimens.
Methods: Virologically suppressed subjects on PI + RTV+FTC/TDF regimens for ≥ 6 months were randomized (2:1) to switch to E/C/F/TDF or remain on their PI regimen (PI). Eligibility criteria included CrCl ≥ 70 mL/min, no resistance to FTC and TDF, exposure to no more than 2 prior ARV regimens, and no previous virologic failure. The primary endpoint was the proportion of subjects who maintained HIV-1 RNA < 50 c/mL at W48 by FDA snapshot algorithm (12% non-inferiority margin). If non-inferiority was established, then superiority would be tested per a pre-specified sequential procedure.

Results: 433 subjects (86% male, 19% non-white, 18% age ≥ 50 years) were randomized and treated (293 E/C/F/TDF; 140 PI). At randomization, Atazanavir (40%) and Darunavir (40%) were the most common PIs used; median years since first ARV use was 3; 19% were on their second ARV regimen. Baseline features were similar between the two groups. At W48, 94% of subjects on E/C/F/TDF maintained HIV < 50 c/mL compared to 87% on PI (diff. 6.7%, 95% CI +0.4% to +13.7%; p=0.025). Virologic failure rates were low (0.7% E/C/F/TDF vs. 1.4% PI) with no resistance in either group. The safety and tolerability of E/C/F/TDF were consistent with those reported in previous studies. Grade 2-4 drug-related adverse events (AEs) were 3.8% E/C/F/TDF vs. 1.4% PI. AEs leading to discontinuation were low, 2.0% vs. 2.9% respectively. At W48, median changes in CrCl (mL/min) were -7.5 and 0.4, respectively, with no cases of proximal renal tubulopathy in either group. There was a larger decrease from baseline in fasting triglycerides for E/C/F/TDF compared to PI (median: -16 vs. +3 mg/dL; p =0.001) and no change in other lipid parameters.
Conclusions: Switching to E/C/F/TDF compared to continuing PI +RTV +FTC/TDF resulted in significantly higher rates of virologic suppression without resistance development. E/C/F/TDF was well-tolerated with a favorable safety profile. Switching to E/C/F/TDF from a multiple-tablet, PI-based regimen may be an option for patients to simplify their ARV therapy.

P307

Pharmacokinetics (PK) of the co-administration of raltegravir (RAL) and amlodipine (AML) to male and female healthy volunteers

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Background: Calcium channel blockers (CCB) such as AML are the preferred first line antihypertensives in young (<55 years) black patients and older patients of all ethnicities. Due to CYP3A metabolism, interactions between CCB and antiretroviral therapy (ARV) are anticipated. For example, interactions between PI/r and CCB may lead to CCB overdose resulting in serious toxicity. It is therefore necessary to identify ARVs which are safe when patients are taking concomitant CCB. We aimed at investigating the PK of RAL and AML when co-administered.
Methods: This Phase I, open-label, three period, cross-over, PK study enrolled healthy males and females, who following consent and screening procedures were randomized to receive RAL 400mg BID, RAL plus AML 5mg OD, and AML, or the same treatment in the opposite order. All phases lasted 7 days and PK sampling was performed at the end of each phase (Days 7, 14 and 21). RAL and AML concentrations were analysed by validated LC-MS/MS and PK parameters determined by non-compartmental methods (WinNonLin).
Results: Seventeen (13 female) subjects completed the study and no serious adverse events were reported. Geometric mean ratios (GMR) and 90% confidence intervals (CI) of RAL (with AML *versus* alone) area under the curve (AUC_{0-12h}), C_{max} and C_{trough} were 1.39 (0.87-2.29), 1.58 (0.84-3.09), and 0.78 (0.57-1.04). GMR and 90% CI of AML (with RAL *versus* alone) AUC_{0-24h}, C_{max} and C_{trough} were 1.00 (0.89-1.12), 1.00 (0.90-1.12), and 0.93 (0.80-1.08). Coefficient of variation (CV) for RAL PK parameters with and without AML ranged between 69% and 98%. AML CV ranged between 27% and 42%.
Conclusions: RAL did not alter AML plasma exposure and AML did not have a significant effect on RAL plasma concentrations, suggesting that co-administration of the two drugs is safe in the clinical setting.

P308

Elvitegravir/cobicistat/emtricitabine/tenofovir DF in HIV patients with renal impairment

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Background: Elvitegravir/cobicistat /emtricitabine/tenofovir DF (STB) is approved for use in treatment-naïve HIV-1 infected adult patients with creatinine clearance (CrCl [Cockcroft Gault]) ≥70 mL/min. Study 118 assessed the renal safety of STB and cobicistat (COBI) in patients with mild to moderate renal impairment.
Methods: Phase 3, open label, multicenter, two-cohort study in HIV-infected patients with CrCl 50 to 89 mL/min. The STB cohort enrolled treatment naive patients. We present here the 48-week safety and efficacy data from the STB cohort.
Results: 33 patients with mild to moderate renal impairment initiated STB for a median exposure of 61 weeks. At baseline, mean age was 50 years; male 82%; White 42%; hypertension 36%; diabetes 9%; baseline proteinuria (≥ trace) 55%. Median baseline CrCl (mL/min) was 73 (range: 37 to 104; IQR: 65 to 81). Small reductions from baseline in CrCl (median [IQR]) were observed as early as Week 2, after which they stabilized and were nonprogressive through Week 48 (-8 [-12 to -2]). Changes in CrCl did not differ by baseline CrCl (< 70 vs ≥ 70 mL/min): -5.6 [-13.6 to -0.2] vs -7.6 [-11.9 to -3.5]. No clinically relevant changes in cystatin C-based eGFR (mL/min/1.73m^2) (median [IQR]) were observed at Week 48 (2 [-8 to 7]). No serious renal adverse events (AEs) were reported. Study drug discontinuation due to renal AE occurred in 3 patients (all due to reduced CrCl); none had features of proximal renal tubulopathy (PRT). No patient had subclinical PRT (> 1 confirmed renal laboratory abnormalities [increase in serum Cr ≥ 0.4 mg/dL, ≥ 2-grade increase in proteinuria, ≥ 1-grade increase in normoglycemic glycosuria or hypophosphatemia]). At Week 48, high rates of virologic suppression (HIV-1 RNA < 50 c/mL, snapshot analysis, ITT) were achieved (79%); increase in CD4 cell counts (cells/μL)(mean [SD]) was robust (+273 [183.5]). No patient developed emergent resistance to one or more components of STB.
Conclusions: In HIV-infected treatment-naïve patients with mild to moderate renal impairment, STB was well-tolerated with no patients developing clinical or subclinical PRT. The renal safety profile of STB in patients with renal impairment from this study is consistent with the long-term data in patients without renal impairment (CrCl ≥ 70 mL/min) from the two phase 3 studies of STB.

P309

STaR study: Single-tablet regimen (STR) of Rilpivirine/Emtricitabine/Tenofovir DF demonstrates significant difference to Efavirenz/Emtricitabine/Tenofovir DF in subjects with a baseline HIV-1 RNA ≤ 100,000 copies/mL through week 96

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Background: STaR is the first study to directly compare the safety and efficacy of two STRs, RPV/FTC/TDF and EFV/FTC/TDF. RPV/FTC/TDF is indicated for patients with an HIV-1 RNA <100,000 c/mL. We present new safety and tolerability data for subjects with HIV-1 RNA <100,000 c/mL.
Methods: STaR is a randomised, open-label, 96-week study to evaluate the safety and efficacy of RPV/FTC/TDF versus EFV/FTC/TDF in treatment-naïve HIV-1 infected subjects. Subjects were randomized 1:1. Eligibility criteria included screening HIV-1 RNA ≥2,500 c/mL, genotypic sensitivity to components and no prior ARVs. Randomisation was stratified by HIV-1 RNA of 100,000 c/mL. The primary endpoint was the % of patients with HIV-1 RNA <50 c/mL at Week 48 using the Snapshot analysis (12% non-inferiority margin). Secondary endpoints included safety and efficacy at Week 96 both for the overall population and for also the subjects with a screening HIV-1 RNA ≤100,000 c/mL.
Results: A total of 786 subjects were randomised and dosed.

Table 1. Virologic Suppression (HIV-1 RNA <50 c/mL) by Snapshot outcomes for overall at Weeks 48, 96 and by ≤100,000 c/mL stratification

	RPV/FTC/TDF	EFV/FTC/TDF	Difference	95% CI	p-value
Overall W48	86% (338/394)	82% (320/392)	4.1%	-1.1 to 9.2%	0.12
≤100,000 c/mL W48	89% (231/260)	82% (204/250)	7.2%	1.1% to 13.4%	0.02
Overall W96	78% (307/394)	72% (284/392)	5.5%	-0.6% to 11.5%	0.076
≤100,000 c/mL W96	79% (205/260)	71% (178/250)	7.6%	0.2% to 15.1%	0.046

Overall, virologic failure at Week 96 was 9.4% for RPV/FTC/TDF vs 5.9% for EFV/FTC/TDF by snapshot analysis. Virologic failure in the HIV-1 RNA ≤100,000 c/mL subset at Week 96 was 6.5% for RPV/FTC/TDF vs 4.4% for EFV/FTC/TDF. Discontinuations due to treatment-emergent adverse event (AE) were 3.5% for RPV/FTC/TDF vs 12.0% for EFV/FTC/TDF. Grade 3 or 4 AEs through Week 96 were reported in 10.8% of subjects in the RPV/FTC/TDF arm vs 16.0% for EFV/FTC/TDF. There were differences in selected all grade AEs reported for RPV/FTC/TDF and EFV/FTC/TDF, notably nervous system disorders (20.0% vs 42.0%), psychiatric disorders (24.6% vs 47.2%) and rash (8.8% vs 12.4%).
Conclusions: RPV/FTC/TDF demonstrated a statistically significant difference in efficacy compared to EFV/FTC/TDF through Week 96 in subjects with screening HIV-1 RNA ≤100,000 c/mL. RPV/FTC/TDF demonstrated fewer discontinuations due to AEs, and was well-tolerated. Based on these results, RPV/FTC/TDF is a favourable option for treatment-naïve patients with a screening HIV-1 RNA ≤100,000 c/mL.

P310

Atazanavir/cobicistat fixed-dose combination is bioequivalent to the individual components

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Background: The once-daily protease inhibitor atazanavir (ATV) boosted with low-dose ritonavir (RTV) combined with other antiretrovirals is approved for the treatment of HIV-1 infection. Cobicistat (COBI), an alternative pharmacoenhancer to RTV with more selective CYP3A inhibition but no antiretroviral activity or CYP induction, has similar pharmacoenhancing activity as RTV. A Phase III trial has demonstrated comparable efficacy and safety of ATV 300 mg + COBI 150 mg relative to ATV 300 mg + RTV 100 mg. To reduce pill and prescription burden, a fixed-dose combination (FDC) of ATV/COBI has been developed. Because ATV is recommended to be taken with food, which enhances ATV bioavailability and reduces pharmacokinetic variability, we assessed the bioequivalence of ATV and relative bioavailability of COBI in an FDC vs ATV and COBI coadministered individually after a light meal.
Methods: This randomized, open-label, cross-over study in 64 healthy subjects assessed 48- hour ATV and COBI plasma concentration-time profiles after single doses of an FDC of ATV 300 mg/COBI 150 mg or ATV 300 mg and COBI 150 mg co-administered as individual agents (NCT01837719). Treatments were administered after a light meal and followed by a 7-day washout between each period. Pharmacokinetic (PK) parameters assessed were Cmax, AUC(INF), and AUC(0-T). Bioequivalence for ATV was established if the 90% confidence intervals (CIs) for the FDC vs individual administration geometric mean ratios (GMRs) fell within the predefined limits of 0.80-1.25 for all PK parameters.
Results: All ATV PK parameter GMR 90% CIs fell within the predefined limits indicating bioequivalence of the FDC to ATV 300 mg and COBI 150 mg coadministered individually (Table). Although not prespecified, COBI in the FDC also met the criteria for bioequivalence to coadministration of the individual agents.
Conclusions: ATV and COBI administered in an FDC is bioequivalent to coadministration of the individual agents under fed conditions.

	Adjusted geometric mean		
PK parameters	ATV + COBI n=63†	ATV/COBI FDC n=62†‡	GMR (90% CI)*
ATV			
C_{max} (ng/mL)	3822	4101	1.07 (1.01, 1.14)
AUC(INF) (ng.h/mL)	33475	35623	1.06 (1.01, 1.12)
AUC(0-T) (ng.h/mL)	32723	34848	1.07 (1.01, 1.12)
COBI			
C_{max} (ng/mL)	1320	1351	1.02 (0.99, 1.06)
AUC(INF) (ng.h/mL)	9053	9225	1.02 (0.98, 1.06)
AUC(0-T) (ng.h/mL)	8745	8912	1.02 (0.983, 1.057)

†One subject excluded as accidentally given both treatments A and B. ‡One subject excluded as vomited shortly after receiving treatment B.

P311

Raltegravir-containing antiretroviral therapy in HIV-infected individuals over 60 years of age: a Phase 1 pharmacokinetic study

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Background: Antiretroviral (ARV) safety, efficacy and pharmacokinetics (PK) may differ in older versus younger HIV-infected patients. The objective of this study was to assess each of these profiles in older HIV-infected subjects (>60 years) switching combination antiretroviral therapy (cART) to a raltegravir (RAL) containing regimen.
Methods: 19 HIV-infected patients over 60 years of age on effective cART (HIV-RNA <50 copies/mL) were enrolled in this prospective 24 week study. On day 1, patients switched to tenofovir/emtricitabine (TDF/FTC 245/200mg once daily) and RAL (400 mg twice daily). On day 28, intensive PK sampling was undertaken in a fasted state and RAL plasma concentrations determined by a validated LC-MS/MS method. Neurocognitive function was assessed at baseline and week 24 using a neuropsychological battery of eight tests (NPZ-8). RAL PK parameters were compared to those of two younger historical HIV-infected control groups that received twice daily RAL co-administered with darunavir/ritonavir (DRV/r) 800/100 once daily: control 1(n=14, age: 25-55, fasted) and control 2 (n=24, age: 26-51, low-fat meal) by nonlinear mixed effects modelling (Monolix v 4.2.0; Lixoft, France).
Results: Median (range) age was 67 years (61-73) and CD4+ count at baseline and week 24 were 618 (154-1387) and 518 cells/uL (220-969), respectively. RAL area under the curve, maximum concentration and plasma concentration at 12h were: geometric mean values (confidence interval) 6240 ng.h/mL(3740-10406), 1732 ng/mL(969-3095) and 73 ng/mL(45-118), respectively in study patients. Older age (>60 years) or DRV/r intake did not influence RAL PK but relative bioavailability was reduced by 53% following a low-fat meal. HIV-RNA remained undetectable in all subjects and there were no clinically significant abnormalities in laboratory parameters throughout the study. A significant deterioration in global cognitive function score for NPZ-8 was observed over 24 weeks (baseline; NPZ-8 [SD]: 0.31[0.7] vs week 24 -0.59 [1.3], z-change[SD]= -0.91[1.3], p= 0.018)
Conclusions: Raltegravir is safe and well tolerated in older HIV-infected subjects. We observed no significant changes in raltegravir concentration associated with age. The clinical significance of the slight deterioration in global cognitive performance warrants further investigation

P312

Experience of managing patients with primary HIV infection in a large London HIV Centre

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Background: In London, 22% of new HIV diagnoses amongst men who have sex with men (MSM) were probably recently acquired infections. Immunological

damage after HIV acquisition is not wholly reversible by later antiretroviral therapy (ART). There is some evidence that early initiation of ART in primary HIV infection (PHI) may be beneficial. Early initiation of ART may also be an important opportunity to reduce the enhanced risk of onward transmission during PHI.
Methods: A retrospective case note review of patients diagnosed with PHI (defined as diagnosis within 6 months of a negative HIV test; incident recent infection testing algorithm and/or clinical presentation with new positive or evolving HIV serology) between January 2012 and December 2013. Patients were identified from coding data and the UK Seroconverter Register.
Results: 42 patients with PHI were identified (20% of 209 new HIV diagnoses) during the study period. All were male, and 39 (93%) were MSM. The median age was 30 years (range 18-52). The median time from last HIV negative test to diagnosis was 4 months (range 0.5 – 48). Where documented, 29/34 (70%) reported symptoms suggestive of PHI on average 5.4 weeks prior to diagnosis (fever 17, 50%; rash 10, 29%; sore throat 6,18%; diarrhoea 7, 21%; general malaise/fatigue 8, 24%. The median baseline markers were: CD4 count 516 cells/uL (70-1165), viral load 613500 copies/uL (range <20 to >10,000,000), ALT 58 IU/L (range 10-485), platelets 237x10^9/L (99-699). 10 (24%) were co-infected with a bacterial sexually transmitted infection. ART was commenced within 3 months in 28 (62%) a mean of 4.4 weeks (range 0-12) from diagnosis. Of those, CD4 count was >350 cells/uL in 22/28 (79%). 28 patients had standard ART regimens. 6/15 (40%) of patients initiated on an efavirenz based regimen developed a rash. From 2012 (n=14) to 2013 (n=28) there was no significant difference in demographic characteristics, baseline CD4, or time from diagnosis to initiation of ART (p-values 0.51, 0.36, 0.79 respectively), however there was a tendency towards shorter time from symptoms to diagnosis (10 vs. 4.7 weeks, p-value 0.08) over time.
Conclusion: The number of patients identified with PHI increased and there was a tendency towards earlier diagnosis from onset of symptoms over the study period. STI co-infection was high. Two thirds initiated early ART in PHI irrespective of CD4 count. This could have a significant impact on onward transmission.

P313

Is switching to Kivexa with rilpivirine as effective as switching to Eviplera in clinical practice?

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Background: Several studies and cohorts report favourable outcomes when switching to tenofovir-emtricitabine-rilpivirine (Eviplera, EVP). There are no data for switching to abacavir-lamivudine (Kivexa, KIV) with rilpivirine (RPV). We compared outcomes in practice.
Methods: All patients switching to KIV-RPV or EVP from June 2012 from 2 HIV units were identified. Treatment history, indication for switch and discontinuation, viral load (VL) outcomes were analysed using chi-squared, Fishers or Mann-Whitney U test as appropriate. Only first use of RPV was included. Any ART change was considered failure.
Results: 356 patients switched, 17% (61) to KIV-RPV. There were no significant differences between KIV-RPV and EVP in baseline demographics (age, sex, ethnicity, risk for HIV), previous regimen (54% vs 55% switch from NNRTI+2NRTI, p=0.7), indication for switch (43% vs 41% due to CNS side effects P=0.86), VL<50c/ml (93% vs 88%, p=0.38) or CD4 at switch (561 vs 689 cells/mm^3, p=0.38). Those switching to KIV-RPV had been on ART for longer (median 8 vs 5yrs, p=0.02).
At 24 and 48 wks follow up, 81% (38/47) vs 79% (200/253, p=0.78), and 50% (11/22) vs 67% (121/181, p=0.12) remained on KIV-RPV or EVP respectively with VL<50c/ml (S=F analysis; missing=excluded). In an on treatment analysis, 96% (44/46) vs 95% (236/248, p=0.89) and 100% (17/17) vs 96% (155/161, p=1.00) had VL<50c/ml at these time points.
Overall 20% (72) discontinued an ARV in their regimen; 20% (12/61) from KIV-RPV, 20% (60/295) from EVP (P=0.91). Compared to KIV-RPV there were no differences in median time to discontinuation (8.1 weeks for KIV-RPV vs 12.9 wks for EVP, p=0.83) or discontinuation by 24 week (17% vs 17%, Kaplan-Meier estimates p=0.66). Reasons for indications were similar, with toxicity/intolerance the most common (58% [7/12] vs 50% [30/60], p=0.60). 17% (2/12) and 13% (8/60) stopped KIV-RPV or EVP with detectable VL>50 copies/ml. 6/10 failed with resistance, 5 on EVP: 2 with low level etravirine resistance (E138K + M184I, 1 on KIV-RPV), and the remaining EVP patients failing with intermediate (1/6, K103N, L100I + M184V), or high level etravirine resistance (K101E, V108I, Y181C, G190A, A98G + T215F, M184V, V75I [1]; F227C, M230L + M184I [1], Y181C, M230L + K65R & M184I [1, but likely archived resistance])
Conclusions: In this diverse cohort, switching to KIV-RPV was as effective as EVP at maintaining virological suppression. No key difference between the 2 regimens were observed.

P314

The reasons and financial impact of switching antiretroviral drugs: room for improvement?

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Background: Similar to many other medical specialities, the cost of drugs is the main component of HIV departments' budgets in the UK. The cost effectiveness of combined antiretroviral (cART) drugs is well established. Reduction of cART drugs' wastage is therefore a significant measure to improve cost effectiveness for HIV departments. We investigated the reasons for switching cART in a cohort of HIV infected patients. We also calculated the cost of switching based on the volumes of previous medicines returned to the hospital.
Methods: In our centre, the decision on switching cART is made jointly between the patients, HIV doctors and pharmacists. Once the decision is made, the new cART is issued and dispensed to the patients and they are advised to return the supply of their previous cARTs for safe disposal. The supply can be handed over to HIV nurses, or pharmacists at any clinic session. HIV pharmacists routinely record patients' names, the names of the medicines, the volumes, and values of each cART collected from patients at the time of the return of their previous regimes. The reasons for the switch are also recorded. We collated data on patients who switched their cART between September 2010 and September 2013 for the present study.
Results: We identified 84 patients who switched their cART 109 times involving 212 cART medicines during the above period. The most common reasons for switch were toxicity (41/109, 37%), and cART simplification (23/109, 21%). Switching reasons for virological failure (10/109, 9%), and non-collection of pre-filled blister packs of cART (10/109, 9%) were other significant reasons. Amongst patients with toxicity, (10/41, 24%) switched because of deterioration of renal function. The average value of the switched cART medicines per patient was £817.00 in 2010, £1170.00 in 2011, £1192.00 in 2012, and £958.00 in 2013.
Conclusion: Switching cART is an expensive step in HIV management. Our data suggest that the timing of switching can be delayed for cART simplification and for cases of long term and low grade toxicities. Further education of patients receiving pre-filled cART blister packs for adherence support to collect their medicines on time can reduce the cART wastage further.

P315

Generic nevirapine: cost savings in a large urban clinic

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Background: Nevirapine came off patent in June 2013 allowing generic nevirapine to be produced. This represented an opportunity to make cost savings within the drugs budgets for departments providing HIV care, in keeping with wider NHS budgetary needs. Branded nevirapine, Viramune, comes in 2 preparations, Viramune (200mg, licensed for BD use) and Viramune XR (400mg, licensed for OD use). As with any drug switching, there were concerns that new problems might arise from the generic formulations. Patients were counselled at their appointment and at pharmacy about the switch to generic medications.
Method: Patients using nevirapine were identified from electronic dispensing records held in pharmacy. No patients were prescribed Viramune XR within the unit in anticipation of generic nevirapine becoming available. The electronic records were reviewed in order to see if there had been an increase in

specialist nurse appointments or doctor appointments following the nevirapine switch, and any patients accessing extra appointments had their case notes reviewed.
Results: 246 patients were found on the database. As all patients were under routine follow up care, they would not be expected to need to access specialist nurse appointments, and to access 1 doctor appointment.
After the nevirapine switch date, 116 specialist nurse appointments were accessed by these individuals, with 41 patients accessing 1 appointment and 25 patients accessing 2 or more appointments. An additional 78 doctors appointments were accessed by 61 patients. These notes were reviewed. 1 patient was a new starter and had a classical nevirapine rash and was found to be HLA DRB1*15 positive. No extra face to face appointments were for nevirapine related issues. 2 patients called in with concerns about generic medications. The savings for those switching to nevirapine represents a 90% reduction in the monthly costs. There were no discontinuations due to discontent at being switched to a generic medication.
Conclusion: Within the limits of this notes review, it is clear that the switch from Viramune to generic nevirapine has been well tolerated within the cohort. There were no stops due to the switch. Additional specialist appointments were accessed during the switch period, none of which were attributed to the generic switch. Given the magnitude of the cost reduction, generic nevirapine represents excellent opportunities for cost savings with no compromise on patient care.

P316

Do common medicines information resources identify drug interactions between the most frequently prescribed medicines in primary care in the UK and antiretrovirals?

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Introduction: Antiretrovirals (ARVs) have transformed HIV into a chronic disease. As our cohort ages they may develop other co-morbidities requiring treatment, which are increasingly prescribed by non-HIV specialists. Drug-drug interactions (DDIs) are common with ARVs. We looked at frequently prescribed non-ARV drugs (nARVs) and their potential for DDIs with commonly prescribed ARVs.
Method: The DDI potential of the UK's most frequently prescribed nARVs with efavirenz (EFV), atazanavir/ritonavir (ATV/r), elvitegravir/cobicistat (EVG/c), raltegravir (RAL) and rilpivirine (RPV) were identified using data from the Summaries of Product Characteristics (SPCs) and Martindale. We reviewed common medicines resources (British National Formulary online [eBNF], SPC for the ARV and nARV) and the Liverpool HIV DDI website (LIV-DDI) to see if potential DDIs were identified and appropriate management advice given. If nARVs were from the same class (e.g. statins), with similar likely DDI, then the most commonly prescribed nARV was chosen. Differences were assessed using Fisher's exact test.
Results: 23 nARVs were reviewed; 52% (12/23) had potential DDIs with at least one of the ARVs considered. 9% (2) had type A DDIs (see table), 22% (5) type B, and 22% (5) type C. Type A and B DDIs were observed in 30% (7/23) for ATV/r, 26% (6) EVG/c, 22% (5) EFV, 4% (1) RPV and 4% (1) RAL ($p=0.035$). The eBNF identified 60% (12/20) of all type A and B DDIs, compared to 70% (14) for nARV SPCs, 75% (15) ARV SPCs and 100% (20) LIV-DDI ($P=0.010$). LIV-DDI identified more type C and D DDIs (83%, 77/93) than the eBNF (0%, 0), nARV (0%, 0) and ARV SPCs (2%, 2, $P<0.0001$).
When type A and B DDIs were identified, clear, appropriate management advice was given by eBNF in 20% (4/20) of cases, ARV-SPC 60% (12), and nARV-SPC 65% (13), compared to 100% (20) by LIV-DDI ($p<0.0001$).
Conclusion: ARV DDIs with frequently prescribed non-ARVs are common but less likely to be identified by the eBNF or SPCs, than the Liverpool DDI website. As patients increasingly engage other healthcare services it is important appropriate resources are used to identify DDIs. Strategies are required to ensure integrated care and that the HIV team are accessible for advice.

Category	Defined as a potential DDI:
A	Which contraindicates use of one/both drugs
B	Requires dose modification or enhanced monitoring of one/both drugs
C or D	Of unlikely clinical significance requiring no change to dose or monitoring OR no DDI predicted

P317

Darunavir/ritonavir (DRV/r) monotherapy durability and tolerance study

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Background: Protease Inhibitor monotherapy (PIM) is not recommended within the BHIVA guidelines but may be an option for individual patients. The durability of response and toxicity profile of PIM is unknown in the clinical setting. We have analysed our use of Ritonavir boosted Darunavir (rD) as PIM and followed up the long term efficacy of regimens over a 5 year period.
Method: A retrospective cohort study of individuals switched to rD (800mg/100mg) monotherapy from 2007 to 2012. These patients have been analysed retrospectively for treatment response, virological failure and adverse effects.
Results: 354 individuals switched to rD. 98% were treatment experienced. 67 had a detectable viral load at the time of switching. 85% of patients were male with an average age of 60 (range 23-87) years. 203 (57.3%) were still receiving rD monotherapy at the end of the study period. 144 of 354 patients switched to an alternative therapy, 3 stopped antiretroviral treatment and 4 patients died during the study period.
Of the 40.7% ($n=144$) of patients who switched therapy, 50% switched due to virological failure, and 29.9% switched due to adverse drug reactions, GI symptoms being by far the most reported reaction (32.6%).
Of the 72 patients (20%) who switched from DVR/r due to virological failure there was an average of 388 days before virological failure occurred. 94% intensified treatment, the most common intensifiers being Truvada, Lamivudine and Kivexa. Only 4 patients switched therapies completely. 3 individuals developed PI mutations.
24 (56% n) of those commencing rD with a detectable viral load ($n=67$) switched due to virological failure compared with 48 (13.5%) who switched with an initial undetectable viral load.
Conclusion: Rates of continuation with a durable response to rD are relatively low when compared to those reported with other regimens. However only 3 patients developed resistance and therefore intensification or switch to a new regimen would be expected to have a positive outcome. Individuals with a detectable viral load should not switch to rD due to high rates of subsequent failure.

P318

A Review of the indications for initiating antiretroviral therapy in patients with CD4 counts over 350 in a London cohort

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Background: Successful Antiretroviral Therapy (ART) has dramatically improved survival for people living with HIV and, for those with suppressed viraemia, can significantly reduce the risk of onward transmission. Current UK ART guidelines recommend ART for all patients with CD4 counts below 350 cells/cc3. Initiation of ART for those with CD4 > 350 cells/cc^3 remains controversial, with different recommendations between National and International guidelines.
This audit reviewed the recorded indications for starting ART in patients with a CD4 count greater than 350 over a two year period from 2012-2013 in a London cohort.
Methods: All patients with a CD4 count greater than 350 cells/cc3 initiating ART were identified through a clinic database. Data collected included: demographics, viral load, CD4 count prior to starting therapy, and case note review of recorded indication for treatment.

Results: In total between 2012-2013, n=282 patients started ART. Of these, 95/282 (34%) started with CD4 counts > 350 cells/cc[3]; 40 in 2012 and 55 in 2013. The mean CD4 count at ART initiation overall for this cohort was 516 cells/cc3 (range 357-1170). For those starting ART at CD4 count > 350 cells the stratification was as follows: 351-400: 30/95 (32%); 401-500: 22/95 (23%); and > 500 cells: 43/95 (45%). From case-note review, 25/95 (26%) individuals started ART at the time of Primary HIV Infection (PHI). The main indication documented in 24/95(25%) cases was a CD4 count approaching 350. The highest recorded CD4 count where this indication was stated was 380. 21/95 (22%) cases had a co-morbidity and 13/95 (14%) individuals started treatment to reduce transmission risk. An AIDS-defining condition led to ART initiation in 3/95 (3%) - all of these 3 patients had Kaposi's sarcoma.
Conclusion: This audit shows that in individuals commencing ART at CD4>350, the majority of patients were starting treatment because of a decline in CD4 count towards 350, in accordance with BHIVA guidelines. The two main other indications for starting ART at CD4 > 350 were PHI and the presence of a co-morbidity. A small but significant number of patients opted to start treatment to reduce transmission.

P319

Is Raltegravir robust? – real world data across three UK centres

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Background: Existing evidence supports Raltegravir (RAL) use in both antiretroviral therapy (ART) naïve & switch patients, with BHIVA placing it as a preferred third agent. RAL has a limited side-effect profile with few drug-drug interactions. We reviewed our local RAL use to inform ongoing practice.
Methods: All patients accessing three HIV services commenced on RAL between Feb 2008 and April 2013 were identified via HIV database records. Demographic, clinical and biochemical data was collated. Patients were followed at 6 monthly intervals and outcomes recorded.
Results: 157 patients provided 337 patient years of follow up. 131 (83%) were male; 125 (79%) White & 15 (10%) Black African; 106 (68%) were MSM. RAL was used in 6 and 2 patients respectively with Hepatitis B and C co-infection. 108 (69%) were ART-experienced and 49 (31%) naïve. Median nadir CD4 count was 231 cells/mm^3. Median duration of RAL use was 26 months (range 6-60). Concomitant ART agents were varied with the most frequent co-prescription being Truvada (70/157 – 45%). ART-naïve patients at RAL initiation had a median CD4 count 282 c/mm^3 and VL 35586 copies/mL; 16 (33%) patients had an initial VL >100,000. 3 naïve females commenced RAL in pregnancy; all had VL <40 c/mL at delivery and HIV-negative infants. ART-experienced patients had a median baseline CD4 count 503 c/mm^3 and VL <40 c/mL. Median VL remained <40 c/mL throughout follow up with no significant change in median bilirubin, transaminases or lipids. 8 (5.1%) patients discontinued RAL: 2 postnatally, 2 for simplification, 2 with ART-related side effects, 1 with persistent viraemia (no integrase resistance identified). 1 patient discontinued ART whilst undergoing surgery, recommencing unchanged 3 months later. 48 (31%) patients had detectable VL (>40 c/mL) during follow up: 45 with blips, 3 with persistent viraemia. 21 had documented poor adherence, 1 received a 800mg OD regimen. Only 5 patients required a change in ART, 2 with NRTI-associated mutations (M184I), 1 requiring intensification, and 2 patients stopping RAL.
Conclusion: Our data shows RAL to be safe and efficacious in a wide variety of ART regimens and clinical contexts, including high viral loads, co-infection and pregnancy. RAL discontinuation is infrequent, with no integrase mutations, despite intermittent VL blips being seen. RAL is an excellent option for naïve and experienced patients.

P320

Quantifying polypharmacy in a large HIV cohort

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Background: Potential drug to drug interactions (DDI's) have been a concern in HIV medicine since the introduction of highly active antiretroviral treatment (HAART) in the 1990's. Our HIV cohort is ageing which increases the risk of polypharmacy and thus DDI's. Our aim was to quantify the degree of polypharmacy and DDI's using an HIV clinic management database.
Methods: Our HIV clinic database records current antiretrovirals and all other prescribed medication. This is updated at each visit by clinic staff and maintained by a database manager. Medicines reconciliation is achieved by direct enquiry and review of the patient's general medical electronic record using a Clinical Portal. For patients attending in the year prior to 04/10/2013, we extracted key demographics, CD4, viral load, antiretroviral regimen and list of all other medication. We categorised co-prescribed medications and looked for critical DDI's.
Results: Our cohort comprised 1415 patients of whom 92 (6.5%) were aged over 60. Among 1395 patients with evaluable data, 1227 (88%) were on HAART and 988 (71%) reported taking other medications. The median number of co-prescribed drugs was 2 (range 0 to 27, IQR 4), with 21% of patients taking five or more drugs. A total of 574 different medicines were recorded. In patients aged over 60, and also in those with hepatitis C co-infection, the median number of co-prescribed drugs rose to 4. Absolute CD4 count did not affect the number of co-prescribed agents. Twenty-six percent of all patients were on at least one central nervous system drug and 21% were taking a cardiovascular medication. In spite of this we found little evidence of critical DDIs. No patients were found to be on rilpivirine and a proton pump inhibitor. Among 64 patients prescribed a statin alongside a protease inhibitor only one of these prescriptions was for a contraindicated statin. Among 202 (14%) patients using any corticosteroids, 78 were on protease inhibitors. Of these, 24 DDIs were predicted, notably with inhaled and topical preparations.
Conclusion: This audit highlights the potential for serious DDI's in HIV practice in an aging cohort due to the degree of polypharmacy. Although steroid co-prescription remains a concern, other critical DDIs have generally been avoided. We believe this is due to good practice in medicines reconciliation, GP communication, and our pharmacy support team. Further improvements would come from real-time electronic drug interaction alerts.

P321

An assessment of HIV patients' views on generic (non-branded) antiretroviral therapy

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Background: Average annual cost of antiretroviral (ARV) regime is currently between £6,000 and £7,000 per person. The opportunity for significant reduction in the cost of ARV budgets in the UK through use of generic drugs has been well recognised. Seeking patients' views on generic drugs could identify potential concerns for switching from brand name ARVs and facilitate the transition. We conducted a survey to investigate HIV patients' views on switching to generic ARVs.
Method: Questionnaires were handed out to HIV infected patients on ARVs who attended our centre in October 2013. The survey consisted of 14 questions. Patients were given a short introduction to the survey during their routine clinic visit. Consenting patients completed the survey anonymously.
Results: Two hundred consecutive patients on ARVs consented to participate in the survey; 118 (59%) aged between 41-60 years and 143 (71%) were male. The majority of patients who took the survey spoke English as their first language (83.5%; n=167), were men who have sex with men (MSM) (44%; n=88) and were White British (43.5%; n=84). The majority of patients took their medication once a day (82%; n=164). A total of 112 (56%) respondents were willing to switch to a generic HIV drug. A significant majority of patients (65%; n=130) said they would not take a generic drug if it resulted in an increased pill burden.
Conclusion: Just over half of the surveyed patients (56%) were willing to take a generic HIV drug but only if it did not increase the pill burden of their ARV regime. By identifying patients that are willing to switch to generic ARVs while remaining on the same regime and number of tablets it would be possible to reduce drug expenditure and help with securing HIV drug budgets for patients requiring more complex and expensive regimes.

P322

Clinical features and epidemiology of HIV and coinfection with TB and/or viral hepatitis in a large clinic in Jeddah, Kingdom of Saudi Arabia

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Background: There are insufficient data on the epidemiology and clinical features of HIV in the Middle East. WHO statistics show the Kingdom of Saudi Arabia (KSA) to be oone of the least affected countries globally. However, the Saudi National Program for HIV Control reported a 34.6% increase in cases in 2008 from the previous year. Jeddah region has the highest proportion of HIV cases in KSA (40%). Infection risk data are not always complete and coinfection rates have not been studied.
Aims: To describe demographic and clinical features of HIV infection in clinics and hospitals in Jeddah and to document prevalence and risks for coinfections with tuberculosis (TB) and/or hepatitis
Methods: Retrospective study including all HIV positive Saudi adults attending the main treatment centre in Jeddah in one year. Data were systematically collected from casefiles and summarised. Statistical comparisons included univariate and multivariate analyses with a p value <5% considered significant.
Results: 1383 HIV positive adults were reviewed, median (range) age 40 (18-86) years, of whom 1026 (74.2%) were male. Risk factors included heterosexual transmission in 709 (51.3%), MSM in 264 (19.1%), blood products in 148 (10.7%), injecting drug use (IDU) in 97 (7%) and not identified in 165 (11%). The predominant clinical presentation was with respiratory symptoms 611 (44%), followed by gastrointestinal manifestations in 312 (22%), while 29% (408) were asymptomatic. Past or present TB coinfection (clinical and/or radiology) was found in 208 (15%); 59 (4%) had hepatitis B coinfection (HBsAg positive) and 82 (6%) had hepatitis C coinfection (antibody positive). TB was associated with IDU (RR 1.67 (CI 1.13-2.41) p< 0.01) and having been in prison (1.83 (1.18-2.85) p< 0.01) and these two risk factors were closely linked themselves. HBV coinfection was not linked with IVU (1.89 (0.93-3.85) p=0.08) but was linked to being in prison (2.38 (1.25-4.54) p <0.01), while HCV was strongly linked with IVU (4.22 (2.71-6.57) p<0.01) but not with imprisonment (1.94 (1.04-3.63; p=0.07)
Conclusion: HIV/AIDS and related coinfections are medical problems in Saudi Arabia with many social challenges. The Saudi National Program for HIV Control actively addresses prevention of HIV and provision of high quality care for those affected. More detailed studies are needed on clinical patterns in outpatient and inpatient settings and on locally appropriate prevention programmes in high risk groups.

P323

Longer-term follow-up of protease inhibitor-based dual antiretroviral therapy (PIDAT) in clinical practice

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Background: PI-based Dual Antiretroviral Therapy (PIDAT) is being evaluated as a switch strategy in a number of clinical studies. We looked at longer term outcomes in clinical practice.
Method: Patients switching to a single protease inhibitor (PI/r) plus one other ARV (excluding PI/r) from 2004 to 2011 were identified from our HIV database. Treatment history and indication for switch were identified. Virological outcomes were assessed for those with the potential for 96 weeks or more follow up.
Results: 133 patients switched, 79% (93/133) were male, 65% (87) of white ethnicity, median 45yrs old (27-69), 61% (81) MSM. 77% (103) were VL<50c/ml and median CD4 618 cells/mm^3 (range 107-2320) at switch, with median 11.7 yrs on ART (0.1-22.6), and 7 (1-24) prior regimens. 39% (52) had no resistance at switch, 33% (44) with NRTI, 18% (24) NNRTI and 9.7% (13) PI mutations.
39% (52) switched from dual PI/r based (PI+PI/r+/-other) regimens, 25% (33) PI/r+2NRTI, 5% (7) NNRTI+2NRTI, 12% (16) PI/r monotherapy, and 19% (25) other. Indications for switch were: 28% (37) rationalisation of dual protease inhibitor-based regimens (15 switch from dual protease inhibitors for other reasons), 29% (39) current NRTI toxicity, 11% (15) intensification of PI monotherapy and 4.5% (6) resistance.
82% (109) of PIDAT regimens used DRV/r (101 OD, 8 BD). Second agents were 17% (23) NRTIs (11 TDF, 10 3TC/FTC, 2 ABC), 56% (75) NNRTI (67 ETR, 6 NVP, 2 EFV), 23% (30) maraviroc and 3.7% (5) raltegravir. Etravirine and maraviroc were prescribed once daily in 81% and 79% of cases respectively. 95% (127/133) had 96wks or more FU, with 77% (85/110), 64% (54/84) and 58% (40/69) remained on PIDAT with VL<50c/ml at 96, 144 and 192 weeks respectively (snapshot analysis, +/- 10 weeks). The percentages with VL<50 c/ml at these same time points (disregarding regimen switches) were 92% (96/104), 91% (69/76) and 94% (48/51), At last FU, 92% (122/133) had VL<50c/ml after median 170 wks (range 0-618) follow-up. 20% (32/133) discontinued PIDAT, with median time to discontinuation of 44 weeks (range 0-241). 55% (16/29 for whom data were available) had VL<50c/ml at discontinuation, 60% (20/32) intensifying to triple therapy, 30% (9) switching to PI monotherapy, and 10% (2) stopping ART.
Conclusions: Protease Inhibitor-based Dual Antiretroviral Therapy (PIDAT) may be an effective maintenance strategy in the longer term.

P324

Switching ART: the rates and reasons for changing first-line ART in a mixed urban cohort

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Background: Understanding the rate and reasons for changing first-line ART in HIV treatment is important. This study looks at ART changes and their outcomes at a single UK tertiary centre.
Method: A sample of 129 was randomly selected from 331 patients who started first-line ART between January 2008 and January 2013. Changes in ART in the first 24 months after commencing treatment were recorded and clinical notes were reviewed.
Results: Data were collected from 122 patients (7 lost to follow-up). Within the first 24 months of treatment 52/122 patients (43%) switched ≥1 ART component. Of the 52 patients that changed, median time on ART before changing regimen was 7 months (IQR 2-13). First line regimen included efavirenz (EFV) in 32(62%) and protease inhibitors(PIs) in 13(25%). Median time on EFV before changing was 7 months (IQR 1-13.25). Median time on non-EFV regimens before changing was 6.5 months (IQR 2.75-13.5). CNS symptoms on efavirenz-based ART accounted for most changes (16/52, 31%) leading to replacement of efavirenz with another NNRTI (rilpivirine, n=6; nevirapine, n=2; etravirine, n=1), a PI (n=5) or Raltegravir (n=2). Median time on EFV in those with CNS symptoms was 6 months (IQR 1-14.5) Overall 14/16 (88%) patients reported resolution of CNS symptoms on average 1.9 months after changing ART. 2 patients who changed from EFV to rilpivirine or PI had persistent insomnia. Four patients switched due to deteriorating renal function, 3 of these were on a regimen containing tenofovir. In 3 (75%) renal impairment did not improve after changing treatment. Four had a rash or Stevens-Johnson syndrome and 4 developed abnormal liver function tests, half improving after changing treatment. 13(25%) changed due to poor virological suppression, after a median 7 months (IQR 5-9). 7(54%) were on an EFV. 11 (85%) were changed to a PI containing regimen. 11(85%) achieved virological suppression after changing ART. 3(23%) patients with poor virological suppression had baseline resistance. 22 patients (42%) switched a second time.
Conclusion: Changing first line ART is common. It appears that CNS symptoms affect those on EFV well beyond the early phase of treatment. Waiting for baseline resistance testing avoids the need to change ART in those with poor virological suppression.

P325

A comparison of virological outcomes among HIV-positive individuals receiving HAART in Canada and the UK

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Background: Differences exist in the guidelines, co-ordination and provision of HIV clinical care in the UK and Canada. We compared virological outcomes among individuals starting highly active antiretroviral therapy (HAART) in these two countries.

Methods: Datasets from two large cohort collaborations, the UK Collaborative HIV Cohort (CHIC) Study and Canadian Observational Cohort (CANOC) were merged. Individuals included had started HAART since 2000, had a baseline and ≥1 follow up CD4 count and viral load (VL) and had acquired HIV through sexual contact. Demographic and clinical characteristics were compared using chi-square and Wilcoxon Rank-Sum tests. Cox Proportional Hazards models compared virological suppression defined as two consecutive VL <50 copies/ml and viral rebound defined as two consecutive VL >500 copies/ml between cohorts. Stratified analyses considered differences by year of starting HAART (2000-2003, 2004-2007, 2008-2010).

Results: A total 2,331 individuals from CANOC and 14,967 from the UK CHIC Study were included. CANOC participants were older (median (interquartile range (IQR)) 40 (34, 47) vs. 36 (31, 43) years), more likely to be male (93% vs. 70%), co-infected with hepatitis B (11% vs. 5%) or hepatitis C (8% vs. 5%) and start a protease inhibitor-based HAART regimen (56% vs. 25%). Median (IQR) CD4 count and VL were similar: 220 (120, 310) cells/mm^3 and 4.9 (4.5, 5.0) $\log_{10}$copies/ml in CANOC; 216 (120, 310) cells/mm^3 and 4.8 (4.1, 5.0) $\log_{10}$copies/ml in the UK CHIC Study. Median (IQR) time to suppression was similar: 4.6 (4.4, 4.8) months in CANOC and 4.1 (4.0, 4.1) months the UK CHIC Study (p=0.18). There was no difference in the likelihood of suppression between cohorts after adjusting for VL, CD4 count, HAART regimen, calendar year, age, sex and exposure (adjusted Hazard Ratio (aHR) [95% Confidence Interval (CI)]: 0.97 [0.93, 1.21]) or when stratified by calendar year. Viral rebound was experienced by 2,119 (13.3%) individuals. Between 2000 and 2003 CANOC participants were more likely to experience viral rebound (aHR [95% CI]: 1.51 [1.25, 1.82]) but no difference was seen in later calendar years (aHR [95% CI]: 1.04 [0.82, 1.32] 2004-2007; 0.84 [0.54, 1.31] 2008-2010).

Conclusion: Despite differing healthcare and demographic settings, there was no difference in achievement of virological suppression. Whilst viral rebound outcomes were poorer in Canada in earlier calendar periods, this difference was attenuated in more recent years.

P326

Antiretroviral treatment switch in an urban HIV cohort

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Background: While effective treatment is available for the management of HIV, some patients require a switch from their initial regimen; reasons include resistance, toxicity, intolerance, co-morbidities, pill-burden and drug interactions. Understanding reasons for switching therapy can improve the patient experience and adherence, reduce potential resistance and adverse clinical sequelae as well as reducing drug wastage, thereby improving cost-effectiveness.

We sought to identify the reasons for switching regimens amongst patients on antiretroviral therapy (ART) in an urban HIV clinic in the UK, and to describe ART prescribing trends.

Materials and Methods: Information regarding patients switching therapy was collected prospectively and entered onto a spreadsheet. Data including demographics, reason for switching and details of treatment regimens were collected between April 2012 and December 2013 and subsequently analysed. Patients were divided into 6 'switch categories':

- Switch to a protease inhibitor regimen from a non-protease inhibitor regimen
- Switch to Eviplera
- Switch to a Raltegravir-containing regimen
- Switch to Maraviroc with a boosted protease inhibitor
- Switch to Maraviroc with boosted protease inhibitor and an additional agent
- Switch to any other combination

Results: Overall 228 patients were identified to have switched ART regimens. 137 (60%) male; 150 (66%) heterosexual, 107 (47%) Black African/Caribbean, and 83 (36%) Caucasian. Overall, switch categories 1 to 5 represented half of the total number of switches (114 patients, 50%) and this sub-group was analysed. Of these 52 patients (22.8%) switched to Eviplera, and 36 patients (15.7%) switched to a boosted protease inhibitor regimen. Toxicity was the main reason for switch.

Table 1: Reasons for ART switch

Reasons for switch (n=228)	n (%)
Toxicity	68 (29.8)
Intolerance	54 (23.7)
Pill burden	33 (14.5)
Resistance	20 (8.8)
Co-morbidity	13 (5.7)
Drug interactions	7 (3)
Other	33 (14.5)

Conclusion:

- Over 50% of patients switched ART regimen because of intolerance or toxicity with only a minority requiring treatment change due to resistance.
- Prescribing trends reflected current clinic guidelines on switching treatment.
- As the population ages, switching ART regimens because of drug interactions and co-morbidities will become more common.

P327

Prescribing of combination nucleoside reverse transcriptase inhibitors for first-line anti-retroviral therapy: can drug costs be lowered?

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Background: HIV services are under increasing financial pressure as numbers of HIV positive patients and novel anti-retroviral therapy (ART) costs rise, but budgets do not. British HIV Association (BHIVA) guidelines for the choice of nucleoside reverse transcriptase inhibitor (NRTI) backbone for ART naïve patients recommend using Truvada, with Kivexa as an alternative choice. Our institution has modified these recommendations on the basis of cost; local guidelines advocate Kivexa as the preferred NRTI backbone, using Truvada if there are clinical indications for avoiding Kivexa. We aimed to identify opportunities for decreased ART spending, when Kivexa could be prescribed instead of Truvada as first line ART.

Methods: A retrospective case note review was undertaken for all patients who had been dispensed Kivexa, Truvada or Atripla in the preceding six months. The following data were recorded for patients on Kivexa or Truvada as part of a first line regime, and those currently on Atripla but who had previously been prescribed Kivexa or Truvada as a first line regime: NRTI backbone chosen, documented reason for choice of backbone, contraindications to Kivexa.

Results: 198 patients were prescribed Kivexa, Truvada or Atripla as their 1st line regime. Tenofovir and Atripla accounted for 64% of 1st line NRTI backbones prescribed.

Only 37% of the 76 patients on Truvada had an appropriate clinical indication for avoiding Kivexa. For 38% of patients, a clinical indication for the use of Truvada over Kivexa was documented which did not fulfil the local guidelines. Of those who were prescribed Atripla but had previously received Truvada as a first line regime, 74% could have received Kivexa instead of Truvada. Only 8% (13 patients) on Atripla had received Kivexa before.

Based on a calculated saving of £74 per person per month using Kivexa instead of Truvada, £42,624 per annum could be saved if patients currently on Truvada with no reason to avoid Kivexa were prescribed Kivexa.

Conclusion: We identified the potential for significant savings on ART spending by prescribing Kivexa as the NRTI backbone for first line ART to those with no clinical indications to avoid it, in accordance with local guidelines. The

use of higher cost ART when cheaper alternatives are available may, in the longer term, affect the availability of finances to ensure the maximum number of patients have access to ART.

P328

Patterns of early uptake of TDF/FTC/EVG/COBI ("Stribild®") in Germany

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Background: Germany is a European country with early access to the single tablet regimen (STR) Stribild (EVG/COBI/FTC/TDF). A cohort study "STRike" enrolled patients commencing Stribild and can provide insights into its early use.
Methodology: "STRike" is the first cohort study, describing the use of STRs in clinical practice in Germany. It collates data including demographics, previous treatment histories, treatment motivations, efficacy and safety data. 800 participants are included in 4 STR treatment arms (Atripla, Eviplera, Stribild). Patients will be followed for at least two years. This analysis describes the patient population joining the Stribild arm.
Results: 228 patients on Stribild are included in the cohort. Patients reflect the typical German HIV-infected population: 87 % are male with MSM route of transmission (73 %). Mean age is 40.3 years; a bimodal age distribution is seen with peaks in the age groups of 26-30 and 46-50 (16.8% each) representing a different patient population compared with the EFV/FTC/TDF and RPV/FTC/TDF cohorts. 37 % of patients are treatment naïve, 63% treatment experienced. The mean CD4 count for treatment naïve patients is 396 c/μl (Q1 269 c/μl; Q3 491 c/μl), although current German-Austrian guidelines recommend a treatment initiation at a CD4 count <350 c/μl. Treatment experienced patients switched to EVG/COBI/FTC/TDF with a mean CD4 count of 619 c/μl (Q1 407 c/μl;Q3 815 c/μl) and only 10 % had CD4 counts <200 c/μl; the majority of patients were switched from PI based regimens (43 %) (versus NNRTI 26 % and INI 20 %) with DRV being the leading compound (42 %). The majority of naïve patients (75%) show a strong desire to start ART with an STR, while treatment simplification (37 %) is the major motivation for switch patients. Co-Medications are common with 87.5 of patients reporting additional medications.
Conclusions: Early Stribild use in Germany suggests that an integrase based STR appears to be suitable treatment option for an early initiation of ART. There has been high usage in switch, suggesting Stribild meets a previously unmet need for treatment simplification, particularly in patients receiving multi tablet boosted PI based regimens. An integrase inhibitor based STR also appears to be utilized among an older, therapy-experienced patient population.

P329

Starting patients on Maraviroc and use of tropism assays: a single centre's experience

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Background: Maraviroc (MVC) is effective in suppressing the HIV viral load when used in combination with other ART. This makes MVC a valuable option in patients with contra-indications or resistance to standard first line therapy. Since MVC is only effective in CCR5 tropic individuals, a tropism assay is required in all individuals in whom use of MVC is planned. This is an expensive test (~£143 per test) and the results are only valid for 90 days in individuals with a detectable viral load. We aim to describe the experience using MVC within our patient cohort.
Methods: We undertook a retrospective case note review of 83 patients who had their tropism tested between June 2010 and April 2013. Baseline demographic data, the tropism result, previous and current ART, and the reason for switching to MVC were collated on an Excel database. Each patient's response to MVC was assessed by recording the VL, CD4, renal function, lipid profile, urine PCR, and BP at follow up intervals of 4 weeks, 12 weeks, 24 weeks, and 48 weeks post switch.
Results: 136 tropism tests were ordered for 83 patients. 62 patients (74.7%) were CCR5 tropic, of these, 20 (32.3%) were actually started on MVC. Median age of this group was 46 years (25-70), median time of previous ARV regime before switch was 44 weeks (4- 240), median follow up on MVC was 34 weeks (4-100). Reasons for starting MVC were: detectable viral load, to decrease pill burden, poor compliance, deterioration in renal function, and current ART side effects. All patients were treatment experienced.
No trends were noted in the CD4 count, creatinine, lipid profile, or BP following use of MVC. In one patient who switched to MVC and DRV/r due to renal toxicity, the urine protein to creatinine ratio improved from 541 to 195. 13 patients were started on MVC due to persistent viraemia. Of these, 8 completed 24 weeks of follow up and 6 (75%) had an undetectable HIV viral load.
Conclusion: MVC is an effective switch option in specific patient groups, such as individuals experiencing adverse effects with other ART combinations, or treatment experienced patients with limited options. In our cohort, a number of tropism assays were requested unnecessarily. Since this is an expensive test, complex patients being considered for MVC may benefit from a multidisciplinary team discussion in order to minimize repeat testing and improve cost effectiveness within the department.

P330

Gastric acid-reducing therapy is common in a large UK HIV-positive cohort on protease inhibitor-based cART, but has no significant effect on rates of virological failure

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Background: Drug-drug interactions remain a significant barrier to successful treatment of HIV with combined antiretroviral treatment (cART). There is concern that the efficacy of the protease inhibitor (PI) class can be impaired by concomitant administration of gastric-acid reducing agents, especially proton pump inhibitors (PPIs). In particular, available pharmacokinetic (PK) data for atazanavir led to guidance advising against the combination of atazanavir/ritonavir and omeprazole. The published data for other PPIs – especially darunavir – are less clear.
There are no published peer-reviewed data on the prevalence of gastric acid-reducing agent use amongst those on cART in the UK, and there are few studies that assess virological or clinical end points for PI use with concomitant gastric acid-reducing agents. We present an audit of gastric acid-reducing agent use in a large UK cohort taking cART, and an assessment of effects on virological outcomes of those on PI-based cART.
Method: We performed a retrospective case note audit of all HIV positive patients under the care of a UK tertiary centre, as of November 2013. We recorded the ARVs prescribed, any concomitant gastric acid-reducing agent use and HIV viral load at 6 and 12 months after starting therapy. Virological treatment failure was defined as viral load > 200 copies/ml at assessment time.
Results: We examined the records of 1602 patients; a total of 697 were currently taking cART; 249 (35.7%) were taking PI based regimens. Of these, 25 (10.0%) were taking concomitant gastric-acid reducing agents, of which 23 (92%) were PPIs. No patients were taking atazanavir and PPIs. Similar proportions of those on NNRTI based cART were also taking acid-reducing medication, 32/405 (7.9%) (p=0.35). Treatment failure rates in patients taking a PI based regimen were the same, irrespective of gastric acid-reducing agent use, at 6 months (17% vs 12%, p= 0.48) and 12 months (10% vs 13%, p=0.69)
Conclusion: We did not find an association between use of gastric acid reducing agents and adverse virological outcomes, but our study is underpowered to detect anything but a large effect. There are few published studies on the frequency of prescription of other common medications in HIV positive cohorts and studies of interactions with cART

are often limited by small size and lack of clinical and virological endpoints. Extending this local audit to a national setting or to other large cohorts would overcome this methodological problem.

P331

Acceptability of generic anti-retroviral medications: a patient survey

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Background: It is recognised that the use of newly available generic anti-retrovirals will generate financial savings, an increasingly important factor in the current economic NHS environment. However, quality of care and treatment outcomes should not be compromised. As more drugs come off patent and the use of generic medications increases, we aimed to assess their acceptability in our clinic attendees.
Methods: All service users attending our HIV clinic were asked complete a short anonymised questionnaire in July 2013. This asked whether generic medications were acceptable and what concerns if any, they had about switching. This was preceded by a written explanation about generic medication and why they may be asked to switch.
Results: 68 questionnaires were completed. Although we did not collect demographic data, we are a medium sized urban clinic. Our cohort is predominantly Black African (68%), women (60%), heterosexual (88%) with 83% aged 25-50 years old. The majority are diagnosed late and 80% are on antiretroviral medication.
Respondents took a median of 2 antiretroviral tablets a day (range 1-6). 26/68 (38%) felt that it would be acceptable to take the same quality treatment broken down into more tablets daily. 5/68 (7%) patients denied any concerns about taking generic tablets. 57% (36/63) said that they were worried about efficacy. 67% (43/64) said they were worried about pill burden. 67% (43/64) said they would be worried about new side-effects. Other concerns cited included being too busy to switch, anxiety about the unknown, a high level of trust and satisfaction with current medication, not wanting change a regimen that works after previous problems, impact on adherence and issues hiding more tablets from housemates.
Conclusion: The majority of respondents did not find generic medications acceptable. Pill burden, efficacy and side-effects were significant concerns. As the use of generic medications rises, these findings highlight the significant need for patient education, explanation and reassurance when switching. It must also be recognised that a small minority of patients may still refuse to switch, and in these cases patient choice should be considered. Since the study, we have switched some medications to generic formulations and plan to re-survey our patients in July 2014 to see if their views have changed.

P332

An audit of therapeutic drug monitoring (TDM) in clinical practice

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Background: The value of antiretroviral TDM is often questioned. BHIVA recommend against unselected use of TDM, but it is recognised that there may be clinical value in certain patient populations/clinical scenarios. These include management of drug-drug interactions (DDI), dose optimisation in children or pregnant women, and suspected non-adherence. The local cost is £80-£103 per sample so appropriate use is important. We examined our local TDM ordering to see the proportion that were abnormal and how often this resulted in change.
Method: All TDM requests for 2012 were identified. The results were analysed to see if the levels were in range. A review of medical notes determined the rationale for the TDM request and to see if results lead to treatment changes.
Results: Forty-seven TDM requests analysing drug levels in thirty-four patients were made in 2012. The indications for the TDM requests were 'monitoring adherence' (23, 49%), 'recent treatment switch' (8, 17%), 'pregnancy' (6, 13%), 'DDI' (5, 11%), ADR (1, 2%), 'suspicion of covert ART' (4 samples in 1 patient, 9% of tests). Thirteen patients had suboptimal levels of drug (17 samples, 35% of tests). This prompted regimen change in nine patients (69%). The other eight samples were taken from four patients; two had repeat viral load tests with satisfactory response (one was given extra adherence support) and one had repeat TDM for two drugs showing good levels. The fourth patient had four TDM samples analysed to exclude covert dosing of ART. Thirty TDM samples (65%) for twenty-two patients reported optimal drug levels. Six of the twenty-two (28%) patients had a change in treatment despite optimal levels; one was related to CNS toxicity on efavirenz, four (5 samples) had persistent low level viraemia, and one had a poor virological response on their current regimen. No changes in treatment were made in the remaining sixteen patients (72%). Repeat TDM analysis was requested in six patients resulting in 14 samples being analysed.
Conclusion: Less than half of the patients that had TDM analysis had a treatment change. Nearly two-thirds of this group had sub-optimal levels of drug and the remainder had drug levels within the accepted range. Patients that did not change treatment accounted for two-thirds of samples analysed. The cost of TDM analysis was nearly £4000 for this period. This spend is relatively low but further work is needed to see if cost savings could be made in this area.

P333

Use of Maraviroc (MVC) in clinical practice in an inner London HIV centre

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Background: MVC is a CCR5 antagonist recommended in treatment experienced patients with R5 tropic virus. It has also been used in various clinical situations including in patients with neurocognitive impairment and liver fibrosis.
Method: Data was collected retrospectively for all patients identified as being on MVC between October 2012 and January 2013. Demographics, year of HIV diagnosis, reasons for MVC use, dosages commenced, tropism assay results and HIV drug regimes prior to and after adding MVC were recorded. HIV viral load (VL) and CD4 count prior to, at 6 months and 1 year after adding MVC were also recorded. Creatinine (Cr) and eGFR were recorded prior to and 6 months post MVC.
Results: 40 patients were on commenced on MVC containing HIV drug regimens and received the treatment for one year except one patient who stopped treatment due to myositis. 75% of these patient were male (n=30), median age 52 (range 35-74). 43% (n=17) were black African, 38% white (n=15), 3% (n=1) Asian. Tropism assay results were available prior to commencing MVC for 34 patients (32 R5, 2 X4).
39 patients were treatment experienced and commenced MVC for the following reasons: intolerance to other therapy(n=4), drug resistance (n=8), neurocognitive impairment (n=11), low level viraemia (n=5), immune reconstitution(n=1), liver fibrosis (n=2), CNS penetration and renal sparing (n=1), no data available (n=9). One patient started on MVC as first line for renal sparing and CNS penetration.
No significant change in CD4 count was observed. CD4 at baseline median 406 cells/ml (range 15-1156) and at one year follow up was 456 cells/ml (range 38-1170).
58% commenced MVC with a suppressed HIV viral load (<100 copies/ml) and this was increased to 74% at one year follow up.
A total of 78% (n=31) were switched onto a regime that included a protease inhibitor (PI), 25 of these patients were on Ritonavir boosted Darunavir.
58% (n=21) had an e-GFR<80mls/min and 42% had an e-GFR>80mls/min and at 6 months follow up no change were observed.
Conclusion: MVC was well tolerated in the majority of patients. Viral suppression was improved with this simplified therapy and was preferentially used in patients with neurocognitive impairment in this cohort.

P334

Immunisation in co-infected HIV-hepatitis C patients: an audit of practice

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Background: The British HIV Association published guidelines on immunisation of HIV infected adults in 2008. This audit aims to address how effectively our population of HIV/hepatitis C (HCV) co-infected patients

are identified and immunised against hepatitis A (HAV) and B (HBV) virus, pneumococcal disease and influenza.
Methods: The unit database was searched for all co-infected individuals (n=183), the following were excluded; 90 due to undetectable HCV PCR, 6 were deceased, 4 due to unavailability of case notes. 83 patients were included; a review was conducted of data from paper records of clinic letters, written notes, lab reports and prescriptions from the current case note volume. Electronic information from the database and TRAK result system were included.
Results: 60.2% (n=50) of patients were HAV IgG positive; 2 had documentation of prior immunisation and 1 of infection. 37.5% (n=30) had negative HAV serology; of these 22 (73.3%) received vaccination, 3 (10%) declined vaccination, 5 (16.6%) had no record of vaccination, data was missing for 1 patient. 46 (55.4%) were HBcAb positive, 5 (6%) were thought to be positive on serology prior to 1997, 1 had equivocal serology, 1 had missing serology. Of the 29 (34.9%) with negative HBcAb/HBsAg serology, 23 (79.3%) received pre-exposure HBV immunisation (48% had documentation of the recommended 3 dose regime, 36% had incomplete immunisation or documentation). Of the 23 who underwent subsequent immunisation only 9 (39.1%) achieved satisfactory HBsAb titres; 13 had inadequate (<100IU/L) titres; of these 5 received a booster; however 2 of these 5 did not receive the required 3 further doses. 1 patient did not have a titre checked. 26.5% had evidence of receiving pneumococcal vaccination. 31.3%, 49.3% and 63.8% had evidence of a single influenza vaccination over the previous 1, 2 and 3 years respectively.
Discussion: : this audit is limited by being retrospective and only using current note volumes. However it highlights the difficulty posed to clinicians to determine the immunisation status of patients. Although the majority received appropriate HAV/HBV immunisation, monitoring immunological responses and pneumococcal/influenza vaccination could be improved. Recording information in a single, transferable format could improve implementation of the immunisation guidelines in this patient population.

P335

An audit to assess antiretroviral prescribing practice for treatment-naive HIV-1-positive patients in a London clinic

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Background: The 2012 British HIV Association (BHIVA) guidelines on treatment of HIV-1 positive adults with antiretroviral therapy (ART) recommend that treatment naïve patients should be started on Truvada or Kivexa as treatment backbone. Recommended third agents are efavirenz, nevirapine, rilpivirine, boosted atazanavir, boosted darunavir, boosted fosamprenavir and Kaletra.
It is also recommended that the presence or risk of co-mobidities and adverse effects should be taken into consideration when making the choice of ART in individual patients.
Aim: This audit aimed to assess the extent to which ART initiated for treatment naive HIV-1 positive adults conformed to BHIVA guidelines between January 2012 and June 2013.
Methods: This was a single centre retrospective case note audit of all ART naïve patients, 18 years old and over, who commenced therapy between January 2012 and June 2013. Data was collected from patient's case notes and electronic database. Data collected included patients' demographics, viral load, CD4, HLA –B*57:01, resistance test, urea and electrolytes (U&Es). Pregnant patients were excluded from this audit as prescribing should be in accordance to a BHIVA pregnancy guideline.
Results: A total of fifty, 18 years and over, naive patients, excluding pregnant patients, who commenced on ART between January 2012 and June 2013 were audited. Twenty eight (56%) were females and twenty two (44%) were males, thirty five (70%) were black Africans, four (8%) were Caucasians, two (4%) were Asian, nine (18%) were unknown/not documented.
All patients had their resistance test done prior to commencement of treatment.
Ten patients (20%) commenced on abacavir regimen and had their HLA-B*57:01 negative status recorded. Forty patients (80%) commenced on tenofovir regimen and had their renal function test recorded.
All patients had either Truvada or Kivexa as the ART backbone. Thirty five (70%) had efavirenz as third agent, while fifteen (30%) had either boosted darunavir or boosted atazanavir as third agent.
Conclusion: Overall, the audit revealed that routine ART prescribing for naïve HIV-1 positive adults at the clinic were in accordance with the BHIVA guidelines.
The audit did not evaluate the treatment outcomes of ART prescribing and future recommendation is to measure the outcomes of prescribing in terms of virological suppression and disease progression.

P336

Tamsulosin induced retrograde ejaculation and intramuscular steroid induced Cushing's syndrome in a patient with Ritonavir-boosted antiretroviral regimen

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Background: In HIV patients, Ritonavir, a potent inhibitor of the hepatic cytochrome P450, is recommended in combination with protease inhibitors (PIs) to improve their pharmacokinetic profile. If administered concurrently with other medication metabolized by the same pathway, this can lead to change in drug levels enhancing their side effect profile. Here we present a case of a patient who had developed unwanted effects due to the above drug-drug interaction.
Case: A 34 years old homosexual man from Egypt was diagnosed with asymptomatic HIV infection in March 2013. He had no significant past medical history except for previous urinary problems and was on Tamsulosin prescribed by his General Practitioner.
He was commenced on PI based anti retroviral regime (Truvada/Darunavir/Ritonavir) in May 2013.At post treatment review visit, he complained of symptoms of retrograde ejaculation which occurred after starting his HIV medication .He stopped taking Tamsulosin and the symptoms improved.
Shortly afterwards he flew to Egypt. On return he had signs and symptoms of Cushing's syndrome. On further questioning he admitted to the use of steroid injections (Triamcinolone Acetonide IM) on 5 separate occasions for a skin rash and also to build up his muscle mass. The short synacthen test was positive. He was commenced on hydrocortisone and referred to endocrinology. His ARV was switched to non-PI based regime.
Discussion: Tamsulosin is an alpha blocker and retrograde ejaculation is a recognized side effect of alpha blockers. Tamsulosin hydrochloride is extensively metabolized by cytochrome P450 enzymes in the liver, hence when administered concurrently with Ritonavir this can lead to increase levels of Tamsulosin enhancing its side effects. The temporal relationship of his symptom to the ARV initiation and the improvement of symptoms after stopping Tamsulsoin support this.
Corticosteroids are metabolized by cytochrome P450 3A4 .Concurrent administration of Ritonavir and Corticosteroids can lead to inhibition of corticosteroid degradation and increase its accumulation. This can result in iatrogenic Cushing's syndrome and adrenal suppression.
Many patients and physicians are still unaware of this important interaction. Increasing awareness among patients and physicians about this potentially serious interaction can prevent development of detrimental effects in patients.

Management Issues in HIV/STIs

P337

Does dropping day 5 PEP follow-up affect other outcomes?

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Background: Prior to 2013 individuals attending for post exposure prophylaxis (PEP) at a London sexual health clinic, were initially given 5 days of treatment and, on repeat visit, had baseline bloods reviewed and collected further medication. It was felt most patients continued with treatment and the day 5 consultation was unnecessary. In January 2013, clinic policy changed and PEP was dispensed for 28 days on the first consultation with follow-up at day 14, day 28 and 12 weeks after completing PEP. Patients with abnormal baseline results were identified by the doctor on the results checking rota with appropriate management. The aim of this audit was to investigate whether dispensing the full course of PEP at presentation increased

attendance at follow-up appointments and to ascertain whether omitting the day 5 visit affected the identification of abnormal baseline results.
Methods: We undertook a retrospective case-note review of all individuals who commenced PEP at a London sexual health clinic in June 2012 and June 2013. All appointments and results were reviewed including day 1, day 5, day 14, day 28 and week 12 attendances.
Results: PEP was given to 62 and 100 attenders in June 2012 and 2013 respectively. 98% were MSM with median age 32y. Most (93%) received Truvada and Kaletra. In June 2012, attendance was: day 5(74%), day 14(65%), day 28(56%) and week 12(47%) and in June 2013: day 14(66%), day 28(67%) and week 12(44%). Of those who did not attend at week 12, the proportion subsequently HIV testing up to January 2014 were 42% from June 2012 & 9% from June 2013. In June 2012, of the 46 who attended day 5 follow-up, 1 discontinued PEP by that review. Abnormal baseline results were ascertained in 55% (2012) and 52% (2013); none of which changed PEP management. In June 2013, 29% of abnormal results were documented in the medical notes following results checking.
Conclusion: These results suggest that dispensing 28 day PEP medication did not adversely affect attendance at subsequent PEP appointments. Since policy change, documentation of baseline abnormal results is poor (29%) and we have implemented a change to improve documentation. Post-PEP HIV testing at week 12 is also poor, falling below the BASHH outcome measure of 60%, however we note individuals do subsequently retest for HIV but in their own time.

P338

Effect of different protease inhibitor combinations on serum inflammatory biomarkers

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Background: The SMART study demonstrated inflammatory biomarkers such as Interleukin 6 (IL6) and highly sensitive CRP (hsCRP) are associated with morbidity and mortality amongst people living with HIV. In the general population low serum adiponectin is associated with metabolic syndrome. How protease inhibitors (PIs) influence these biomarkers is unknown. We investigate the effects of 3 different PIs on serum concentration of IL6, hsCRP and adiponectin.
Methods: Stored sera were analysed from patients starting lopinovir/ritonovir (LPV/r), atazanavir/r (ATV/r), or darunavir/r (DRV/r) with tenofovir/emtricitabine. Previously treatment naïve (naives) and those switched from an NNRTI-based regimen (NNRTI-switches) were included in the analysis. Serum concentration of hsCRP, IL6 and adiponectin were measured using validated assays at baseline and closest to 4,8,16 and 24 weeks after PI initiation. Multilevel linear regression assessed evidence that after initiation of a PI, serum concentrations of each outcome changed over time, in unadjusted analyses and analyses adjusted for age and gender.
Results: There were 68 participants (33 naïve & 35 NNRTI-switch) 62% male, 46% black-African. The choice of PI in naïves was: LPV/r (n=16), ATV/r (n=15) and DRV/r (n=2). The choice of PI in NNRTI-switches was: LPV/r (n=14), ATV/r (n=17) and DRV/r (n=4). Median serum concentrations and inter-quartile range (IQR) of biomarker at baseline were as follows: in naïves, IL6=1.87pg/ml (0.98-3.2), hsCRP=2.0ug/ml (0.73-4.66), adiponectin=4.90ug/ml (2.30-8.90); in NNRTI-switch, IL6=0.83pg/ml (0.55-1.62), hsCRP=2.00ug/ml (0.80-11.46), adiponectin=4.23ug/ml (2.13-7.73). There was evidence in the adjusted analysis that each week on PI-therapy was associated with: a 0.05pg/ml decrease in IL6 (95% CI -0.08, -0.02) amongst naives; and a 0.15ug/ml decrease in hsCRP amongst NNRTI-switches (95% CI -0.27, -0.04). There was no evidence that PI-based therapy altered serum IL6 in NNRTI-switches, hsCRP in naives or adiponectin in either group. There was no evidence that choice of PI influenced serum concentrations of IL6, hsCRP or adiponectin in naive or NNRTI-switch participants; however there were few participants in the DRV/r subgroup.
Discussion: : We present evidence that PI-based therapy reduces serum IL6 in naïves and hsCRP in NNRTI-switches, suggesting that PI-based therapy may reduce HIV-associated inflammation. We found no evidence that choice of PI influenced biomarker concentration.

P339

Patient survey: Attitudes towards new modes of managing Neisseria gonorrhoeae (GC)

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Background: Emerging antimicrobial resistance (AMR) to extended spectrum cephalosporins has led to alternate strategies to manage GC. These include using new classes of intramuscular (IM) and intravenous (IV) antibiotics, such as carbapenems and aminoglycosides as well as deferring treatment until AMR results are known, which are not available following microscopy for GC, nor usually when GC is detected by NAATs. We explored patient acceptability to the use of new IV treatment and to treatment deferral strategies.
Methods: Consecutive adult attendees were given an anonymous 17-question modified Likert scale survey, numbered 0-100. Questions related to understanding of GC and its management, route of drugs, convenience of treatment and acceptability of treatment deferral. Patients were given photographs explaining treatment routes.
Results: 412 patients completed the survey and sample size of 384 was reached for 16/17 questions. 54.1% of patients were female, 63.8% of 'white' ethnicity and 86.4% heterosexual. 47.9% had received an IM injection previously. The median score for patients' self-perceptions of understanding of GC, treatment and resistance was 81-94, with 52-65% of patients scoring ≥80. The proportion of those who scored ≥80 for willingness to accept IV antibiotics was 65.5% (median 95). The median score for a likelihood of only willing to take tablets as GC treatment was 7, with only 14.1% scoring ≥80). When asked about willingness to spend extra time in clinic for IV treatment patients scored a median of 95 with 70.3% ≥80. However 'willingness to wait a week for AMR results becoming available before treatment' scored a median of 50 for symptomatic patients and only 32.8% scored ≥80 for this statement. A higher score for self-perceptions of understanding AMR and IV treatment was associated with higher scores for willingness to accept IV antibiotics (p=0.00 for both genders) and for spending extra time in clinic for the best treatment (p=0.01 and 0.04) in women but not in men. Understanding AMR appeared to be associated with likelihood of accepting treatment deferral in asymptomatic women but not men (P=0.04).
Conclusion: This study suggests that most patients surveyed are likely to accept IV antibiotics for GC if necessary. Self-perceptions of understanding GC and its management were linked to increased acceptability of treatments that involved IV antibiotics and waiting longer in clinic, and treatment deferral, particularly in women. (2486 characters)

P340

Safety and efficacy of the single tablet regimen rilpivirine-tenofovir-emtricitabine (Eviplera®) in clinical practice: Experience from the UK and Ireland

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Background: Eviplera (EVP; rilpivirine, tenofovir and emtricitabine) is licensed for use in the HIV-1 infected treatment-naive patients whose baseline plasma viral load (VL) is less than 100,000 copies/mL. EVP also offers an attractive single tablet regime option for patients who require switching from their antiretroviral (ART) regimes. The aim of the present study was to examine the efficacy of EVP in routine clinical practice including ART experienced patients.
Methods: A multi-centre observational study was performed. Patients starting or switching to EVP as part of routine clinical care across 14 hospitals in the UK and Ireland with an available VL measurement at the time of starting EVP were included. Patients were followed from date of starting EVP (baseline) until September 2013 and were stratified according to ART experience and VL when starting EVP.
Results: 958 patients were included, of whom 780 (81%) were male, 632 (66%) were men who acquired HIV through sex with men, 648 (68%) were

white and 190 (20%) were aged>50 years. 98 (10%) and 42 (4%) had chronic hepatitis C and chronic hepatitis B infections respectively. Only 107 (11%) were ART-naive at baseline. A total of 814 ART-experienced patients switched to EVP; 523 (64%) due to ART toxicity (including 368 (45.2%) for CNS toxicity), 9 (0.1%) due to treatment failure, and 313 (38.4%) due to other or unknown reasons. At the time of switch to EVP, 734 (90%) patients had a VL<50 copies/ml, and 23 (2.8%) had VL more than 10,000 copies/ml. Amongst 601 patients on EVP for more than 6 months, 568 (95%) including 90% (57/63) of the naïve group and (95%) 511/538 in the switch group had a VL of <50 copies/mL.
EVP was discontinued in 126 (13%); 7% of naïve group and 15% of switch group. The main reason for discontinuation (32%) was rilpivirine-related toxicity. 50% (56/113 for whom data are available) had stopped EVP by 3 months; 58% (4/7) in the naïve group, 49% (52/106) in the switch group.
Conclusions: In this large, multi-centre cohort, a high proportion of patients on EVP had undetectable VL. A large number of those who switched to EVP achieved VL suppression at 6 months. We have recorded a higher than previously reported treatment discontinuation with EVP. Further investigation on the causes of discontinuation is required.

P341

Renal monitoring in HIV-positive individuals: are we adequately screening our patients?

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Background: Renal disease may affect up to 30% of HIV positive individuals and is associated with older age, hypertension, diabetes, HIV infection and the use of potentially nephrotoxic drugs such as tenofovir (TDF). With an aging population of HIV positive individuals, there may be an increase in the prevalence of renal pathology. It is therefore essential that HIV positive patients are monitored closely for evidence of renal dysfunction. This audit aimed to assess compliance with local guidelines regarding the monitoring of renal function in a large tertiary HIV centre.
Methods: A retrospective computer-based data analysis was conducted. Out of 3,063 HIV-1 infected patients who had attended the service between September 2012 and October 2013, 2,488 were eligible for inclusion. Data collected included demographics, serum renal and bone biochemistry, urinalysis and urinary protein to creatinine ratio (uPCR). Additionally, a retrospective case-note review was performed on a sample of 60 patients to assess reasons for non-compliance with guidelines.
Results: 413/2488 (17%) patients were on no antiretroviral therapy (ART), 608/2488 (24%) patients were on ART not including TDF and 1467/2488 (59%) patients were on ART including TDF. Mean age was 38, 48 and 46 respectively. Mean creatinine was 79, 85 and 81 respectively.
Fig 1: Percentage of patients who had ≥1 test within the last 12 months

Test	*No ART (n=413)*	*ART, no TDF (n=608)*	*ART including TDF (n=1467)*
U&Es	80.1	95.9	97.0
Serum phosphate	72.6	81.6	94.2
Urinalysis	37.5	41.6	71.1
uPCR	8.0	5.8	21.7
Urinalysis or uPCR	39.7	44.4	77.2

The case-note review revealed that 3 of 39 (7.7%) recorded urinalysis results had been documented in the notes but not transferred to the computer database.
Conclusion: This audit demonstrated that the majority of patients, particularly those receiving TDF-based ART, received at least annual review of their renal/bone biochemistry. However, uptake of urinalysis was significantly less and highlights an area for improvement. Screening with uPCR was comparatively low and this was largely attributable to differences between local and national guidelines. Several strategies have been proposed for improvement and will be discussed.

P342

Disengagement from HIV care resulting in admission to hospital: how common is this and what are the costs?

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Background: Patients who do not have an HIV test risk presenting late and unwell. There may also be another cohort of late presenters who, after HIV diagnosis do not engage with care or adhere to ART. This study aimed to examine whether and how much these factors impacted on inpatient admissions. A secondary aim was to see if there were any predictors for this which could enable service providers to intervene.
Methods: We conducted a survey of consecutive HIV+ inpatients admitted from 01/01/2013 to 01/12/2013. Inclusion criteria included: over 18-years-old, HIV diagnosis more than 6 months prior to admission, documented disengagement from clinical care and, evidence of a worsening clinical picture supported by rising viral load and/ or decreased CD4 counts. Data on patient demographics, days spent in hospital, readmission rates and diagnoses were collected from ward round summaries, EPR, clinical notes and patient letters.
Results: The total number of patients admitted to the HIV service during the study time period was 181. Of these, 40 (22%) patients were admitted having disengaged from care after their HIV diagnosis. This group accounted for 56 (23%) of the 242 total admissions for this period. These 56 admissions accounted for 730 inpatient days. Of the 56 admissions, 27 (48%) were due to 11 (28%) patients who had two or more inpatient admissions, including one patient who died. The commonest demographic factors associated with admission and readmissions were female gender (65%) and Black African ethnicity (65%). 27/31 (87%) of patients had stopped ART. Viral loads ranged from 112-5,124,383 copies/mL and CD4 cell counts from 3-532 cells/μL. The commonest diagnosis on admission was community-acquired pneumonia in 11/40 (28%).
Conclusion: Admissions to hospital and morbidity after being lost to HIV care accounted for nearly a quarter (23%) of total HIV-related admissions over 730 days. Thus, disengagement from care after HIV diagnosis uses considerable resources and causes ill-health. Awareness of risk factors for disengagement could enable targeted interventions. This preliminary study has only explored some of the factors associated with admission and not, for example, beliefs about HIV, healthcare or the patients' experience at the time of diagnosis. A larger, more detailed qualitative study is warranted to further characterise disengagement and late presentation risks in patients already diagnosed with HIV.

P343

Is it NAAT time to change management of gonorrhoea contacts?

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Background: Traditional and recent guidelines from BASSH recommend epidemiological treatment for patients who are recent contacts of gonorrohoea (GC). Current European Guidelines recommend such patients receive both ceftriaxone 500mg im and high dose azithromycin (2grm). Such guidelines are based on the high infectivity of the organism, in addition to the low sensitivity of previous culture results, and possibly a concern for patients defaulting without treatment. Such guidelines have not been changed to account for the NAAT tests currently widely used with sensitivities of >99% and the wide availability of patient access to their results and their clinics with mobile technologies. We believe therefore that we are over treating such contacts, and subjecting them to excessive potentially toxic antibiotic exposures.
Methods: A retrospective review was taken of all patients treated as contacts for GC in a busy urban MSM clinic to determine how many Gonorrhoea contacts were treated unnecessarily. The review took place between Jan 2012 and Sept 2013, and is ongoing to date.
Results: During this time 6408 attended the clinic for STI screening and 554 patients were treated for GC.
147 patients attended as contacts of GC. Of those patients 80 (54%) had positive NAAT for GC, with 44 (55%) receiving epidemiology treatment, and 36 (45%) not receiving epidemiological treatment - however all were successfully contacted, all returned, and all subsequently received treatment.

59 (40%) GC contact patients were NAAT negative, with 51 (85%) receiving epidemiological treatment.
Greater than 80% of the patients were seen >3 days after the possible contact, with 37% greater than 14 days.
Overall 56 (38%) GC contacts were unnecessarily treated epidemiologically for GC.
Discussion: The data demonstrates excessive epidemiological treatment of GC in the MSM population. The current treatment strategies for GC involve combination therapy with both a beta-lactam and high dose macrolides, with recent data concerning for macrolide cardiac toxicity, in addition to the inappropriate use of antibiotics and consequent development of resistance.
Our clinic has now changed protocols to target MSM sub-populations for epidemiological treatment of GC, and preferentially will await results of NAAT testing prior to treatment. Notable exceptions remain in the protocol, however with most patients having excellent mobile technologies, this has been equally warmly accepted by all patients.

P344

Incidence of gestational diabetes mellitus (GDM) in a cohort of HIV-positive pregnant women

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Background: Insulin resistance and metabolic complications including diabetes mellitus has been increasingly recognized in HIV-infected individuals since the introduction of highly active antiretroviral therapy (HAART). There is little data regarding incidence of GDM in HIV seropositive women. This study aimed to determine the incidence and factors associated with GDM/GIGT in HIV-1 seropositive women.
Methods: From Jan 2007 to Dec 2013 141 HIV-1 seropositive women underwent 100g oral glucose tolerance test (OGTT) at 24-28 weeks gestation with blood glucose at 0, 1, 2 and 3 hr. American Diabetic Association thresholds of 5.8
(fasting), 10.5 (1 h), 9.2 (2 h) and 8.0 (3 h) mmol/ l were used in the clinic for the diagnosis of GDM. Baseline demographics, use of HAART and obstetric outcomes were recorded.
Results: Over the study period 141 HIV positive women had 100g OGTT at 24-28 weeks gestation. In total 7 women (5%) had abnormal results; 3/141 (2%) were diagnosed as having GDM and 4/141 (3%) were diagnosed as having gestational impaired glucose tolerance (GIGT). All 7 women were on HAART prior to pregnancy. There was no difference in age (31.4 vs 31.0 p=0.842) or BMI (31.9 vs 28.8 p=0.323) between GDM/GIGT and normal glucose tolerance. 2/3 of those with GDM and 2/4 of those with GIGT had other risk factors that would have precipitated an OGTT. All 3 patients with GDM were treated with insulin from 28 week gestation. Patients with GIGT were given advice on diet modification. Average baby weight for GDM/GIGT 3.6kg vs normal OGTT 3.3kg (P=0.118). 2/3 GDM women had normal OGTT 6 weeks post partum (1 women did not attend for testing).
Conclusions: This study does not demonstrate a higher incidence of GDM in the HIV-1 seropositive pregnant women. However, one HIV-1 seropositive woman with GDM and 2 women with GIGT had no other identifiable risk factor for GDM/GIGT. For this cohort HIV/HAART may be a potential risk factor for GIGT. Further studies assessing the association between HIV/HAART and GDM/GIGT are needed.

P345

Cross-sectional study investigating the prescription, adherence and tolerability of malaria prophylaxis in HIV-positive travellers

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Background: In those with malaria, HIV coinfection is associated with an increased risk of severe malaria, ITU admission and death. This association is greater with lower CD4 counts. This is the first study to look at HIV and malaria chemoprophylaxis (CP) in the UK.
Methods: Cross sectional, questionnaire study with ethical approval. Consenting adult HIV patients at the Ian Charleson Centre who had visited a malaria endemic country for >72 hours in the past 12 months. The primary objective was to describe the proportion of such patients that were prescribed and adhered to malaria CP. Secondary objectives were to describe travel patterns and uptake of travel health advice, attitudes and beliefs about medicine, and the spectrum and frequency of adverse drug reactions in those taking CP and to investigate the tolerability of CP using a treatment satisfaction questionnaire.
Results: 319 participants were approached, of whom 90 were recruited. HIV positive travellers who travel tend to be visiting friends and relations (VFR) in Africa or south-east Asia for >3 weeks. Black and white ethnic groups were most commonly represented. A minority (36%) took CP and of those 77% took either atovaquone-proguanil or mefloquine. 44.9% used a mosquito net. Of those that take ARVs (85.6%), all interacted with CP. The median CD4 count was 490 cells/mm^3 and an undetectable HIV viral load (<50 copies/ml) in 83.4%.The minority (43.8%) sought pre-travel advice and 51.5% disclosed their HIV status (reasons for non disclosure; 50% did not think it was relevant, 25% stigma, 25% confidentiality concerns). Only 30% told their HIV clinician they were travelling. The travellers that did not seek pre travel advice were more likely to be VFR (P 0.06) for >7 weeks (P 0.02).Tolerability of CP was good with only 18% experiencing (largely minor) side effects. Treatment satisfaction was good/excellent in >80%. Adherence to CP was variable with the most common reason for non-adherence being forgetting. >56% thought CP was too costly. Travellers that did not take CP were more likely to visit Africa and Asia (P 0.05) for >7 weeks (P 0.08). Age, ethnicity, CD4 and gender were similar in both groups. There was a 4.4% incidence of malaria.
Conclusion: HIV-positive travellers are vulnerable to malaria in terms of lack of travel preparation. More must be done to increase awareness of this preventable disease.

P346

Recognition and optimal management of patients with suspected or diagnosed rectal sexually transmitted infections

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Background: There is ongoing concern regarding the growing epidemic of rectal lymphogranuloma venereum (LGV) both in the UK and internationally. Co-infection with HIV, Hepatitis C and other STIs is common. Furthermore, there is emerging evidence of an undiagnosed reservoir of asymptomatic LGV, particularly in men who have sex with men (MSM). For these reasons, it is vital that healthcare professionals are vigilant in the recognition of signs, symptoms and behavioural risk factors which may be associated with LGV.
Working in a busy sexual health service based in a seaside town of the UK, we aimed to determine whether patients presenting with anorectal symptoms have appropriate history-taking, examination, and management plan made. We assessed our practice based on the 2013 European (IUSTI) draft guidelines on the management of proctitis.
Method: Retrospective case notes review of all patients diagnosed with any rectal STI between August 2012 and July 2013.
Results: Of 42 patients diagnosed with rectal STI, 12(29%) were asymptomatic, and in 52% a concurrent STI (including HIV) was noted. The majority of rectal STIs were caused by Gonorrhoea and Chlamydia (40% and 31% respectively). HSV-1 and HSV-2 accounted for the remainder (each 14%). MSM accounted for 65% of rectal STI diagnoses. Test of cure rates were sub-optimal in those with chlamydia and gonorrhoea (85-94%). Appropriate treatment was given in all patients, in line with national guidance.
Relevant history pertaining to specific rectal symptoms (eg tenesmus and pain) was asked in just 42% of patients. Finally, the window period of HIV and availability of post-exposure prophylaxis after sexual exposure (PEPSE) was discussed in only a minority of patients.
Conclusion: In all patients suspected or diagnosed with rectal STI, the window period of HIV should be discussed. Additionally, where HIV specific risk factors are evident, including all MSM, information on the availability of PEPSE should routinely be given. When rectal symptoms are noted in the history, further specific details of rectal symptoms should be obtained in order to

assess for risk of proctitis. Additionally, performing proctoscopy should always be considered where proctitis suspected, to allow optimal point of care assessment and consideration of appropriate empirical/syndromic management.
Meeting these recommendations is vital in allowing timely diagnosis, preventing complications and reducing onward transmission.

P347

Do patients with HIV living in a rural setting share this diagnosis and information with their primary care health professionals?

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Background: Patients living with HIV often take antiretroviral drugs with high propensity for complex drug-drug interactions. GPs have a crucial role in the management of long-term medical conditions. Knowledge of the patient's HIV status and their medication is important when managing other conditions. Other primary health care professionals (HCPs) – dentists, community pharmacists - involved in the care of HIV patients may also prescribe or issue medication with the potential to interact with HIV drugs. It is therefore recommended that patients disclose their status to healthcare professionals other than their specialist where necessary.
People with HIV have concerns about the stigma associated with their disease. We wanted to ascertain whether our HIV population disclosed their status and therefore medication to other primary HCPs involved in their care.
Method: A questionnaire was handed to patients attending the HIV service. The questionnaire was completed anonymously prior to the patient's appointment.
Results: To date 59 patients have completed the questionnaire (not all patients answered all questions). There were 44 males and 9 females (6 did not note their gender). The mean age was 45 years (range 21 – 69). Fifty-six (95%) of 59 patients were registered with a GP, and 50 of these 56 responded that their GP knew their status with 43 indicating that this was recorded in the GP notes. Only 36 patients had a dentist and 21 (58%) of these had informed their dentist of their status. Twenty-nine patients reported that they buy medicines over the counter from community pharmacies, though only 8 (28%) indicated they disclose their HIV status when asked about other medication they take. Free text comments also illustrated patients' concerns in relation to engaging with primary care practitioners.
Conclusion: We found a higher percentage of our patients (89%) had disclosed their HIV status to their GP compared to 75% elsewhere in the UK, though the barriers our patients have to disclosing their status reflect those seen elsewhere. It is not only GPs who issue medications in primary care. Dentists also prescribe medication with the potential to interact with HIV regimes resulting in side effects or failing HIV therapy. Our patients were less likely to make their dentist aware than they were their GP.
A resulting action is for staff within the hospital sexual health team to further encourage patients to inform relevant HCPs of their status.

P348

The 2013–14 European Collaborative Clinical Group (ECCG) survey on the management of non-gonococcal urethritis (NGU) across Europe

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Background: Controversy surrounding NGU management remains unaddressed by the current 2009 European guideline. The integration of *Mycoplasma genitalium* (MG) testing into diagnostic protocols represents a major challenge, with MG diagnosis only regularly available in eastern and northern Europe. Furthermore, given the sub-optimal efficacy of tetracycline therapy and the significant association between single-dose treatment failure and macrolide resistance; consideration must be given to current MG management strategies. Indeed, the postulated development of MG antimicrobial resistance as a direct consequence of single-dose azithromycin regimes, requires consideration. Finally, definitive partner management strategies require urgent clarification.
This study aimed to evaluate the current practice of NGU management across Europe via the ECCG; a network of sexual health specialists under the International Union against Sexually Transmitted Infections (IUSTI) who conduct questionnaire-based research across Europe.
Method: Five European experts in the field of NGU were interviewed about controversies in management, and a case-based questionnaire developed. The questionnaire was then reviewed and validated by the ECCG core group. The final questionnaire was then circulated electronically to the 120 sexual health specialists from 38 countries of the ECCG.
Results: There is evidence that divergent and conflicting clinical algorithms are utilised by clinicians, demonstrating their underlying uncertainty and the crucial need for refined guidelines. Pilot data suggests that MG diagnostic testing and antimicrobial resistance testing occur to different extents across Europe. Additionally, there is a significant variation in the type and dosage of antimicrobials used in first line treatment pathways. Also, there are differing views on the value of notification and treatment for partners of those patients with non-chlamydial NGU. A full complement of results will be available by the conference.
Conclusions: Many clinicians argue that current practice causes the ineffective eradication of MG, thus promoting the occurrence of recurrent/persistent NGU. Clinicians fear that current management strategies are encouraging macrolide resistant strains of MG which are sexually transmissible. Further, that this will become established before MG testing becomes commercially available. Our research identifies key areas of uncertainty that national and pan-European guidance need to address.

P349

An audit of the management of women with positive Treponema serology in a GUM clinic

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Aim: Antenatal syphilis infection can lead to complications (spontaneous miscarriage, stillbirth, premature delivery, perinatal death or congenital syphilis) which are rare in the UK because of an effective screening program. The management of women referred to our clinic for assessment of positive treponema serology by our local Obstetric department between April 2010 and December 2012 was audited.
Methods: Clinical standards of care were agreed on and all patients referred were identified. Electronic patient records (EPR) and electronic pathology reports were reviewed retrospectively. Data was analysed using Excel spreadsheets.
Results: 69 out of 107 patients referred attended. The median age of the women seen was 32 range (20 – 48) years. The largest ethnic group was Eastern European 24 (35%) followed by African 21 (30%). Thirty-seven (54%) were >15 weeks gestation at first attendance and the median gestation was 20, range (9-38) weeks. All were heterosexual. Twenty patients (32%) had false positive serology results and 27 (39%) had previously been treated for syphilis. The rest had latent syphilis of unknown duration. Six had positive RPRs ranging from positive neat to 1:4. Forty-six (67%) had an STI screen. Three were HIV positive with 1 having been diagnosed antenatally. 4 had concurrent STIs (2 chlamydia, 1 genital warts and 1 chronic hepatitis B). 24 received three doses of Benzathine penicillin or Extencilline and 1 received Azithromycin. All completed the recommended treatment course. Sixty-one reported regular male partners and 31 partners were seen. 14 had negative serology, 1 latent syphilis and 2 previous treated syphilis. One of the infants of the 6 patients with positive RPR had documented syphilis serology after birth and this was negative.
Conclusion: All the women seen were satisfactorily treated. However we are concerned about the significant number of women who did not attend as well as the late stage of first attendance. We did not meet our standard of all women having STI screens and partners being screened and treated as a contact. We aim to introduce an improved standard electronic referrals for new patients with prompt feedback if they do not attend. We are introducing an electronic template in our EPR for management of patients with syphilis

containing prompts to standardise practice and emphasise to the paediatricians the need to do follow up serology on infants of women seen especially if the RPR is positive.

P350

Management of cervical warts – are current BASHH guidelines appropriate?

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Background: Cervical warts are less common than external genital warts. The management of these can sometimes be challenging in a Genitourinary Medicine Clinic. It is known that cervical warts can be associated with cervical intraepithelial neoplasia (CIN) and mixed infections of high and low risk Human Papilloma Virus (HPV) types can be present concurrently. Current BASHH guidelines do not recommend colposcopy referral for women with cervical lesions. However they recommend destructive procedures such as cryotherapy as one of the treatment option for cervical warts which is also a treatment for women with only low grade CIN as per NHS Cervical Screening Programme (NHSCSP). We reviewed all cases referred with possible cervical warts to colposcopy to evaluate if the existing guidance would have been appropriate for these women.
Methods: Retrospective case note review of women referred to our colposcopy[y clinic from GUM clinic with cervical warts
Results: Of a total of 7256 new female attendance to an inner city GUM clinic, 671 (9.2%) were diagnosed as having genital warts. Of these 18 were thought to have cervical lesions and referred to our colposcopy clinic .All women with abnormal colposcopy findings were biopsied. 6 women had normal colposcopy and so did not undergo a cervical biopsy. Of those having abnormal colposcopy findings and biopsy 1 had vaginal condyloma, 3 with cervical HPV changes, 6 CIN1 and 2 women had CIN2.
Discussion: : A high proportion of women (44%) referred with possible cervical warts had CIN on biopsy. As per NHSCSP guidelines, these women if treated with cryotherapy would require follow up smears and now HPV test of cure before being discharged to routine recall. In a small proportion of women (11%) cryotherapy would have been inadequate treatment for their high grade CIN
Conclusion: Based on the high proportion of women with CIN associated with cervical warts a histological diagnosis of the cervical lesion is needed prior to any ablative or destructive therapy. This will ensure that high grade CIN is not missed and appropriate follow up is arranged for these women.

P351

Early virological response to antiretroviral therapy: can we predict earlier who is unlikely to achieve a response at 6 months?

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Background: To assess the extent to which viral load response to first ART at 1 and 3 months is predictive of treatment outcome at 6 months.
Methods: All previously ART-naïve, HIV-positive individuals starting ART since 2000 with at least one VL 6-12 months after starting ART, and at least one VL at month 1 (7-60 days) or month 3 (61-120 days) were included. Lack of treatment response was defined as (i) first VL measure after 6 months>200 c/mL or (ii) first VL measure after 6 months>200 c/mL or simultaneous switch of at least 2 drugs before this time. Predictive ability was assessed using area under the Receiver-Operating Characteristic (AUROC) curve; a value >0.7 is commonly considered to indicate good prediction.
Results: Of 2316 eligible patients, 60% initiated ART with 2NRTI+NNRTI and 40% with 2NRTI+PI/r. Baseline median CD4 and VL were 205 cells/μl and 5.0 log c/mL. 2154 (93%) and 1827 (79%) had a VL measured after 1 and 3 months of ART. 222 (10%) experienced VL>200 c/mL at 6 months (outcome i), increased to 288 (12%) when also including drug switches (outcome ii); of these, 53% and 59% achieved VL<200 c/mL at some point before 6 months respectively. Each 1-log c/mL higher VL at 3 months was associated with a 2.01-fold risk of detectable VL at 6 months (RR=3.01; 95% CI 1.87-2.16) and at 1-month VL (RR=1.26; 95% CI 1.07-1.48). These became 2.26 (2.09-2.45) and 1.49 (1.26-1.80) respectively for outcome (ii). Compared to responders, non-responders had similar pre-ART VL, but slightly higher mean VL at 1 month and substantially higher at 3 months (Table). Consequently the 3m VL was a better predictor than the 1m VL (higher AUROC), and showed good predictive ability (AUROC >0.7). Change in VL from baseline to 3 months showed similar predictive ability.
Conclusions: VL at 3 months could be used to detect early signs of low probability of treatment response at 6 months, but the 1 month value has very limited predictive value.

Table: Ability of early viral loads to predict 6-month ART response

	Mean VL or change from pre-ART VL (log c/mL)					
	Treatment response (i) VL>200			Treatment response (ii) VL>200 or switch		
	No 222 (10%)	Yes 2094	AUROC	No 288 (12%)	Yes 2028	AUROC
Baseline	4.8	4.9	0.47	4.7	4.9	0.45
1 month	2.9	2.6	0.56	2.8	2.6	0.53
3 months	2.9	2.0	0.72	2.7	2.0	0.66
1m change	1.9	2.3	0.62	2.0	2.3	0.60
3m change	1.8	3.0	0.74	2.0	3.0	0.70

P352

Long-term follow-up of a primary HIV infection (PHI) cohort with over 4 years of ART

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Background: Eradication strategies are now being developed with the hope of achieving either a functional cure (FC) or eradication (ER). Viral reservoirs (VR) of integrated HIV-1 remain one of the main obstacles to achieve such a goal. We and other have shown low levels of VR as measured by cell-associated HIV-1 DNA in treated PHI (PloS One 2011 Cellerai et al, Ananworanich J, PloS One 2012). Very prolonged ART initiated at PHI may therefore theoretically be associated with one of the best opportunities for ER/FC. Little data is available on PHI cohorts with a long duration of ART and whether subjects can be maintained on long-term antiretroviral therapy initiated during PHI.
Methods: Review of medical files of early PHI subjects: (1) <3 bands WB/low avidity test and 2) ART initiation ≤3 months post diagnosis) referred to our seroconversion clinic for treatment advice with follow-up (FU) on ART for >4 years (y). Subjects' characteristics, ART duration, rate of ART discontinuation after 4 y of treatment, HIV-1 viral load (VL), CD4 at last follow-up and type of ART received are reviewed.
Results: 38 subjects fulfilled the inclusion criteria (male/females 36/2), of which 36 were under FU after having completed >4 y of ART. Mean age at last FU (n=38); 46 y (29-69 y). Mean ART duration was 111.7 months (51-151). 37/38 subjects initiated ART with PI. Blips >50 HIV-1 copies/mL occurred in 2/38 subjects. Both subjects later re-suppressed due to temporary low adherence level. Two subjects decided to discontinue ART after >4 years and are under FU.
Conclusion: Low level of treatment discontinuation in subjects having completed >4 years of ART initiated at seroconversion. Long-term VL control (<50 HIV-1 c/mL) on ART was achieved in most subjects. Assessment of VR using newly developed virological assays (target capture and deep sequencing) is planned in this cohort. We believe that such cohorts should be considered for future eradication strategies.

P353

Review of gonorrhoea management across a large inner city sexual health network

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Background: We aimed to audit the management of gonorrhoea (GC) against BASHH guidelines across a large inner city sexual health network consisting of level 3 and level 2 services, in order to compare practice and ensure high standards.
Method: A standard questionnaire of GC management was sent to all services (Results 1). L3 services collected data on all patients (men and women of any age) given SHHAPT code "B" (GC diagnosis) between June-August 2012 inclusive. Data was analysed centrally using Microsoft Excel (Results 2).
Results 1: Five L3 sites and 4 L2 sites completed the questionnaire. 8 sites used the BD Probetec platform for GC DNA, 1 site used BD Viper. All L3 sites used microscopy (MS). No L2 sites used MS. 2 L3 sites performed urethral and cervical MS in symptomatic women; 3 L3 sites did cervical MS only. TOC was done in all patients in 3 sites and in selected patients in 2 sites. 4 sites did not perform TOC.
Results 2: Four L3 sites gave data on patients coded "B".
Men: 218 men were identified. Mean age was 30 years (range 15-58). 74% men were symptomatic. Of MS undertaken in men, 86% (79-91%) of urethral MS and 60% (50-79%) of rectal MS was positive. 87% (76-93%) were cultured with a 23% (0-38%) resistance rate. 91% men were treated with ceftriaxone and azithromycin. 81% (72-87%) had partner notification (PN). 77% were followed up (text/phone/visit) but only 31% had TOCs (15% non-attendance rate in one site recalling all patients).
Women: 102 women were identified. Mean age was 24 years (16-37 years). 47% were asymptomatic (32-64%). One site did urethral MS, with a positive rate of 31%. Across all sites, 25% (8-40%) of endocervical MS was positive. 86% were cultured, with 1 case of resistance. 87% (82-91%) were treated with ceftriaxone and azithromycin. 91% had some follow-up, 37% (13-57%) had TOC and 85% (73-100%) had PN. Data regarding non-attendance for TOC was limited, but one site recalling all patients had 47% non-attendance.
Conclusion: Our results provide a comprehensive assessment of GC management across our network, allowing individual site comparison to inform recommendations for improvement. Management of GC across the network is not consistent, with differences in use of MS and TOC. Low re-attendance rates limit TOC therefore individual services may decide to target select patients to recall. Nonetheless, rates of MS diagnosis, culture, TOC & PN are variable across the network, do not meet BASHH audit standards & merit improvement.

P354

A retrospective analysis of chest and abdomen CT scanning in an unselected HIV-positive population

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Background: CT scanning of chest and abdomen in HIV positive patients is done for a wide range of indications. However, there are risks associated with CT including radiation exposure, and contrast-related complications. Despite this there are no clear guidelines to direct clinicians as to when to investigate this patient group with CT scanning.
Methods: A retrospective analysis of chest and abdomen CT scanning in an unselected HIV population between 1st January 2010 and 31st August 2013. CT scan request information and reports were obtained, and patients' clinic letters and blood test results were examined.
Results: 96 CT scans were obtained for known HIV positive patients, of these 9 were performed for staging purposes and were removed from further analysis. Of the remainder, 44 were investigating suspected malignancy (including lymphoma),
29 for suspected TB, 6 for surgical indications and 6 for assessing the presence of lymphadenopathy. Of the 86 scans, there were 29 positive results (33.7%). Most commonly these were malignancy including lymphoma (5), TB (4), pulmonary nodules (3). There were 9 non-HIV related findings. 32% of the patients with positively diagnostic CT scans ('positive scans') had CD4 counts <350, compared to 14% of those with negative scans ('negative scans') ($p<0.05$). Mean viral load for positive scans was 105,122, compared to 26,492 for negative scans ($p<0.05$). 65.5% of positive scans had a first-line imaging investigation before the CT scan (chest xray or US abdomen), as compared to 47.4% of negative scans. Average length of time on anti-retroviral (ARV) treatment was 101.8 weeks for positive scans compared to 136.1 for negative scans. 37.9% of positive scans had previously had an AIDS-defining illness, compared to 38.6% of negatives scans.
Conclusion: CT scanning is an essential tool in diagnosing certain HIV-related conditions, but requires careful consideration given the risks of CT. We found that 66.3% of scans were negative, and of these less than half had undergone basic imaging first. Patients with diagnostically positive scans were more likely to have lower CD4 counts, higher viral loads, and have been on a shorter duration of ARVs, and this should be taken into account when considering CT. A previous AIDS-defining illness was a poor predictor from our data.

P355

Effectiveness of an HIV network

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Background: Our regional HIV network was established in 2009 comprising four hospitals in close proximity with a combined total HIV cohort of approximately 1500 patients. This is in line with BHIVA standards and best practice. Monthly or twice monthly multidisciplinary team meetings were held to review antiretroviral (ARV) initiation and switch patients. A review was carried out of the anonymised information provided at the MDT. The MDT provides educational value for trainees and consultants; access to HIV specialist pharmacist, dietician and specialist nurses and allows for sharing of expertise and experience.
Methods: Completed pre-discussion anonymised patient proformas with history, prior ARV use, past medical history and relevant social history was reviewed with the relevant network decision. Data was looked at over a 12-month period between August 2012 and July 2013.
Results: 199 cases were discussed in the time frame in 14 meetings. The mean number of consultants attending each meeting was 6.1 (range 4-9) out of 11 HIV consultants in the network. Resistance was present in 47 cases discussed (23.6%), which was almost exclusively NRTI, NNRTI or combination of both. Twenty-three patients were discussed at more than one meeting, 13 of these were duplicates, but 2 were discussed to follow up on previous issues and 8 patients had new reasons for discussion. Some cases were discussed for more than one reason.

		MDT Network decision		
Reason for discussion	No.	MDT agrees with plan	MDT agrees new plan	Further details required
Initiation	97	78 (80.4%)	13 (13.4%)	6 (6.2%)
Switch	60	33 (55.0%)	16 (26.7%)	11 (18.3%)
Adherence	3	0	3 (100%)	0
Toxicity	21	11 (52.4%)	10 (47.6%)	0
Tolerance	5	2 (40%)	2 (40%)	1 (20%)
Failing	6	1 (16.7%)	5 (83.3%)	0
Other	12	3 (25%)	8 (66.7%%)	1 (8.3%)
Total	204	128 (62.8%)	57 (27.9%)	19 (9.3%)

Conclusion: The HIV network actively participates in patient care and allows for MDT discussion of difficult cases when choosing ARVs. The HIV network

complies with The BHIVA HIV standards of care. The network MDT had vital advice and helped formulate new management plans in 27.9% of cases. The network would like to increase the frequency of meetings and work with local hospitals to improve attendance by building attendance into job plans.

P356

An audit of PEPSE in the West Midlands

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Background: Post-exposure prophylaxis (PEP) against HIV infection is routinely used in a variety of settings, including following sexual exposure (PEPSE), occupational exposure and injection drug use. The efficacy of PEP is difficult to quantify owing to the paucity of studies in this area. However, available data would suggest that efficacy is compromised if treatment is not started within 72 hours of exposure or is not continued for 28 days. It is also important for patients to undertake screening to exclude other STI's and to have a definitive HIV test 12 weeks after completing the course. This is the first regional audit of PEPSE to be conducted in the West Midlands.
Methods: A proforma was designed to take account of all auditable outcome measures in the 2011 BASHH/BHIVA PEPSE guidelines, including the proportion of patients who commence treatment within 72 hours, complete 28 days' treatment and return for a HIV test 12 weeks post-PEP. All 21 Genito-urinary Medicine (GUM) clinics in the West Midlands were asked to submit data on their last ten patients, with data collection taking place from October to December 2013.
Results: 15 centres returned data on 143 patients (33.5% female, 66.5% male), average age 31.7. 39 **(27%)** of PEPSE prescriptions were for patients who had been sexually assaulted. **31.5%** commenced PEPSE in non-GUM settings, e.g. Sexual Assault Referral Centres and A&E. 76 **(53%)** were men who have sex with men. The commonest exposure route was receptive anal intercourse **(40.6%)** followed by receptive vaginal intercourse **(30.8%). 98.5%** of patients had a baseline HIV test (guideline standard 100%). All commenced treatment within 72 hours and **74%** completed the course (standards 100% and 75% respectively). However, only **82%** had a STI screen during the course (standard 90%) and only **52.5%** of those who would have completed PEPSE more than 12 weeks previously had undertaken a HIV test (standard 60%). All final HIV results were negative.
Conclusion: This audit demonstrates that GUM clinics in the West Midlands broadly comply with the majority of standards in the PEPSE guidelines, but fall below target with respect to the proportion of patients undergoing both a STI screen and a 12 week post-PEPSE HIV test. The latter is particularly important given the uncertain efficacy of PEP. Seeing the patient at this point can also provide an important opportunity to offer advice on future risk reduction.

P357

A review of new HIV diagnoses, avidity testing and missed opportunities for motivational interviewing/risk reduction

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Background: Avidity testing can be used to help evaluate the incidence of HIV, impacting on public health strategy and partner notification. Our clinic implemented routine avidity testing for all new HIV diagnoses as part of the baseline assessment. Our review looked at the success of this implementation; the results and, in those with recent infection, whether there were any missed opportunities for risk reduction.
Methods: All records of new HIV diagnoses between January 2011 and December 2012 were reviewed. Avidity test results; relevant clinical history; and documentation of risk reduction in those with previous attendances and recent infection were assessed.
Results: There were 64 new diagnoses. 7 were excluded (5 diagnosed elsewhere and 2 who never engaged after initial test).Of the remaining 57, 45 had avidity testing and 12 did not. 6 were diagnosed as inpatients and 6 had attended clinic with no documented reason for omission. Where avidity testing was performed, 13 were MSM and 32 identified as heterosexual. 49% were Black African. 4 had results consistent with recent infection: 1 heterosexual, 3 MSM. One had a negative point of care test at time of positive serology, one had a history of recent sero-conversion illness and the other 2 had no previous tests but clinical history and HIV markers were compatible with recent infection. In 2 cases where avidity results suggested recent infection unlikely, we had documented evidence of a negative HIV test in the last 3 months. 6 new infections were therefore identified. 9/57 (16%) had attended our service before: 2 were UK heterosexuals with no identifiable risk factors on previous visits,1 tested HIV negative and 1 declined bloods;7 were MSM. On review of the case notes by a senior clinician it was felt that in 4 cases there may have been missed opportunities for discussion of risk reduction.
Conclusion: In those diagnosed during inpatient admission, advanced HIV disease may have been presumed. As a result of our findings, all new HIV positive serology specimens automatically have avidity testing performed without need to request.
Indications for motivational interviewing are clearly prompted on our sexual health proforma. Despite this, other issues such as post exposure prophylaxis, rapid HIV testing, partner notification and clinic time pressures may result in omission or poor documentation.

P358

Syphilis outbreak with unusual presentation in a rural county

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Background: Since the late 1990s there has been a sharp rise in cases of syphilis in many UK inner cities; majority occur in men who have sex with men (MSM) and more than half were known to be HIV positive. In early 2011 an outbreak of infectious syphilis was identified in a rural county, one of the least densely populated in England. This was on a background of stable low incidence in the area. Many presented with 'balanitis' only.
Methods: Relevant information was obtained from the clinical notes and laboratory data of patients diagnosed with infectious syphilis between January 2011 and December 2013.
Results:

Characteristics	n	%
Male	49	98.0
Female	1	2.0
Heterosexual	5	10.0
Bisexual	9	18.0
Homosexual	35	70.0
HIV positive	9	18.0

50 cases were identified, one woman and 49 men. Like in other areas, majority [44, (88%)] occurred in MSM; however our cohort showed low HIV positivity [9, (18%)]. Of these, one patient was diagnosed with HIV and syphilis concurrently; the rest had pre-existing HIV infection. 24 patients were symptomatic of which 13 presented with symptoms and signs suggestive of balanitis without obvious genital ulcer, rash or other clinical manifestations of syphilis.
Discussion: Relevant areas of interest are as follows: (1) the rural nature of the county (2) significant proportion of patients presenting with 'balanitis' (only) which is a relatively common condition seen in patients attending sexual health clinics (3) many bisexual men identified themselves as heterosexuals; some admitted to MSM activity during further questioning after the syphilis diagnosis (4) low HIV positivity.
This article is aimed at drawing the attention of this outbreak to other sexual health providers especially those in rural areas so that they may exercise a high index of suspicion of infectious syphilis in patients presenting with 'balanitis' as some of them may not divulge MSM activity. The true burden of the infection in this rural county is likely to be higher than estimated.
Conclusion: Syphilis outbreak occurs in major cities as well as rural counties. In rural areas, patients may not identify themselves as MSM and therefore may not perceive themselves at risk of sexually transmitted infections. Such patients are unlikely to attend sexual health clinics. Patients with syphilis can present with 'balanitis' without other characteristic symptoms and signs of syphilis. Improving accessibility to the clinic and effective patient engagement will increase the chances of syphilis diagnosis.

P359

Comparing the attitudes of different medical specialties to confidentiality and HIV transmission issues

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Background: In the practise of medicine, some of the most difficult ethical scenarios arise in relation to balancing the interests of public health versus individual patient confidentiality, and this is especially true in the care of HIV positive individuals. We undertook a prospective qualitative study to assess whether physicians from different medical specialities display differing attitudes regarding when patient confidentiality should be breeched due to concerns regarding HIV transmission and secondly, what ethical reasoning they use to reach this decision.
Methods: During June and August 2013, qualitative semi-structured interviews were conducted with 6 Infectious Diseases and 5 Genitourinary Medicine clinicians (all providing specialist HIV care), 5 Ophthalmologists and 5 General Practitioners, all from the same health board of a large urban city. Two different written vignettes concerning cases of potential HIV transmission were presented to all interviewed clinicians, and they were asked to discuss how they would act in each case and why. For data analysis, transcriptions of the tape recorded interviews were read several times and key words, phrases, and sentences were developed into categories of response which were then considered against established ethical theories.
Results: The first vignette explored the scenario of a sexually active HIV positive gay man who was poorly compliant with medication, and the individuals at risk were unknown. When presented with this situation, 5 of the doctors said they would break confidentiality, 10 were unsure and 6 would maintain confidentiality. In the second vignette concerning a HIV positive man fully compliant with his treatment and trying for a baby with his fiancée who is unaware of his status, 14 doctors would break confidentiality, 3 were unsure and 4 would keep confidentiality. Overall, GPs seemed more likely, and GUM clinicians less likely to breech confidentiality.
The ethical factors discussed by the respondents as influencing their decisions were categorised under the broad themes of utilitarian or "harms" arguments, autonomy arguments and duty of care and known person arguments, and explored further in our analysis.
Conclusion: Our study suggests that there is wide variation in opinion between how different doctors think they should act in scenarios of potential HIV transmission, and what ethical arguments they emphasis in their decision-making.

P360

Recall of clients three weeks after Chlamydia Trachomatis treatment is a feasible and effective strategy

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Background: The National Chlamydia Screening Program recommends retesting individuals with *Chlamydia Trachomatis* (CT) three months after initial infection. This inner city DGH introduced this policy in 2008 but amended it to six weeks in 2009 and three weeks in 2013 aiming to answer whether there was a difference between individuals retested at three, six or twelve weeks in any of the following parameters: numbers returning for repeat test; number of false positive retest results; number of partners treated.
Methods: All cases of CT diagnosed between 01/07/08 and 30/09/08 were advised to return for retesting 12 weeks after treatment. All cases of CT diagnosed between 01/05/13 and 31/7/13 were advised to return 6 weeks after treatment and all cases diagnosed between 01/08/13 and 31/10/13 were advised to return 3 weeks after treatment. Outcomes were: numbers of individuals returning for retest within 100 days of initial infection; time to retest; outcome of retest and number of partners identified.
Results: The 17 people who were positive in the three week retesting cohort were all considered to be genuine positive infections as they were either still symptomatic (n=2), had been inadequately treated initially (n=4), had had sex with an untreated partner (n=1) or the retest was more than 42 days after treatment (n=10).
Conclusions: Retesting individuals at three weeks significantly improves the number of index cases attending for retest, the number of persistent positives identified and the number of partners treated. The proportion of positive retests remained constant in the three different testing periods and there were no false positive results identified in the early retesting group. Caution should be exerted when comparing results separated by 5 years, but the three week and six week arm represented similar populations. Although later testing may identify individuals with re-infection, an early retest is useful for client engagement and partner notification purposes.

P361

A multicentre audit of clinical information provided on transfer of HIV-infected patients between centres

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Background: The BHIVA guidelines for the routine investigation and monitoring of adult HIV-1-infected individuals (2011) clearly outlines the minimum clinical information required from a referring centre should a HIV-infected patient transfer their care to another service. It is recommended that the referring centre provides date of HIV diagnosis, nadir CD4 count with date, current CD4 count and plasma viral load with date, vaccination history, baseline and subsequent genotypic resistance results, antiretroviral therapy (ART) history, tropism and HLA B5701 results. Do letters of transfer reflected these standards?
Methods: Seven centres (three with cohorts greater than 500 patients) retrospectively analysed case notes of patients transferred into their care in 2012 with respect to the criteria as stated above.
Results: A total of 75 case notes were analysed

- **63/75 (84%)** stated the date of diagnosis.
- **44/75 (59%)** stated the nadir CD4 count (9/49 with date).
- **62/75 (83%)** stated the current CD4 and viral load.
- **27/75 (36%)** letters contained the vaccination history (including information just about hepatitis B vaccinations).
- **31/75 (41%)** letters contained information about baseline and subsequent genotypic resistance testing.
- **58/75 (77%)** contained information regarding ART history.
- **4/75 (5%)** contained information about tropism assays.
- **4/75 (5%)** contained information about HLA-B5701 testing

Conclusion: Information with regards ART, current CD4 and viral load is present in the majority of transfer letters. Of concern is less than half of the letters contained information about the vaccination history, genotypic resistance, HLA B5701 and tropism testing. Not only may the transfer of sub optimal clinical information between centres be detrimental to the ongoing care of a HIV-positive individual, it can waste valuable resources through the unnecessary duplication of expensive investigations. A standard proforma encompassing all the clinical information may decrease variation in quality of transfer information.

Treat - retest interval	Total cases of CT	Number retesting			Positive retests	Median (range) days to retest		Partners treated
		n	%	RR (95% CI)	n (%)	negat-ive	*posi-tive*	n
3 weeks	207*	149	*72*	**1**	17 *(11)*	30 (0-95)	*38 (0-100)*	108
6 weeks	240	104	*43*	**0.6 (0.5-0.7)**	13 *(12)*	43 (0-99)	*44 (27-75)*	77
12 weeks	263	60	*22*	**0.3 (0.2-0.4)**	6 *(10)*	65 (7-100)	*20 (8-93)*	48

*Excluding 122 people with less than 100 days of follow up at the time of writing

P362

Fournier gangrene in HIV seroconversion

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Background: Fournier gangrene (FG) was first described in 1883 as a rapidly progressive gangrene of the penis and scrotum. The condition is described as a polymicrobial necrotising fasciitis. Impaired immunity, as seen in established HIV infection, is known to increase risk of FG.
Case: We present the case of a 27 year old man who has sex with men who presented to Accident and Emergency with diarrhoea and malaise. He had no significant past medical history and had tested negative for HIV 1 month previously. He was discharged with symptomatic relief. An HIV serology test requested at this presentation was later reported as p24 antigen positive, but HIV antibody negative. He was lost to recall, but presented 1 week later with testicular pain. The patient reported recent receptive anal sex; but no other genital trauma. On examination he had erythema and tenderness of the perineal skin and right scrotum. Fournier's gangrene was suspected, the area was immediately debrided and empirical antibiotic therapy commenced with intravenous (iv) cefuroxime, metronidazole and gentamicin. Tissue samples from the 1st surgical debridement cultured a mixed growth of anaerobes and Streptococcus sanguinis (viridans). Subsequent samples showed heavy growth of coliforms, mainly Escherichia coli and Enterococcus faecalis. Antibiotics were rationalised to iv co-amoxiclav based on organism sensitivities. Repeat HIV testing confirmed the previous result. CD4 positive T-lymphocyte count was 80 cells/μl (18%) and HIV viral load was 3,933,958 copies/ml. Prophylactic septrin was commenced on day 4 of admission given the low CD4 count; antiretroviral therapy with tenofovir, emtricitabine, darunavir/ritonavir was started 2 weeks later. After 12 surgical debridements faecal diversion via a colostomy was required to protect the debrided areas. One month after the initial presentation, the patient is still admitted under the care of the plastic surgery team, requiring careful wound care and ongoing surgical management.
Conclusion: To our knowledge, this is the only case of FG associated with HIV seroconversion reported in the literature. Immunosuppression is a risk factor for FG, and in this case the patient presented with a low baseline CD4 count in the context of seroconversion. Retrospective case reviews suggest that HIV infection does not have an adverse effect on the prognosis of FG providing surgical debridement and appropriate antibiotic cover are administered without delay.

P363

MMR and VZV Immunisation of new HIV patients in Glasgow

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Background: Patients with HIV are at risk of severe complications of measles, rubella and varicella zoster. The MMR and VZV vaccines are live vaccines that should be avoided in those with severe immunosuppresion. All new HIV patients should have their measles and VZV status checked and women of childbearing age should also be tested for Rubella IgG. MMR and VZV vaccination should be offered to all non-immune patients with an adequate CD4 count.
Methods: The patient notes of new HIV patients presenting to a busy infectious disease and genitourinary centre during one year were retrospectively reviewed. The lab system, electronic and paper notes were reviewed. It was determined whether measles, rubella and VZV serostatus had been checked and immunisation offered if recommended by BHIVA in the immunisation guidelines (2008).
Results: Seventy-three patients who were newly diagnosed with HIV were audited. Sixty-one patients (84%) were tested for measles IgG and sixty-seven (91%) were tested for VZV IgG. Eight (13%) of those patients tested were non-immune to measles and of these seven had a CD4 >200. Three were vaccinated with MMR and one patient had post-vaccination titres checked. Six (10%) of those tested for VZV IgG were found to be non-immune but only one of these patients had a CD4 count that would permit vaccination; this patient did not attend his clinic appointment. There were twelve women of child bearing age in this cohort, two of whom were pregnant. None of the remaining ten patients had their rubella status checked.
Conclusions: The majority of patients had measles and VZV IgG titres checked at baseline, however, audit standards for measles IgG testing were not met (84% v 90%). Reasons for missed MMR or VZV vaccination included refusal of immunisation and failure to attend appointments. Rubella IgG was not checked in any women of child-bearing age, this may have been part of a strategy to delay testing in women until they want to conceive. Following this audit all newly diagnosed patients who failed to have their measles, rubella or VZV status checked or those who missed vaccination will be identified and appropriate testing or vaccination performed.

P364

Audit of the diagnosis and management of gonorrhoea in a genitourinary medicine clinic

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Background: An audit was performed of the diagnosis, management and treatment of individuals with gonorrhoea against current BASHH guidelines. Outcomes for the audit were testing, test of cure (TOC), chlamydia screening, partner notification (PN) and treatment.
Methods: Cases of gonorrhoea seen in this Genitourinary medicine (GUM) clinic between 1/6/2013 and 31/10/13 were identified from coding and laboratory reports and data collected in an audit tool.
Results: Of 49 cases, 13 (27%) were women, 27 (55%) heterosexual men and 9 (18%) were men who have sex with men. Mean age was 26 years (range 16-52). 1 case was diagnosed by culture only and 1 by microscopy only. 47 cases were positive on nucleic acid amplification tests. Of these, 34 also had culture, 20 were positive. Of 25 men presenting with a urethral discharge, 22 had microscopy performed of urethral smear, of which 11 were positive, giving a sensitivity of 50%. Infection was urethral, rectal, pharyngeal and multiple site in 30, 1, 2, and 3 men respectively. 13 of 48 patients who were tested also for chlamydia were co-infected. 1 patient was not tested but was treated for chlamydia. 86% received first line treatment or had reasons for not doing so documented. TOC was done for 8 patients, and advised in another 10 (total 37%). PN was done in 81%, the remaining were lost to follow up or had non-contactable partners. 0.38 contacts per index case were reported or verified to have attended a GUM service.
Conclusions: Sensitivity of microscopy in symptomatic men could be improved by training and implementing quality control on microscopy. Pre-treatment culture was omitted when cases were initially diagnosed elsewhere or in asymptomatic patients and this can be improved. No ceftriaxone resistance was isolated. Improved training on guidelines and induction for new staff is needed to meet BASHH targets. Better documentation in the electronic patient record should help meet TOC and PN targets.

P365

Routine laboratory monitoring in the HIV out-patient setting – what does the full blood count add?

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Background: Haematological abnormalities - including anaemia, neutropenia and thrombocytopenia - are common in immunosuppressed HIV-positive patients and especially those with significant opportunistic infections or advanced disease. Moreover, older antiretroviral therapy (ART) and drugs used to treat opportunistic infections can be myelosuppressive. Consequently full blood count (FBC) testing is routinely performed along with other toxicity tests and surrogate markers to assess disease progression and treatment response although its utility in otherwise stable patients is uncertain. Furthermore it is often assumed that abnormalities identified on FBC testing are related to HIV or ART and that further investigation is unnecessary. Therefore we sought to determine the incidence of significant haematological abnormalities in our cohort and the extent of investigation of abnormal results.
Method: FBC monitoring was reviewed for a one-month period in an out-patient HIV service. Further information was obtained from case notes.
Results: 163 patients were examined: 141 (86.5%) were taking ART, 100 (63.4%) were Black-African, 100 (63.4%) were female, with a mean age of 42 years. Of those on ART, 102 had a stable infection with a plasma viral load suppressed below 50 copies/ml. 48 individuals (29%) were anaemic (male: female - 7:41): no patients had severe anaemia (<8.g/dL) and 6 patients (4% - all female) had moderate anaemia. Four of these had a recorded menstrual

history but none were assessed for gastrointestinal bleeding. Seven (11.1%) of men were anaemic, 6 (85.7%) of these were on ART and only 1 had a CD4 count of $<200x10^6$/L. Nine individuals (6%) were thrombocytopenic and all of these were asymptomatic. No patients had severe thrombocytopenia ($<50x10^9$/L) and 4 patients (2%) had moderate thrombocytopenia. All of these patients were on ART. 39 patients (23.9%) were neutropenic: no patients had severe neutropenia (<0.5g/dL) and 6 had moderate neutropenia. Ten patients (6%) had a macrocytosis of whom all had recent liver function tests, 2 had haematinics and 1 had thyroid function testing. An alcohol history was elicited in 2 of patients with macrocytosis.

Conclusions: FBC abnormalities- in particular anaemia - are relatively common in the out-patient HIV setting but the majority are not clinically significant and frequently unrelated to their HIV infection. However, rigorous assessment including further investigations should be performed to rule out co-morbidities.

P366

Audit of hepatitis B vaccination in a semi- urban HIV-positive cohort

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Background: BHIVA guidelines recommend all non-immune HIV positive individuals are immunised with 40 micrograms (double dose) of hepatitis B vaccine with non-responders and partial responders given 3 further doses of double dose vaccine. Has the local HIV infected cohort been managed along these lines?

Methods: An audit of the hepatitis B vaccination history was undertaken assessing vaccinations given, hepatitis B antibody status, risk factors for acquisition of blood borne viruses and antiretrovirals (ART) regimen.

Results: 227 notes were analysed.**68/227 (30%)** patients had been vaccinated with antibody levels of over 100 achieved. A further **61/227 (27%)** were found to be hepatitis B core antibody positive. **6/227 (3%)** patients were known to be infected with chronic hepatitis B. **24/227 (10%)** had antibody levels of 10-100. **68/227 (30%)** had antibody levels less than 10. Further analysis of this sub-cohort showed that in **18/227 (8%)** cases there was no history of vaccination or vaccination had been declined by the patient. In **15/227 (7%)** cases either a double dose vaccine course or a single double dose vaccine was given. **35/227 (15%)** were given a full or partial course of single dose hepatitis B or combined hepatitis A and B combined vaccine. **26/68** were classified as being men having sex with men (MSM), of which **6** were on a non-tenofovir containing regime and **2** were ART naive. **7** non-MSM were either on non-tenofovir regimen or ART naiive.

Conclusion: **30%** of the cohort had no measurable immunity to hepatitis B. Amongst that subgroup only 22% received vaccination (some of the vaccine courses being suboptimal according to the revised guidelines) leaving substantial opportunity for improved care, though some of these may have chosen not to have further vaccination. Furthermore, within this sub-group 38% would be deemed high risk on one measure of risk (MSM status). A more rigorous view of managing hepatitis B immunity and vaccination status amongst HIV positive patients is required.

P367

Immunisation profiles of HIV-infected individuals: are we following the British HIV Association guidelines?

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Background: HIV infected individuals' have increased susceptibility to vaccine-preventable diseases. In 2008 the British HIV association (BHIVA) released guidelines outlining immunisations required for HIV infected individuals. In light of a recent local measles outbreak we audited immunisation rates of patients attending our HIV treatment service.

Methods: Immunisation profiles were collected for all active attenders of the service. This was done using retrospective review of patient notes, immunological test results and by contacting General Practitioners. For each patient we looked at twelve of the twenty conditions listed in the BHIVA guidelines for which a vaccine is available and recommended for use in HIV infection. The other eight were excluded based on their extremely low prevalence in the UK population. Diphtheria, Pertussis and Tetanus were considered in combination.

Results: Table 1. Audit outcome summary results

Infection	Immunity/Vaccine status documented N (%)	Vaccination offered to those at risk N (%)
Hepatitis A	58/73 (79.5%)	15/41 (36.6%)
Hepatitis B	73/73 (100%)	21/32 (65.6%)
Influenza (*in previous year)*	71/73 (97.3%)	68/73 (93.2%)
Meningococcus	24/73 (32.9%)	7/24 (29.2%)
Pneumococcus	71/73 (97.3%)	46/71 (64.8%)
Diphtheria, Pertussis, Tetanus	18/73 (24.7%)	0/18 (0%)
Polio	34/73 (46.6%)	0/34 (0%)
Rubella *(if child-bearing age)*	8/9 (88.9%)	1/1 (100%)
Measles	46/73 (63.0%)	2/2 (100%)
Varicella Zoster	68/73 (93.2%)	0/4 (0%)

Conclusion: We found very few patients had full immunisation profiles recorded, and only for Rubella had we met immunisation targets set by BHIVA. The minority of patients had thorough vaccination histories taken, including the screening of risk factors for Hepatitis A and Menningococcus. All patients were tested for Hepatitis B, but only 89.9% within the stipulated time frame. Despite only 63% having been tested for measles serology, all those found to be non-immune had vaccination initiated. This audit demonstrates the need for effective vaccination documentation and for the establishment of clear vaccination pathways within HIV services and between HIV services and primary care.

P368

Itching to know? What are the current diagnosing and prescribing patterns used in the investigation and treatment of women with vulvovaginal candidiasis (VVC)?

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Background: Local protocol indicates the use of a clotrimazole 500mg pessary for first line treatment of vulvo-vaginal candidiasis VVC, though the 2007 BASHH guidelines on the management of VVC indicate similar efficacies for both fluconazole and clotrimazole.

We wished to establish whether there were any prescribing preferences for first line and subsequent therapies in view of the conflicting guidance and the fact that fluconazole is significantly lower in price.

We planned to perform an initial case note review aiming to look at the feasibility of performing a larger trial comparing diagnostic methods and treatment. We wanted to assess whether clinicians used a consistent pattern of descriptive signs and symptoms to detect VVC when women present to integrated sexual health services and also assess the frequency with which microscopy, pH testing, high vaginal swabs and sabaraud plates were used to establish diagnosis.

Methods: A prism search revealed that 2958 prescriptions of fluconazole and clotrimazole were dispensed to female patients between 01/10/2012 and 01/10/2013. This data was anonymised and listed in order of patient electronic record number and from this the record of the first 25 patients who had received more than one prescription of an azole on separate attendances were selected for more detailed scrutiny. The clinical note, microscopy and culture results as well as examination and prescription details were noted. Treatment at initial diagnosis and subsequent presentation was documented. Frequency of documented signs and symptoms of VVC were recorded under specific headings.

Results: Abnormal discharge and vulval itch were the most frequently documented symptoms (17 and 16% of the 25 women respectively) and erythema/oedema the most documented sign (11%)

Microscopy was the most frequently carried out investigation, however was only performed for 32% of the women.
Clotrimazole 500mg pessary was the most frequently prescribed azole both as first line treatment and with repeated treatments (44.4% of azole prescriptions). Fluconazole 150mg was the least prescribed at 5.6% of prescriptions.
Conclusion: The most frequent description of VVC was a history of itch coupled with abnormal discharge on examination. Use of local, often on site easily accessible microscopy service as a diagnostic tool was poor. Rates of fluconazole prescribing were low and whilst reflecting local protocol in light of its lower cost and equal efficacy this merits review.

P369

Safe prescribing in primary care for HIV patients – survey

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Aim: To evaluate the safety of Prescribing in Primary care in HIV patients who are on antiretroviral therapy. To assess the quality of co-ordination of care between primary and secondary care
Methods: All HIV positive patients known to a local urban GP practice were identified by read code search in Feb 2013. All their prescribed medications in the preceding 12 months were downloaded and printed. Using Liverpool website for drug interactions (www.hiv-druginteractions.org) possible drug interactions between the GP prescribed medication and patients' Antiretroviral therapy prescribed in HIV clinic were checked.
Case notes were also reviewed to check if all patients had at least one clinic letter from the secondary care (HIV clinic) within the last 12 months.
Results: 19 patients were identified by read code search. No dangerous drug interactions were identified. Two potential interactions needing close monitoring of side effects and drug dose were identified (1. Atazanavir and Amitriptyline, 2. Efaverinz and Sertraline).Practice received at least one letter every year for all patients who are routinely followed up by a local HIV clinic During the survey it was also identified that 9 HIV positive patients registered at that GP practice were not attending the HIV clinic at the local hospital for their HIV care. On further enquiry 7 patients were attending various HIV clinics outside their local area and worryingly 2 patients had not been attending any service for their HIV care at all.
Discussion: Although no serious unsafe prescribing was identified, there was no documentation of any consideration to check the interactions before prescribing in any of the notes. Following the survey an alert was added to HIV patients' notes to warn clinicians to take into account HIV therapy when prescribing new meds. This message also includes a suggestion to check interactions on www.hiv-druginteractions.org
Although the study's primary aim was to identify any unsafe prescribing, it was apparent that in 2 cases no secondary care follow up was happening at all. Both patients were invited to attend the GP practice to explore the reasons for non attendance. One patient agreed to re engage with the HIV service and GP practice was unsuccessful in contacting the other patient in spite of several attempts.

P370

HIV partner notification – are we any better?

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Background: Late diagnosis of HIV (CD4 count less than 350 cells/mm^3) is associated with high rates of morbidity and mortality. HIV partner notification (HIVPN) has been shown to be one of the most effective methods of diagnosing further cases of HIV. An audit from 2012 in our department demonstrated deficiencies in HIVPN. Results from that audit showed HIVPN discussion documented by 4 weeks in only 64% of our newly diagnosed patients and completion documented by 3 months in only 41% of patients. The verified and reported HIVPN outcome at that time was 0.7 and 0.9 respectively. Discussion with staff led to the development of a new checklist for newly diagnosed HIV patients, incorporating prompts for HIVPN.
Methods: This was a short case note re-audit of HIVPN for newly diagnosed HIV patients seen in our clinic from 1st January 2013 to 30th November 2013. Basic descriptive demographic data were also collected.
Results: There were a total of 11 cases of newly diagnosed HIV within the audit time period. Seven were males, remaining were females; nine were white British origin. Four of the male patients were reported to be men who have sex with men (MSM). Median age was 39 years (range 27-63). Six reported 2 to 3 contacts while 5 reported less than 2 contacts. PN discussion was documented by 4 weeks for all our newly diagnosed patients improved form 64%(BHIVA standards 90%) and completion documented in 88% patients, improved form 41% by 3 months after the diagnosis (BHIVA standards 90%) in eligible patients. In total, there were 18 contacts disclosed as relevant by 11 newly diagnosed index patients. There were 10 traceable partners, 9 reported tested (six verified), out of which 4 were HIV positive. The reported partner notification outcome was 0.8 per newly diagnosed index patient (0.6 for verified PN). Patient referral was the sole method of PN contact in 10 cases, while in 1 it was a combination of patient and provider referral.
Discussion: : The BHIVA care standards 2013 outline process targets of 90% documentation of HIVPN discussion by 4 weeks and 90% documentation of completion by 3 months. Re-audit demonstrated improvement in performance against both of these standards following discussion with the clinical team and the use of a new checklist for newly diagnosed HIV patients. Partner notification integrated to clinical care should be commissioned as a prioritised HIV prevention intervention.

P371

HIV transmission and the law: what do people living with HIV understand?

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Background: In England and Wales, it remains possible to be prosecuted for 'Reckless Transmission' of HIV, where an unintended transmission takes place. Since the first prosecution, the usefulness and appropriateness of this use of the law has been debated by scholars and advocacy groups. Despite this debate, people living with HIV and AIDS (PLWHA) must continue to negotiate their sex lives under the Damoclean threat of imprisonment in the event of a transmission. The aim of this study was to examine what PLWHA understood about the law.
Method: The qualitative methodologies of Grounded theory and thematic analysis were used. PLWHA attending a large, urban HIV centre were invited to complete a questionnaire, which contained prompts to discuss personal understanding of the law in relation to HIV.
Results: Grounded theory analysis requires data to be collected continuously until no further relevant data are emerging. This required 33 completed questionnaires. Demographics: Male 28 (85%), female 5 (15%). Mean age 36 years (range 19-53). Heterosexual 10 (30%), homosexual 21 (64%), bisexual 1 (3%), no answer 1 (3%).
4 main themes of discussion were identified in response to the prompts, and 3 new themes emerged from the narratives. Main themes were understanding; practices; relationships; information sources
Emergent themes were morality; rights & responsibilities; prosecution & discrimination. Many of the participants had either a flawed understanding of the law, the sentences that could be passed, or both. Sexual practices were seen as relevant to the law, with responsibilities of a PLWHA potentially varying based on duration and status of a relationship. Conspicuous by its absence was any discussion of partner responsibility in attempting to avoid acquisition of HIV.
Conclusion: PLWHA sometimes have a weak grasp of how the law relates to their behaviours, which places them at greater risk of prosecution. Effort must be made by clinicians and advocacy groups to ensure that PLWHA have accurate information about the circumstances under which prosecution may occur, with sensitive exploration of beliefs which may impact on this understanding.

P372

Outcome of antiretroviral treatment audit based on BHIVA 2012 guidelines in a North East UK regional unit

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Background: This study aimed to audit the initiation of antiretroviral therapy (ART) in ART-naïve HIV-infected patients against the 2012 BHIVA guidelines.

Primary outcome measures included the proportions of patients with undetectable viral load (<50 copies/mL) at 6 and 12 months post-initiation. Secondary outcome measures included choice of regimen, proportion of patients experiencing virological failure, and proportion of patients switching regimens.
Methods: Patients were included if they were ART-naive HIV-infected and commenced on ART between 1 January 2010 and 1 January 2013. Pregnant patients were excluded. Data was extracted retrospectively from electronic medical records. Descriptive statistics were obtained to characterize patient demographics, serial viral loads and CD4 counts, hepatitis serology, HLA-B*5701 status, drug resistance testing, choice of regimen, and regimen changes.
Results: A total of 110 patients were identified: median age 43 (17-76) years, 81 (73.6%) male, 61 (55.5%) white, and 22 (20.0%) black. Most (83.6%) had a baseline CD4 < 350. Four (3.6%) were co-infected with hepatitis B, and five (4.5%) with hepatitis C. Drug resistance testing results and HLA-B*5701 status were noted in 85 (77.3%) and 66 (60.0%) of patient's records, respectively. Both patients receiving abacavir had a negative HLA-B*5701 test. Most patients (107/109, 98.2%) were prescribed two NRTIs and either a NNRTI, PI, or INI. The most commonly prescribed regimens were Truvada and efavirenz (42/109, 38.5%), Truvada and boosted darunavir (28/109, 25.7%), and Atripla (26/109, 23.9%). Of the patients not lost to follow-up, 63/100 (63.0%) achieved viral suppression at 6 months, increasing to 77/99 (86.5%) at 12 months. Regimens were changed for 18 (16.4%) patients in the first 12 months, most commonly due to adverse drug effects (11/18, 61.1%). Efavirenz was implicated in 7 (63.6%) of these switches. Of the 18 patients undergoing regimen switches, 14 were followed-up and 11 (78.6%) subsequently achieved viral suppression. No patients experienced virological failure during the study period.
Conclusion: Viral suppression was achieved by 86.5% of our cohort at 12 months, which is in line with the national average. Most patients were prescribed guideline-recommended regimens. No patients experienced virological failure during the study period. Most regimen changes resulted in sustained viral suppression.

Opportunistic and Co-infections

P373

An outbreak of Shigella flexneri infection amongst MSM in Brighton: a descriptive study

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Background: *Shigella flexneri* diarrhoea was previously only seen in the UK in association with travel to higher incidence countries. Since 2009 there has been an increase in UK-acquired infections amongst men who have sex with men (MSM). This prompted the Health Protection Agency to introduce enhanced surveillance measures. In Brighton in 2013 we saw a sharp increase in incidence of *Shigella flexneri* associated with severe symptoms, especially in HIV-positive individuals. We performed a retrospective descriptive study of all cases.
Methods: All individuals with a positive isolate for *Shigella flexneri* in the Brighton area in 2013 were included in the study. A database was set up to collect information about demographics, risk factors, laboratory results, antibiotic sensitivities, outpatient / inpatient management, STI testing, STI/HIV co-infection and clinical outcomes. Hospital notes were reviewed or General Practitioners contacted to ascertain information.
Results: 24 cases of *Shigella flexneri* were identified. 13 were co-infected with HIV. Median age was 43. Only one had travel history outside Europe. Serotypes were 1b, 1c, 2a, 3a and 3b. No Ciprofloxacin resistance was identified in those where sensitivity testing was performed. Median CRP was 153 (43-266). 12 cases required hospital admission of which 8 were HIV-positive. Average length of stay was 4.3 days. The odds ratio for hospital admission in HIV-positive versus HIV-negative individuals was 2.8 (p=0.22). All individuals made a full recovery; the majority did require treatment with either Ceftriaxone or Ciprofloxacin. 15 patients were tested for STIs and 6 concurrent infections were identified (3 rectal Chlamydia, 1 rectal Gonorrhoea, 1 acute Hepatitis C and 1 acute HIV).
Conclusion: A sustained outbreak of *Shigella flexneri* was seen amongst MSMs in Brighton in 2013. The greater likelihood of hospital admission in HIV-positive individuals may suggest they experience a more severe illness associated with *Shigella flexneri* infection, although numbers were too small to reach statistical significance.
Co-infection with other STIs was as high as 40% in those tested. All MSMs with *Shigella flexneri* infection must be tested for STIs including blood borne viruses.
Shigella flexneri is an emerging STI amongst MSMs in several cities in the UK. Public health campaigns which increase awareness of sexual risk-factors, presenting symptoms and preventative measures should be targeted at MSMs and healthcare workers.

P374

A novel method comparing sexual networks with the HCV phylogeny in HIV-positive MSM with acute HCV infection identifies two potential intervention targets for permucosally transmitted HCV in Australia

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Aims: We aimed to identify sexual networks for sexually-transmitted HCV to allow public health intervention.
Methods: Men with acute and recent (≤12 months, AHCV) or chronic (>12 months, CHCV) HCV were recruited prospectively. For MSM with AHCV, 2-mode networks were created, showing links between men and sex venues. Transformation into 1-mode networks showed links between men who sourced partners from the same venues. Sequencing of HCV RNA 5′UTR-HVR1 and NS5B was performed and results compared to 76 sequences obtained from participants with AHCV from the Australian Trial in Acute Hepatitis C and CHCV from the Health in Men / Positive Health cohorts. Maximum likelihood phylogenetic trees were constructed and branch support assessed via bootstrapping (cut-off >90%). Clusters were defined with Phylopart. Univariate analysis showed factors associated with clustering. Factors with p<0.05 were included in a multivariate logistic regression (MLR). Significance of the Jaccard correlation between 1-mode networks and clustering was assessed via the quadratic assignment procedure.
Results: Table 1 shows participant characteristics. 32/69 (46%) individuals for genotype 1a and 8/48 (17%) for 3a were in clusters. Most clusters/pairs (26/40, 65%) comprised participants from 2 cohorts; 18/40 (45%) included both sexual and IDU risk factors. MLR identified HIV coinfection (OR16.4 95%CI 5.7-47.4 p<0.001) and sexual HCV acquisition (OR6.1 95%CI 2.6-14.2 p<0.001) as associated with clusters. Comparing the phylogeny and 1-mode network showed clusters were correlated with sourcing sex partners at the same venue (p<0.001). One sauna in Melbourne and 3 websites in Sydney were key to their networks.
Discussion: : Results imply ongoing sexual HCV transmission; two sites for intervention are identified.

Table 1. Prospective recruits with (A) AHCV and (C) CHCV and retrospective recruits with (B) AHCV and (D) CHCV. Brackets denote % or IQR.

	A	B	C	D
Number	24	71	22	5
Years of Recruitment	2008-2013	2004-2008	2010-2013	2001-2007
Median age, years	44 (34-49)	34 (25-42)	51 (44-56)	46 (43-48)
Male	24 (100)	54 (76)	22 (100)	5 (100)
HIV+	23 (96)	24 (34)	12 (55)	2 (40)
Sexual acquisition	23 (96)	16 (23)	6 (27)	1 (20)
HCV genotype 1a	15 (63)	41 (58)	11 (50)	3 (60)
No. in a pair/cluster	15 (63)	18 (25)	6 (27)	1 (20)

P375

Hepatitis B infection among individuals attending for care in the UK Collaborative HIV Cohort (CHIC) Study

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Introduction: Hepatitis B virus (HBV) co-infection is an important cause of morbidity and mortality among HIV positive individuals and has implications for HIV treatment and management. We estimated prevalence and incidence of hepatitis B infection in a large UK HIV positive cohort.
Methods: Individuals in the UK CHIC Study attending any of 11 participating centres from 2004 who had ever been tested for hepatitis B surface antigen (HBsAg) hepatitis B surface antibody (anti-HBs) or hepatitis B core antibody (anti-HBc) were included. Logistic regression identified factors associated with cumulative HBV prevalence, defined as ever having a positive HBsAg. Incidence of hepatitis B was investigated among susceptible individuals (negative anti-HBs and negative or missing HBsAg and anti-HBc) using Poisson regression.
Results: Among 26157 tested individuals 6.8% (1766) ever had ≥1 positive HBsAg test result. In multivariable analysis, individuals with higher baseline CD4 counts were less likely to have a positive test: adjusted odds ratio (aOR) 0.90 per 100 cells/mm^3, 95% confidence interval (CI) 0.88-0.92.Compared to individuals of white ethnicity those of black African and other ethnicity were more likely to have a positive test (aOR, 95% CIs: 2.02, 1.65-2.47 and 1.57, 1.35-1.84 respectively). Compared to men who have sex with men (MSM), injecting drug users (IDU) were the group most likely to have a positive test (aOR 1.54, 95% CI 1.18-2.02) and female heterosexuals the least likely (aOR 0.45, 95% CI 0.36-0.57). Incidence of HBV infection was 1.6 per 100 person years. In multivariable analysis, incidence decreased over time (adjusted rate ratio (RR) 0.88 per year, 95%CI 0.81-0.96). There was no difference in incidence between MSM and IDU (aRR for IDU 0.88, 95% CI 0.32-2.37) but male and female heterosexuals were less likely to have an incident infection than MSM (aRR, 95%CIs: 0.24, 0.11-0.52 and 0.14, 0.06-0.33 respectively). Older age and higher viral load were also associated with HBV incidence (aRR, 95% CIs: 1.30 per 10 years, 1.08-1.54 and 1.18 per log copies/ml, 1.04-1.35 respectively).
Conclusions: There is ongoing incidence of hepatitis B in this population although this is decreasing. This emphasises the need to ensure implementation of prevention strategies, in particular vaccination, and screening among HIV positive individuals.

P376

Hepatitis C antigen testing: a reliable alternative for diagnosing acute hepatitis C infection

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Background: Hepatitis C virus (HCV) co-infection in HIV-positive individuals is increasingly common. Early identification of infection has important implications for both treatment and reduction of onward transmission. Acute HCV infection is usually diagnosed using HCV RNA PCR which is more sensitive and specific then HCV antibody tests, particularly in immunosuppressed patients. In recent years tests against HCV core antigen have become available which are more cost-effective than HCV PCR. Our aim was to compare HCV core antigen testing and HCV PCR in the detection of early HCV infection in an HIV-infected population.
Methods: 111 HIV-infected individuals who presented with isolated alanine transaminase (ALT) values above the upper limit of normal (>41 IU) at routine blood sampling were tested for HCV infection using HCV core antigen testing (Abbott Archetect +/- Biorad), HCV RNA PCR (Abbott Real Time PCR - qRT-PCR) and standard in house HCV antibody testing. A cut off of 5.0 IU/mL for HCV antigen positivity was used. Samples were collected between April 2012 and December 2013. Retrospective testing of stored samples determined which infections were acute; chronic HCV infections were excluded. All HCV positive patients were genotyped and entered into a co-infection clinic for assessment.
Results: The mean age of patients was 44 years, 6 were female, 92% were MSM, 4% were of Black ethnicity and 2 reported IVDU. None had pre-existing liver disease. Genotype 1a or 1b predominated (80%). Fourteen cases of acute HCV were identified during the study period. All 14 were identified by HCV PCR. HCV antigen testing also identified 14 positive, plus 1 'indeterminate' result which did not become positive on retesting with either assay. Of the 14 patients with acute HCV infection, six patients were HCV antibody negative and 2 showed only a weak positive signal and one was already positive from a previously cleared infection. The positive and negative predictive values of HCV core antigen testing were 93% and 98% respectively.
Conclusion: With the increase in HCV infection amongst HIV-infected populations, a quick, easy and cost-effective method of testing for acute HCV is needed. HCV antigen testing costs around 1/5th the price of HCV RNA testing with a turnaround time of 2 hours. It therefore offers an alternative to HCV PCR as a screening tool in the clinical setting. Relying on HCV antibody tests as a screening tool is likely to miss some acute infections.

P377

The majority of acute HCV infection in HIV-positive men who have sex with men (HIV+ MSM) is transmitted permucosally in the context of HIV serosorting in Australia

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Aims: We aimed to identify behaviours associated with sexual transmission of HCV in HIV+ MSM.
Methods: HIV+ MSM with acute and recent HCV (AHCV, ≤12 months' duration) were prospectively recruited from two HIV centres between 2009-2013. Questionnaires on drug and sexual history were completed. Statistical analysis of sexual behaviour was with Chi2 and Fishers exact tests.
Results: For 40 men recruited, median age was 45.3 (34.6-49.8) years; 32 (80.0%) were Australian-born. Twenty (50.0%) reported past injection drug use (IDU) with median age of 1st IDU 31.0 (28.0-43.5) years. Fifteen (37.5%) had injected and 25 (62.5%) taken permucosal drugs within 6 months; last IDU was with methamphetamine for 16 (80.0%). HCV genotype was 1a in 25 (62.5%). Median CD4 cell count was 528.5 (IQR 351.8-701.0) cells/mm3; 24/29 (82.8%) men on antiretrovirals were aviraemic. Eight of 20 screened had an STI (40.0%). Median AHCV duration was 12.4 (IQR 6.5-22.5) weeks. Nine (22.5%) reported jaundice; 4 (10.0%) spontaneously cleared. For 25 (62.5%) acquisition was sexual. Men with sexually- vs IDU- acquired HCV were older (46.0 vs 37.6 years). For 34 men with a sexual history, median number of partners within 6 months was 15 (IQR 4-35). Men reported sex with partners assumed to be of HIV+ 31 (91.2%), HIV- 23 (67.6%), and unknown HIV status 22 (64.7%). Overall, 24 (70.6%) reported group sex. Table 1 shows sexual behaviours. Men chose HIV+ over HIV- partners for unprotected receptive and insertive anal sex ($p<0.0001$) and ungloved receptive fisting ($p=0.047$).
Discussion: : HIV serosorting was associated with multiple risky behaviours including unprotected anal sex and ungloved receptive fisting. This is likely to increase risk for HCV acquisition.

Table 1. Detailed sexual behaviour for 34 participants providing sexual histories

Sexual activity:	No. (%) men reporting partners of HIV status: HIV+	HIV-	Status unclear
Unprotected receptive anal	23 (67.6)	6 (17.6)	15 (44.1)
Protected receptive anal	14 (41.2)	11 (32.4)	22 (64.7)
Unprotected insertive anal	18 (52.9)	2 (5.9)	12 (35.3)
Protected insertive anal	9 (26.5)	8 (23.5)	15 (44.1)
Ungloved receptive fisting	9 (26.5)	2 (5.9)	6 (17.6)
Gloved receptive fisting	2 (5.9)	2 (5.9)	2 (5.9)
IDU during sex	9 (26.5)	3 (8.8)	4 (11.8)

P378

Baseline drug resistance mutations are detectable by population sequencing in hepatitis C genes NS3 and NS5A but not NS5B in acute and chronic hepatitis C/HIV co-infected patients

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Background: There is a continuing epidemic of acute hepatitis C (HCV) in HIV positive MSM. The current standard of care is treatment with pegylated-interferon plus ribavirin (pIFN/RBV) in the early phase of disease (<12 months) which is associated with favourable outcomes. If chronicity develops, newer direct acting antiviral drugs (DAAs) may be used with pIFN/RBV which target HCV NS3, NS5A and NS5B. Recent data suggest that shorter courses of pIFN/RBV and an NS3 protease inhibitor can be used in acute genotype (gt) 1 HCV infection. However, HCV resistance associated mutations (RAMs) at baseline may be associated with poorer outcomes to therapy. We sought to quantify these in acute and chronic HIV/HCV co-infected patients.
Methods: Samples were obtained from 3 groups of HIV/HCV co-infected patients: (1) acute (2) chronic treatment-naïve (3) chronic treatment-experienced (pIFN/RBV). Plasma viral RNA was extracted and genotyped by population sequencing of HCV genomic regions (sites of known RAMs) ie: amino acids 1-181 of the HCV NS3 protease for gt1, amino acids 1-213 of domain I of NS5A and amino acids 219-347 of NS5B.
Results: Baseline RAMs were detected in all 3 groups in NS3 and NS5A (table).

	NS3	NS5A	NS5B
Acute			
gt1a (n=19)	3 (15.8%)(1 Q80K, 2 R117H)	2 (10.5%) (1 Q30H, 1 H58P)	0
gt3 (n=2)	0	0	0
gt4d (n=4)	N/A	4 (100%)(4 L30R)*	0
Chronic treatment-naive			
gt1a (n=11)	1 (9.1%)(Q80KQ)	1 (9.1%)(Q30H)	0
gt1b (n=3)	2 (66.7%)(2 I132V) †	3 (100%)(2 Q30R, 1 Q30R +Y93H)	0
gt4 (n=6)	N/A	6 (100%)(2 L30R*, 4 L30R* T58P)	0
Chronic treatment-experienced			
gt1a (n=23)	1(4.2%)(Q80K)	2 (8.7%)(1 Q30QR,1 L31M)	0
gt1b (n=1)	1 (100%)(I132IV) †	1 (100%)(Q30R)	0
gt3 (n=2)	N/A	1 (50%)(P58S)	0
gt4 (n=2)	N/A	2 (100%)(1 L30R*, 1 L30R* +T58P)	0

*Common gt4 polymorphism; † common gt1b polymorphism.
Conclusion: RAMs that may confer resistance to HCV DAAs are frequently encountered as baseline polymorphisms in both acute and chronic infection. Resistant variants exist as the dominant species (by population sequencing) and minority resistant variants may be detectable by ultra-deep sequencing. The implications of this remain to be fully established but, in some cases, pre-treatment sequencing may be indicated to limit treatment failures.

P379

Outcomes from rifabutin-based tuberculosis treatment in HIV-infected individuals: A two-centre case-control study

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Background: Tuberculosis (TB) treatment in HIV co-infection is complicated by interactions between components of highly active antiretroviral therapy (HAART) and anti-tuberculosis agents. This is especially important for ritonavir boosted protease inhibitors (PI/r) and rifamycins. Rifabutin has fewer significant drug–drug interactions than rifampicin and is effective in treating tuberculosis in HIV negative individuals. Although UK National guidelines recommend the use of rifabutin with PI/r there are few data on long term outcomes of TB and HIV in co-infected patients.
Methods: We performed a retrospective case control study of HIV and TB patients from two large HIV centres in London, UK from April 1999 and August 2011 analysing demographic, clinical and laboratory data. Long term TB treatment success was determined by recurrence and mortality rates at two years post completing TB treatment. Rifabutin treated patients were matched with rifampicin treated patients from the same period.
Results: Forty-one patients treated with rifabutin were matched to 123 treated with rifampicin. All patients received HAART at the time of treatment. 158/164 completed TB treatment. By 2 years follow up 5% of rifabutin and 4% of rifampicin patients had recurrent TB *(p=0.793)*. Treatment was interrupted due to adverse drug reactions in 24% receiving rifabutin and 18% rifampicin *(p=0.478)*. Adverse reaction profiles and median CD4 responses on completion of TB treatment did not significantly differ *(p=0.167 & p=0.857 respectively)*.
Conclusion: Where rifampicin is contraindicated rifabutin is an alternative option when a PI/r regimen is used. Both regimens appear equally effective, have similar rates of adverse drug reactions and low rates of recurrence.

P380

Clinical experience of Telaprevir for the treatment of chronic hepatitis C in HIV co-infection

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Background: HIV and HCV co-infection is associated with excess morbidity and mortality. Telaprevir is available in combination with Pegylated Interferon alfa (PegIFNα) and Ribavirin (RBV) for the treatment of Genotype 1 Hepatitis C in adults with compensated liver disease. We report outcomes of treatment with Telaprevir in Hepatitis C genotype 1 co-infected individuals.
Methods: 30 individuals received Telaprevir/PegIFNα/RBV for 12 weeks. PegIFNα/RBV was then continued until 24 weeks in non-cirrhotics with rapid virological response (RVR) and until 48 weeks in the remaining patients.
Results: 12 of the 30 were hepatitis C genotype 1a infected, 1 was genotype 1b infected and 17 were genotype 1a/1b infected. 21 were treatment naïve. In the treatment experienced individuals, 4 were relapsers, 3 were partial responders and 2 were non-responders.
27 were on antiretroviral therapy and 24 had an undetectable HIV viral load. The median CD4 count was 530 cells/uL (range 153-1267cells/uL). 26 patients were on a Truvada backbone and 1 on a Tenofovir-only backbone. Third agents were as follows: 13 Raltegravir (1 with additional Etravirine), 6 Rilpivirine, 4 Darunavir/r, 3 Atazanavir/r, and 1 Efavirenz. Pre-treatment liver fibroscans were performed on 24/30 patients: 9 <F2, 10 F2-F3 and 5 F>4 values (cirrhosis).
At week 4, 25 individuals achieved RVR, 3 achieved Hep C PCR values <1000 iu/ml (2 log drop), 2 failed to achieve a 2 log drop and discontinued treatment. Both these individuals had genotypic resistance to Boceprevir and Telaprevir. At week 12, 3 further individuals had ceased therapy due to relocation, intolerance (fatigue/nausea) and disengagement with services, respectively. All of the remaining 25 had an undetectable Hepatitis C viral load.
At week 24, 13 of the remaining 25 patients upheld a sustained virological response (SVR), 1 of whom continued treatment for 48 weeks. Data is awaited for 9 patients and 3 patients stopped therapy after week 12 due to: refractory anaemia, rebound viraemia secondary to non-adherence and disengagement with health services, respectively.
At end of treatment, 13 patients had an SVR which was maintained in 9 at 4 weeks (1 relapsed and data is awaited for 3), 6 at 12 weeks (data awaited for 3) and 1 at 24 weeks (data awaited for 5).
4 individuals required blood transfusions or EPO and 1 required GCS-F.
Conclusion: Telaprevir is an effective and well tolerated treatment in individuals, who are unable or unwilling to wait for Interferon-sparing regimens.

P381

Retrospective case study analysis of the clinical presentation and survival of HIV-positive patients diagnosed with PML within a multi-ethnic cohort

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Background: Progressive multifocal leucoencephalopathy (PML) remains an important AIDS defining condition associated with high levels of morbidity and mortality. This study describes the presentation, demographics and outcomes of patients diagnosed with PML in a multi ethnic urban HIV cohort.
Methods: A retrospective case note review was performed from 01/01/2006 to 31/12/2012 collecting demographic information, HIV surrogate markers, cART history and survival outcomes. Inclusion criteria were HIV positive patients with clinical and radiographic findings consistent with PML.
Results: 18 patients were identified with a median age of 38 years (IQR 34-42). 61% were male and 66% of black ethnicity. Median CD4 count at diagnosis of PML was 134 cells/mm^3 (IQR 5-193), with nadir CD4 109 cells/mm^3 (41-168). Median HIV viral load at PML diagnosis was 5.05 $\log_{10}$ (IQR 3.61 – 5.63 $\log_{10}$). 44% of the patients were previously undiagnosed with HIV infection, with the remainder being on unplanned cART interruptions at the time of PML diagnosis. CSF JC virus was positive in 33%, median CSF protein 438 g/dL (IQR 372-635 g/dL) with 73% having no positive inflammatory markers in the CSF. Seizures occurred in 2 (12%) of patients. Median inpatient length of stay was 34 days (IQR 14-50). Of the 18 patients, 4 (22%) died within 6 months of diagnosis; 1 (6%) at 12 months; 2 (11%) at 24 months with 11 (61%) surviving over 2 years post diagnosis. 72% of all patients were discharged home.
Conclusion: PML appears to occur most commonly in the third decade of life and at a low CD4 count and high HIV viral load. All patients were not taking cART at PML diagnosis therefore HIV treatment remains highly protective. PML is still an important AIDS defining condition, as nearly half were previously undiagnosed with HIV infection and is associated with long in-patient admissions. CSF findings were generally unhelpful in the diagnosis apart from the identification of JC virus. The level of long term morbidity in this case series was relatively low and mortality of ~28% within 12 months compares favourably to the ~35% reported in other studies of PML in the post-HAART era.

P382

Epidemiology of HBV infection in a cohort of Ugandan HIV-infected patients and rate and pattern of lamivudine-resistant HBV infection in patients receiving antiretroviral therapy

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Background: Many HIV-infected patients in Sub-Saharan Africa are not routinely screened for HBV infection and are on ART regimens containing only lamivudine as anti-HBV active drug.
Methods: In 2009-2011, all HIV-infected patients aged ≥16 years seen at the Mbarara Hospital Uganda were asked to complete a questionnaire assessing risk factors for HBV infection, be screened for HBsAg with the Determine™ Test and have samples of dried plasma or blood spots (DPS/DBS) collected. DBS/DPS samples of the HBsAg-positive patients on ART for ≥12 months were tested for HBV-DNA by quantitative PCR (lower limit of detection from DPS/DBS 250 IU/ml) and HBV drug resistance by sequencing.
Results: Of the 2820 patients who agreed to participate to the study (93.3% uptake), 109 patients tested positive for HBsAg (3.9%). HBsAg-positive patients were more likely to have a family history of liver cancer (p 0.02) and have had >4 lifetime sexual partners ($p < 0.01$). Of the 55 HBsAg-positive patients on ART for ≥12 months, 53 were on lamivudine-monotherapy for their HBV infection and 2 were on tenofovir and lamivudine. HBV-DNA was detected in 30 (54.5%) patients, all on lamivudine-monotherapy (for a median 46 months). Of the 23 patients in whom HBV-DNA sequencing was successful: 19 had genotype A and 4 genotype D; 17 had lamivudine-resistant HBV strains harbouring rtM204V/I mutations, accompanied by the rtL180M mutation in 12 cases.
Conclusion: This confirms the importance of screening for HBV and of using ART regimens containing tenofovir and either lamivudine or emtricitabine in HIV/HBV co-infected patients in Sub-Saharan Africa, as lamivudine-resistance seems to develop quickly in this population.

P383

Deep sequencing shows that HIV patients co-infected with acute hepatitis C harbour additional viruses that may cause hepatitis

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Background: Acute hepatitis C (HCV) infection has become a prevalent problem in HIV-positive men who have sex with men. We have previously shown that individual patients are often infected with several subtypes of hepatitis C (10% with different genotypes and 30% with different strains). We aimed to identify other viruses that cause hepatitis or have been previously considered to be associated with hepatitis in this cohort.
Methods: 21 plasma samples from 17 patients infected with HIV and acute hepatitis C were analysed using a metagenomic Illumina deep sequencing approach. Mapping was used to identify genomic sequences with similarity to reference genomes from Hepatitis A, B, C, D and E, Human Pegivirus (previously known as Hepatitis G), TTV, SENV, EBV and CMV.
Results: Metagenomic sequencing followed by mapping confirmed the presence of sequences derived from Hepatitis A (1 patient; 5%), B (1 patient; 5%), C (all patients; 100%), D (1 patient; 5% - this patient was co-infected with HBV) and E (1 patient; 5%), Human Pegivirus (previously known as Hepatitis G; 19 patients – 90%), TTV (1 patient; 5%), SENV (6 patients; 29%), EBV (17 patients; 81%) and CMV (9 patients; 43%)
Conclusion: HIV-positive patients acutely infected with HCV are infected with other viruses that may be associated with viral hepatitis. The presence of Human Pegivirus, TTV, EBV, SENV and CMV may not be clinically relevant (in fact the presence of Human Pegivirus has been associated with a favourable outcome in HIV-infected patients) but illustrates the diversity of the virome in patients with HIV and HCV coinfection.

P384

Acute hepatitis C infection in HIV-negative men who have sex with men

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Background: Acute hepatitis C (AHC) is now well recognised in HIV positive men who have sex with men (MSM) but the risk to HIV negative MSM remains unclear. We evaluated a population of MSM diagnosed with AHC attending a sexual health service.
Methods: From January 2010 to December 2013, all cases of HCV antibody positive (Ab) HIV negative MSM were identified. The European AIDS Network (NEAT) criteria were applied to determine whether infection was acute i.e. positive HCV Ab or HCV RNA with negative HCV Ab +/- negative HCV RNA in previous 12 months, or alanine aminotransferase (ALT) rise >10xULN/ >5x ULN with documented normal ALT within 12 months.
Results: 36 individuals had a diagnosis of acute hepatitis C. 10 were RNA negative at baseline and were excluded as they were classed as previous spontaneous clearance. 3 of these 10 had follow-up RNA performed- all remained negative. Of the remaining 26, 9 met antibody and 4 ALT criteria for AHC. 13 individuals had a clinical diagnosis of AHC on risk history.
Median age at diagnosis was 36 years (range 24-53), nationality- 87.5% European, and 12.5% Asian. Risk factors included unprotected anal sex (UPAI) 84.6%, known HCV infected partner, 26.9%), multiple sexual partners in the last 3 months (median 2, range 1- 60), high risk sexual practices; group sex (34.6%), fisting (34.6%), documented recreational drug use (57.6%- e.g.

cocaine, GHB, mephedrone, crystal methamphetamine and ketamine), intravenous use (26.9%), and history of UPAI whilst under the influence of drugs (30.8%). 30.8% had a coexisting sexually transmitted infection (STI). Genotype was documented in 13 individuals 12 genotype 1, 1 genotype 4. Three (11.1%) individuals with a positive RNA at baseline achieved spontaneous clearance of AHC, none of whom had evidence of subsequent reinfection. 9 underwent treatment for AHC (pegylated interferon +/- ribavirin), 7 achieved SVR. Of the remaining 14, 6 patients had persistent infection, and 8 were lost to follow up.

Conclusions: Similar to the ongoing epidemic of AHC in HIV+ MSM, AHC is also a problem for HIV negative MSM with similar risks and must be considered as part of a sexual health where risk factors exist. Accurate history taking, documentation of drug use and risk prevention messages are crucial in this high risk population.

P385

The UK/Ireland experience of Eviplera in hepatitis C/HIV co-infection

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Background: Eviplera® (EVP) is a single tablet regimen (rilpivirine plus tenofovir/emtricitabine) with fewer potential drug-drug interactions (DDIs) with directly-acting antiviral agents for treatment of Hepatitis C (HCV) than other antiretroviral drugs.

Methods: Retrospective data was collected from 14 UK/Ireland centres. Individuals with HCV/HIV co-infection were compared with HIV mono-infected individuals. Statistical analysis was performed using chi-squared test, Fisher's exact test and unpaired t-test.

Results: 10.2% (98/958) HIV individuals on EVP were HCV antibody positive, 30.6% (30/98) of these were HCV PCR positive. Compared to HIV mono-infection, those with HCV/HIV were more likely to be male (94% [92/98], 81% [697/860], p=0.001), older; (mean 45 vs. 42 years, p=0.0008) and more likely to be men who have sex with men (76% vs. 66% p<0.0001). 10% HCV/HIV co-infected had a previous AIDS-defining illness. Time since HIV diagnosis: mean 10.8 years vs. 8.4 years (p=0.0023). 4% of the HCV/HIV cohort were also co-infected with Hepatitis B. 11% HCV/HIV co-infected individuals on EVP had been ART-naïve (vs 12% in mono-infected). Of those that switched in the HCV/HIV cohort, 54% were on an NNRTI-based regimen and 22% on a PI-based regimen.

Compared to HIV mono-infection, those with HCV/HIV had similar proportions with CD4 >500cells/mm^3 at baseline (67% vs 58%), 6 months (70% vs 72%), and 12 months after switch (77% vs 65%, p=0.27).

Baseline viral load (VL) did not differ (80% HCV/HIV group VL<50c/ml vs. 79% HIV mono-infected (p=0.22)). After 6 months on EVP, 88% (59/67) vs 96% (416/435, p=0.018) had VL<50c/ml in in the HCV/HIV and HIV mono groups respectively, and 75% (21/28) vs 99% (215/218, p<0.002) after 12 months.

Baseline median ALT did not differ (31 in HCV/HIV group (IQR 21,46) vs. 26 (IQR 19,38) (p=0.07)). There was a statistically significant but clinically small change in ALT at 6 months (HCV/HCV -2 (IQR -16, +5) vs. +3 (IQR -3, +12) p = 0.001).

There was a trend towards higher EVP discontinuation at 3 months in those with HCV/HIV (13% vs. 7%, p=0.06). Discontinuation at 6 months was 15% vs. 12% (p=0.45) respectively.

Conclusion: EVP is an effective alternative treatment for individuals with HCV/HIV co-infection. Rate of viral suppression at 6 and 12 months is lower in the HCV/HIV group and may be explained by patient factors in this cohort.

P386

Are we doing enough to raise awareness of hepatitis C and prevent infection in HIV-positive men who have sex with men?

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Background: In the last decade there has been a significant rise in the number of HIV positive men who have sex with men (MSM) co-infected with hepatitis C (HCV). Most of these infections are thought to have occurred through high risk sexual practices often exacerbated by drug use. We looked at whether we were assessing and advising about HCV risk in our HIV positive MSM cohort.

Methods: We performed a retrospective casenote review of HIV positive MSM patients who attended HIV care in an inner city clinic throughout 2012. Demographic data was collected along with information on HCV testing and risk, partner status, STI testing and disclosure.

Results: 717 patients were included with a median age of 40 (range 20-82). 616 (85.9%) were UK born and 578 (80.6%) were White British. 593 (82.7%) were on antiretroviral therapy. 666 (92.9%) were HCV antibody negative and 505 (70.4%) had an HCV antibody test within the last 12 months. 29 (4.0%) patients were diagnosed active HCV of whom 6 (20.7%) reported disclosure to their regular partners and 8 (27.6%) reported no disclosure to any partners. HCV transmission was discussed in 18 (62.1%) of these patients. Recreational drug use was reported in 122 (17.0%) patients, of which 57 (46.7%) reported intranasal use, 7 (5.7%) intravenous use, 5 (4.1%) shared snorting equipment and 1 (0.8%) shared needles. Unprotected anal intercourse (UPAI) was reported in 212 (29.6%) patients but fisting was only discussed in 11 (1.53%) patients, with 2 (18.2%) practising. HCV transmission advice was given to 65 (9.1%) patients. Sexual health screens were performed in 429 (59.8%) patients and infections were found in 181 (42.2%). 115 (63.5%) of these patients had rectal infections, of which 46 (40.0%) denied UPAI.

Conclusion: Our results show that many of the HIV positive MSM in our cohort are at high risk of HCV infection. 27.6% of our HIV/HCV co-infected patients reported no disclosure of their status to sexual partners. Despite this, HCV transmission was only discussed with 9.1% and HCV risk assessment was rarely performed. We are due to start routine HCV risk assessment in all MSM attending our clinic to try and increase HCV awareness and prevent new infections.

P387

Retrospective case note analysis of toxoplasmosis prophylaxis in an ethnically diverse inner city cohort: is pyrimethamine useful in second-line prophylaxis?

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Background: Cerebral toxoplasmosis gondii is a common opportunistic infection seen in advanced HIV infection which carries a significant risk of mortality and morbidity. BHIVA guidelines recommend toxoplasmosis prophylaxis for all patients with a CD4 count <200 cells/mm^3 and a positive toxoplasma serology (IgG). Co-trimoxazole is recommended as first line prophylaxis with dapsone and pyrimethamine as an acceptable second-line regimen. In practice, a number of patients receive dapsone alone. We reviewed adherence to BHIVA guidance in toxoplasma prophylaxis prescription and investigated the rates of toxoplasma encephalitis for those on non-pyrimethamine containing prophylaxis.

Method: A retrospective case note review was conducted for all patients with a CD4 cell count <200 cells/mm^3 and positive toxoplasma IgG attending clinic in 2012. Notes were reviewed to identify prophylaxis regime and a history of or any subsequent development of toxoplasma encephalitis.

Results: 248 patients were identified with 61% male and 66% of black ethnicity, 28% white and 6% other. Median age at diagnosis of toxoplasmosis was 43 years (IQR 36-49). Nadir CD4 count was 42 cells/mm^3 (IQR 14-95) with CD4 at time of toxoplasmosis diagnosis 105 cells/mm^3 (IQR 46-157). 81% (201) were taking co-trimoxazole as prophylaxis. 14% (34) were taking dapsone alone, 2 dapsone and pyrimethamine, 2 atovaquone, 2 atovaquone and pyrimethamine, 1 clindamycin and pyrimethamine, 1 clindamycin, pyrimethamine and co-trimoxazole and 4 were not on prophylaxis. Of the 11 patients not on co-trimoxazole who had a history of toxoplasmosis, 3 patients were not on pyrimethamine. 2 of these developed subsequent recurrence. No patients on pyrimethamine based prophylaxis developed cerebral toxoplasmosis.

Conclusion: The majority of patients were taking co-trimoxazole. 14% were on non-pyrimethamine therapy. Of these, recurrence was seen in 2 of 3 patients with a previous history of toxoplasma infection. Recurrence was not seen in patients with no history of toxoplasmosis. This highlights the need for pyrimethamine-based prophylaxis for patients with a history of cerebral toxoplasmosis who are intolerant of co-trimoxazole. For those without previous toxoplasma infection, dapsone alone may be sufficient, but larger

studies are required to confirm this observation. Adherence may also play a part in the reactivation of toxoplasmosis and patients should be counselled with regard to the importance taking prophylaxis.

P388

Tropical screening – are we testing the right people?

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Background: Tropical parasitic infections can have serious consequences in immunocompromised populations if untreated and may increase risk of HIV transmission in the case of urogenital schistosomiasis. Studies within HIV-positive populations have revealed significant rates of positivity when screening immigrant HIV-positive cohorts. Current BHIVA investigation and monitoring guidelines recommend that all patients with HIV-1 who have originated or spent significant time (> 1 month) in sub-Saharan Africa should have Schistosomiasis serology performed. Also patients with eosinophilia (absolute eosinophil count > 0.4 x 10^9 cells/L) who have originated from or spent significant time (> 1 month) in the tropics should be further investigated. Our aim was to evaluate tropical screening in susceptible HIV-1 positive patients
Methods: A retrospective case note review was performed for all new patients registering HIV care with the Genitourinary Medicine and Infectious Diseases departments from January 2012. Paper notes and serology results were checked for evidence of screening for tropical infection and eosinophil counts.
Results: Of the 41 patients fulfilling the criteria for schistosomiasis screening, serology was sent in 37 (90%). 4 patients were found to be positive (8% of those tested) and were referred to the Infectious Diseases Unit for treatment. Stool samples were also sent in 5 patients (including the 4 patients had had positive schistosomal serology) all of which were negative. Schistosoma serology was also sent for 2 UK born patients with no documented risk factors. All patients had available eosinophil counts and 3 had counts > 0.4 x 10^9 cells/L (4.9%). One of these patients has not engaged in further care, one patient subsequently had normal eosinophil counts and has not been investigated further and the other patient was investigated but no cause of the eosinophilia found. Of note 34 patients also had strongyloides serology sent. There was 1 positive result.
Conclusion: Schistosomal serology was performed on 90% of susceptible patients within this cohort. 2 non-susceptible patients were also screened. There was a significant positivity rate within those tested for schistosomiasis (8%) consistent with previous estimates within HIV-1 positive immigrant populations. It is important that the correct patient groups are screened for tropical infections and that testing is repeated in those spending further time in endemic areas.

P389

Impact of peer-led support for HIV/hepatitis C coinfected MSM

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Background: Hepatitis C (HCV) coinfection is an increasingly important issues for HIV+ MSM community in London. Though traditionally injecting drug use (IDU) was the main driver of new infections, rates of sexual transmission also appear to be higher amongst HIV+ MSM. Anecdotally there have been reports of higher levels of stigma experienced by coinfected, as compared to HIV monoinfected, MSM. Following the success of our peer-led courses for individuals newly diagnosed with HIV we developed a workshop for HIV+ people newly diagnosed with HCV.
Method: The Bloomsbury Clinic Patient Network has conducted two one-day, peer-led workshops for coinfected patients to facilitate engagement with their clinician and discuss management of stigma with a view to enabling better advocacy in the future. Clinicians were also in attendance to discuss the medical facts of HCV and existing/future treatments. Participants were then invited to provide feedback on the workshop including its psychological impact. Questions were scored from 1 ('a little') to 4 ('extremely).
Results: Questionnaires were completed by 16 attendees. Average scores were as follows (max 4.00):
Do you now feel more comfortable with your Hep C diagnosis? 3.63
Do you now feel more confident about disclosing your Hep C status? 2.81
Do you now feel you have a better understanding of Hep C? 2.00
Do you now have a greater understanding of treatment options? 3.50
The importance of difference workshop aspects was scored as:
Meeting other people with Hep C 3.88
Gaining knowledge about Hep C 3.69
Understanding current and future treatment options 3.63
Gaining confidence with disclosure 3.13
Gaining self-confidence 3.31
Conclusion: The workshop revealed that the sense of isolation felt by coinfected individuals led to wider psychological issues causing lack of confidence and depression. After attending the workshops the participants were more confident in their diagnosis, better able to have informed discussions with partners, and more able actively engage and make informed decisions with their clinician regarding ongoing and future care. We hope to roll-out this model to other centres in and outside London.

P390

Barriers to hepatitis C treatment in HIV/HCV co-infected patients

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Background: Patients co-infected with hepatitis C (HCV) and HIV progress more rapidly to liver cirrhosis and are at increased risk of hepatocellular carcinoma. Uptake of treatment for HCV is low within many patient cohorts. The reasons behind this are multi-factorial and include interferon (IFN)-associated toxicity, other patient factors and provider factors. We undertook a study in order to ascertain whether the availability of IFN-free regimens would be likely to improve treatment uptake.
Methods: A retrospective case note review of a single population of co-infected patients was carried out using electronic and paper records in order to identify whether treatment for HCV had been discussed and if treatment was not prescribed, the reasons behind this.
Results: One hundred and fifty-four patients were identified as HCV antibody and HIV antibody positive, with 83 HCV PCR positive and 71 HCV PCR negative (including 32 previously treated successfully). The average age was 45 and average CD5 count 538 cells/cmm. In the HCV PCR positive group, sixty-two (75%) had a documented discussion in the notes and eleven (13%) had a plan to start or had started treatment. In thirty-two patients (39%), either a contraindication to IFN or a fear of IFN-related side effects was the reason for deferring treatment. HIV factors (low CD4 count or poor adherence) was the second most common reason for delaying treatment (8%). Twenty-one (25%) had no documented evidence of a discussion with seven patients not attending the appointed clinic for a discussion.
Conclusions: The majority of patients in our cohort have discussed the possibility of HCV treatment but uptake is low. IFN-related toxicity was the most common reason for deferring treatment. Complications associated with advanced HIV infection (low CD4 count and opportunistic infections) also contributed to treatment delays. Non-attendance in clinic was a significant problem in this cohort and new IFN-free treatment pathways (for example in the community) may in the future allow patients to engage with services more and access treatment.

P391

Immune reconstitution inflammatory syndrome (IRIS) presenting as Varicella Zoster Virus (VZV)-mediated vasculitis causing stroke – a case report

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Case Report: A 36 year old Zimbabwean woman was diagnosed HIV positive following development of pulmonary tuberculosis. She disengaged from care following tuberculosis treatment and re-presented to the tertiary GUM centre with oral candidiasis 4 years later. Her CD4 count was 26. She commenced

pneumocystis prophylaxis and antiretrovirals. One month into treatment, she reported severe recurrent headaches and pyrexia. Neurological examination was unremarkable and a computed tomography (CT) head scan revealed inflammation of the sinuses. Lumbar puncture (LP) revealed 84% lymphocytosis. CSF was PCR positive for VZV with HIV VL of 1300 copies/ml (plasma HIV VL 2300 copies/ml). She was prescribed oral Valaciclovir.3 weeks later she re-presented with severe left peri-orbital headache and facial drooping. Neurological examination revealed right hemianopia and upper motor neuron facial weakness, dysarthria, global dysphasia and dyspraxia. CT brain revealed subacute ischaemia within superficial left temporal and parietal lobe. VZV vasculopathy was suspected and repeat LP revealed lymphocytosis and persistently positive CSF VZV PCR. Repeat CD 4 count was 179.She was commenced on intravenous (I.V) Aciclovir and Aspirin 75mg. Steroids were withheld at this stage due to worries about infectious vasculitis in the setting of immunocompromise. Magnetic resonance imaging (MRI) brain scan revealed appearances consistent with the clinical suspicion of vasculitis. Diffusion imaging demonstrated multi focal areas of left hemispheric infarction within the (middle cerebral artery) MCA territory. Verapamil 400mg TDS was commenced as an antivasospastic agent. I.V Aciclovir was continued for 3 weeks and then switched to oral Valaciclovir. Unfortunately she developed new onset right facial droop and slurred speech, with repeat MRI demonstrating progression in the left MCA stenosis with extension of infarcted areas. Repeat CSF showed persistent lymphocytosis but was negative for VZV PCR. This was felt to be VZV IRIS and I.V Aciclovir was restarted with tapering dose of steroids. Although she had some cognitive problems at the time of discharge, follow up at 6 months revealed no residual neurological deficit. A repeat MRA at 1 year was normal.

Discussion: : VZV mediated vasculitis is a rare cause of stroke, but should be considered in HIV patients where vasculitis can occur in association with Central nervous system - immune reconstitution inflammatory syndrome (CNS-IRIS).

P392

A case of pseudo-histoplasmosis presenting with hepatitis

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Background: Clinicians frequently have to start empirical treatment before histological and microbiological results are available. Our case illustrates the importance of reviewing a diagnosis in the light of new information and seeking second opinions when appropriate.

Case: A 33-year-old British-born man presented with a 2-month history of jaundice and weight loss but no fevers or sweats. He had a history of alcohol abuse. Investigations showed deranged liver function tests: ALT 259, AST 914, ALP 680, bilirubin 412, INR 2.5 and albumin 25. A CT scan showed splenic and gastric varices, normal looking liver parenchyma, a mildly enlarged spleen; marked periportal oedema and an inflamed, oedematous gallbladder, suggestive of acalculous cholecystitis. There was lingular consolidation and abnormal thickening of the oesophagus and ascending colon, with mediastinal free air suggesting oesophageal perforation. An HIV test was positive. His viral load was 657 733 copies/ml and CD4 count 0 cells/mm^3. Viral hepatitis serology was negative and serum CMV PCR was 12 100 copies/ml.

Broad-spectrum antibiotics were started, as well as intravenous Ganciclovir for presumed disseminated CMV. The liver biopsy was negative for CMV and mycobacteria but showed chronic active hepatitis with fibrosis and non-caseating granulomas. Fungal staining showed small spherical structures, suggestive of *Histoplasma capsulatum (HC)*. These were also present on bone marrow trephine. *HC* can be associated with granuloma in up to 20% of cases. Liposomal Amphotericin B was commenced. The serum *HC* complement fixation test was negative. Ongoing investigations, including for Cryptococcus and mycobacteria, remained negative.

He failed to respond clinically and external review of the liver biopsy was requested. The second opinion felt that *HC* was unlikely, and the spherical structures seen were more likely to represent lysosomal debris. Subsequently *Mycobacterium avium intracellulare (MAI)* was cultured from bone marrow aspirate, sputum, blood and the oesophageal biopsy. He responded well to antimycobacterial therapy and antiretroviral treatment was commenced.

Discussion: : This was an atypical presentation of disseminated MAI, where the correct treatment was delayed by the mistaken finding of another, less likely, diagnosis. This case reflects the importance of multidisciplinary discussion in cases where the diagnosis is uncertain and the patient fails to respond to empirical therapy.

P393

Challenges of hepatitis B-HIV co-infection screening and management in resource-limited settings

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Background: Estimations of Hepatitis B virus (HBV) prevalence and HIV co-infection in SubSaharan Africa (SSA) is high, however due to limited resources routine testing is rarely performed. Consequently there is little evidence on HIV-HBV co-infection management in this setting. Due to cost restrictions, those patients who are screened with Hepatitis B surface antigen (HBsAg) rarely have further HBV or liver analysis carried out. Management is often restricted to starting a Tenofovir-Lamivudine (TDF-3TC) based regimen, which are increasingly available in much of SSA. In line with international guidelines, we introduced HBsAg tests for all newly registered HIV patients in July 2012. This study reviews the uptake of screening and resultant patient management.

Methods: We collected data from all newly registered patients from September 2012 to September 2013. A retrospective analysis was performed to determine CD4 status, HBsAg, Liver Function Tests (LFT), and ART regimen prescribed. This data was used to analyse our adherence to guidelines with regards to testing, monitoring and management of HBsAg positive patients.

Results: Results show that 1263 patients registered during the collection period. Of these 530 (41.96%) were tested with HBsAg, and 3.4% were positive. 61% of patients had baseline LFTs checked, and no patients had follow up LFTs. 10 HBsAg positive patients (55.6%) were started on TDF-3TC, the most appropriate available regimen. 2 patients were on Zidovudine-Lamivudine (ZDV-3TC). 6 patients were not on any ART and each had a CD4 of greater than 350, therefore not meeting immunological criteria for ART in this setting.

Conclusion: These results show that in a resource limited setting, despite guidelines and availability of testing, there is a low uptake of HBV screening and management is shown to be inconsistent. The 2013 World Health Organisation guidelines suggest that all people with co-infection are treated. This will require all clinics in resource limited countries to start HBV screening. Following this audit, we have organised training for clinic staff on HBV screening, as well as treatment protocols. We aim to adapt our electronic patient record system to introduce an automated alert for Hepatitis B screening. We will re-audit our results after these processes have been put in place, and we hope that our experience may help to guide other clinics on the challenges of safe HIV-Hepatitis B co-infection management in similar settings.

P394

A review of the prevention and management of hepatitis A and B in patients with HIV attending our clinic

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Background: The immunisation and behavioural intervention to prevent Hepatitis A (HA) and B (HB) and manage co-infection is integral to HIV care. We evaluated compliance with BHIVA guidance for the management of HIV and HB co-infected individuals (2013).

Methods: In December 2013 all clinic letters were reviewed for the previous year. HA immunity was reviewed in all. Patients were categorised as HB carriers and non carriers. In carriers we recorded Delta serology, annual alpha fetoprotein (AFP) & liver ultrasound scan (USS) as we do not have access to transient elastography. Vaccination status was recorded for non carriers.

Results: 434 notes were reviewed (70 female, 364 males). All were screened for HA IgG, 422 had natural or post vaccination immunity. 7 were undergoing vaccination or awaiting serology post vaccination. 2 declined vaccination, 1 was deferred and 2 failed to mount an immunological response. *Carriers:* 16 were co-infected with HB; all were counselled regarding alcohol intake. Annual AFP and USS were up to date in 11 (70%). 3 had Delta serology recorded; all were negative.

Non carriers catagorised by sAb

	S-Ab>100 N=229	S-Ab ≥10 and <100 N=41	S-Ab ≤10 N=45
Vaccine ongoing		5	20
Boosted or awaiting booster		30	1
Deferred		1	6
Declined		4	5
Non Responder			14

Non-carriers: All patients with S-Ab≤10 were screened for HB sAg. 14 were recorded as 'non-responders' (NR). One NR had been revaccinated with Fendrix®, 12 with HB Vax Pro®, one had neither. 104 patients were (or had been) c-Ab positive. Of the 6 with isolated c-Ab, three received a test dose of Engerix®, one declined and two did not ('e' markers were requested as an alternative).
Conclusion: Management of HIV/HB co-infection and prevention of HB in non carriers requires a systematic approach to care. Our clinic demonstrates high compliance with national guidance. Results tables in clinic letters facilitate punctual investigations and measurement for audit purpose. Delta testing has only been recommended locally since 2012. Where investigations have been identified as missing or delayed we have used this opportunity to arrange them.

P395

Just the tip of the iceberg: A retrospective review of HIV/hepatitis C co-infected patients in an inner city hospital

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Background: The incidence of HIV and Hepatitis C co-infection is increasing, particularly in men who have sex with men (MSM). When initiating treatment numerous factors must be considered for example comorbidities, patient readiness, compliance and drug-drug interactions.
Methods: We performed a retrospective review of co-infected patients who attended HIV clinics in St Mary's Hospital, London. Data was collected from case notes, pathology results and correspondence letters to gather information on co-morbidities, current and previous treatment history and social factors.
Results: 336 co-infected patients were reviewed.
298 patients were male of whom 215 were MSM. 70 patients were female and the age range for all patients was 24-71 with a mean age of 45. 77% of the patients were on treatment and of those on treatment, 242 had an undetectable viral load. There were 16 patients who were co-infected with Hepatitis B as well as HIV and Hepatitis C. In terms of the whole patient cohort – 64% were infected with type 1 17% with type 3; 16% type 4 and 3% with type 4 viruses. The commonest reasons for patients being unsuitable for the current Hepatitis C treatments were psychiatric co-morbidities that included mostly anxiety and depression, but also bipolar disorder and schizophrenia. Large proportions of our patients were also either current intravenous drugs users or were on opiate replacement therapy.
In our unit we are increasingly using Fibroscan to assess the extent of fibrosis in out patients. In the patients that have had Fibroscans there were the following results: 56% had F0-1, 17% F2, 13% F3 and 12% F4.
Conclusion: The majority of our HIV and hepatitis C co-infected patients are MSM with type 1 Hepatitis C virus. Most of them are undetectable on treatment but a significant proportion of patients have psychiatric co-morbidities that may make them unsuitable for current treatments but possibly suitable for newer therapies. This study outlines the need to understand the socio-demographic and medical context in which patients present with Hepatitis and HIV co-infection, to allow for future planning.

P396

Treatment of HIV and hepatitis B co-infection: Are we managing appropriately?

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Background: Patients with HIV and hepatitis B (HBV) co-infection are more likely to progress to chronic HBV infection, have a higher HBV viral load and are associated with faster disease progression. We looked at our HIV/HBV co-infected patients to see if they were being investigated, monitored and managed in line with national guidelines.
Methods: We performed a retrospective audit of HIV and HBV co-infected patients attending HIV care in an inner city sexual health clinic during 2012. Information was collected on demographics, sexuality, hepatitis screening, HBV monitoring, transmission and treatment.
Results: We reviewed 68 patients with HIV/HBV co-infection, with a median age of 42 (range 20-71). 56 (82.4%) patients were male, 29 (42.6%) were white British and 27 (39.7%) were Black African. 36 (52.9%) were MSM, 29 (42.6%) were heterosexuals and 3 (4.4%) acquired both infections via blood products. 57 (83.8%) patients were taking antiretroviral therapy. 63 (92.6%) were HBV surface antigen (HBsAg) positive and 39 (57.4%) were HBV 'e' antigen (HBeAg) positive. There were 4 (5.9%) occult HBV infections with negative HBsAg but positive HBV viral loads. All patients had a documented HBV viral load, 67 (98.5%) had an alpha fetoprotein performed within the last 12 months. 67 (98.5%) had a liver ultrasound and 22 (32.4%) had a hepatitis D (HDV) test. 5 (7.4%) patients were co-infected with Hepatitis C (HCV), of which 4 (5.9%) acquired the infection during the audit period. Safer sex discussion was documented in 66 (97.1%) patients. 45 (66.2%) had a partner or household contact and their HBV status was documented in 39 (86.7%) patients. 66 (97.1%) patients were treated with a tenofovir containing regime and 1 (1.5%) patient was treated with entecavir. 16 (23.5%) patients subsequently seroconverted from HBeAg positive to negative. 15 (22.1%) patients seroconverted from HBsAg positive to negative.
Conclusion: HBV viral loads, alpha fetoprotein and ultrasound monitoring were performed in most patients. We screened for HAV in all patients but were less consistent with HDV testing. We were good at discussing safe sex but only screened partners for HBV in 86.7%. We've now set up a clinic protocol to refer all co-infected patients directly to the joint HIV/Hepatitis clinic to standardise care.

P397

Outcomes in HIV-infected patients diagnosed with pulmonary tuberculosis by smear and GeneXpert: Experience in a limited-resource setting

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Background: In TB-HIV co-infected patients, smear negative Pulmonary Tuberculosis (PTB) patients have higher mortality than smear positive PTB patients. One of the reasons cited for the high mortality is delays in diagnosis. New highly sensitive methods of diagnosing TB, such as GeneXpert, can reduce the time to confirmation of TB diagnosis and initiation of treatment which may reduce mortality. We run a joint TB-HIV clinic and have been using GeneXpert as an adjunct for TB diagnosis since 2012. Our objective was to see if there was a difference in outcome in TB-HIV co-infected patient depending on smear and GeneXpert diagnosis.
Method: A retrospective observational study was conducted to analyse quantitative data from the clinic patient database and TB Clinic Register. We analysed all adult HIV patients diagnosed with PTB from May 2012 to April 2013. Patients were categorized into: 1) smear positive, 2) smear negative/Xpert positive, 3) smear negative/Xpert negative. Their TB treatment, outcomes and mortality were recorded.
Results: A total of 230 patients were diagnosed with PTB. Of these 18 were excluded from analysis; 17 transferred to other clinics during treatment, and in one case treatment was stopped by the clinician. Of the remaining 212 patients, 125(62.5%) were smear positive, 22(11%) smear negative/Xpert positive, 65(32.5%) smear negative/Xpert negative. The outcomes were; 5 (2.3%) defaulted on treatment, 7 (3.3%) had positive smears at month 5 of treatment and 158 (75%) completed treatment with negative smears at end of treatment. Forty two patients died; of these 23(54%) were smear positive, 3 (7%) smear negative/Xpert positive and 16 (38%) smear negative/Xpert negative. The mortality rate was higher in smear positive compared to both smear negative/Xpert positive 12 and 1.5 respectively per 100 (p 0.03), and also compared to smear negative/Xpert negative 8.1 per 100 (p 0.03).
Conclusion: Previous data has suggested that outcomes in smear negative pulmonary TB is worse than in smear positive TB in limited resource settings. However, this study has shown that those who were smear negative had a

lower mortality than those who were smear positive. Further work to determine other confounding and contributing factors, such as time to diagnosis and baseline characteristics that may be associated with this unexpected result.

P398

Characterising the role of the HLA-B27 allele in spontanous clearance and evolving progression of hepatitis C in a cohort of HIV-infected men

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Background: 185 million people worldwide have been infected with the hepatitis C virus (HCV), of whom 20% will develop liver cirrhosis. In contrast, 20% of patients spontaneously clear the virus. The HLA-B27 allele is strongly associated with spontaneous clearance of HCV due to a CD8+ response targeting a single epitope within the HCV RNA-dependent RNA polymerase (NS5B). We investigated diversification within NS5B over time in a rare cohort of HLA-B27+ HIV-positive patients with acute HCV, some of whom spontaneously cleared infection and some of whom progressed to chronicity.
Methods: We used PCR, clonal and next generation sequencing analysis to study changes within the immunodominant NS5B epitope ($NS5B_{2841-2849}$) during evolving progression of early HCV infection. Sequential samples from 7 HLA-B27+ patients were available for analysis, 2 of whom spontaneously cleared infection.
Results and Conclusion: The most frequent substitutions within the NS5B epitope were A2841V, M2843V, I2844V and M2846V/L. These were either present at the onset of infection and disappeared later, absent throughout, or in one patient emerged only after 5 years. These results contrast with the evolution of the epitope in HLA-B27+ HIV-negative patients and suggest that HIV-coinfection may be associated with impaired CD8+ responses.

P399

Opportunistic infections and timing of antiretroviral therapy in a large urban centre

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Background: Based on evidence suggesting early ART initiation reduces morbidity and mortality and improves cost effectiveness, BHIVA guidelines (2012) recommend ART initiation within two weeks of diagnosis of opportunistic infections (OIs), tuberculosis (TB) with CD4 <100, and in severe bacterial infections with CD4 <200.
Methods: We undertook a retrospective case note review of all HIV positive inpatients with OIs or severe bacterial infections with CD4 <200 over a 1 year period following publication of the guidelines. Practice was compared with an audit at the same centre prior to guideline publication. 'Early ART' refers to initiation of ART within 14 days of specific antimicrobial therapy for OIs and 'deferred ART' to initiation after 14 days.
Results: 51 patients were included. 29 (57%) were ART naïve, 22 (43%) had previously taken ART (8 stable on ART, 2 recently started, 12 with poor adherence/defaulted). Average CD4 was 76 (3-339) in treatment naïve patients and 174 (3-616) in treatment experienced patients. OIs encountered: PCP 17 (33%), TB 13 (25%), MAI 4 (8%), toxoplasmosis 9 (18%), CMV 5 (10%), cryptococcal disease 3 (6%), severe bacterial infections 8 (16%), other 4 (7%). 13 (45%) treatment naïve patients received early ART, compared with 20% in 2010. Mean days to ART initiation: 9 (early ART), and 29 (deferred ART). Deferral reasons: undocumented 12 (75%), patient reluctance 3 (19%), cryptococcal disease 1 (6%).
Conclusion: Almost half of ART-naïve patients received early ART, an improvement compared to data from this centre prior to publication of 2012 BHIVA guidelines. Documentation of deferral reason was often lacking in patients for whom ART initiation was deferred. It is possible that the rationale for deferring treatment in some patients was due to perceived risk of toxicity, morbidity or pill burden associated with TB, severe PCP, toxoplasmosis or other co-morbidities. Although current guidelines support early ART in these patients, it is recognised that insufficient evidence exists regarding ART initiation in critically unwell patients. It is therefore important that decisions regarding ART are made on an individual basis, but documentation of this process is essential to good patient care and clinical governance. We propose a new electronic documentation process for MDT discussions, including those relating to ART initiation. More evidence is needed on ART initiation in critically unwell patients.

P400

Multi-drug resistant TB (MDR-TB) and HIV; the effect of introducing molecular testing for MDR-TB at a regional centre in Uganda

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Background: Multidrug- resistant tuberculosis (MDR-TB) is an increasing problem. In 2010 the World Health Organisation (WHO) rolled out use of Xpert MTB/RIF, a molecular test for TB which allows early diagnosis of TB and for rifampicin resistance even where sputum is smear-negative. The expected outcome was a doubling of diagnoses of TB and a three-fold increase in detection of drug resistance. The Ugandan **National TB and Leprosy Control Programme issued** guidelines with options for use of the test; detection of TB in HIV-positive patients, screening for MDR-TB in high risk groups, and in paediatric TB. We looked implementation of testing at one centre in the eastern region of Uganda and its impact on diagnosis in HIV patients.
Method: We assessed the criteria for testing and laboratory reports for patients who had molecular testing at a unit which became an MDR-TB treatment centre one year previously.
Results: Molecular testing had been used in patients assessed to be at high risk of MDR-TB at a clinical case conference. Ten patients had been tested of whom three were HIV positive. All ten tested positive on Xpert MTB/RIF for TB and rifampicin resistance. Confirmatory TB cultures and resistance testing were positive in all cases.
Conclusion: As the MDR-TB service developed, molecular testing was used for rapid diagnosis in patients who already had clinical MDR-TB. This had a negligible impact on TB case finding. Testing should now be used in accordance with national guidelines for screening at risk groups and HIV patients.

P401

HEV: an uncommon cause of cirrhosis in advanced HIV

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Background: Hepatitis E virus (HEV) is a recognised cause of acute hepatitis. Chronic infection (viraemia for over 6 months) has been reported in the context of immunosuppression, including HIV. A case of chronic HEV in a patient with advanced HIV and signs of decompensated liver cirrhosis is presented, as well as an examination of the Unit's practice on HEV testing in HIV patients.
Methods: Clinical, imaging and laboratory records on the patient were reviewed. Laboratory records for Jan-Dec 2013 were searched and all HEV tests identified and matched to the HIV cohort.
Results: An HIV infected 52 year old man who was diagnosed in 1993 was admitted with urinary sepsis, decompensated liver cirrhosis and advanced uncontrolled HIV. A full screen for other causes was negative (hepatitis B, hepatitis C and Epstein-Barr viruses, cytomegalovirus, *Mycobacterium avium*, auto-antibody screen). Anti-HEV (IgG and IgM) as well as HEV-RNA were positive for genotype 3 HEV. He was commenced on ribavirin in addition to highly active antiretroviral therapy (HAART), but was readmitted within one month with recurrent bacteraemia, acute kidney injury and further decompensation of cirrhosis, subsequently dying of massive gastrointestinal haemorrhage. Stored samples tested confirmed positive serology and positive RNA for HEV over a period of more than 14 months. In 2013, there were 24 HEV serology request sent on HIV patients from this Unit. All were to investigate abnormal liver enzymes. Eight of these were for our reported patient, all of which were positive; there were no other positive results.

Conclusion: BHIVA guidance suggests testing for HEV (including RNA if CD4 count under 200) if other causes of abnormal liver enzymes and/or cirrhosis have been ruled out. The patient reported had chronic HEV-HIV co-infection, which was diagnosed subsequent to advanced decompensated cirrhosis. Attempts to treat with HAART and ribavirin (as suggested by the BHIVA guidelines) proved to be ineffective, possibly due to end stage disease. Chronic HEV in HIV patients is rare. Case reports of chronic HEV-HIV co-infection number less than ten. This case underscores the importance of considering HEV as a possible cause of liver disease in patients with HIV when other causes have been excluded.

P402

Unmasking immune reconstitution inflammatory syndrome: a report of tuberculous epididymo-orchitis mimicking a testicular tumour in a Caucasian AIDS patient

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Background: Worldwide, it is estimated that 14.8% of all new TB cases in adults are attributable to HIV infection. Genitourinary tuberculosis is not common, and it is considered a severe form of extra pulmonary tuberculosis. We report a Caucasian HIV seropositive patient who developed a testicular lump six weeks after initiation of antiretroviral treatment. He underwent an urgent right orchidectomy. The histopathology revealed tuberculous epididymo-orchitis.
Case Report: A 46-year-old heterosexual Caucasian man presented with weight loss. He also had several female sexual partners whilst living in Thailand. He denied night sweats or testicular pain. HIV test was positive. His nadir CD4 count was 84 cells/mm^3 (5%) and HIV viral load was 6.54 x10^5 IU/ml. Chest radiography was normal. The patient was commenced on combination of tenofovir, emtricitabine, darunavir and ritonavir. Six weeks later, he presented with a right painful testicular lump to his GP. He also developed fever and hilar lymphadenopathy two weeks earlier. A presumptive diagnosis of bacterial epididymo-orchitis was made and he was given oral antibiotics. His symptoms persisted, and he was referred to urologist. A clinical diagnosis of testicular tumour was made and the patient had a right orchidectomy. Histology showed a florid granulomatous epididymo-orchitis. Z N stain on tissue sections showed AAFB.
Discussion: : We described a patient with advanced HIV infection in whom initiation of HAART has resulted in unmasking of an underlying occult tuberculous infection. This case has all the classical features suggestive of immune reconstitution inflammatory syndrome (IRIS). Our patient had advanced HIV disease with a very high viral load and low CD4 count at the initiation of the HAART. The paradoxical worsening and the presentation, with an opportunistic infection six weeks after the initiation of HAART, correlated with the drop in viral load and the rise in CD4 count. The rarity of pathology in this case associated with IRIS is also remarkable.
Conclusion: Our case establishes the fact that IRIS is a significant issue in the post HAART era and is associated with several challenges for the treating physicians. The inclusion of tuberculous epididymo-orchitis in the differential diagnosis of a patient with advanced HIV, who presents with a testicular mass after initiating HAART, should be considered to allow timely diagnosis and prompt management.

P403

An unusual referral for stroke

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Background: Progressive multifocal leukoencephalopathy (PML) remains an uncommon diagnosis in HIV positive individuals, with an incidence of around 1-3 per 1000 person years. Here we present a case of PML leading to a new HIV diagnosis, presenting as a suspected stroke.
Case: A 27 year old Ghanaian woman was referred to gynaecology for management of menorrhagia. Admission for transfusion was required as she was found to be significantly anaemic, and following this she reported a 3 week history of blurred vision, difficulty walking, decreased coordination and slurred speech. She was referred to the medical take and a diagnosis of a right posterior circulation infarct was suspected; an unenhanced head CT scan demonstrated a lesion consistent with this. Further evaluation on the stroke unit included a head MRI reported as showing multiple microvascular infarcts. Routine HIV testing on admission to medicine was positive and her baseline parameters included a CD4 count of 50 cm^3 and viral load > 1 million. We proceeded to CSF examination which was acellular with a slightly raised protein and PCR testing for JC virus was positive. EEG was suggestive of an encephalopathy which was thought to be due to HIV. She declined antiretrovirals due to low mood and feelings of hopelessness regarding her diagnosis and she rapidly further deteriorated experiencing generalised seizures and reduced conscious level requiring admission to intensive care. We commenced antiretroviral therapy with zidovudine, lamivudine and nevirapine and following an appraisal of the literature, olanzapine was added. Over the following weeks she made an excellent recovery and is now back on a general medical ward and is awaiting specialist neuro-rehabilitation. She has recovered her speech, increasing motor abilities, and understands her diagnosis and is optimistic about the future.
Conclusion: This case underlines the need for routine HIV testing of patients admitted on the medical take, and especially in young people presenting with neurological symptoms and signs. We are pleased to report this patient's excellent recovery despite severe manifestations of PML disease following treatment with antiretrovirals with good neurological penetration and olanzepine. The mechanism by which olanzepine is thought to effective in this scenario is by competing with JC virus for the 5-HT neuroreceptors.

Pathogenesis, Transmission and Prevention

P404

Can we measure HIV viral load in mucosal secretions in men?

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Background: Sexual transmission of HIV correlates with plasma and genital tract HIV viral load. In men the measurement of genital mucosal viral load is usually limited to semen samples, however the urethra and rectum remain untested sites of HIV shedding. The aim of this study was to pilot whether measurement at these other sites is possible.
Methods: HIV infected eligible consenting participants with detectable plasma viral load, not on ART, donated samples for genital tract HIV viral load measurement. Urethral samples were taken using a custom polyvinyl alcohol sponge, inserted for 2 minutes. Rectal samples were taken using EYETEC ophthalmic sponges placed on the rectal wall at proctoscopy for 2 minutes. Semen and blood samples were also obtained and STI testing performed. Individuals testing HIV negative were recruited as controls.
Swabs were eluted into buffer, virus pelleted by centrifugation and RNA extracted on spin-columns. HIV RNA was detected by PCR amplification in a single-tube reverse-transcribed PCR followed by a nested PCR using primers in the integrase gene (limit of detection 10 RNA copies/ml for semen or 10 copies/swab for urethral and rectal samples). Viral load quantification is in progress.
Results: Nine volunteers were recruited; 4 HIV infected (median serum viral load = 4125 copies per ml) and 5 HIV uninfected controls. Co-infection with an STI was excluded. HIV RNA was detected in semen and rectal swabs in all participants with a plasma viral load >1000 copies/ml (3 out of 4). HIV RNA could not be detected on urethral swabs in any individual. HIV uninfected controls had no detectable HIV RNA from any site sampled.
Conclusion: These results indicate that it is feasible to measure HIV viral load in semen and rectal swabs in participants with a viral load >1000 copies/ml. The failure to detect virus from urethral samples may reflect differences in sampling techniques between genital sites. However, from this small pilot study urethral viral shedding maybe minimal compared to rectal and seminal fluid. This technology could be an important tool to support clinical information when discussing the risk of HIV transmission within couples.

P405

The impact of the 2011 post-exposure HIV prophylaxis following sexual exposure (PEPSE) guidelines: a regional retrospective audit across three genitourinary centres

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Background: The 2011 British Association for Sexual Health and HIV guidelines state that PEPSE is no longer recommended for exposure to an HIV positive partner with an undetectable viral load, except in unprotected receptive anal intercourse (RAI). In this study we assess how the application of these new guidelines has altered prescribing practices.
Methods: We performed a retrospective case note review of all patients prescribed PEPSE in three local genitourinary clinics from 1st May 2012 to 1st May 2013. The results were compared with an identical case note review from 2011.
Results: 125 patients were included. 105/125 recipients were male (84%), of whom 84/105 (80%) were men who have sex with men (MSM). 58/84 of MSM reported RAI (69%), compared to 50% of MSM reporting RAI in 2011.Overall, no condom was used in 84/125 (68%, vs. 57% in 2011), method failure was reported in 27/125 (22%, vs. 35% in 2011), and the patient did not know in 9/125 cases (7%, vs. 8% in 2011). Baseline HIV testing was performed in 114 (91%). 30/125 patients (24%) reported an HIV positive partner, of whom only 5 knew their partner was taking ART. Of these 5 patients, 2 reported unprotected RAI, 1 reported unprotected insertive anal intercourse (IAI) and PEPSE stopped once a viral load (VL) was ascertained, and 2 patients reported unprotected IAI with a partner whose VL was undetectable - their PEPSE was continued despite this. 68/125 (54%) completed the PEPSE course. Follow-up appointments 12 weeks after completion of PEPSE were attended by 38/125 (30%) - no patients tested positive for HIV.
Conclusion: Compared to our data from 2011, PEPSE prescriptions to patients with HIV positive partners has fallen, however could have been avoided in 7% (2/30) of this important group. In only one patient was PEPSE recorded as discontinued once the source was discovered to have an undetectable VL. The majority of PEPSE prescriptions in men were for unprotected sex, particularly RAI, with partners of unknown HIV status – a risk group unaffected by the new guidelines. 12 week follow-up rates continue to be poor at 30% compared to 37% in 2011 and ongoing health advisor and clinician input is required to address this.

P406

What are the best methods to recruit healthy volunteers into HIV vaccine trials?

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Background: HIV vaccine trials are demanding in terms of the intensity of procedures, frequency and duration of study visits and overall follow-up. Eligibility criteria are frequently stringent. A range of approaches are being used to enrol healthy volunteers in two phase I HIV vaccine trials, CUTHIVAC001 and UKHVC003.
Methods: A website dedicated to HIV vaccine trials incorporating a volunteer Register was set up in July 2010; posters; intranet sites; magazine advertising; social media; local and wider media coverage have been used to promote the trials. To determine the effectiveness of these methods thus far, we defined effective as (1) resulting in contact with the study team and (2) attendance for screening visit. Volunteers contacting the study team were asked how they heard about the trials (the Source), and attendance for screening was logged. Data were recorded in Microsoft Excel and analysed in STATA 12.
Results: Between June and December 2013, 249 volunteers contacted the study team to request information about the trials. The source was available in 198 (79.5%) (see table). Contact with the study team was most likely to be due to a poster, although only 8.5% (95% CI 3.5-16.8) attended screening. The most effective method leading to screening was word of mouth with 38.5% (95% CI 20.2-59.4) attending a visit.
Conclusion: Locally distributed posters are effective for eliciting contact, but yield lower levels of screening attendance. Word of mouth recruitment, which was not a formal component of our outreach efforts, proved the most effective tool in generating screening visits and will be central to ongoing efforts. Newer internet based approaches, including dedicated websites, have demonstrated their potential, but further work is needed to maximise the impact of social media and to understand the reasons for drop out between contact with the study team and screening.

Source	Contacts N	Screens N (%)
Posters	82	7 (8.5)
Dedicated website	45	5 (11.1)
Word of mouth	26	10 (38.5)
Advertising	16	2 (12.5)
Hospital/College intranet	10	0 (0)
Other	8	0 (0)
Social media	6	2 (33.3)
Local/Wider Newspaper/Magazine	5	0 (0)
Missing	51	2 (3.9)
Total	249.0	28 (11.2)

P407

Identifying barriers to effective partner notification of HIV infection in a UK centre

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Background: Partner notification (PN) is an important step in HIV testing and prevention. The 2012 BASHH/BHIVA PN audit showed that one new case of HIV is identified through PN for every 10 index cases. Despite this, there is no national performance standard on HIV PN. We evaluated our practice to assess our performance and identify barriers to effective PN.
Methods: We reviewed notes of patients newly diagnosed with HIV in 2012. Data collected include demographics, risk factor for HIV acquisition, healthcare worker discussion about PN, number of contactable and uncontactable sexual partners, and reasons for incomplete partner notification.
Results: 59 patients were newly diagnosed with HIV in 2012. 52 case notes were accessible for review. 12 patients were initially diagnosed outside the GUM and Infectious Disease setting before referral to our unit.65% of patients were born in the UK. 35% patients had a previous or concurrent STI when they were diagnosed with HIV. Syphilis was the most common STI diagnosed before or at the time of diagnosis (44%). 46% were MSM, 23% had sexual partners from abroad and 25% had known HIV exposure. 2 patients reported receiving blood transfusion abroad.
Of 52 patients, PN was discussed with and documented in 48(92%). In 4 patients, no documentation of discussion about PN could be found. 52 individuals reported a cumulative total of 143 partners. 20 index patients were willing to notify partners and 3 patients agreed to provider referral. 28 partners were contactable and 8 patients were diagnosed with HIV through PN.
Main reasons for incomplete PN were inability to provide details of casual partners (21%) and index patient reluctance to discuss partner details (19%). The majority of PN in our cohort was driven by index patient willingness to participate in the PN process.
Conclusion: Despite high numbers of sexual partners reported by new HIV diagnoses, only a minority had contactable partners. However, there remain high numbers of uncontactable partners who are at risk of infection. HIV partner notification in our 2012 cohort yielded 8 new HIV diagnoses equating to 1.5 new HIV diagnoses per 10 index patients. This is higher than the figure from the national audit. PN is an ongoing process and for effective PN, patients need to continue to be motivated and supported by appropriately trained staff with adequate time.

P408

The clinical significance and detection of Gardnerella vaginalis in male specimens using a quantitative real time polymerase chain reaction assay

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Background: *Gardnerella vaginalis* is known to colonise the genital tract of healthy females however bacterial vaginosis (BV) – a common cause of vaginal discharge, is characterised by an overgrowth of *G.vaginalis* due to disruption of the normal vagina flora. Despite *G.vaginalis* being the most predominant aetiology of bacterial vaginosis its transmission and clinical significance in males remain unclear. *G.vaginalis* is thought to be sexually transmitted as identical strains have been isolated from sexual partners. *G.vaginalis* has not been isolated from the urethra or rectum in prepubertal boys indicating it is not a commensal organism in male genital and/or gastrointestinal tract. Bacteria associated with BV (i.e. *Gardnerella vaginalis*) are thought to be associated with non – chlamydial non – gonococcal urethritis (NCNGU) in males however this remains uncertain due its isolation from healthy males. Uncertainties regarding *G.vaginalis* role in male disease arise when studies use insensitive non - quantitative detection methods and since a higher *G.vaginalis* concentration is associated with symptoms in women, it is not surprising to hypothesize that higher concentrations are symptomatic to males. This study uses a highly sensitive quantitative real time PCR assay to assess the clinical significance of *Gardnerella vaginalis* in male disease with regards to its presence and load in the urethra and rectum of males.
Methodology: A quantitative real time PCR TaqMan assay is used to detect and quantify *Gardnerella vaginalis* in urine from symptomatic and asymptomatic males and in rectal swabs from men sex men (MSM). Statistical analysis are performed to determine if *G.vaginalis* load is significantly increased in symptomatic males and if a significantly higher proportion of heterosexual males are positive for *G.vaginalis* compared to men sex men. The prevalence and load of *G.vaginalis* in rectal swabs from MSM is also observed using *G.vaginalis* qRT-PCR assay.
Discussion: : This study concludes that males with urethral symptoms have a significantly higher *Gardnerella vaginalis* load in their urine compared to asymptomatic males and *G.vaginalis* presence is significantly associated with heterosexual males compared to men sex men (MSM). Despite a low prevalence in MSM urine, the study shows a high prevalence of *G.vaginalis* in MSM rectal swabs. This study emphasises the importance to further investigate the role of *Gardnerella vaginalis* in non chlamydial – non gonococcal urethritis and proctitis.

P409

Social media, sexual health and men who have sex with men (MSM): an exploratory qualitative study in Scotland

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Background: Sociosexual media have opened up important new ways for men who have sex with men (MSM) to meet other MSM for both social and sexual relationships, where interactions are markedly different from more 'traditional' meeting places.
Methods: Fifteen exploratory qualitative interviews and nine focus groups were conducted with MSM living in Scotland. All data were transcribed verbatim and analysed for recurring themes using Interpretative Phenomenological Analysis.
Results: These data reveal how sociosexual media have modified traditional means of social and sexual interactions for MSM. They highlight the novelty of social media as an emerging and important social context but also the continually changing nature of social media. Within this, the centrality of profiles, distinct sexual cultures and the functionality of specific sites were important in how men negotiated sexual interactions with potential partners. These unique aspects of social media facilitated both sexual communication and crucially HIV status disclosure. Moreover, the potential of social media to be utilized for sexual health promotion was also highlighted.
Conclusions: Social media are an increasingly important part of the sexual lives of MSM. Site functionality and the way men engage with this produce unique sexual cultures which maximize sexual opportunities, compatibility and safety. Whilst it is inevitable that these sites facilitate sexual health risk behaviors, more importantly they also present novel opportunities for targeted sexual health promotion.

P410

Towards a holistic understanding of HIV-negative MSM who bareback

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Background: In the UK men who have sex with men (MSM) remain disproportionately affected by HIV, which is almost exclusively transmitted through condomless anal sex, known colloquially as barebacking. It has been argued in order to understand why MSM engage in risk taking behaviours requires understanding the complexity and interaction of the psychological, sociological and biological elements involved.
Methods: Following ethical approval, in-depth interviews were undertaken with 13 HIV-negative MSM who had recently engaged in bareback sex. The interviews were transcribed verbatim and an Interpretative Phenomenological Analysis (IPA) approach was taken.
Results: Three super-ordinal themes were identified from the participant's narratives. 1) How men contextualise their barebacking experiences; 2) the act of bareback sex and 3) the meanings men ascribe to bareback sex. The IPA approached allowed for a deeper understanding of the personally unique perspectives of the participants and demonstrated the complexity of the intersecting elements. For example there were interconnections between negative affective states such as loneliness, self-esteem, partner attributes and erotic capital. In addition, how participants connect with partners appears to influence the negotiation of bareback sex and the filtering of partners. And for most participants barebacking was a profoundly meaningful endeavour.
Conclusion: The study highlights that bareback sex is often the result of a convergence of multiple factors rather than being reducible to a single element, which poses particular challenges for those working in HIV prevention. This paper concludes by considering the implications for this for practitioners and researchers.

P411

Hepatitis B testing and vaccination in new HIV patients

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Background: Patients with HIV are also at risk of hepatitis B (HBV) due to their shared mode of transmission. HIV patients who develop HBV have an increased incidence of chronic active HBV infection, viral replication, cirrhosis and end stage liver disease. All new HIV patients should be tested for HBsAg (surface antigen), anti-HBc (core antibody) and anti-HBs (surface antibody) and subsequently vaccinated if not immune.
Methods: A retrospective review was done of all HIV diagnosed patients presenting to infectious disease and genitourinary medicine over a year long period. Using lab records, electronic and paper notes, we assessed if all new HIV patients had been tested for HBV infection and immunity within 3 months of diagnosis and if vaccination was offered to the non-immune within 6 months as advised in the BHIVA 2008 immunisation guidelines.
Results: There were 73 HIV diagnoses. 72 were tested for HBV but 4 were not tested within 3 months of their HIV diagnosis. Of the 4 not tested within 3 months, 2 failed to attend their appointments. 3 of the 73 patients (4%) were found to have active HBV infection. 15 patients (21%) had evidence of previous HBV infection with anti-HBc present. There were 34 patients, without evidence of previous HBV, who were not immune to HBV with anti-HBs titre levels <10 IU/ml. Half of them were vaccinated for HBV and half were not. The mean CD4 count of those vaccinated was 517 (range 81-1031) compared to 146 (range 5-339) of those not vaccinated. Of the non-immune patients with anti-HBs titres between 10-100 IU/ml, 50% were given a HBV booster.
Conclusions: 97% of the new HIV patients who continued to attend for care were tested for HBV within 3 months, meeting the BVIVA target. Only 50% of the non-immune patients were vaccinated for HBV which is well below the

95% target set by BHIVA. Those patients who were not vaccinated for HBV had lower CD4 counts. This may have been a deliberate policy to allow CD4 recovery before vaccination. These patients are at higher risk of HBV and so should be vaccinated irrespective of CD4 count but their response should be monitored as a further course of vaccine may be required should they not respond, when their CD4 count is higher.

P412

Hepatitis B vaccination in male sex workers

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Background: Vaccination against Hepatitis B virus (HBV) infection is an effective method of prevention in high risk groups such as men who have sex with men (MSM) and commercial sex workers. Current British Association of Sexual Health and HIV (BASHH) guidelines recommend HBV screening, vaccination and testing for post-vaccination response in high risk groups. A previous study of HBV vaccination in male sex workers (MSW) in a MSW specialist clinic found a 59.8% HBV vaccination completion rate in MSW over a 10 year period. The objective of this audit is to compare HBV vaccination completion rates in MSW attending a MSW specialist clinic and MSW outreach clinics with current BASHH audit targets.
Methods: Total attendances of new MSW seen in a specialist clinic for MSW and in MSW outreach clinics over a two year period (October 2010 to October 2012) were retrospectively reviewed. Data on age, baseline HBV screening, HBV vaccination and post-vaccination response were collected.
Results: Data was available for 66 MSW attending the specialist clinic and 51 MSW attending outreach clinic and are tabulated below.

	Specialist clinic	Outreach Clinic
Total	66	51
Age range (years)	21-68	19-31
Mean age (years)	33.7	26.4
HBV screening	89.4% (59/66) 1/66 declined 6/66 previous HBV vaccination	98% (50/51) 1/51 declined
AntiHBc positive	8.7% (6/59)	6% (3/50)
Previous HBV vaccination	54.2% (32/59)	48% (24/50)
Eligible for HBV vaccination and offered immediate vaccination	28	23
Accepted HBV vaccination	85.7 % (24/28)	95.7% (23/24)
Completed HBV vaccination	66.7% (16/24)	31.8% (7/22)
Anti-HBs titre post vaccination completion	56.25% (9/16)	14.3% (1/7)

Conclusion: Good rates of screening and vaccination acceptance were achieved by both the specialist clinic and outreach service, exceeding the BASHH audit targets. Outreach clinics achieved a higher rate of HBV screening compared to specialist clinics. Levels of vaccination completion achieved amongst MSW attending the specialist clinic was improved from that previously reported in a 10 year study of MSW HBV vaccination rates (66.7% compared to 58.9%). Lower rates of completion were obtained amongst those seen by outreach service and may reflect the transitory nature of MSW in London or the opportunistic nature by which this group was treated, with very few of the patients seen by outreach services subsequently attending the specialist clinic. A recall system for outreach patients could be utilised to improve the level of completion of HBV vaccination.

P413

Evaluation of PEPSE use in a district general hospital genitourinary medicine department

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Background: The GUMedicine clinic is located within the same hospital site as the regional SARC (sexual assault referral centre). In cases of sexual assault, the recommendation on whether to administer PEPSE is less clear. BASHH guidance suggests it should be "considered". The aim of this work was to review PEPSE use and compare with BASHH standards.
Method: GUM records with the code "PEPS" were reviewed between July 2012-2013.
MS Excel was used for collating data and analysis.
Results: 26 cases were identified where PEPSE had been administered. 61.5%, (n=16) of attendances for PEPSE were female SARC patients. There were no assaults involving male patients. Of the male patients attending (n=10), 70% incidences involved heterosexuals with the remaining 30% MSM.
100% (26) received PEPSE for an appropriate indication. 96% (25) underwent baseline HIV testing (one patient received 3 day starter pack but insisted blood was taken at her local GUM clinic but subsequently did not attend). 100% patients received PEPSE within 72 hours. 11/26 (42%) completed the 4 week course. 6/26 elected follow-up at their local GU clinic and completion of PEP was not ascertained, 4 patents changed their mind and discontinued PEP, 3 patients did not attend follow-up, one patient was prescribed PEP but did not receive PEP due to her carers erroneously omitting it, one patient stopped due to side-effects. 13(72%) underwent STI screening at 2 weeks. 8(47%) underwent the final HIV test at the appropriate time interval.
Conclusion: 100% were appropriately initiated on PEPSE according to the BASHH recommendations and received it within the appropriate time frame. Most individuals however (73.1%) initiated PEP based on a situation where the guidance suggested the clinician should 'consider' PEP. The vast majority of cases were sexual assault. The decision to initiate PEP in these cases is often very complex. An additional difficulty was that many of the patients referred by the SARC were not local to the area and requested follow-up more locally. In these cases it was not verified whether they had had appropriate follow up. We have established a local code for sexual assault cases and plan to compare cases where PEP was not administered with cases where it was started.

P414

Abstract withdrawn

P415

PEPSE use or not to use: assessing the use of post-exposure prophylaxis in a small town genitourinary clinic

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Background: BASHH released new UK guidelines in 2011 on the use of post-exposure prophylaxis for HIV following sexual exposure (PEPSE). The guidelines offer recommendations on when PEPSE should or should not be considered and monitoring its' use in individuals who are receiving PEPSE.
Aims & Objectives: The objectives of this audit were to compare our usage of PEPSE and the management within the national recommendations.
Method: Data was collected retrospectively for the patients who had been prescribed PEPSE between the 1st April 2012 and 31st March 2013 using the SHHAPT code.
Results: Over 12 month period, we identified 10 patients with PEPS CODE. We saw 5 female and 5 male of whom 2 are MSM. In 7 patients PEPSE was initiated in the GUM clinic. The main indication for prescribing PEPSE was sexual assault (4/10), 2 of those is MSM. Other indications included community needle stick injury (2) or having sex with IVDU (1). In 2 patients the indication was having sex with known HIV positive contact. All the patients started PEPSE within 72 hours of exposure and 70% reported side effects to medication.
Table 1: Results comparing local PEPSE prescribing with national targets

Audit Standard	Target	Outcome	Was target achieved?
PEPSE prescribed according to indicated criteria	90%	70%	No
Receive PEPSE within 72hrs of risk exposure	90%	100%	yes
Baseline HIV test within 72hrs of taking PEPSE	100%	100%	yes
Patients received PEPSE should be screened for other STIs	90%	80%	No
Patients completed a 4 week course of PEPSE	75%	40%	No
HIV testing at 12 weeks	60%	20%	No

Conclusion: We are achieving 2 out of 6 standards set by the BASHH PEPSE guidelines. Completion rates and follow up testing rates were low similar to previous publications from large centres. Counselling patients By GUM staff while using BASHH guidelines did not reduce PEPSE usage in low risk group. We are planning to recommend staff training and improve patient access to counselling as part of the initiative to improve PEPSE prescribing in our unit.

P416

Avoiding pitfalls in PEP (SE)

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Background: Post Exposure Prophylaxis (PEP) is prescribed to patients presenting with a history of occupational and sexual exposure to HIV infection. The British Association for Sexual Health and HIV (BASHH) published clinical guidelines on Post Exposure Prophylaxis following Sexual Exposure (PEPSE) in 2011. Expert Advisory Group on AIDS (EAGA) PEP guidance covers occupational usage and was published in 2008.Commencement of PEP/PEPSE is recommended within 72 hours of exposure and so therefore requires a pathway of care from Emergency Medicine (EM) and Sexual Assault Referral Centres (SARCs) through to the Sexual Health Clinic (SHC) to ensure appropriate and timely administration outside routine clinic hours.
Method: A retrospective case note review of SHC attendances GUMCAD/SHHAPT coded as PEPS (PEPSE) from 1st October 2011 to 30th October 2013. Prior to this date there was no GUMCAD code for PEPSE. There is no code for occupational PEP. Data was collected on patient demographics, PEPSE indication, time from exposure to commencement and HIV testing outcome.
Result: 16 patient attendances were coded as PEPSE; 9 males, seven females. 3 were initiated in EM, four in a SARC and nine in SHC. The age range was 18 to 51 years.7 patients received PEPSE following sexual assault; two after needle stick injuries and the remaining following other sexual exposure. All patients were started on PEPSE within 72 hours (BASHH standard 90%) and all had a baseline HIV test (standard 100%). 10 out of 16 patients (63%) (standard 75%) finished the full PEP course. PEPSE was prescribed within the recommended indications in 88% of patients (standard 90%). A sexually transmitted infection screen was completed in all patients (standard 100%) with sexual exposure. PEPSE was discontinued in 1 patient, as the baseline HIV test was positive. 6 out of the remaining 15 patients (40%) initiating PEPSE/PEP had a documented HIV test 12 weeks post PEP (standard 60%).
Conclusions: PEP/PEPSE was commenced within the recommended 72 hours along with a baseline HIV test in all patients. Results of this clinical audit highlight the need to improve completion rates and post PEP/PEPSE HIV testing uptake. A local clinical code for occupational PEP cases attending SHC has been introduced to improve data recording, as there is evidence that some cases were uncoded or incorrectly coded as PEPSE.

Reproductive Health and Contraception

P417

Factors influencing combination antiretroviral therapy choice: a comparison between patients and health care professionals

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Introduction: HIV treatment has evolved rapidly. The role of shared decision making and thus an understanding by healthcare professionals (HCPs) of the therapy qualities valued by patients is key.
Method: Using an anonymous survey, Patients and HCPs were asked to rank 10 therapy characteristics. Patients were requested to order the treatment qualities by views of importance, while HCPs completed the same survey according to their views of patient preference. The median and interquartile ranges (IQR) were calculated, and therapy qualities were ranked using the median value for each group. All patients were receiving Highly Active AntiRetroviral Therapy, and HCPs completing the questionnaire were specialist HIV doctors, nurses, and pharmacists.
Results: A total of 114 patients and 32 HCPs completed the survey.

Table 1. Table comparing the Average scores on each question for Patient and HCPs

Factor	Median Score (IQR), 1 = Most important, 10 = Least important		**p-value** (3dp) Calculated using Mann-Whitney U test
	Patient n=114	**HCP n=32**	
Efficacy	1 (1-2)	2 (1-4)	**0.024**
CD4	2 (2-3)	3 (2-5)	**0.007**
Low toxicity	5 (3-6)	3 (1-5)	**<0.001**
No interactions	6 (4-8)	8 (6-9)	**0.005**
Cost	9 (6-10)	10 (10-10)	**<0.001**
One daily dose	7 (4-9)	4 (3-5)	**<0.001**
Low tablet dose	7 (6-9)	6 (4-8)	**0.029**
Single tablet	7 (5-9)	5 (4-7)	**0.002**
Resistance	6 (4-8)	8 (7-8)	**0.010**
Protection	5 (3-7)	6 (5-8)	**0.008**

Conclusion: In order to aid effective information providing patient centred care, it is important for the physician to have an awareness of the patients' requirements of therapy. In terms of anti-retrovirals, HCPs and patients appear to rank similar factors as of most (i.e. Efficacy) and least (i.e. Cost) importance. However there are significant differences between other factors which contribute towards medication choice, such as once daily dosing and STRs, suggesting patients may be more willing than HCPs to break STRs into generic parts in the future.

P418

A retrospective audit of oral emergency contraception prescription since introduction of Ella One in an integrated sexual health and contraception unit

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Background: Ella One is a progesterone receptor modulator licenced for use as emergency contraception (EC) up to 5 days post UPSI. It has shown greater efficacy for prevention of pregnancy mid cycle compared to Levonelle. In February 2011 Ella One was locally approved for EC on days 4-5 post unprotected sexual intercourse (UPSI). Mid-cycle use of Ella One, as per product licence, was not locally approved. We audited prescription of EC according to guidelines and quality of consultations: offer of emergency copper Intra-uterine device (IUD), sexual history (SH), sexually transmitted infection (STI) screening, advice on future contraception and follow up pregnancy test (PT).
Methods: We identified 300 attendances for EC in 278 patients via coding, between 7/6/12-14/2/13. We collated data on demographics, use of EC and quality of consultations from notes and electronic records.
Results: Median age was 22 years (range 13-44). 76/300 (25%) White British, 62/300 (21%) Black Caribbean, 55/300 (18%) Black African and 44/300 (15%) Mixed ethnicity. 149/300 (50%) did not use any regular contraception. 256/290 (88%) presented on days 1-3, 27/290 (9%) on days 4-5 and 5/290 (2%) >day 5 post UPSI. 254/300 (85%) were prescribed Levonelle; 237/245 (97%) within product licence and local guidelines. 3% prescriptions were outside of licence due to presentation > day 3 post UPSI and prescription in case of future condom failure. 44/300 (15%) were prescribed Ella One; 40/44 (90%) within product licence and 24/44 (55%) within local guidelines. Prescription outside local guidelines included presentation on days 1-3 (including midcycle) or >120 hours post UPSI and high BMI.
The IUD was offered as EC in 109/300 (37%) cases. Future contraception was discussed in 255/300 (86%) and 69/253 (27%) were quick started on hormonal contraception. 278/300 (93%) had a documented SH taken and 253/292 (87%) were offered STI screening. 217/298 (73%) were advised on PT post EC.
Conclusion: Since most women present for EC days 1-3 post UPSI Levonelle remains the most widely prescribed EC despite availability of Ella One. Greater experience of using Ella One midcycle may guide updating of local guidelines to reflect product licence. SH and STI screening was offered in almost all patients. Offer rate of emergency IUD could be increased. As half of patients

are not on any contraception, some presenting repeatedly for EC, it is important to increase the number of patients quick started on contraception.

P419

The characterisation of long-acting reversible contraception (LARC) provision in primary care, April 2012 to March 2013 – Nexplanon and intrauterine-contraceptive device (IUCD) insertion

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Background: This study was undertaken by public health commissioners to understand current service delivery. It reviews the provision of LARC by primary care in preparation for developing a lead provider model as part of the new integrated sexual health service.
Method: A questionnaire, sent to GP Practices holding a contract with the Local Authority to provide LARC, asked if an up-to-date register was being maintained; number and age distribution of patients on the register; number of clinicians providing the service; compliance with clinical governance, infection control and consent procedures; number of insertions; number of removals and age distribution; reasons for removal; time device was in-situ prior to removal; and, for IUCDs, indication (contraception vs menorrhagia) and *Chlamydia trachomatis* testing before fitting.
Results: 37/65 Practices returned data on Nexplanon insertion and 27/51 on IUCD insertion. All reported maintaining a register, compliance with infection control and clinical governance procedures. 1275 Nexplanon were inserted and 981 removed. For IUCDs, 791 were inserted and 310 removed. Indication for treatment was recorded in 20/27 (74%) for IUCD with 679/877 (77%) inserted for contraception and198/877 (23%) for menorrhagia. The inconsistency in the denominator is attributed to inaccurate registers. The number of insertions per Practice varied considerably. The range was 5-280, median 28.5 for Nexplanon insertions and 1-200, median 18 for removals. For IUCDs the range for insertions was 0-80, median 22 and 1-47, median 7 for removals. One Practice had 5 clinicians to fit IUCDs and 9 to fit implants but 20/37 (54%) of implant providers had only one clinician and only 6 had >2 clinicians. For IUCDs 15/27 (56%) had one clinician and only 4/27 (15%) had >2 clinicians. Only 134/363 (37%) of IUCDs and 418/891 (47%) of Nexplanon were removed because of expiry. Nexplanon was far more popular in the 15-19 age group while IUCDs were preferred by over-35's.
Discussion: : This study highlights a number of issues: the high removal rate of contraceptives before expiry; high number of single-clinician providers, risking gaps in service; identifying IUCDs inserted for menorrhagia (no longer part of the public health sexual health budget); and ensuring Practices have comprehensive, accurate registers from which to extract the information. These issues present challenges to the efficiency and efficacy of public health and sexual health services.

P420

Sexual and reproductive health (SRH) amongst HIV-positive adolescents: an HIV Young Persons Network (HYPNET) survey

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Background: Increasing numbers of HIV positive adolescents are transitioning from paediatric to adult HIV services and becoming sexually active. This study looks to capture data on their sexual and reproductive health in order to optimise patient care.
Method: A multicentre case note review of vertically infected adolescents aged 16-25 years attending either a transition or adult HIV clinic was conducted across 10 UK centres. A standardised electronic proforma was used to collect anonymised patient data including demographics, sexual health, contraception, and discussion on HIV transmission and post exposure prophylaxis.
Results: Data was returned for 139 adolescents; 65 (47%) male; 99 (71%) Black African, 25 (18%) Black other, 14 (10%) Caucasian, 2 other ethnicity. Current age 20 yrs (range 16-25); median age at diagnosis 7 yrs (range 0-19). 119 (86%) heterosexual, 2 MSM, 2 lesbian and 16 unknown. 119/139 (86%) were taking antiretroviral therapy (ART); 86/119 (72%) had HIV VL <40 c/ml. 75% were aware that an undetectable HIV VL reduced transmission risk.
79/139 (57%) disclosed ever being sexually active; 80% within the last year and 50% in the preceding 3 months. Median number of partners; 3 (range 1-35). Median age of coitarche 17yrs (range 12-20). All sexually active patients' notes had documented safer sex discussions. 74% report using condoms always, 26% reported suboptimal usage. Previous STIs were reported in 18% patients. Of the 40 sexually active females, 5 were using LARC (IUS, IUD or depo) whilst 23 (58%) were using condoms alone and 8 (20%) reported previous pregnancy. Of all 74 females, 47 (64%) were aware of emergency contraception (EC) with 29 (39%) aware of double dose oral EC if on ART. 7 (6%) patients reported domestic violence and 5 (4%) patients reported coercion and sexual abuse. 32 sexually active adolescents disclosed their status to their current partner; 26 (81%) of whom had tested for HIV; 20/26 HIV negative and 5/26 HIV positive (4 known MTCT). 116/139 (83%) patients had recorded discussions about PEPSE and 12 partners had received PEPSE.
Conclusions: 57% of this HIV positive adolescent cohort were sexually active, of whom a quarter reported suboptimal condom use and one fifth a past STI. Half had disclosed their HIV status to current sexual partners, of whom 80% had tested for HIV and half had attended for PEPSE. Improved targeted reproductive and sexual health services are essential to meet the needs of this vulnerable group.

P421

High-risk human papilloma virus (HRHPV) infection in cervical cytology samples from HIV-positive and HIV-negative women attending a genito-urinary medicine clinic

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Background: High risk Human Papilloma Virus (HRHPV) primary screening as part of the National Cervical Screening Programme is currently being delivered in 6 centres across the UK. In the literature, infection with and persistence of HPV is generally found to be higher in HIV positive (HIV+ve) women. We report local results in women attending a GUM clinic at one of the centres.
Methods: A retrospective review of cervical cytology results following the introduction of primary HPV screening
Results: 79 cytology tests were performed in the first 6 months of HRHPV screening (51 HIV +ve, 28 HIV-ve women). HRHPV positivity (HRHPV+) was 33.3% in HIV+ve women and 50% in HIV-ve women, compared with 15.9% in the general population. 9.8% (5/51) HIV+ve women were referred or re-referred for colposcopy, compared with 21.4% (6/28) HIV-ve women and 4.2% of the general population. Across the centre, 70% of HRHPV+ samples had negative cytology, which previously would not have generated early recall. The corresponding figures from the clinic were: HIV-ve 7/14 (50%), HIV+ve 12/17 (70.6%). Table 1. Age specific HRHPV positivity.

	HRHPV+ number of tests(%)				HRHPV+ number of tests (%)		
Age	HIV-ve	HIV+ve	Pop.*	Age	HIV-ve	HIV+ve	Pop.*
<24	1(100%)	1(0%)	39.5%	45-49	1(100%)	7(14%)	9.6%
25-29	10(70%)	1(100%)	30.1%	50-54	2(0%)	5(40%)	8.7%
30-34	7(43%)	11(27%)	17.6%	55-59	0(0%)	2(0%)	7.2%
35-39	4(50%)	11(45%)	12.6%	60-64	0(0%)	2(50%)	9.6%
40-44	3(0%)	11(36%)	10.5%	*Pop= general population at centre			

Conclusions: In this clinic, all HIV+ve women are offered routine annual cervical cytology, and the high percentage of HRHPV+ samples supports this enhanced surveillance. For HIV-ve women, cytology is only offered if overdue for screening or unlikely to attend elsewhere. Even though this is a selected group, 50% HRHPV+ and a colposcopy referral rate of 21.4%was higher than

anticipated. Despite the current trend towards integration of sexual health and family planning services, not all will be commissioned to deliver cervical cytology. This comes at a time when screening coverage is falling, especially in younger age groups. Review of GUM attendances when HRHPV screenning began found 23.2% of women aged 25-29 were not up to date with screening, yet 40% of those of this age screened in the clinic were referred for colopscopy. We would suggest that integrated services are well placed to offer screening to a high risk group and commissioning should be considered based on local coverage data.

P422

Reducing the risk of re-infection: Are women in Yorkshire changing their sexual behaviour after chlamydia?

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Background: Chlamydia is the most common, treatable sexually transmitted infection and rates are increasing within the UK. Recent figures show that 1 in 10 sexually active woman aged 16-24 years are infected with Chlamydia. Yorkshire has the highest rate of chlamydia outside of London. A national screening programme aims to increase awareness and detect chlamydia in sexually active people under the age of 25. The government also recommends a sexual health check up before having sex with a new partner. However little is known about whether women are changing their behaviour after a diagnosis of chlamydia.
Methods: A semi-qualitative questionnaire-based study was conducted in Grimsby and Scunthorpe sexual health clinics. Women who had previously received treatment for Chlamydia and were re-attending the clinic for any reason were included. Questions relating to sexual behaviour before and after the diagnosis, together with whether steps had been taken to reduce infection risk were included. Initial infection had to be more than 3 months prior to attending the clinic.
Results: A total of 52 female patients from Scunthorpe (37) and Grimsby (15) sexual health clinics completed the questionnaire. The average age was 22 years (Min 15, Max 48). Only one third had symptoms of chlamydia initially. 13% had sex within 7 days of receiving treatment. 71% of patients received information about the risks of not receiving treatment, which closely corresponds to the 77% who were aware that Chlamydia can cause infertility. The number of patients using condoms most or all of the time rose from 54% to 65% after treatment. 77% received condoms at the clinic, however only 73% used them. Patients who got sexual health check-ups prior to unprotected sex before and after a diagnosis of chlamydia was 54% and 58% respectively.
Conclusion: Our data supports the use of education and supply of condoms at sexual health clinics, as patients do change their behaviour. However, there are patients who despite this, continue to put themselves at risk of re-infection. The number of patients who got a sexual health check-up prior to unprotected sex was least affected by intervention from healthcare staff, and remains an on-going challenge. The work also emphasises the use of a one-off dose of azithromycin, rather than 7 days of doxycycline to treat Chlamydia, as 13% of patients had sex within 7 days of treatment, putting them at risk of re-infection.

P423

Improvement in contraception provision in a genitourinary medicine clinic

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Background: Progress has been made locally and nationally in the integration of Contraception and Genitourinary Medicine (GUM) services. A previous audit of our hospital based GUM clinic demonstrated inadequate documentation and provision of contraceptive needs. This was in particular believed to be inefficient in meeting the needs of younger clients. Subsequently, the staff received additional training in contraception and a new clinical template with an integrated contraception history was created which enabled clinicians to better document contraceptive methods used and a pregnancy risk assessment. A re-audit was undertaken to assess the improvement in our services.
Methods: A retrospective case note analysis of 100 randomly selected female patients who attended our clinic from October to December 2012.
Results: The age range was 16-50 years (median age 24 years). Contraception history was documented in 99/100 patients (99%) compared to 92% in the previous audit. Pregnancy risk assessment was evident in 97% compared to 29% previously. We identified 32 patients who were taking combined pill, 12 using Depo Provera, 8 taking Progestogen-only pills, 5 with a contraceptive implant and 3 women each using Intrauterine contraceptive device (IUCD) and Intrauterine system (IUS). There were 20 patients using only condoms and 8 not using any method. In 20/28 patients (72%) who were using condoms or no method, there was documentation of information given about methods of contraception along with leaflets, in the previous audit this was documented only in 27% of eligible patients. Referral to a contraceptive clinic was arranged for 2 women while 3 declined referral; 6/20 women using condoms (30%) were started on a new method of contraception. Emergency contraception (EC) was given to 2/3 eligible patients along with 'quick start' regular hormonal contraception, 1 each given Levonelle 1500 and EllaOne. An emergency IUCD was discussed as the best method of EC in these patients. EC was missed in only 1 eligible patient.
Conclusion: Results showed an improvement in documentation of contraception history, pregnancy risk assessment and discussion of available contraceptive methods in relevant patients. This re-audit demonstrates that contraceptive care improved after staff training and the introduction of the new clinical template. We are now better placed to address the contraceptive needs of young people, in particular, attending the hospital GUM clinic.

P424

What women want: Opportunities to integrate screening for sexual infections alongside fitting of an intrauterine device

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Background: The Faculty of Sexual & Reproductive Healthcare recommends that prior to fitting an intrauterine contraception device (IUCD) a sexual history should be taken. Those identified as at higher risk of a sexual transmitted infection (STI) or who request swabs should be tested for Chlamydia trachomatis infection (CT) as a minimum and Neisseria gonorrhoeae (NG) if deemed necessary from the history. In October 2012 routine screening for CT/ NG was implemented in all women undergoing fitting of an IUCD using a dual nucleic acid amplification test. The aim was to review the number of women who were offered and accepted screening and positivity rates.
Methods: The clinic management system was used to identify patients attending for intrauterine device insertion between January and April 2013. A retrospective case note review was undertaken of 50 consultations selected at random. Demographic and clinical data were recorded including assessment of STI risk and offer of a screen, current contraception, obstetric and medical history, STI screening results, type of device fitted and details of the procedure. Results were entered into an excel database and reviewed against local standards.
Results: Of 50 women all had a documented sexual history and assessment of risk and all accepted screening for CT/NG. 30% (n=15) were using condoms. Four per cent had CT (n=2), both women were under 25 years of age, neither had changed partner in the last year. No cases of NG were identified. 16% (n=8) were tested at IUCD insertion, 66% (n=33) within 1 month and the rest beyond 1 month. Mean age was 31 years (range 20 to 44 years). 26% (n=13) identified themselves as White British; 16% (n=8) as other White; 12% (n=6) as Indian; 12% (n=6)) as Black African, 12% (n=6)) as Pakistani; 10% (n=5) as other Asian; 8% (n=4) as Black Caribbean and 4% (n=2) as Other.
Conclusions: Those under 25 years continue to be at higher risk of CT regardless of sexual history. This cohort included women from a variety of ethnic backgrounds, age groups and clinic settings requesting contraception. All women accepted the offer of a CT/GC test prior to fitting of an IUCD. Contraception consultations can provide a platform for women to discuss sexual risk and is an opportunity to access STI testing including for HIV. Providers should consider how this could be integrated into routine care.

P425

Contraceptive healthcare for HIV-infected women – are we doing enough?

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Background: Worldwide, women represent more than half of all people infected with HIV. Contraceptive healthcare is now recognised as an important part of combination strategies for HIV prevention and promotes pre-pregnancy counselling. Recent literature has scrutinised the integration of HIV and family planning services; finding this to be clinically and cost effective. BHIVA guidelines state the HIV care team must support women to make informed choices, offering other methods of contraception alongside condoms. Where women choose to attend their general practitioner for contraceptive advice, but do not disclose their HIV status, there is concern that incorrect contraceptive methods might be provided in terms of ART interactions. It is therefore important that the HIV Physician encourage disclosure and include a sexual and contraception history in the consultation, even where they do not supply the contraception.
Methods: A retrospective case notes review was conducted on the last 100 women attending clinic between the ages of 18-50 years. Outcomes audited included documentation of sexual history, PEPSE, condom and contraception use over the last 3 HIV clinic attendances.
Results: Of the 100 case notes sampled, sexual history was recorded in 79% of women. Discussions about emergency contraception and PEPSE were poorly documented. Discussion about condom use was documented for 59% of women, and discussion on another method of contraception was 39%. Of the total sample, 24% were recorded as using another method of contraception, regardless of sexual activity. Taking only those women who were sexually active, avoiding conceiving and not already using a long-acting method of contraception, 17 of 52 women were counselled about contraception other than condoms.
Conclusion: Our survey has shown that a minority of women had a documented discussion about another method of contraception aside from condoms as part of their HIV care. Where implemented, contraception is mainly appropriate. Where couples are serodiscordant the clinician must ensure the patient is aware of the availability of PEPSE. Once electronic patient records are in place in our department an electronic 'contraception' template will serve as a prompt for the clinician to discuss contraception. However at present further work is needed to ensure discussions regarding condom use and contraception take place, integrating HIV and Sexual Health services.

P426

Contraception provision in HIV-positive women

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Background: In our GU clinic, we are working towards integration with CASH services, and currently refer all HIV positive patients who require contraception other than Depo- Provera (DMPA) to our CASH colleagues. This audit aims to assess our current provision of contraception service in HIV positive women.
Methods: Retrospective case note review of 100 HIV positive women under the age of 50, who were randomly selected. Documentation between September 2012 and 2013 was assessed.
Results: 84/100 patients were treatment experienced and 16 treatment naïve. 60/100 patients had at least 1 partner in the last year.
35/100 were consistently using condoms. 32/100 were not (of which 12 had positive partners and 13 had no partners). Condom use was not discussed in 33/100 (of which 2 had positive partners and 23 had no partners).
Of the 60 patients with partners, 15 were on a regular contraception; 2 provided by GUM (DMPA) and 13 by CASH (DMPA, 1 Nexplanon, 9 IUD/IUS, 1 COCP). All 15 patients had suitable contraception in relation to ARV history. 26 had a documented discussion about contraception options with valid reasons for contraception not being appropriate at the time. 19 were not on regular contraception without documented discussion (9 stated regular condom use). Of the 40 patients without partners, 7 were on regular contraception; 1 provided by GUM (DMPA) and 6 by CASH (2 DMPA, 1 Nexplanon, 2 IUD/IUS, 1 COCP). 6 patients had suitable contraception. 1 had Nexplanon co-administered with a protease inhibitor.
Annual sexual health screening was offered to 40/100 patients
Conclusion: In close collaboration with our CASH colleagues, we are able to provide a comprehensive spectrum of contraceptive options for our HIV positive female cohort. In the vast majority of patients on regular contraception, the method was appropriate. This work highlights areas for improvement; preventing drug-drug interaction and improving the proportion of sexually active patients whose contraception needs are addressed annually, which will be facilitated when we integrate with CASH services.

P427

Inconsistent condom use and attitudes towards pregnancy in young women

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Background: This study explores the relationship between ambivalence about pregnancy and inconsistent use of condoms for contraception, and the ways in which this may also be related to wider socio-contextual factors including aspirations and opportunities.
Methods: A qualitative study design was used. Semi- structured interviews, of around 45 minutes duration, were undertaken with 20 women aged between sixteen and twenty-one. The data set was analysed using a framework analysis approach so that a thematic framework could be identified early and then applied to the entire data set to draw wider conclusions.
Results: There was a strong association with young women's ambivalence towards pregnancy and their consequent failure to utilise condoms during intercourse. Objectively, our study found that volunteers from lower socio-economic background with limited life opportunities were more likely to express indifference towards condom use and the resulting unplanned pregnancy. Overall, many participants used condoms inconsistently.
Conclusion: Understanding the factors at work influencing the correct and consistent use of condoms in young women is vitally important. Whilst, the topic of condom compliance has received much attention in the literature; the link between condom use and attitudes towards unplanned pregnancy is an area yet to be fully explored. This study draws important conclusions that will aid in the promotion of condom compliance.

P428

Is it time to align with primary care on the management of uncomplicated lower urinary tract symptoms in women?

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Background: Lower urinary tract symptoms is a common clinical syndrome seen in female attendees of sexual health clinics. The ethos of sexual health medicine is to treat patients based on positive investigations rather than empirically treating those with symptoms. Hence, routine investigation of women presenting with lower urinary tract symptoms usually includes urinalysis and microscopy and culture of a mid-stream urine (MSU) specimen in those with high suspicion of urinary tract infection (UTI). Antibiotic therapy is usually reserved for those with significant symptoms, positive urinalysis or those with bacteruria on culture. However, this management strategy is quite different to that used by General Practitioners. National guidelines recommend empirical treatment of women with uncomplicated lower UTI or cystitis in view of the reduction in length of symptoms, which occurs regardless of whether bacteruria is present or not. They also recommend only sending routine MSUs in pregnant women, men or those with complex UTIs. We sought to review our own practice against national guidelines.
Methods: Retrospective audit of case notes between November 2012 and October 2013. Inclusion criteria: women and men undergoing urine culture. The following data was entered into Excel; demographics, symptoms, presence of complex features (e.g. renal tract abnormality or treatment failure), results of urinalysis and MSU and antibiotic therapy.

Results: 71 women and 3 men had a confirmed UTI. 5 had complex features. Based on current guidelines, only 11/74 (15%) of these patients needed an MSU. Of the 69 patients with simple UTI, 36 (52%) actually received antibiotics at their initial visit, and the remaining patients needed to return for treatment.
Conclusions: Given that women with lower urinary tract symptoms derive a therapeutic benefit from antibiotics, even in the absence of confirmed bacteruria, sexual health physicans could consider reducing the threshold for treatment. Not only would this benefit those with culture-negative urinary tract symptoms, but it would also expediate the treatment of patients with true bacteruria. If patients are treated empirically based on symptoms, the need for routine MSU would be lessened, and could be restricted to those with complex UTIs and suspected treatment failure, aligning our practice with primary care. This strategy is also likely to be cost effective in terms of reduced cost of investigations and avoidance of reattendances.

Sexually Transmitted Infection Treatment and Evaluation

P429

A comparison of clinical evaluation against microscopy in the diagnosis of patients presenting with vaginal symptoms to an integrated sexual health clinic

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Background: Microscopy is arguably the gold standard test for diagnosing vaginal discharge (VD). However, it may be possible to make a diagnosis based on symptoms in some women, which could save time in clinic and be of use in services without microscopy. The aim of this study was to compare the results of standard clinical evaluation (CE) and microscopy (micro) with a clinician's final diagnosis (FD) for vaginal symptoms (VS).
Methods: We conducted a prospective study of consecutive women presenting with VS to an integrated sexual health clinic over a 6-week period in 2013. All patients underwent a detailed CE using a purpose-designed proforma, which was used to establish a provisional suspected diagnosis. This was followed by micro for all patients by individuals blinded to the clinical data. The results of the CE and micro were then compared to the clinician's FD. The Goodman Kruksal Tau test was used to assess the strength of the association between the CE and Micro against various specific final diagnoses. All data were collected and analysed using SPSS for Mac (V.21).
Results: There were 250 patients who presented with VS. The main presenting complaints were VD in 206 (82.4%), pruritus in 115 (46%) and vaginal odour in 96 (38%) patients. The genital examination revealed thin VD in 110 (44%), vulval inflammation in 47 (19%) and cervicitis in 13 (5%) patients. The clinicians reported a normal CE in 23 (9%) and an uncertain diagnosis in 52 (21%) patients. In these 75 patients, micro was normal in 27 (26%) and demonstrated mixed flora in 16 (27%) patients. The relationship between the CE, micro results and the FD for the 154 patients with isolated conditions is given in Table 1. There was no significant difference between CE and microscopy in establishing a FD of either Bacterial Vaginosis (BV) or Trichomonas vaginalis (TV).

Diagnosis	FD	CE	Micro	p
BV n (%)	58	69 (119)	49 (84)	0.49
Thrush n (%)	44	76 (172)	26 (59)	0.03*
TV n (%)	8	9 (113)	8 (100)	0.71

Conclusions: In patients presenting with symptoms suggestive of BV or TV, clinical evaluation alone was sufficient to make a diagnosis without microscopy. There was not the same relationship between symptoms and microscopy for those with thrush. Further studies are needed to explore this and perhaps to support the rationalisation of microscopy to only those patients with complex or unclear clinical signs and symptoms.

P430

Rectal chlamydia test of cure – worthwhile or a pain in the bum?

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Introduction: 2006 BASHH national guidelines state that a test of cure (TOC) following rectal *Chlamydia Trachomatis* (ReCT) should be performed if the patient is pregnant, non-compliant with treatment or re-exposure is suspected. Local guidelines state that TOC should be performed in everyone following ReCT. We aimed to identify the percentage of people returning for TOC, plus the chlamydia positivity rate. We also wanted to determine if current practice should continue, as it falls outside national guidelines
Methods: A case-note review of all patients attending the genitourinary medicine clinic in 2012 diagnosed with ReCT was carried out. Patients were identified via KC60 codes
Results: 110 patients were identified. 106 were audited. 82% were men having sex with men (MSM), one heterosexual male & the remainder female. 24% of MSM were HIV+. All patients received gold standard treatment; doxycycline. 32% returned for TOC; defined as return at 6-12 weeks. Only one was ReCT positive; likely to be re-infection. Rectal gonorrhoea was diagnosed in one patient. When presenting for TOC, 66% received a full screen, indicating ongoing risk behaviour. In the year following ReCT diagnosis, 57% of MSM returned to GUM for a repeat screen and 56% of these had a new STI. It is not standard clinic practice to carry out rectal swabs in women. Women had rectal swabs due to anal intercourse (41%) or anal sex with urethral positive partner (35%). 29% (5/17) had sole ReCT infection
Discussion: : In this audit, a low number of patients returned for TOC. Of those who returned, 66% required a full screen. We suggest that recalling patients simply for a TOC sends the wrong message to patients and clinicians. More emphasis should be placed upon regular reassessment with a comprehensive STI screen. We found further evidence for this; of the 57% who returned in the subsequent year, 56% had a further STI. Our clinic has since changed practice. MSM and high risk women with rectal chlamydia are recalled by automated text at 3 months for a full screen rather than TOC. Patients are recalled annually by a health advisor if they have not attended within the previous 12 months. All patients with rectal infection are offered behavioural intervention. We identified that 29% of women sampled had sole ReCT infection. This may not be treated effectively with a stat dose of azithromycin and women may therefore be a reservoir for ongoing infection if the rectum is not sampled. Further research is needed.

P431

Screening for intimate partner violence in a sexual health service: a review of practice

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Background: Draft NICE guidance on "Domestic violence and abuse - identification and prevention" recommends routine enquiry for intimate partner violence (IPV) in a variety of settings including sexual health clinics. In Scotland it is already mandatory to routinely enquire about IPV within the sexual health consultation, however, we are not aware it has not yet been established into routine practice in the rest of the UK. Our English clinic was encouraged to start routine enquiry for IPV with a single screening question on our proforma after local data suggested women at risk of IPV were accessing sexual health services.
Methods: 100 male and 100 female case notes where a sexual history proforma had been completed were reviewed. Retrospective analysis of notes evaluated whether staff documented the screening for IPV, and in cases of on-going risk, whether appropriate management followed.

Results:

IPV routine enquiry:	Male	Female
documented	55	87
not documented	45	13
IPV identified	0	17 On-going risk: 4 Previous risk: 12 Not recorded: 1

In 16 cases repeated heterosexual partner abuse was documented. Of 4 who had on-going risk of IPV, 3 were seen by a Health Advisor and 1 declined as they had on-going support. In cases where IPV was identified, 8 (47%) were diagnosed with a new sexually transmitted infection (STI), compared with 34% of patients who denied IPV.

Conclusion: Overall, IPV screening was performed well in female patients. Documentation in men was less good and although this review did not identify any men who disclosed IPV, anecdotally cases of male victims of IPV have been identified. Management was appropriate: all cases with on-going risk wanting support were referred to a Health Advisor. Final guidance from NICE is anticipated in February 2014: our work demonstrates that routine enquiry for IPV can be successfully implemented in a sexual health clinic in England.

P432

Four successive audits on the management of ano-genital warts in clinical practice

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Background: Our management of ano-genital warts was audited in 2010 and 2011. By case-note review 95% were clear of original warts by three months (assuming wart clearance if patient stopped attending). However by confirmed outcome (documented in case-notes or verified by telephone) only 81% (2010) and 83% (2011) were clear. We concluded that the auditable outcome standard in the BASHH guideline i.e. that 90% of patients should be clear of original warts by three months might be unachievable in clinical practice. However, in these first two audits we did not differentiate between persistence and recurrence.

Methods: We re-audited our management of ano-genital warts in 2012 and 2013. Retrospective case-notes reviews were undertaken for all patients attending with first episode genital warts during two calendar months (January/February in 2012 and February/March in 2013). Patients in whom the outcome was not clear in the case-notes were telephoned after three months on up to three separate occasions to confirm whether their warts had cleared or whether they had cleared and then recurred.

Results: The results from all four audits are presented in the table below.

Year	No	Assumption of clearance	Unable to contact	Confirmed outcome – clear of all warts	Confirmed outcome – clear of original warts
2010	101	96/101=96%	37	43/53=81%	
2011	134	127/134=95%	45	74/89=83%	
2012	118	113/118=96%	38	62/76=82%	66/76=87%
2013	128	118/128=92%	41	54/83=65%	72/83=87%
Total	481	454/481=94%	161	233/301=77%	138/159=87%

Discussion: Auditable outcomes need to be challenging yet achievable. However, it is well recognised that standards set using expert opinion are unrealistic when compared with evidence of what is achievable. Even differentiating between persistence and recurrence in the 2012 and 2013 audits only 138/159 = 87% were clear of their original warts at three months. Again we conclude that the standard of 90% is unachievable in clinical practice.

P433

Chancroid – down but not out – lessons from a case report

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Background: Chancroid is caused by a Gram negative coccobacillus, *Haemophilus ducreyi* and is characterised by painful, soft genital ulcers with or without inguinal lymphadenopathy. Although chancroid is now a rare cause of genital ulcer disease (GUD) in industrialised countries such as the UK it should still be born in mind in the differential diagnosis. Our case illustrates that chancroid doesn't always have an obvious non-UK origin. If undiagnosed the ulcers may persist for months and cause considerable distress.

Aims: We aim to highlight the importance of considering chancroid in cases of GUD where PCR (polymerase chain reaction) for herpes simplex virus (HSV) and syphilis tests ((PCR/serology/dark ground microscopy) are negative.

Case report: We report a case of chancroid in a white heterosexual male with no history of contact with a non UK resident. He was symptomatic for 6 weeks prior to diagnosis. During that time he suffered with excruciatingly painful penile ulcers, such that he was unable to sleep or carry out normal activities. He presented to our service 3 times. Investigations for syphilis, HSV, lymphogranuloma venerum, chlamydia, gonorrhoea and HIV were all negative. He also consulted 2 other GUM services and a walk in centre. Despite 4 negative HSV PCRs and a self diagnosis of chancroid (he consulted the internet) he was repeatedly offered aciclovir. On his last 2 attendances he explained his self diagnosis and requested erythromycin; he only succeeded in getting treatment however by threatening to kill himself!

We made the diagnosis using multiplex PCR testing just after he commenced erythromycin. At that time he had 3 painful, deep ulcers with raised edges on the frenulum and coronal sulcus of his penis. He also had mild bilateral inguinal lymphadenopathy.

Contact tracing was initiated but no other cases were identified.

Discussion: : As clinicians we are very likely to miss cases such as this where the patient has no obvious non-UK links. It may be that chancroid is in fact more common than we think. It is easily treated with *single dose oral azithromycin 1gm*. Theories as to the cause for its decline in developed countries include the increased use of empirical antibiotics. Doubt as to the reliability of diagnostic tests for chancroid may perhaps influence readiness to test for it, however PCR testing for *H.ducrei* is reliable (95% sensitivity), and if available should be considered as an investigation in all cases of persistent painful GUD.

P434

A retrospective case note analysis of hepatitis B vaccination prescribing in a genito-urinary clinic setting: what is the role of the fourth vaccine?

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Background: Hepatitis B (HBV) can be prevented with the use of vaccines. Clinic policy states that "high risk" patients i.e. men who have sex with men (MSM) and commercial sex workers (CSW) should receive an accelerated HBV vaccination course of 0,7 and 21 days. If subsequent HBSab <10 IU/l patients are revaccinated; HBSab 10-100 IU/l patients are given a booster and those HBVSAb >100 IU/l are deemed immune. This audit was performed to clarify the role of the fourth vaccine at 12 months, as stipulated in BASHH Guidelines.

Methods: From 1st January 2012 to 31st December 2012 HIV negative patients were included if they had been coded as receiving the 1st or 3rd HBV vaccine. Demographic data were collected along with risk factors, prescription and timings of HBV vaccines and whether they had received all doses. HBSab results were also collected if available.

Results: 121 patients were identified, with 91 fulfilling the inclusion criteria with a median age 26 years (IQR 22-33 years). 84% were male with 82% of these being MSM. The other risk groups identified were sexual contacts with CSW, sexual assault, and a partner with active HBV. 64% were prescribed the 0,7 and 21 day schedule with only 7% initially being prescribed the 4th dose. 14% were prescribed the 0,1 and 6-month regime, with the remaining being prescribed all 3 vaccines within six months with differing schedules. 2% of those eligible for vaccination were given, but not prescribed the vaccine. Of the people who were initially prescribed 3 doses, 55% of these received all 3 doses. Of the 46/91 of the patients who had HBSab results available following

3 vaccinations, 24% had <10 IU/l, 26% 10 -100 IU/l and 50% >100 IU/l. Only 7% of notes had documentation regarding a discussion around Hepatitis B transmission.
Conclusion: The majority of the patients included were MSM with two thirds being prescribed the accelerated schedule. As only half of those who received 3 vaccinations achieved HBSab >100 IU/l, it seems sensible to incorporate a 4th dose at 12 months to ensure higher titres of HBSab and reduce frequency of HBSab testing. Overall, the prescribing of Hepatitis B vaccinations remains good with 98% of notes having the correct prescription. Clients should be offered written information regarding transmission risks and vaccination against HBV and clinicians should ensure clear documentation of these discussions.

P435

Is appropriate evaluation of male subjects with chronic pelvic pain feasible within a specialist GU service?

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Background: Up to 15% of men develop chronic pelvic pain in their lifetime and present to a variety of healthcare settings including GUM. Chronic pelvic pain syndrome (CPPS) and chronic prostatitis (CP) are frequently implicated. BASHH guidelines (2008) recommend assessment of suspected CP/CPPS includes documented history, examination including digital rectal exam (DRE), urinalysis and urine microscopy and culture plus STI screen (target 95%).
Aim: We present an approach to evaluating male chronic pelvic pain patients and adherence to BASHH guidelines within a specialist GU service.
Methods: New patients referred to the Male Problem Clinic at the Jefferiss Wing, St Mary's Hospital between 1.1.12 and 1.7.12 were included. Data was collected retrospectively from clinical notes including subject demographics, symptoms & duration, working diagnosis and BASHH audit measures: Urinalysis, MSU, STI screen, DRE, genital examination.
Results: 53 new patients were assessed during the study period. Mean age was 39.3 years, all were HIV negative. The majority were of white British (42%) or Asian (42%) ethnicity. Most patients (94%) reported chronic pain (mostly penile, perineal and scrotal), plus urethral symptoms and/or voiding symptoms in 17 and 20% respectively. Symptoms had been present for an average of 21 months. History and genital examination were documented in all cases. Urinalysis and MSU results were documented in 50 (94%), STI screen in 53 (100%) and DRE was accepted and performed in 46 (83%). Diagnoses included CPPS in 36 (68%), CP in 3 (6%), persistent NSU (13%) and urethral stricture 1 (2%). Urological referrals were required for haematuria, renal tract abnormalities and raised PSA in a small number of patients. Observed rates of anxiety and depression were high and scores using the NIH-CPSI inventory demonstrated a high impact of symptoms upon quality of life. Management included antibiotic therapies (53%), simple analgesics (13%) neuropathic pain management (13%) and psychology referral.
Conclusions: Chronic male pelvic pain is frequently reported in GU clinics and appropriate investigation and evaluation of men attending with suspected CP/CPPS is possible within a specialist GU service.

P436

Neisseria gonorrhoeae (GC): Persistance of DNA detection after successful therapy and changing pattern of antibiotic sensitivity 2007–2013

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Background: Nucleic acid amplification testing (NAAT) is widely used in GUM clinics in the UK to diagnose GC infection; its in-built high sensitivity may potentially detect DNA from non-viable organisms following successful treatment. The BASHH national guidelines stipulate that test of cure (TOC) with NAAT should take place two weeks post-treatment. The purpose of this study was to determine whether this is an adequate time interval to perform TOC. We also analysed the changing pattern of antibiotic sensitivity between 2007-2013.
Methods: All GC cases at our clinic between 01/01 to 30/06 in 2007 – 2013 were identified and assessed for antibiotic sensitivity and the same cohort from 2013 were analysed for results of TOC.
Results: There were 134 cases in total, culture and sensitivity results were available for 99 cases. TOC with NAAT was done in 62 patients. All but one female were negative on NAAT TOC. One patient who had successful treatment but found a positive NAAT on day 13 but became negative on day 31 before re-treatment. Following successful antibiotic therapy a TOC with NAAT was performed between 4 – 49 days after treatment with mean, median and mode of 18.5, 16 and 14 days, respectively.
Antibiotic sensitivity was available for 99/134 cases.

Antibiotic resistance profiles	2007(%)	2009(%)	2011(%)	2012(%)	2013(%)
Percentage of GC fully sensitive to antibiotic testing panel	46	67	59	49	79
Reduced susceptibility to 1 antibiotic group	27	15	20	38	10
Reduced susceptibility to 2 antibiotic groups	15	10	16	8	6
Reduced susceptibility to 3 antibiotic groups	12	2	5	3	2

Conclusion: Our study supports the BASHH guidelines of NAAT TOC two weeks after successful GC therapy. It is pleasing to see gradual reduction of antibiotics resistance isolates since 2007 and there was no Ceftriaxone resistance isolates in the 2013 cohort of patients.
Sample size was very small and we would suggest re-audits on a larger, multi-centre level, in order to establish the timescale of TOC post-treatment.

P437

The role of plasma cells in the diagnosis of sexually transmitted infection in a Caucasian woman

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Background: A 41-year old Caucasian woman developed painful mouth ulcers and then noticed more painless ulcers on her arms, breast and perineal areas over an eight month period. The dermatologist made the clinical diagnosis of pemphigus and prescribed steroids. A biopsy from her arm showed abundant plasma cells, which eventually led to serological testing for syphilis. This confirmed secondary syphilis.
Case report: This woman developed painful mouth ulcers followed by more painless ulcers on her arms, breast and perineal areas over an eight month period. She was referred to the dermatologist as she did not respond to clarithromycin, azithromycin and clindamycin. Examination showed painless, non itchy lesions on her left eyebrow, upper arms, and breast. She had deep painful fissuring ulcers on her tongue. She did not have lymphadenopathy or macular rash involving palms and soles. The dermatologist clinically made the diagnosis of pemphigus and prescribed high dose prednisolone. The histology from her arm showed abundant plasma cells which led to serological testing for syphilis. This was strongly positive with RPR of 1:128 and positive Ig M. Her last sexual contact was with her ex Albanian husband two years previously. The PCR tests for syphilis from the tongue, lips, eye brow and perineum were positive.
Discussion: This case is interesting in that she had mucocutaneous ulcers for eight months and syphilis was not considered even though her ex husband came from Eastern Europe where the prevalence of syphilis is high. Secondary syphilis is highly contagious as these lesions are teeming with spirochaetes. Clinicians are at risk of acquiring infection if gloves are not worn during examination. If it is misdiagnosed as being a common condition such as stomatogingivitis and prescribed incorrect antibiotics as in this case, this may achieve remission without complete eradication of syphilis. This can lead to the development of tertiary syphilis with grave complications. Abundant plasma cells are also found in other conditions such as Behcet's disease and in a drug reaction.

Conclusion: Clinicians need to be aware of the finding of numerous plasma cells in the histology as possibly indicative of syphilis. The prescription of appropriate antibiotics in the correct dose combined with active partner notification could potentially avoid a mini outbreak.

P438

Gonorrhoea: culture in the age of NAATs: An audit of practice in north east Scotland.

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Background: In recent years, diagnosis of N. Gonorrhoeae has shifted from using culture as a primary diagnosis to the more sensitive Nucleic Acid Amplification Tests (NAATs). Despite this, culture remains essential for determining antimicrobial sensitivity and detecting emerging resistance. Health Protection Scotland suggest that NHS boards should attempt culture in all cases of NAAT positive gonorrhoea with culture being successful in at least 70%. In rural areas this can be hard to achieve as the isolates can die in transit.
We audited performance of NHS Grampian against this standard for GC NAAT positive cases in 2012.
Method: All patients identified as having a positive NAAT test for Gonorrhoea in 2012 in the Grampian region were selected for audit. Data on culture attempts and results were retrieved from laboratory records.
Results: In 2012 there were 176 episodes of gonorrhoea, 117 (63%) of which had culture attempted. Of the culture attempts, 66% were positive. In GUM attendees, 84% were cultured, compared to hospital and other locations eg Prison patients where much fewer, or even no cultures were obtained. Compared to the set standard of 70%, these results convey a good compliance in some locations, but poorer in others. Culture results show that of all results obtained, 44% of samples were resistant to ciprofloxacin and penicillin.
Discussion: : A strength of this audit is that it covered all testing locations in the region. A limitation is the small sample size from some of those locations. Despite this, it's clear that culture practice is variable. Some of this is likely to be due to concerns about die-off in transit and poor communication of clinical guidelines.
Conclusion: Practice in 2012 did not meet the HPS standard for GC surveillance. New guidance has since been issued to clinicians in the region and this topic will be re-audited in late 2014.

P439

An unusual case of pelvic inflammatory disease: "Don't forget the tubes"

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Background: Pelvic inflammatory disease (PID) is usually the result of ascending infection causing, salpingitis, oophoritis, tubo-ovarian abcess and/or pelvic peritonitis. *Neisseria gonorrhoeae* and *Chlamydia trachomatis* have been identified as causative agents but are only found in a quarter of UK cases.
Clinical Presentation: An 18-year-old girl presented to Accident & Emergency (A&E) with 7 days of right upper quadrant (RUQ) pain with nausea and weight loss. She was normally fit and well with no past medical history. A full blood, urea and electrolytes, C-reactive protein (CRP), liver function (LFTs) and a pregnancy test were all unremarkable. Clinical examination yielded no findings.
A pelvic ultrasound (USS) was normal however the right ovary was not seen due to overlying bowel gas. Her pain was managed with simple analgesia and she was discharged home.
Two weeks later she was re-admitted with severe RUQ pain radiating to her right shoulder associated with vomiting. Clinical examination was again normal, however, LFTs and CRP were deranged. ALP 238, ALT 89, GGT 374 and CRP 101. Repeat USS was normal as was a CXR. Further tests including a vasculitic screen, haematinics, hepatitis serology and α1-antitrypsin were negative. Her LFTs slowly improved over a few days with no medical intervention but did not normalise. A CT scan of her abdomen was booked and she was sent to the sexual health clinic for review.
She denied any vaginal discharge, abnormal bleeding, dysuria or dyspareunia. She had been treated for chlamydia 2 yrs earlier but had tested negative for chlamydia and gonorrhoea 2 months prior to presentation. There had been a casual encounter 6 weeks before presentation.
Notably bi-manual examination was unremarkable as was microscopy. In view of her admission she was managed as PID with Ceftriaxone, Doxycycline and Metronidazole.
Clinical progress: She remained clinically well but the CT scan later showed a tubo-ovarian abscess. She was referred urgently for drainage. Her vaginal swab subsequently proved positive for chlamydia.
Conclusion: This young woman had developed Fitz-Hugh-Curtis Syndrome, a complication of PID. It was unusual in that there were no signs on bi-manual examination.
This case highlights the importance of having a low threshold for treating young sexually active women presenting with lower abdominal pain. Young sexually active female patients presenting to the general physicians must always be referred to the sexual health clinic for further investigations.

P440

Epstein–Barr virus (EBV) causing genital ulceration: case series and review of literature

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Background: There are many causes of genital ulceration. GUM clinicians see a large proportion of genital ulceration of all cause. EBV is a herpes virus that can cause systemic illness and rarely genital ulceration. We present three cases of genital ulceration most likely caused by EBV and review the literature.
Case 1: 24 year old female presented with painful vulval ulcers. No systemic symptoms, except a recent episode of tonsillitis requiring antibiotics from her General Practitioner. Last unprotected sexual activity was 4 weeks ago with a new regular male partner, with 3 casual male partners (all UK) in the last three months. On examination multiple, painful deep ulcers with induration, no lymphadenopathy. Systemically well with no rash or joint swellings. EBV IgG positive, IgM negative, EBNA equivocal. HSV negative, Chlamydia positive, ESR 10, ANA negative. **Diagnosis–**Reactive ulceration secondary to recent EBV infection, treated with 4 days of oral prednisolone 30mg OD. Seen 4 days later with good response to steroids.
Case 2: 31 year old female presented with a 5 day history of fever, rash and vulval ulceration. She had no past medical history. Last unprotected sexual activity was 6 weeks ago with CMP UK. On examination were non-tender ulcers on inner labia and diffuse redness over trunk/thigh/upper arms, sparing palms and soles, no lymphadenopathy. EBV IgM positive EBV IgG negative, ALT 77, AST 75. Chlamydia negative. **Diagnosis-**Genital ulceration and viral exanthem secondary to EBV, managed with supportive treatment.
Case 3: 18 year old female presented with painful vulval sores. She had a similar episode 5 months earlier, clinically diagnosed as HSV. She was systemically well. Last sexual activity in last 4 weeks. On examination, shallow ulcers and deep fissures of introital and inner labial areas. No rash, lymphadenopathy, joint problems. EBV IgG positive, IgM positive, EBNA negative, Chlamydia negative, HSV2 PCR positive, ANA negative. **Diagnosis-**Consistent with recent EBV and HSV 2 ulceration. Treated with aciclovir and lignocaine gel
Gonorrhoea, syphilis and HIV were negative in all cases
Discussion: : EBV should be considered an uncommon differential diagnosis in genital ulceration, especially when HSV testing is negative even in sexual active patients. The literature contains 26 case reports involving young females, who are most likely to acquire EBV infection, dating from 1906 to 2006.

P441

Escherichia coli epididymo-orchitis: a tale of resistance in an HIV-positive man

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Background: Epididymo-orchitis in men >35 years is more frequently associated with enteric rather than sexually transmitted organisms. British Society for Sexual Health and HIV (BASHH) and The International Union against Sexually Transmitted Infections (IUSTI) guidelines provide strict

antibiotic protocols based on age of patient and whether the cause is an enteric or sexually transmitted pathogen. We report a case in the context of HIV where guidelines failed to provide successful treatment.
Case: A 41 year old HIV positive MSM diagnosed 8 years previously, taking Atripla with a CD4 452 and an undetectable viral load. He had a background of recurrent urinary tract infections and epididymo-orchitis. Renal ultrasound scans and urinary flow studies were normal. He presented with a few days history of fever and dysuria alongside left testicular pain and swelling. Initial treatment with ciprofloxacin by the GP for urinary tract infection was followed by a urological admission and treatment with ofloxacin as an inpatient. He continued to have persistent fevers and painful testicular swelling. A sexually transmitted infection screen was negative. A mid-stream urine culture grew *Escherichia coli* (E.coli) resistant to amoxicillin and trimethoprim, and presumed to be quinolone resistant. Nitrofurantoin 100mg QDS for 7 days finally led to resolution of symptoms. He has been asymptomatic ever since.
Discussion: : The local prevalence of E.coli resistance to amoxicillin has remained at 40-50% over the last 6 years with trimethoprim resistance at 30% and quinolone resistance <10%. We are increasingly observing HIV positive men with resistant E.coli urinary tract infections requiring alternative treatment regimens for the management of epididymo-orchitis. Community, hospital and BASHH guidelines do not suggest alternatives when there is treatment failure. Ineffective antibiotic therapy in this patient led to a prolonged inpatient hospital stay. This case highlights the need to consider E.coli resistance when treating epididymo-orchitis in older men. This patient's infection proved microbiologically and clinically sensitive to nitrofurantoin.

P442

Upping the game – sexually transmitted infection care in level 2 services: a re-audit of standards

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Background: In 2011 an audit of primary care practices offering level 2 care for uncomplicated genitourinary conditions was undertaken. This centrally coordinated audit was repeated to examine whether standards were being maintained or hopefully improved.
Aims: To assess numbers seen in level 2, provide data on auditable outcomes and compare to the previous audit.
Methods: Data on level 2 attendances over a one year period in 2012/13 were requested via a survey distributed electronically. Specifically the following information was requested: offer and uptake of HIV testing; Hepatitis B vaccination in men who have sex with men (MSM); Chlamydia management including first line treatment, offer of written information and partner notification (PN); offer of written information for genital warts and clearance of warts within 3 months.
Results: A total of 9 level 2 providers took part. Four hundred and sixty eight patients were included (range seen for each provider 17-146) with age mean 27.7 years for males and 28.2 years for females. Generally the offer of HIV testing was excellent with 8 providers achieving 100% offer of HIV testing (range 92-100%) and 8/9 achieving >60% uptake of HIV testing (range 58–100%). Four MSM attended and all were offered Hep B testing and offered and completed hepatitis B vaccination. There were 68 diagnoses of Chlamydia with first line medication offered 100% by all 9 providers. Documentation of provision of written information was variable ranging from 0 to 100% (mean 71%). All practices achieved 100% offer of partner notification. Documentation of written information for warts was also variable ranging from 0 to 100%. Clearance of warts within 3 months ranged from 25-100% (mean 81%)
Conclusion: There was a wide variation in numbers of patients seen by the different providers. In general higher standards of the audit criteria set were achieved in this audit compared to the previous one two years ago. As in the previous audit very few MSM attend the level 2 providers but where they do there is full offer of hepatitis B testing and vaccination. Once again there are some issues regarding documentation and provision of written information. Data will be fed back to all providers in order to highlight successes and where improvements are still needed to ensure optimal patient management of STIs by level 2 providers.

P443

Audit on syphilis management January 2011 to September 2013

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Background: This audit on the management of syphilis is measured against British Association of Sexual Health and HIV (BASHH) guidelines. There were 49 cases, 98% were male of which 87.8% were men who have sex with men (MSM). There were 72 (59.2%) contactable partners.
Methods: Data between January 2011 and September 2013 were obtained from the patients' records and assessed against BASHH standards.
Results: Assessment of patient records against the BASHH outcome measures

Outcome measure	Applicable cases n (%)	Patients achieving outcome measure (of applicable cases) n (%)	Cases not achieving outcome measure n (%)
1. Performing VDRL/RPR titre at commencement of therapy.	49 (100%)	49 (100%)	0 (0%)
2.Response to treatment	19 (38.8%)	19 (38.8%)	0 (0%)
a. Resolution of clinical lesions	34 (69.4%)	33 (97.0%)	1 (3.0%)
b. A two dilution (four-fold) or greater decrease in the VDRL/RPR within 3 to 6 months after treatment	0 (0%)	0 (0%)	0 (0%)
c. For neurosyphilis, CSF cell count should decrease by 6 months and be normal by 2 years, except for persistent positive specific tests	49 (100%)	49 (100%)	0 (0%)
d. 95% of patients with early syphilis should complete treatment	49 (100%)	49 (100%)	0 (0%)
3.At least 60% of contactable partners should attend for screening and/or treatment	72 contacts from 49	42 (59.2%)	30 (40.8%)

Discussion:
1. Performing VDRL/RPR titre at commencement of therapy, All patients (100%) had syphilis serology (EIA, TPPA & RPR) performed.
2. Response to treatment
a. Resolution of clinical lesions, 23 patients had lesions. Of these, 19 (82.6%) resolved, 4 (17.4%) were lost to follow-up.
b. A two dilution (four-fold) or greater decrease in the VDRL/RPR within 3-6 months after treatment/ At 6 months, 33 out of 34 (97.0%) patients achieved sufficient decrease in RPR titre.
c. For neurosyphilis, CSF cell count should decrease by 6 months and be normal by 2 years, except for persistent positive specific tests. No patients had a diagnosis of neurosyphilis.
d. Ninety-five percent of patients with early syphilis should complete treatment
All patients (100%) completed their treatment.
3. At least 60% of contactable partners should attend for screening **and/or** treatment 72 potentially contactable partners were identified. Of these, 42 (59.2%) attended for screening/treatment.
Conclusion: Audit is an important aspect of patients' care. This service nearly met all the applicable auditable outcome standards.

P444

Improving clinical standards in GU medicine: a retrospective audit of Neisseria gonorrhoeae

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Background: This was a retrospective analysis of clinic performance in the management and treatment of Neisseria gonorrhoeae (GC) according to current British Association of Sexual Health and HIV (BASHH) guidelines.
Methods: All cases of GC diagnosed at our clinic between 1st January and 30th June 2013 were identified. The case notes were reviewed and assessed against current BASHH criteria. This was compared to data collected at the same clinic for the same six months (1st January to 30th June) in 2007, 2008, 2009, 2011 and 2012. The total number of cases identified for 2007, 2008, 2009, 2011, 2012 and 2013 was 41, 61, 78, 75, 66 and 136 respectively.
Results:

Criterion	2007	2008	2009	2011	2012	2013
1) All patients treated for GC should be recommended to have a test of cure (TOC)				(36% had a TOC)	91% (66% had a TOC)	84.6% (52.9% had a TOC)
2) All patients with gonorrhoea should be screened for genital infection with Chlamydia trachomatis or receive presumptive treatment for this infection	100%	100%	100%	98.6%	100%	100%
3) All patients identified with gonorrhoea should have partner notification carried out according to the published standards of the BASHH Clinical Standards Unit	82%	95%	92%	92%	88%	90.4%
4) All patients identified with gonorrhoea should be offered written advice about STIs and their prevention	32%	64%	81%	61%	50%	66%
5) All patients with gonorrhoea should receive first-line treatment*, or the reasons for not doing so should be documented	77%	96%	100%	97%	88%	100%

*At least 95% of the cases of genital gonorrhoea should be cured by first-line therapy (BASHH guidelines, 2005)
Conclusions: Current BASHH targets have been achieved in 2 out of 5 criteria, with one of these being an improvement from previous years (first-line treatment/documentation). Targets for chlamydia screening/treatment were met. Criterion four (patient offered or given written information) was poorly met with 66%; this is still an improvement on previous years but may be due, in part, to poor documentation in patient records.
Continual improvement in our electronic patient records, better training and staff induction should help to meet BASHH targets in future. Our department also launched a documentation audit in 2013 and have anecdotally noted that once awareness has been raised, there seems to be a significant improvement in documentation standards. As well as a re-audit of GC cases in 2014, we would suggest that the addition of some criteria, such as documentation of information provision and partner notification, should be added to the next documentation audit in order to improve outcomes.

P445

The 2013–14 IUSTI ECCG service evaluation of the European management of herpes simplex virus in pregnancy

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Background: The European incidence of neonatal herpes simplex virus (HSV) varies widely regionally from between 1- 6 in 60,000 live births. Neonatal HSV is associated with high morbidity and mortality, and any effective opportunities to reduce its incidence should be incorporated into management having carefully considered the possible adverse consequences of interventions.
Historically, management of HSV in pregnancy has varied widely across Europe. The current 2010 European HSV guidelines attempted to bring consistency with best evidence based practice across Europe. However management still varies widely.
The European Collaborative Clinical Group (ECCG) is a network of sexual health specialists under the umbrella of the International Union against Sexually Transmitted Infections (IUSTI) who conduct questionnaire based research across the European Region. The aim of this study was a service evaluation of current practice in the management of HSV in pregnancy across the European region.
Methods: A number of European experts in the field of neonatal herpes were interviewed about controversies in management, and a case-based questionnaire developed based on their responses. Scenarios include acquisition of the virus in the third trimester and earlier stages of pregnancy and have particular focus on recurrences in later stages of pregnancy and at delivery. This questionnaire was then reviewed and validated by the core group of the ECCG. It was then circulated electronically to the 120 sexual health specialists from 38 European countries that make up the ECCG. The written management guidelines currently in place will be used as a basis of comparison.
Results: Pilot results indicate that the management of neonatal herpes across Europe varies widely and that management is not always in line with the IUSTI European Guideline for the Management of Genital Herpes 2010. The full data set will be available by the conference.
Conclusions: An updated European Guideline for the Management of Genital Herpes is currently being developed to be published in 2014. The release of the updated guidelines may act as a prompt for standardisation of care across Europe to ensure that best practice is being followed.

P446

Etoricoxib-induced drug eruption causing penile ulceration: A case report

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Background: Genital ulceration within the Genitourinary clinic (GU) setting is most commonly due to infectious causes such as Herpes simplex and Treponema Pallidum. Non infectious aetiologies however, are another important cause of genital ulceration. We report a case of a fixed drug eruption thought to be secondary to Etoricoxib, a selective cyclo-oxygenase-2 inhibitor (COX-2-I).
Case Report: A 59 year old heterosexual male of Pakistani origin attended the GU clinic with a four day history of urethral discharge. He had a past medical history of gout and had a recent flare of symptoms requiring non-steroidals. Two days prior to attending the clinic his general practitioner had commenced flucloxacillin in view of the urethral discharge. He had two regular sexual partners within the preceding three months.
Examination revealed a green urethral discharge which was positive for gram negative diplococci on microscopy. He was treated for presumptive gonococcal urethritis with intramuscular ceftriaxone and oral azithromycin. Subsequent Chlamydia and Gonorrhoea NAAT test and urethral gonorrhoea culture were negative. Seven days post treatment he re-attended with a large painful, well circumscribed ulcer to the glans penis. Dark ground microscopy of the lesion was negative and he was treated empirically with valaciclovir and co-amoxiclav to cover herpetic and bacterial infection. Etoricoxib was taken 12 days prior to the ulceration and flucloxacillin was taken seven days prior to

ulceration. Syphilis and HIV serology, bacterial cultures and herpes simplex PCR tests were all negative. It was felt that a fixed drug eruption (FDE) secondary to Etoricoxib was most likely. One month following discontinuation of Etoricoxib the ulcer had fully healed.
Conclusion: Non infectious causes of genital ulceration are not uncommon in the setting of Genitourinary medicine. Careful medical and drug history are important in trying to elucidate non infectious aetiologies. The diagnosis of a fixed drug eruption is not always easy. Oral provocation and patch testing may help in the diagnosis of fixed drug eruption. Avoidance of precipitating agents is advised.

P447

An audit on management of genital herpes in an inner city sexual health clinic

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Background: Sexually Transmitted Infections (STI) is on the rise in the UK and Genital herpes contributes 5% of the overall rise in STIs in the UK. We audited the management of genital herpes in a sexual health clinic against the standard set up by BASHH National Guideline.
Methods: We identified patients with primary and recurrent genital herpes from Electronic Patient Records for a period of 12 months. We collected information about baseline demography, diagnostic test and management steps.
Results: Total 322 patients with 346 consultations were examined. Mean age was 29.6 (+/-11.5) years. Most (96%) were heterosexual, 199 (62%) were females and 91 (28%) were of white ethnic origin but 192 (60%) chose not to disclose their ethnic back ground. 220 (68%) patients had primary genital herpes.
Attempt for virus isolation was carried out in 220 (100%) of patients with primary herpes (Target 100%). 208 (95%) had a successful virus typing (Target 100%) but in 17 (5%) patients where virus typing was successful, they either presented with healed ulcer (n=) or sample could not be processed from laboratory end.
Of 220 patients with primary GH, 203 patients presented in early stage and treatment has been offered to all (100%) in the first visit (Target 100%).
102 (32%) patients had recurrent genital herpes. Forty one (40%) patients had 6 or more episodes in 12 months and all were offered suppressive therapy but only 23 (54%) patients preferred to take suppressive therapy.
A clear documented plan of duration of treatment has been provided to all patients. 205 (93%) of the patients received counselling and support but providing written information was documented in 93 (42%) of the patients only (Target 100%).
Conclusions: Our results demonstrate reasonably good adherence to the National guidelines. However there are areas to improve in providing written information and better documentation.

Author Index

