HIV MEDICINE

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Aims and Scope
HIV Medicine aims to provide an alternative outlet for publication of international research papers in the field of HIV Medicine, embracing clinical, pharmacological, epidemiological, ethical, preclinical and in vitro studies. In addition, the journal will commission reviews and other feature articles. It will focus on evidence-based medicine as the mainstay of successful management of HIV and AIDS.

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KEY BHIVA DATES FOR 2009

BHIVA Trustee Elections 2009
Closing date for nominations
Friday 26 June 2009

BHIVA ACCEA/SACDA Awards
Self nomination deadline
Friday 21 August 2009

BHIVA Research Award
Closing date for applications
Friday 3 July 2009

BHIVA Trustee Elections 2009
Closing date for ballot
Friday 4 September 2009

BHIVA Annual General Meeting
Thursday 8 October 2009
London

HIV Events Calendar

3rd Annual Conference
of the Children’s HIV Association (CHIVA)
Friday 15 May 2009
The Bridgewater Hall, Manchester

11th Annual Conference
of the National HIV Nurses Association (NHIVNA)
25–26 June 2009
International Convention Centre, Birmingham

BHIVA/BASHH One-day Revision Course for
Diploma in HIV Medicine
Monday 24 August 2009
London

13th Annual Resistance Meeting
Thursday 17 September 2009
Royal College of Physicians, London

2nd Conference of the
BHIVA Hepatitis Working Group (BHWG)
Wednesday 7 October 2009
One Great George Street, London

BHIVA Autumn Conference
including
Joint BHIVA/BASHH Ordinary General Meeting
and CHIVA Parallel Sessions
8–9 October 2009
Queen Elizabeth II Conference Centre, London

16th Annual Conference of the
British HIV Association (BHIVA)
with the
British Association for Sexual Health and HIV (BASHH)
21–23 April 2010
Manchester Central Conference Centre
Oral Abstracts

O1 Adipogenic gene variants in patients with HIV-associated lipodystrophy
S Pushpakom1, A Owen2, J Vilari3, D Back1 and M Pirmohamed1
1Royal Liverpool Hospital, Liverpool, UK, 2University of Liverpool, Liverpool, UK, 3North Manchester General Hospital, Manchester, UK

Background: Whilst highly active antiretroviral therapy (HAART) has been hugely beneficial in the treatment of HIV, lipodystrophy (LD) associated with HAART is a serious adverse effect, with long term consequences including metabolic disturbances (dyslipidemia, insulin resistance, sometimes leading to diabetes) and an increased risk of ischaemic heart disease. However, LD is clearly related to both the drug regimen and the individual patient and this suggests a role for genetic factors in conferring susceptibility to developing HIV LD. We hypothesised that variation in the genes involved in adipogenesis, and in those implicated in inherited forms of LD, may predispose to the development of LD in HAART-treated patients.

Methods: DNA samples were obtained from HAART-treated patients with LD (HIV LD+; n = 115) or without LD (HIV LD-; n = 51) as well as normal presumed HIV-negative healthy controls (n = 172). High throughput genotyping utilising Sequenom MALDI-TOF technology was employed to screen 62 SNPs in 10 genes involved in adipogenesis and inherited forms of LD. statistical analysis was performed using Haploview software to identify single marker and haplotype associations.

Results: SNP markers in two adipogenesis regulators, LPIN1 (P < 0.03) and CEBPA (P < 0.02), and ZMPSTE24 (P < 0.04), a zinc metalloproteinase involved in prelamin A processing, showed significant differences in allele frequencies between HIV LD+ and HIV LD- patients. We also observed significant differences in haplotype frequencies for ZMPSTE24 between these two groups (P < 0.05). Multivariate analysis involving all three associated alleles revealed that carriage of more than one associated allele significantly increased the risk of development of LD in HAART-treated patients (P = 0.01; OR = 2.9).

Conclusions: Genetic variations in key regulators of adipogenesis could interfere with fat storage and metabolism thereby contributing to the development of LD in HAART-treated HIV patients.

O2 Evaluation of peripheral dual energy X-ray absorptiometry to detect osteoporosis in an HIV-seropositive male population
CS Short1, SM Shaw1, MFisher2, KWalker-Bone2 and YGilleece1
1Brighton and Sussex University NHS Hospitals Trust, Brighton, UK, 2Brighton and Sussex Medical School, Brighton, UK

Introduction: Osteopenia and osteoporosis are increasingly recognised in HIV and may cause significant long-term morbidity. Early identification of low bone mineral density (BMD) may enable intervention to prevent fracture. The current standard method for measuring BMD, Dual Energy X-ray Absorptiometry (DEXA), is impractical for use as a routine screening tool. This study evaluated the use of peripheral DEXA (pDXA) as an alternative to DEXA in HIV positive men.

Methods: Subjects were recruited from a cohort of men attending an HIV out-patient clinic (May 2008-August 2008). Consecutive attendees were recruited to categories: Group A- ARV naïve, Group B- ARV <3 years, Group C- ARV >3 years. Subjects underwent a forearm pDXA and DEXA imaging (lumbar spine and femoral neck) within 12 weeks. Risk factors for low BMD and fracture history were collected. The threshold T score that produces optimum values of sensitivity and specificity for pDXA to identify osteoporosis at any site was derived from a receiver operator characteristic curve. Multivariate logistic regression was used to evaluate independent risk factors for low BMD.

Results: One hundred and sixty-eight men were recruited: median age 45. Osteopenia at any site by DEXA was found in 100/168 (60%) overall; 70%, 53% and 58% in groups A, B and C respectively. Osteoporosis at any site was found in 22/168 (13%) overall; 5%, 11%, 17% in groups A, B and C respectively. ARV exposure/weeks (P = 0.03), HIV infection >13 years [OR 2.81 (1.6–5.1) P = 0.00] and fracture post infection [OR 3.23 (1.6–6.6) P = 0.02] were independently associated with osteoporosis at any site. Using a threshold of T<−1, pDXA has 95% sensitivity and 35% specificity to identify osteoporosis at any site, with a negative predictive value of 98%.

Conclusions: This study confirms a high prevalence of low BMD in HIV-infected men independently associated with fracture post diagnosis, underlining the potential requirement for screening. pDXA has a high discriminatory power as a screening tool and could be easily used in routine clinical practice to identify those patients who need DEXA imaging. (BHIVA Research Award Winner 2007: Evaluating the use of peripheral DEXA scans in the detection of osteoporosis in a population of HIV-infected men, Yvonne Gilleece)

O3 Fewer subjects switching to qd ATV/r have limb fat loss versus those continuing bid PI/r: 96 week results of the multicentre, open-label, randomized, prospective ReAL Study for the management of lipodystrophy
P Hay1, GMoyle2, Jamie Andrade3, Andrea Antinori4, Patricia Salvato5 and JM Girand6
1St. George’s Hospital, London, UK, 2Chelsea & Westminster Hospital, London, UK, 3Hosp. Civil De Gdj/Unid VIH Sida, Guadalajara Jaioco, Mexico, 4Istituto Malattie Infettive I.R.C.C.S. Lazzaro Spallanzani, Rome, Italy, 5Diversified Medical Practices PA, Houston, USA, 6Medizinische Klinik Der LMU, Munich, Germany

Background: Atazanavir (ATV) is a potent, well-tolerated QD PI, extensively studied in naïve and experienced patients. Comparative data have demonstrated similar efficacy with a superior lipid profile versus LPV/r. The ReAL Study evaluated the impact on body composition of switching from any BID PI/r to QD ATV/r in patients with lipohypertrophy while the background of two NRTIs remained unchanged.

Methods: Patients with waist circumference >90 cm and viral load <400 copies/mL were randomized (2:1) to ATV/r versus continuing PI/r. CT was used to quantify visceral, subcutaneous, and total adipose tissue; DEXA was used to assess trunk and limb fat. Primary endpoint: 48 week change in trunk-to-limb fat ratio by DEXA.96 week results include the study endpoints and a post-hoc analysis on patients who had a week 96 decrease in limb fat of at least 20% from baseline (BL).

Results: Two hundred and one patients were randomized (200 treated, 131 ATV/r, 69 PI/r [72% LPV/r]). At week 96, there was no significant difference between regimens in mean change from BL in trunk-to-limb fat ratio (ATV/r: 0.04 versus PI/r: 0.05, P = 0.73) and other DEXA or CT parameters. However, more patients in the PI/r arm had a decrease of at least 20% in limb fat from BL at week 96. This difference between regimens was more evident in patients receiving thymidine analogs. Viral rebound rate (<400 copies/mL) was 6% on both regimens. Mean percent changes from BL in fasting lipids (ATV/r versus PI/r): Tot Chol −12.5% versus −0.1% (P < 0.0001); HDL-Chol −6.8% versus −4.6% (P = 0.48); LDL-Chol −8.4% versus 3.6% (P = 0.0171); triglycerides −25% versus −12.2% (P = 0.0381); Non-HDL-Chol −14% versus 1.2% (P < 0.0001).

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Discontinuation rates were 13% on both regimens. Overall AEs were comparable between regimens.

Conclusions: In this 96 week analysis, patients with lipoatrophy who switched from BID PI to OD ATV/r had no demonstrated benefit on lipoatrophy but less limb fat loss, while maintaining efficacy and significantly reducing atherogenic lipids.

O4 A pilot study of changes in surrogate biomarkers of cardiovascular disease in individuals interrupting antiretroviral therapy initiated in primary HIV infection

E Hamlyn, M McClure and S Fidler
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Background: Data from the SMART study indicates that interruption of long term antiretroviral therapy (ART) in chronic HIV infection is associated with increased rates of cardiovascular events and death, and correlates with raised levels of systemic biomarkers IL-6 and D-dimer. The role of intermittent short course ART (SCART) in Primary HIV infection (PHI) is currently under investigation in the SPARTAC trial. If shown to confer an immunological benefit, the risks of interrupting ART in PHI must be evaluated. The aim of this study was to investigate the impact of interrupting a short course of ART in PHI on levels of IL-6 and D-dimer.

Methods: Thirty patients with PHI received either a 3-month course of SCART (n = 25) or no therapy (n = 5) in an open non-randomised pilot study. D-dimer and IL-6 levels were analysed from frozen plasma samples at 4 time-points; baseline, week 12 on ART, and 4–8 weeks and 6–12 months after discontinuation of treatment.

Results: In those receiving SCART, IL-6 declined significantly on commencing ART (P = 0.01, 95% CI: 0.11, 0.66) corresponding with viral suppression. 4–8 weeks following treatment discontinuation there was a further decrease in IL-6 levels (P = 0.005, 95% CI: 0.06, 0.31), and at 6–12 months levels had risen but were not significantly different from those at the time of virological suppression. D-dimer levels decreased significantly on starting ART, but did not significantly rebound on treatment discontinuation. There were no significant changes in biomarkers across the 4 time-points in those who declined ART although the numbers were too small to draw any conclusions. Of the 30 patients, one patient in the treatment arm suffered an acute cardiovascular event.

Conclusions: These data suggest that, contrary to chronic HIV infection, levels of IL-6 and D-dimer do not immediately rebound on discontinuing SCART after treatment interruption in PHI. These findings will be further evaluated using the SPARTAC cohort.

O5 Clinical epidemiology of end-stage renal failure in the UK

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1Chelsea and Westminster Hospital, London, UK, 2University College London, London, UK, 3Mortimer Market Centre, London, UK, 4St Mary’s Hospital, London, UK, 5Brighton and Sussex University Hospitals, Brighton, UK, 6King’s College London, London, UK

Introduction: In HIV-infected persons the US, there has been an “epidemic” of end-stage renal failure (ESRF) requiring renal replacement therapy (RRT). It is unclear whether a similar increase in patients requiring RRT has occurred in the UK.

Methods: Patients with HIV/ESRF from 1998–2007 were identified on the UK CHIC and local renal databases. The trend in ESRF case load was studied, and the clinical characteristics and survival compared for patients with HIV-associated nephropathy (HIVAN) and patients with ESRF due to other renal failure aetiologies.

Results: Of the 70 patients with ESRF, 66% were black and 38 (54%) had HIVAN. The number of patients requiring RRT in each consecutive 2 year period increased from eight in 1998/1999 to 51 in 2006/2007. Patients with HIVAN/other renal failure aetiologies had similar degrees of immunodeficiency (nadir CD4 cell count and AIDS), while those with HIVAN had more advanced renal disease at HIV diagnosis (median eGFR 11 versus 50 ml/min, P = 0.01), spent less time between HIV diagnosis and RRT initiation (137 versus 2171 days, P < 0.0001), and more often commenced RRT within 3 months of initiating HIV care (47% versus 16%, P = 0.01). Of the patients with HIVAN/other renal failure aetiologies who commenced RRT while in HIV care for at least 3 months, a similar proportion had commenced HAART (74% versus 81%, P = 0.57) prior to RRT, resulting in similar CD4 cell counts (268 versus 246, P = 0.89) at RRT initiation. Five years after starting RRT, 75% of patients with HIVAN were alive compared with 59% of patients with other renal failure aetiologies (P = 0.12).

Conclusions: The burden of ESRF increased more than six fold during the HAART era. Patients with HIVAN had more advanced renal failure at HIV presentation and a more fulminant course of kidney disease thereafter. Earlier HIV diagnosis in black patients will be an important strategy to stem the increase in number of patients with HIV/ESRF in the UK.

O6 Risk factors for vitamin D deficiency in a ethnically diverse urban HIV cohort: Which antiretrovirals are implicated?

T Welz1, K Childs1, F Ibrahim1, M Poulton1 and F Post1
1King’s College Hospital, London, UK, 2King’s College London, London, UK

Background: Several studies have shown high rates of Vitamin D insufficiency among HIV patients and suggest that specific antiretrovirals may affect serum 25(OH)D [circulating vitamin D] levels. Optimal vitamin D status is associated with beneficial health outcomes including reduced fracture risk, cardiovascular morbidity and enhanced innate immunity.

Methods: Cross sectional study of 1063 adult HIV outpatients in South London. Risk factors for low 25(OH)D and raised ALP were examined using multivariable linear regression.

Results: Median age was 40 years (35, 46), 59.4% men, 35% white, 58% black, CD4 452 cells/mm3 (324, 613). Median serum 25(OH)D was 13.3 μg/L (8.2, 20.8). Ninety-two percent had 25(OH)D levels <30 μg/L (suboptimal), 72.9% had 25(OH)D <20 μg/L (deficient). Tenofovir (TFD) use was associated with a lower 25(OH)D level (P = 0.001). Factors associated with increased ALP (with normal AST) were increased duration of HIV (P = 0.01), TDF use (P = 0.03) and EFV use (P = 0.004). Serum calcium and CD4 count were inversely associated with ALP level. Patients with low 25(OH)D on TDF were twice as likely to have an ALP >ULN than those on ABC (OR=2.4 [CI 1.5, 3.9], P = 0.001) and 4 times likely compared to other RRTs (OR=4.6 [CI 1.6, 13.3] P = 0.002).

Conclusions: Hypovitaminosis D is almost universal in this cohort. EFV use was associated with a lower 25(OH)D and TDF with a higher 25(OH)D level, although both drugs were independently associated with ALP elevations. Further studies are required to define the potential mechanisms and clinical implications of this interaction between ART, Vitamin D and bone.

O7 Does point-of-care testing improve acceptance of HIV testing?

P Khan and S Creighton
Homerton University Hospital, London, UK

Background: There is currently a drive to improve HIV detection rate in the UK. Internal audit at one city inner genito-urinary medicine clinic
revealed that uptake of HIV testing to be 71%. Of those that tested positive for HIV, 10% failed to attend for follow-up. This study aims to assess whether the provision of point of care HIV testing (POCT) improves the uptake of HIV testing.

**Methods:** Patients who declined serological testing or with high clinical risk of HIV infection were offered POCT by oral swab (Oraquick) or finger-prick (Insti) according to patient preference. Data were recorded prospectively on an electronic database and included demographic data, reason for POCT and result. External quality assurance was provided by random simultaneous POCT and serological testing of 1% of all POCT. Serological confirmation of all positive POCT was performed.

**Results:** Nine hundred and fifty-one STI screens were performed between 01/12/08 and 31/12/08, of which 729 (77%) had an HIV test. 117/729 (16%) opted for POCT, of which 51 were Insti and 66 Oraquick. Main indications for POCT were requiring immediate result (92/117) and dislike of venepuncture (23/117). 3/51 (7%) Insti and 0 Oraquick tests yielded a positive result, compared to 4/611 (0.6%) of clients having conventional serology (P < 0.0001). 2/51 Insti and 0 Oraquick tests were inconclusive due to technical difficulties with the kit. Staff felt offering POCT alongside routine GUM screening to be feasible.

**Conclusions:** Overall uptake of HIV testing increased by 6% with the introduction of POCT. POCT resulted in a significant increase in the number diagnosed with HIV infection. The availability of immediate result by POCT appears to be more acceptable to individuals who may be at high risk of HIV infection and reflects the policy of recommending POCT to these individuals. It is conceivable that immediate results may facilitate ongoing access to HIV care and further work will aim to assess this.

### 08

**A decade of the sperm-washing program: the effect of HIV on semen parameters and viral load?**

**JDM Nicopoulos, P Almeida and C Gilling-Smith**
Chelsea & Westminster NHS Trust, London, UK

**Background:** The Chelsea and Westminster ACU has treated HIV-positive men with ‘sperm washing’ as risk-reduction since 1999. We use a decade of experience to assess the effect of HIV disease on semen parameters and highlight the continuing importance of risk-reduction with sperm-washing when some controversially advocate the safety of timed unprotected intercourse for conception in the ‘stable’ HIV-positive man.

**Methods:** Three hundred and fifty-eight fresh samples used for sperm-washing/IUI were correlated against markers of HIV disease (CD4 count, time since diagnosis and genito-urinary medicine (GUM), (both established opt-out testing sites) between 01/04/06 and 31/08/06. Attendees were identified retrospectively from an electronic database. Women known to be HIV positive prior to attendance were excluded.

**Results:** Women attending GUM or TOP were significantly more likely to have a positive HIV result than those attending ANC (P < 0.01)

<table>
<thead>
<tr>
<th></th>
<th>GUM</th>
<th>ANC</th>
<th>TOP</th>
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</thead>
<tbody>
<tr>
<td>Number</td>
<td>3166</td>
<td>2045</td>
<td>699</td>
</tr>
<tr>
<td>Uptake</td>
<td>63.8</td>
<td>96.3</td>
<td>48.2</td>
</tr>
<tr>
<td>Median age (range)</td>
<td>27 (13–68)</td>
<td>30 (16–48)</td>
<td>28 (14–51)</td>
</tr>
<tr>
<td>Black ethnicity (%)</td>
<td>46%</td>
<td>32%</td>
<td>45%</td>
</tr>
<tr>
<td>HIV positive (%)</td>
<td>0.5</td>
<td>0.2</td>
<td>0.6</td>
</tr>
<tr>
<td>Mean Baseline CD4</td>
<td>285</td>
<td>417</td>
<td>561</td>
</tr>
</tbody>
</table>

**Conclusions:** Reducing undiagnosed HIV infection is an urgent public health priority. Women attending TOP had a higher prevalence of HIV than those attending ANC or GUM. Baseline CD4 was higher. This study shows that routine HIV testing at TOP clinics is feasible and may identify women at an earlier stage of HIV than other venues. Initiatives such as this are likely to reduce the excess morbidity and mortality associated with late diagnosis and may reduce onward HIV transmission.

### 09

**HIV testing in termination of pregnancy services**

**S Creighton, L Stacey and I Reeves**
Homerton University Hospital, London, UK

**Background:** Recent guidelines recommend that HIV testing should be expanded across a number of healthcare settings with increased use of opt-out testing. Anonymous seroprevalence data suggest the prevalence of HIV among women attending one inner city hospital for termination of pregnancy (TOP) may be >1%. This study assesses uptake of HIV testing among women attending for TOP, following the introduction of a new opt-out service.

**Methods:** From April 2008 the TOP service offered opt out HIV testing to all attendees. The demographics and uptake for women attending the TOP service were compared with those attending antenatal clinic (ANC) and genito-urinary medicine (GUM), (both established opt-out testing sites) between 01/04/08 and 31/08/08. Attendees were identified retrospectively from an electronic database. Women known to be HIV positive prior to attendance were excluded.

**Results:** Women attending GUM or TOP were significantly more likely to have a positive HIV result than those attending ANC (P < 0.01)

### 10

**National survey of lactation suppression in HIV-positive pregnant women**

**M Pammi and EM Carlin**
Nottingham University Hospitals NHS Trust, Nottingham, Nottinghamshire, UK

**Background:** Postnatal transmission of HIV occurs in up to 20% of HIV positive pregnant women who breastfeed. BHIVA guidelines suggest that cabergoline may be used postnatally for lactation suppression.

**Methods:** We conducted a national questionnaire survey in the United Kingdom (UK) to identify whether lactation suppression is used for HIV positive mothers, method(s) used, problems experienced and awareness of the available guidance. Written questionnaires were posted to all the HIV Lead Clinicians in the UK and their responses were analysed using an access database.

**Results:** A total of 167 questionnaires were posted and 85 responses were received (response rate 51%). Most clinics (84%) were involved in the care of HIV positive pregnant women, 58% had a specific HIV pregnancy lead, 74% ran a joint obstetric/HIV service, 70% were unaware of any national guidance on lactation suppression. All the pregnant women were advised to avoid breast feeding but only 93% of clinicians were sure that breastfeeding was avoided. One quarter of the clinicians routinely used medications to avoid breast engagement. Of these 72% used cabergoline; 32% indicated it was dealt by the obstetricians; 47% were aware of the potential interactions between protease inhibitors and dopaminergics, 22% felt that the interactions were significant enough to avoid dopaminergics.
4 Oral Abstracts

Conclusions: Avoidance of breastfeeding is universally advised in the UK. Use of single dose cabergoline is a simple effective method to avoid breast engorgement and its associated complications with no major drug interactions. Awareness of its potential for use in HIV positive pregnant women appears to be low. Increasing awareness of cabergoline and its appropriate use will improve the postnatal care of HIV positive mothers.

O11 Pregnancies in HIV-infected adolescents: a multicentre descriptive study

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Background: In the UK adolescent girls are at high risk for sexually transmitted infections (STI) and unplanned pregnancies. Numbers of HIV-infected adolescents are expected to rise.

Methods: A retrospective case note review of HIV-infected pregnant teenagers aged 13–19 years between 2000 and 2007 from 10 clinical centres.

Results: Fifty-nine pregnancies in 52 women. 64% were Black African and 14% Black Caribbean. One acquired HIV through heterosexual contact. Median ages at HIV diagnosis and conception were 17 and 18 years, respectively. 36% were diagnosed pre-conception. Median gestational age (GA) at diagnosis was 18 weeks (W) in cases diagnosed antenatally. 56% were primigravidae. 86% of pregnancies were unplanned. 39% used no contraception; 19% used condoms. Contraception use was not documented in 42%. In 67% of known HIV-infected, contraception was discussed in 12 months preceding pregnancy. 29% had an STI screen within 6 months of conception. Median CD4 count at conception was 379. Four were on antiretroviral treatment (ART) at conception; 55 started ART whilst pregnant, with 78% to prevent mother-to-child transmission only. Median GA at starting ART was 28 W. 53% reported excellent ART adherence. 68% of those on HAART had undetectable HIV viral load at delivery. Median GA at delivery was 38 W. 26% had preterm delivery. Mode of delivery was Caesarean section and vaginal delivery in 58% and 41%, respectively. 85% were uncomplicated pregnancies. There were 59 live births. 1 baby was HIV-infected. During 12 months post-delivery, 22% became pregnant and 51% had contraception advice documented.

Conclusions: Although most pregnancies were unplanned, obstetric and virological outcomes were favourable. Documentation of contraception use and advice was poor. Nearly a quarter conceived again within 12 months of delivery. Although at high risk for STIs, only a third were screened for STIs within 6 months of conception. Effective measures to reduce HIV and STI transmission and unplanned pregnancies in HIV-infected adolescents are needed.

O12 Do we know the HIV status of our patients’ children at our adult HIV unit?

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Background: An untested HIV positive child died as a result of HIV related complications. Both parents were patients at a HIV unit and hence this death in hindsight could have been prevented had the child been tested. The aim of this audit was to evaluate how accurate the information stored within our computer database and notes are about the HIV status of our patients children and, to identify high risk children who are still untested.

Methods: We audited 542 cases, 282 females and 260 males, using the computer database Climate and clinical notes. The questions asked were: How many children does the patient have below the age of 18 years? Has the child been tested for HIV and do we know the result? If there was a cause for concern or lack of data, that case was classified as open.

Results: There were 248 (47.5%) open cases. 125 children have not been tested for HIV. 56 of the untested children belong to HIV positive mothers. 28 children belong to fathers with HIV positive partners. In 10% of the audited cases there was no documentation of whether that patient is a parent.

Conclusions: Unfortunately we do not know the HIV status of our patients children and are not protecting them if, their parents decline child testing. Those at greatest risk are children whose mothers are HIV positive yet they remain untested because the majority of these children were born outside the UK. The next at risk group are, children of HIV positive fathers with positive partners. The system has already failed if we don’t know the child exists. This audit confirms fears that if practise is not changed, further children may potentially die because they were not diagnosed early enough. As a result, our department is now counselling families with untested children and new local guidelines have been implemented. These should be made nationwide. Adult units need to share responsibilities and be prepared to challenge patients if they decline child testing.

O13 Highly active antiretroviral therapy and the incidence of non-AIDS-defining cancers in people with HIV infection

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Background: The effect of highly active antiretroviral therapy (HAART) on the incidence of non-AIDS defining cancers (NADCs) is unclear. Methods: We have investigated the occurrence of NADCs in a prospective cohort of 11,112 HIV positive individuals with 71,687 patient-years of follow-up. Standardised incidence ratios (SIRs) were calculated using general population incidence data. We investigated the effect of calendar period, HIV parameters, immunological and treatment related factors on the incidence of these cancers, using univariate and multivariate analyses.

Results: The SIR for all NADCs was 1.96 (95% confidence interval [CI]: 1.66–2.29). There was no significant excess in the incidence in the pre-HAART era (1983–1995) [SIR 0.95, 95%CI: 0.58–1.47]. However, the incidence rose in the early HAART period (1996–2001) and remains elevated in the most recent established HAART period (2002–2007) [SIR 2.05, 95%CI: 1.51–2.72 and SIR 2.49, 95%CI: 2.00–3.07, respectively]. Multivariate analysis showed that use of HAART (HR 1.64, 95%CI: 1.33–2.00) and a nadir CD4 count below 200 mm-3 (HR 1.67, 95%CI: 1.10–2.54) were associated with an increased risk. Only the non-nucleoside reverse transcriptase inhibitors (NNRTIs) were associated with a significantly increased risk of NADCs (HR 1.45, 95%CI: 1.01–2.08). Much of this association was attributable to an increased risk of Hodgkin’s lymphoma with NNRTIs (HR 2.20, 95%CI: 1.03–4.69).

Conclusions: Since the introduction of HAART there has been a significantly increased risk of NADC, which has now stabilised. A number of factors are associated with this increased risk including, HAART use. There may be an association between the use of NNRTIs and the development of Hodgkin’s lymphoma.
O14 Methylation reversal in high grade B lymphoma cell lines identifies novel epigenetic changes conserved between immunocompetent and HIV-positive hosts and others specific to HIV-associated lymphoma

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Background: Methylation-dependent transcriptional silencing is an important mechanism of tumour suppressor gene inactivation in neoplasia, including lymphoma.

Methods: Pharmacological ‘unmasking’ of transcriptionally silenced genes in B lymphoma cell lines was achieved using 5’ deazacytidine ± Trichostatin A and subsequent analysis of mRNA levels on microarray. Candidate genes thus identified, were further analysed by qPCR, methylation-specific PCR (MSP) and bisulphite sequencing in B lymphoma cell lines and by MSP in clinical samples from sporadic (immunocompetent) (18 cases) and HIV-infected patients (14 cases). Samples in both patient groups were diffuse large B cell lymphoma (DLBCL) and Burkitt lymphoma (BL).

Results: We report the identification of 13 novel genes, not previously described in the literature, which are subject to methylation-dependent transcriptional silencing in high-grade lymphoma. The novel genes encode proteins involved in diverse functional classes and include pro-apoptotic members of the p53 pathway (Scotin), transcriptional regulators (Baz2B) and regulators of telomerase (Smrf2). The frequency of methylation is similar in DLBCL and BL arising in immunocompetent and HIV-infected hosts. A further 5 novel genes were subject to aberrant CpG methylation with apparent specificity for HIV-associated lymphomas.

Conclusions: We have identified a number of novel genes subject to transcriptional silencing in high-grade B lymphomas. The similar frequency of methylation observed in immunocompetent and HIV positive patients for a subset of these genes implies that these may be fundamental in suppression of lymphomagenesis. In contrast, other genes are methylated only in HIV-associated cases suggesting important functions in the immunocompromised host. We are currently assessing the potential utility of detection of methylated DNA in these genes as candidate biomarkers of outcome in each patient group.

O15 Excellent immunological recovery following the intensive chemotherapy CODOX-M/IVAC, an effective therapy for HIV-associated Burkitt’s lymphoma

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Background: There has been considerable improvement in the outcome of non-HIV adults with Burkitt’s lymphoma (BL) with the advent of intensive chemotherapy schedules. There has been reluctance for their use in HIV-BL due to concerns about increased opportunistic infections and other toxicity. A few studies have reported promising results for patients with HIV-BL treated with intensive chemotherapies. However immunological recovery following these regimens has not been published.

Methods: Thirty consecutive patients (23 male; median age: 38 years) from 3 UK centres treated with CODOX-M/IVAC and highly active antiretroviral therapy (HAART) were included. CODOX-M/IVAC consisted of four alternating cycles of CODOX-M (cyclophosphamide, doxorubicin, vincristine, methotrexate) and IVAC (etoposide, ifosfamide, cytarabine) (high-risk) or 3 cycles of CODOX-M (low-risk). Two or more adverse factors (stage III-IV, ECOG>2, extra-nodal sites>2, high LDH) defined high-risk disease.

Results: The median CD4 cell count at diagnosis of HIV-BL was 167 (range: 4–848), plasma HIV viral load (VL) was undetectable in 5/28 patients (18%). Twenty-two patients (72%) had high-risk disease. Grade 3–4 non-haematological toxicity was as follows: infection (66%) of the cycles; mucositis (12%) and diarrhoea (12%). Nine patients died during treatment (disease progression: 3, toxicity: 5, CNS lesion not biopsed: 1). Response rate was 70% (complete response (CR)/CR uncertain: 17, partial response (PR): 4). A few days after chemotherapy completion, VL was undetectable in 88% and CD4>200/mL in 58% of patients. Nine patients died during treatment: 4 due to disease progression and 5 due to severe toxicity. Eight patients have relapsed (4/8 HIV-positive patients) with a median time to relapse of 19 months. Excellent immunological recovery following the intensive regimen CODOX-M/IVAC, a feasible and effective chemotherapy, is associated with an excellent immunological recovery in patients with HIV-BL on HAART.

O16 The role of the gut mucosa in protection from HIV-1 in highly exposed persistently seronegative individuals (HEPS)

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Aim: To determine whether individuals who are exposed to HIV but remain seronegative have HIV-1 specific immune responses or evidence of low-level HIV-infection in the gut.

Methods: Rectal tissue and Peripheral Blood Mononuclear Cell (PBMC) from 6 HEPS and their HIV-1 infected partners were compared to gut resection samples from 6 HIV-1 unexposed uninfected (UU) controls undergoing surgical procedures for clinical indications. Cytokine production by extracted lymphocytes from blood and rectal tissue following in vitro stimulation with HIV-1 gag was assessed using Lumigen and HIV detected by ultrasensitive HIV DNA PCR on CD4 selected cells. Tissue architecture and cell populations were evaluated using immunohistochemistry. All laboratory investigations were performed blinded to HIV status. Detailed sexual behaviour was collected from all couples.

Results: Compared to control rectal tissue, HEPS had significantly less CD8 staining and a trend towards increased CD68 staining, particularly in those reporting most risk behaviour. HIV was not detected in the rectal mucosa or PBMCs of HEPS or UU either by PCR or p24 staining. HIV specific immune responses were not identified in either the blood or rectal tissue of HEPS but were present in their HIV-infected partners.

Conclusions: This is the first study of the rectal tissue of HEPS and although limited by sample size provides insight into gut HIV pathogenesis. The rectum does not represent a sanctuary site for viral control or harbour HIV-specific immune responses in HEPS. Flow cytometry is required to investigate CD8 and CD16 cell populations further. The trend towards increased CD68 in HEPS with increasing sexual exposure to HIV is intriguing as CD16 is found on the surface of NK cells, monocytes and macrophages which play a vital role in the first line of defence against HIV infection.

(BHIVA Research Award Winner 2006: The role of gut mucosa in protection from HIV. Julie Fox)

O17 Impact of recombinant human growth hormone on T-cell phenotype and function in vitro and in vivo during treated HIV-1 infection

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Background: HIV-1–immune-based therapy seeks to reconstitute specific CD4+ and CD8+ T-cell responses. To this end, we administered
recombinant human growth hormone (rhGH) daily in addition to highly active antiretroviral therapy (HAART) in chronically infected HIV-1* individuals, and further determined the in vitro effects of rhGH on T-cell phenotype and function.

Methods: Peripheral blood mononuclear cells from HIV-1 infected individuals and healthy controls were cultured with rhGH for 72 hours. Phenotypic analysis of CD4* and CD8* T cells was carried out before and after culture. Patients enrolled on a double-blinded, placebo-controlled study received daily rhGH. We assessed HIV-1 specific proliferative CD4* and interferon-gamma (IFN-γ) producing CD8* T-cell responses, quantified thymic output and proviral DNA at baseline, after 12 weeks rhGH therapy, at 24 and 48 weeks.

Results: Following culture with rhGH, there was a significant decrease in the expression of the activation marker HLA-DR on CD4* (P = 0.01) and CD8* (P = 0.006) T cells and the expression of the exhaustion marker PD-1 in the naïve CD8* T-cell population (P = 0.03) in HIV-1* individuals. Patients in the study demonstrated significant increases in both proliferative CD4* and IFN-γ-producing CD8* HIV-1-specific T-cell responses after daily administration of rhGH. This increase was focused on HIV-1 Gag-specific T-cell responses and these responses declined with less frequent dosing. There was no change in thymic output and pro-viral DNA remained stable.

Conclusions: These data indicate that beneficial effects of rhGH on T cells in the periphery correlate with reduced activation and exhaustion markers. Daily dosing of rhGH with HAART may reverse some of the T-lymphocyte dysfunction seen in most treated HIV-1* patients. Thus, immune-based therapeutic approaches may enable the induction of HIV-1 specific CD4* T cells required to reverse the expansion of virus-specific CD8* T cells.

O18 HIV transmission amongst MSM: association with antiretroviral therapy, infection stage, viraemia and sexually transmitted infections (STI) in a longitudinal phylogenetic study

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Background: HIV transmission continues among men who have sex with men (MSM). Previous transmission studies have been limited by various methodological imperfections, in particular an inability to account for infection stage changes over time. Using a phylogenetic, clinical and epidemiological approach, we identify key determinants of the epidemic.

Methods: Potential subjects were MSM from a geographically contained population between 2000 and 2006. Individuals were classified such that they could move from acute to chronic infection categories. Pol sequences were obtained from plasma virus or proviral DNA (where viral load was <1000 c/mL) and clusters estimated by maximum likelihood methods as well as conservative genetic distance differences. RI was defined by a previous HIV-1 Ab result within 6 months, STARHS (if subtype B), p24 Ag+/Ab- status, or limited western blot. The single most likely transmitter generating each RI was identified within clusters, and risk factors around the time of the likely transmission identified using a multivariable poisson regression model.

Results: Of 1144 MSM, pol sequence data was obtained for 859 (75%), of which 159/859 (10%) were RI. A single most likely transmitter was identified for 41/159 (26%); 10/41 (24%) were RI. Factors associated with transmission by multivariable analysis were: younger age (rate ratio per 5 years older 0.69 [95% CI 0.55–0.87]; P = 0.002); higher VL (RR per log~higher 1.61 [1.14–2.27]; P = 0.007); RI (RR 3.25 [1.44–7.31]; P = 0.005); and recent STD (RR 5.89 [2.81–12.74]; P = 0.0001). Use of HAART appears to significantly reduce transmission in the univariable model, RR 0.04 (0.01–0.19; P = 0.0001).

Conclusions: Onward transmission of HIV amongst MSM is associated with RI, STI and higher VL, and is reduced by HAART. The majority of new infections, however, appear to occur from individuals whose infection is undiagnosed. Strategies to control the epidemic amongst MSM must consider earlier diagnosis, increased HIV testing, improved STI control, and use of HAART to reduce infectivity.

O19 A cohort analysis of treatment outcomes from the largest provider of antiretroviral treatment in Burma

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Background: HIV prevalence in Burma is approximately 1%, over 76,000 people need ART, and while approximately 15,000 people receive it, 25,000 AIDS deaths occurred in 2007. In 2003, an international non-governmental organisation pioneered ART provision in this challenging environment with limited healthcare resources and now delivers two-thirds of national ART coverage.

Aims: To analyse the long-term survival and retention under care of patients on ART; and to describe outcomes from a country on which little is published in the medical literature.

Methods: From 2003 to mid-2008 approximately 16,000 HIV-positive patients have been enrolled for care and 10,642 have started ART in 13 sites. Baseline data collection included age, sex and WHO stage, and CD4 count since 2005. Survival analysis methods were used to estimate loss to follow-up and survival on ART, stratified by year of starting treatment, and separately for WHO stage 4 patients.

Results: All 10,642 patients were analysed. 42% were female and the median age was 32 y. Among patients who started ART in each of 2004, 2005 & 2006, the survival probabilities at 24 months were 83%, 85% and 88% respectively, with loss to follow up at 24 m of ≤5% in all years. The 36 m survival probabilities for 2004 and 2005 were 81% and 83% respectively, with loss to follow-up of ≤7%; 40% of patients were in WHO stage 4 at baseline, and within this group there was very strong evidence that the probability of survival increased over time (P < 0.001, log-rank test), with a 24 m survival probability of 75% in 2004, 79% in 2005, and 84% in 2006.

Conclusions: The programme has successfully scaled-up ART provision in Burma and progressively improved outcomes of the most advanced patients. Survival and loss to follow-up data compare favourably with those of other resource-limited settings, despite high levels of severe immuno-suppression and treatment provision entirely at the primary care level. Nonetheless, the unmet need for ART remains high, and requires urgent attention.

O20 Low-frequency mutations strengthen the impact of transmitted drug resistance (TDR) on virological responses to first-line efavirenz- or nevirapine-based antiretroviral therapy

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Background: In the UK 10% of HIV-positive persons have evidence of TDR. However, routine genotyping fails to detect variants within the quasispecies if their frequency is <20–30%. Ultrasensitive resistance validation studies is not consistent.

Aim: To determine the impact of TDR on virological outcome of first-line HAART using sensitive real-time PCR.
Impact of baseline (BL) antiretroviral resistance status on efficacy outcomes among patients receiving maraviroc (MVC) plus optimized background therapy (OBT) in the MOTIVATE 1 and 2 studies

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Background: MOTIVATE 1 & 2 enrolled treatment-experienced (TE) patients with triple drug-class experience and/or triple-class resistance. Methods: Efficacy endpoints were evaluated post hoc among patients in the MVC BID and placebo (PBO) arms categorized by BL resistance testing as either triple-class-resistant (TCR – resistance to NRTI, NNRTI and PI classes) or not triple-class-resistant (nTCR), and among patients with ≥2 active OBT drugs (wOBTSS ≥2). Results: At screening, TCR patients had a median of 11, 2 and 7 mutations conferring reduced susceptibility to PI, NNRTI and NRTI, respectively, versus 4, 0 and 4 for nTCR patients (P < 0.001). Efficacy at 48 weeks in patients receiving MVC+OBT is shown below.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>TCR (N = 261)</th>
<th>nTCR (N = 165)</th>
<th>Difference/OD (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean change from BL in VL</td>
<td>−1.74</td>
<td>−2.05</td>
<td>0.31 (0.05, 0.58)</td>
</tr>
<tr>
<td>log10 copies/mL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VL &lt;50 copies/mL, %</td>
<td>42.9</td>
<td>49.7</td>
<td>0.78 (0.51, 1.19)</td>
</tr>
<tr>
<td>Mean change from BL in CD4</td>
<td>110 (n = 257)</td>
<td>150 (n = 161)</td>
<td>−40 (~−62, −18)</td>
</tr>
<tr>
<td>count, cells/mm3</td>
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</tbody>
</table>

Even when the OBT included ≥2 other active agents (by wOBTSS), mean CD4 count increases were higher with MVC in nTCR patients versus the TCR subgroup (+184 versus +125 cells/mm3; difference: −59 [95% CI: −110, −10];) despite virologic response rates that were not significantly different. Similarly, in patients with <50 copies/mL at Week 48, CD4 count increases were higher with MVC in the nTCR versus the TCR subgroup (192 versus 136 cells/mm3; difference: −56 [95% CI: −93, −19]). These differences were not observed in the PBO+OBT arm. Conclusions: These data suggest MVC use may be more beneficial in TE patients with RS virus who do not have triple class-resistant virus than in more heavily treatment-experienced patients. ¤Valdez et al. 48th ICAAC/IDSA 2008, abstract H-1221.

Nuclear receptor polymorphisms and boosted saquinavir plasma concentrations in HIV-infected subjects

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Background: The expression of many CYP enzymes and transporter genes are regulated by nuclear hormone receptors such as PXR, CAR and HNF4alpha. The aim of this study was to investigate whether nuclear receptor polymorphisms influence saquinavir (SQV) plasma concentrations, since like most protease inhibitors SQV is a substrate for CYP3A and transporter proteins.

Methods: Seventy-nine patients from the Liverpool TDM registry were included. All patients received SQV/RTV 1000/100 mg twice daily. SQV plasma concentrations (4–14 h) were measured. Genomic DNA from plasma was genotyped for CAR (rs2207424AC-T), PXR (rs15231307C-T, rs24278777C-T and rs67850497A-G), and HNF4alpha (rs1800961C-T, rs1884613C-G, rs2144908A-G, rs2425640A-G and rs35078168C-T) using real-time PCR based allelic discrimination. A Mann–Whitney U-test and Spearman’s rank correlation were used for analysis of categorical and
Darunavir/ritonavir once daily: a single-centre cohort experience

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Background: Darunavir (DRV) is a novel non-peptidic protease inhibitor (PI) with activity against wild type and protease inhibitor resistant HIV-1 when boosted with low dose ritonavir. We describe our experience of using once daily darunavir/ritonavir (900/100 mg) within the Chelsea & Westminster Hospital cohort.

Methods: This prospective observational study followed a cohort of patients who received DRV/r (900/100 mg) od plus reverse transcriptase inhibitors (RTIs). CD4 count, viral load (VL) and routine safety bloods where measured at baseline, 0, 12, 24, 36 & 48 week intervals.

Results: One hundred and eighty-seven patients commenced RTI + DRVr (900/100). All patients underwent phenotype resistance testing confirming no baseline resistance to DRV. 24/187 patients were anti-retroviral therapy naive and 155/187 patients were anti-retroviral therapy experienced. 108/155 patients switched with VL<50 copies/mL. Data was available for 187, 187, 154 and 102 patients at weeks 12, 24, 36 and 48 respectively. The proportion of patients achieving HIV VL <50 copies/mL (ITT) in the treatment naive group was 54% at week 12, 79% at week 24, 83% at week 36 and 78% at week 48. In the treatment experienced group the proportion of patients with HIV RNA <50 copies/mL (ITT) in the treatment naive group was 54% at week 12, 79% at week 24, 83% at week 36 and 78% at week 48. In the treatment experienced group the proportion of patients with HIV RNA <50 copies/mL (ITT) was 64% at week 12, 59% at week 24, 57% at week 36 and 58% at week 48. 108 individuals switched to DRVr with an undetectable HIV VL. The proportion maintaining HIV VL <50 copies/mL was 72% at week 48 (ITT). 4 virological failures were observed in this group due to poor adherence. No DRV resistance was identified. 32/187 patients discontinued therapy. Main reasons for discontinuation were diarrhoea and patient driven treatment interruption. 7/108 patients were lost to follow up.

Conclusions: In this cohort of treatment naive and experienced patients with no background PI resistance, once daily darunavir/ritonavir (900/100 mg) is both effective in terms of virological suppression and well tolerated.

HIV prevalence and testing practices among tuberculosis cases in London

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Background: Universal testing for HIV in tuberculosis (TB) patients has been advocated for over a decade. Our aim was to determine factors predicting HIV test acceptance and HIV positivity in TB patients in London.

Methods: A cohort study was undertaken of all TB patients in London in 2003 to 2004 (n = 1941). Data include patient demographics, HIV test uptake rates, and test outcome. Logistic regression analysis was used to identify factors associated with being offered and accepting an HIV test and having a positive result.

Results: The overall known prevalence of HIV was 9.9% (193/1941), with 52.5% (n = 101) diagnosed prior to presentation with TB. Of those unaware of their HIV status at TB diagnosis (n = 1840), 47.9% were offered testing. Only 27.0% of patients refused HIV testing if offered. The overall HIV prevalence in those with a test result (including those diagnosed previously) was 25.9%. In multivariate analysis, factors associated with being HIV positive were being female, aged <49 years, of black ethnicity and born overseas. The following were significantly more likely to be offered HIV testing; those aged <49 years (OR 2.2, 95% CI: 1.7, 2.9, P < 0.0001), of black ethnic group (OR 2.60, 95% CI: 1.98, 3.41, P < 0.001), with smear positive PTB (OR 1.8, 95% CI: 1.2, 2.7, P = 0.006) and with a good understanding of English (OR 1.4, 95% CI: 1.1, 1.8, P = 0.04). Factors associated with refusal of an offered test were, being female (OR 2.1, 95% CI: 1.5 to 3.1, P < 0.001) or aged >49 years (OR 2.7, 95% CI: 1.8, 4.1, P < 0.001). HIV status was associated with CNS disease (OR 1.75, CI 1.02, 3.02, P = 0.003) but not with smear status, drug resistance or death.

Conclusions: Over half of TB patients in London in 2003/04 were not offered HIV testing. In those offered testing, uptake was high. Patients in higher risk groups were more likely to be offered testing, but even within the very highest risk groups testing was not universally offered. Healthcare staff should promote universal HIV testing in TB patients given the increased morbidity and mortality of co-infection, and identify barriers to acceptance of testing especially in women.

Successful primary prevention of cryptococcal disease using fluconazole prophylaxis in HIV-infected Ugandan adults (CRYPTOPRO)

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Background: Cryptococcal disease remains a significant cause of morbidity and mortality in HIV infected individuals in tropical settings, despite the introduction of antiretroviral therapy (ART). No large trial of fluconazole as primary prophylaxis has been done in Africa.

Methods: We performed a prospective, double blind randomized controlled trial comparing 200 mg fluconazole 3× per week to identical placebo in rural Uganda. 1519 ART naïve adults with CD4 counts <200 were enrolled. Patients were excluded if baseline cryptococcal antigen (CRAg) was positive. Participants were reviewed every 8 weeks and seen in clinic if unwell. 1335 (88%) participants started ART. Trial drug was continued until CD4 counts rose to 200. Primary end points were invasive cryptococcal disease and all cause mortality. Survival and time to end points were assessed in intention to treat Kaplan-Meier survival analyses. Cox’s proportional hazard regression models analyses were used to adjust for ART and CD4 count.

Results: Seven hundred and sixty participants received fluconazole and 759 received placebo.19 participants developed definite cryptococcal disease, one on fluconazole and 18 on placebo (log rank X2 15.36 P = 0.0001) with an adjusted Hazard Ratio (aHR) of 0.87 (95% CI 0.07–3.07). 12 developed cryptococcus before starting ART (11 on placebo) and 7 whilst on ART (all placebo); fluconazole was effective both pre ART (log rank X2=8.02 P = 0.0046) and post ART (log rank X2=7.45 P = 0.0064). 7 participants died of cryptococcal disease. There was no difference in all cause mortality between fluconazole (n = 100) and placebo (n = 98) arms. Fluconazole reduced oesophageal candida
Extensive neuropsychological, MRI and clinical data have been collected for 20 HIV-1 positive older patients (mean age 58, mean CD4 count 736 cells/µl), 20 HIV-1 positive younger patients (mean age 34, CD4 count 596 cells/µl), 22 matched older controls (mean age 58) and 20 matched younger controls (mean age 32). All patients were asymptomatic, with undetectable HIV-1 viral loads, and had been stable on HAART for at least 6 months prior to enrolment in the study. All patients and controls were also screened to ensure they were medically and psychiatrically stable and free from confounding conditions such as depression, heavy drug and alcohol usage or previous neurological injury.

Results: The analysis revealed a slight increase in prevalence of cognitive impairment in the HIV-1 positive older group when compared to the matched negative controls (15% versus 9%) and in the HIV-1 positive younger group when compared to their matched negative controls (15% versus 10%). These increases were not found to be statistically significant. We did however detect significant differences in the grey matter content in the brains of both the HIV-1 positive older and younger patient groups on the volume based morphometry analysis of the structural MRI data.

Conclusions: Whilst there was a slightly increased rate of cognitive impairment in the HIV-1 positive group, these results were not found to be statistically significant. Results from this study are therefore consistent with existing evidence that suggests that asymptomatic HIV-1 disease does not impair cognitive function. We did however find significant brain grey matter content loss. This may suggest that structural brain changes are present in HIV-1 positive patients despite intact cognitive function and may indeed precede the appearance of detectable cognitive change.

Cognitive function and brain grey matter change in HIV-1 younger and older positive 'men who have sex with men' in the post-HAART (highly active antiretroviral therapy) era

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Background: In this study we report on cognitive function and brain grey matter content changes in groups of HIV-1 positive older adults and younger adults when compared to groups of matched negative controls.

Methods: Extensive neuropsychological, MRI and clinical data have been collected for 20 HIV-1 positive older patients (mean age 58, mean CD4 count 736 cells/µl), 20 HIV-1 positive younger patients (mean age 34, CD4 count 596 cells/µl), 22 matched older controls (mean age 58) and 20 matched younger controls (mean age 32). All patients were asymptomatic, with undetectable HIV-1 viral loads, and had been stable on HAART for at least 6 months prior to enrolment in the study. All patients and controls were also screened to ensure they were medically and psychiatrically stable and free from confounding conditions such as depression, heavy drug and alcohol usage or previous neurological injury.

Results: The analysis revealed a slight increase in prevalence of cognitive impairment in the HIV-1 positive older group when compared to the matched negative controls (15% versus 9%) and in the HIV-1 positive younger group when compared to their matched negative controls (15% versus 10%). These increases were not found to be statistically significant. We did however detect significant differences in the grey matter content in the brains of both the HIV-1 positive older and younger patient groups on the volume based morphometry analysis of the structural MRI data.

Conclusions: Whilst there was a slightly increased rate of cognitive impairment in the HIV-1 positive group, these results were not found to be statistically significant. Results from this study are therefore consistent with existing evidence that suggests that asymptomatic HIV-1 disease does not impair cognitive function. We did however find significant brain grey matter content loss. This may suggest that structural brain changes are present in HIV-1 positive patients despite intact cognitive function and may indeed precede the appearance of detectable cognitive change.

O27

Cognitive function and brain grey matter change in HIV-1 younger and older positive 'men who have sex with men' in the post-HAART (highly active antiretroviral therapy) era

K Towgood1, M Fitkanen1, R Kulasegaram2, G Barker1, S Somi3, M Fisher3, C Bradbeer2 and M Kopelman1
1Institute of Psychiatry, Kings College London, London, UK, 2Guy’s and St Thomas’ NHS Foundation Trust, London, UK, 3Brighton and Sussex University Hospital NHS Trust, Brighton, UK

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Results: The analysis revealed a slight increase in prevalence of cognitive impairment in the HIV-1 positive older group when compared to the matched negative controls (15% versus 9%) and in the HIV-1 positive younger group when compared to their matched negative controls (15% versus 10%). These increases were not found to be statistically significant. We did however detect significant differences in the grey matter content in the brains of both the HIV-1 positive older and younger patient groups on the volume based morphometry analysis of the structural MRI data.

Conclusions: Whilst there was a slightly increased rate of cognitive impairment in the HIV-1 positive group, these results were not found to be statistically significant. Results from this study are therefore consistent with existing evidence that suggests that asymptomatic HIV-1 disease does not impair cognitive function. We did however find significant brain grey matter content loss. This may suggest that structural brain changes are present in HIV-1 positive patients despite intact cognitive function and may indeed precede the appearance of detectable cognitive change.

O28

Non-cirrhotic portal hypertension in HIV-mono-infected individuals

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Chelsea and Westminster Hospital, London, UK

Background: Non-cirrhotic portal hypertension is increasingly recognized in HIV infected individuals. Suggested mechanisms include didanosine (ddI) exposure and chronic HIV-related inflammation.

Methods: We identified all patients in our cohort with non-cirrhotic portal hypertension and used our prospectively collected database and retrospective notes review to describe background characteristics including antiretroviral exposure. Patients with other hepatic pathology, including viral hepatitides, were excluded.

Results: Fifteen patients (10 male) were identified with a median age of 44 (range 39–50). Mean time from HIV diagnosis to liver decompensation was 11.1 years. Fourteen (93%) individuals had undetectable HIV-RNA at presentation and mean ALT was 83. Nine (60%) individuals presented with upper gastrointestinal bleeding, 12/15 (80%) had varices at endoscopy, six (33%) had ascites and one (7%) had encephalopathy. Eleven (73%) patients had features of portal hypertension on ultrasound. Liver biopsy was performed in all patients; 13 (87%) showed evidence of mild portal or perportal fibrosis (<F2 disease) and 2 (13%) demonstrated features of nodular regenerative hyperplasia. Ten subjects had fibroscan performed and 7 (70%) had scores consistent with >F2 disease. Didanosine accounted for the greatest proportion of cumulative NRTI exposure (20%). Thirteen individuals were on a ddl-containing regimen at diagnosis and two had second fibroscans after ddl discontinuation showing marked improvement. Two individuals also met criteria for pulmonary hypertension on echocardiography.

Conclusions: Non-cirrhotic portal hypertension should be considered in individuals with chronic HIV infection, longstanding ddl therapy, persistently raised ALT or clinical features of portal hypertension. Fibroscan is a useful non-invasive method for the diagnosis and monitoring of these patients.

O29

Multicentre surveillance study of hepatitis B virus (HBV) infection in HIV-infected patients: evidence of transmitted and acquired HBV drug resistance

T Doyle
UCL Medical School, London, UK

Background: HBV co-infection is common in HIV seropositive patients and, if poorly controlled, poses a risk of progressive liver damage.

Objective: To assess the HBV virological status of co-infected patients in routine HIV care at 7 centres in England.

Methods: Consecutive sAg+ patients attending for care in Jan-Jul 2008 were tested for HBV viral load (VL) by real-time PCR (LLQ 100 cps/ml). Current samples from patients with HBV VL >1000 cps/ml (n = 47) and stored pre-treatment samples from patients with current HBV VL <1000 cps/ml (n = 59) underwent HBV genotyping and resistance testing.

Results: One hundred and eighty-seven patients were recruited with median age 42 years and CD4 count 401 (range 5–1240); 75% were males, 49% black Africans, 43% whites, 52% heterosexuals, 43% MSM, 86% on ART and 81% on anti-HBV drugs. HIV VL was <50 cps/ml in 66%. HBV DNA was detected in 61/187 (33%) patients with a median VL of 5744 (range 100–80 million) cps/ml. HBV viraemic patients included 36/151 (24%) patients on anti-HBV drugs with either combination therapy (n = 27, median HBV VL 1,161,917 cps/ml) or monotherapy with 3TC (n = 7, median HBV VL 1602 cps/ml), TDF (n = 1, HBV VL 616 cps/ml) or ADF (n = 1, HBV VL 369,926 cps/ml). Among 36 HBV viraemic patients, 23 had a HBV VL <50 cps/ml, including the 7 patients on 3TC alone. HBV resistance to 3TC was detected in 3/47 (6%) patients with HBV VL >1000 cps/ml, all on 3TC monotherapy. One other patient acquired acute 3TC-resistant [V173L, L180M, M204V] HBV infection while on 3TC as part of ART. Genotype distribution (n = 106) was 69% A, 10% E, 9% D, 3% C, 2% F, 2% G, 1% B, 4% mixed.

Conclusions: HBV co-infection is mostly treated according to guidelines, with good virological responses. A subset of patients is on suboptimal therapy and at risk of HBV viremia and drug resistance, despite well controlled HIV. A suppressed HIV VL should not be taken as evidence of HBV control. 3TC-resistant HBV is transmissible and pathogenic. There was a great variety of HBV genotypes in this cohort, consistent with its ethnic diversity.
O30

AIDS Kaposi’s sarcoma: outcomes in 254 consecutive patients diagnosed in modern times

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Chelsea & Westminster Hospital, London, UK

Background: A prospective cohort study was performed to evaluate the clinical outcomes of patients with histologically confirmed AIDS related Kaposi’s sarcoma (KS) diagnosed since the introduction of highly active antiretroviral therapy (HAART).

Methods: Two hundred and fifty-four consecutive patients (96% male) diagnosed with KS between 1996 and 2008 are included. Clinico-pathological and treatment details were prospectively collected. The median follow up is over 4 years and maximum 12 years.

Results: The mean age at KS diagnosis is 39 years and average duration of known HIV seropositivity is 4 years. At KS diagnosis only 19% were on HAART and only 7% had an undetectable plasma HIV viral load. Seventy nine (31%) patients had AIDS clinical Trial Group (ACTG) stage T1 disease at KS diagnosis and 122 (48%) had ACTG stage I1 disease (CD4 <150 mm⁻³). Nodular grade KS represented 28% of the tumours and was significantly associated with black African ethnicity and ACTG T1 stage disease. The overall 5 year survival is 89% (95% confidence interval: 84–93%). 163 antiretroviral-naïve patients were treated with HAART alone for T0 stage KS; only one died of KS and only 37 (22%) required chemotherapy, giving a systemic treatment free survival at 5 years of 74% (95% CI: 67–82%) and the overall survival at 5 years is 91% (95%CI: 87–95%).

Conclusions: The high success rate of HAART in a large cohort of antiretroviral-naïve patients over a prolonged period of follow-up will reassure patients and clinicians that this is a safe and effective approach to stage T0 KS.

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Poster Abstracts

P1 ‘Lost to follow-up’ – which patients disengage from HIV services and why?
A Osborne and S Kegg
Queen Elizabeth Hospital, London, UK

Background: We serve an expanding and largely black African HIV population in south-east London. Our population is mobile and therefore our attrition rate is high. We sought to determine the risk factors and reasons for disengagement in the 6 months after the 2007 part 2 SOPHID census.

Methods: Interrogation of clinic database with subsequent phone and letter contact with patients.

Results: Sixty-four patients appeared on the 2007 part 2 SOPHID census but did not attend for care in the subsequent 6 months. This was more likely if the patient was black African (P = 0.029) or not receiving ART (P < 0.0001). However within 6 months 22/64 (34%) of these patients had returned for care. Twelve (19%) patients were accessing services elsewhere. A small number had died (3%) or were overseas (3%) or in prison (7%). Of the 21 patients in whom outcomes were unknown, 14 (67%) were female, 19 (90%) were black African and 18/21 (86%) were not taking ART (CD4 range 139–645). Eleven of 21 (52%) had failed to attend for their last appointment. Twenty of 21 (95%) had given consent to phone contact, 17/21 (81%) allowed letter contact and in 10/21 (48%) their GP was aware of the HIV diagnosis. Despite having no contact with HIV services 5/21 (24%) had contact with other departments in the hospital. Phone contact was successful in providing 5/20 (25%) patients with a clinic appointment. Two patients informed us that they were not accessing care elsewhere but declined an appointment. Only one patient had been out of the UK.

Conclusions: Black African patients and those not taking ART are most likely to disengage from services. Loss of contact with services or movement to other centres appears to be largely voluntary and not driven by dispensal or deportation. A number of patients re-engage with services within 12 months and although this can be encouraged by proactive contact, mobile phones do not provide a durable means of contact with these patients.

P2 Access to healthcare: addressing barriers to GPs and primary care services for people living with HIV
A Anderson and E Crafer
Positive Women, London, UK

Background: There are 939 plhiv in Hammersmith and Fulham. In 2008 NHS Hammersmith and Fulham and Hammersmith and Fulham Council commissioned a project to undertake research and develop actions to support the uptake of primary care services amongst people living with HIV in the borough, reducing demand and pressure on acute services.

Methods: Focus groups were undertaken with groups of plhiv in West London. A review of the literature found no previous UK studies solely addressing the relationship between plhiv and primary care providers, although studies had explored this area within the context of groups e.g. gay men and the wider health and social care needs of plhiv. A survey was distributed plhiv across Hammersmith and Fulham and West London clinics seeking to understand the needs of plhiv in the borough in accessing primary care services.

Results: Focus groups found that many plhiv are content to access GPs when there is confidence, often on recommendation from family or another plhiv. There is resistance from people long-term diagnosed who have traditionally accessed acute services for all their healthcare needs. However migrant communities and people newly diagnosed are more willing to access primary care services. Data collection through the survey is due for completion in March 2009 and findings will then be presented at BHIVA in Liverpool.

Conclusions: Research to date suggests that there needs to be dual approach to training for GPs addressing anti-discriminatory and protocols for treating plhiv, along with cooperative working between GPs and HIV clinics. There may also be scope in supporting plhiv to act as an ‘expert patient’ managing the doctor-patient relationship between GPs and HIV specialists.

P3 Assessment of the impact of a home delivery service on the virological outcome of patients with the human immunodeficiency virus (HIV)
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Background: Successful treatment of HIV requires a high level of patient adherence to anti-retroviral (ARV) therapy. Compliance is likely to be improved by making treatment more convenient. Since 2005 a home delivery of HIV medicines service that enhanced patient convenience has been available for registered patients at a HIV unit. This study assesses its impact on patient outcome as indicated by HIV viral load.

Methods: Retrospective analysis of case notes from a random sample of 500 patients. Patients were categorised into 5 groups based on their home delivery status: (1) on home delivery; (2) put on hold because of virological or clinical instability; (3) offered the service but declined; (4) never offered the service and (5) withdrawn from the service. Data collected included: gender, age, year of registration with the clinic, current ARV therapy, HIV viral load, prescriber details and type of HIV treatment regime. Data collected was analysed statistically using the Chi-squared test.

Results: Sixty-eight percent (n = 341) of the sample were male with the age of patients included having a negative skewed distribution. The year of registration with the clinic was significantly associated with their home delivery status (P = 0.01). Sixty-seven percent of patients on the home delivery service registered with the clinic more than 5 years ago. Ninety-three percent of the patients on the home delivery service had been on the same ARV treatment regimen for 3–6 months, a required criterion for inclusion on the service. More than half of the patients sampled (54%, n = 268) were on a nucleoside reverse transcriptase inhibitor and non nucleoside reverse transcriptase inhibitor combination. There was a significant association between patients home delivery status and detectable HIV viral load in the past year (P = 0.001).

Conclusions: The study found that there was no significant difference in the HIV viral load between patients who had their ARV medicines home delivered and patients that were suitable but declined to join the service, indicating they have similar patient outcomes.

P4 Challenges in addressing counselling needs of MSM in highly stigmatized contexts: results of a qualitative study from Kenya
M Taegtmeyer1, A Muharari2, A Davies3, M Mwangome4, EM van der Elst5, SM Graham6 and EJ Sanders7
1Liverpool School of Tropical Medicine, Liverpool, UK, 2Centre for Geographic Medicine Research–Coast, Kenya Medical Research Institute (KEMRI), Kilifi, Kenya, 3University of Washington, Seattle, USA, 4Centre for Clinical Vaccinology and Tropical Medicine, University of Oxford, Oxford, UK

Background: The role of men who have sex with men (MSM) in the African HIV epidemic is gaining recognition but capacity to address HIV

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Patients attending the existing HIV service were asked to complete a questionnaire investigating preferences concerning clinic environment and service provision. Questions were designed to probe issues around stigma and confidentiality, and most used a Likert scale to indicate degree of agreement with statements.

**Results:** Fifty-nine patients provided responses of which 38% were African. Ninety percent agreed the building/environment should maintain their confidentiality, whilst 51% did not want separate entrances/services for HIV and GUM. The majority agreed building name should not relate to department work (59%) and waiting areas/receptions for HIV and GUM should not be separated (59% and 71% respectively). In contrast 65% wanted to access HIV information in waiting areas, 43% wanted to talk to other patients in waiting areas and 75% preferred them divided by gender. There was a strong preference for additional service provision in the clinic. At least 54% wanted extra clinical services and 68% or more non-clinical services e.g. immigration advice.

**Conclusions:** Patient preferences were conflicting as they stressed the importance of maintaining confidentiality through environmental design e.g. joint entrances/waiting areas, yet they also wanted to access HIV specific information and talk to other patients within this space. The positive response to the provision of non-clinical services e.g. housing advice and waiting areas separated by gender highlights the social need and diversity of this population, where HIV is only part of a complex of needs. These findings indicate the importance of involving patients and understanding their needs within service design.

**P6**

**Conflicting needs: investigating patient preferences in the design of a new HIV/sexual health clinic serving an ethnically diverse population**

**V Harrison, M Fadojutimi, J Anderson and I Reeves**

Homerton University Hospital, London, UK

**Background:** Patient involvement in the planning and delivery of services is a priority for the health service. Historically, HIV services have grown within pre-existing services as patient cohorts develop. Our objective was to conduct a patient survey to help design a planned new HIV/Sexual Health clinic at our site, serving an ethnically diverse, socio-economically deprived population.

**Methods:** Patients attending the existing HIV service were asked to complete a questionnaire investigating preferences concerning clinic environment and service provision. Questions were designed to probe issues around stigma and confidentiality, and most used a Likert scale to indicate degree of agreement with statements.

**Results:** Fifty-nine patients provided responses of which 38% were African. Ninety percent agreed the building/environment should maintain their confidentiality, whilst 51% did not want separate entrances/services for HIV and GUM. The majority agreed building name should not relate to department work (59%) and waiting areas/receptions for HIV and GUM should not be separated (59% and 71% respectively). In contrast 65% wanted to access HIV information in waiting areas, 43% wanted to talk to other patients in waiting areas and 75% preferred them divided by gender. There was a strong preference for additional service provision in the clinic. At least 54% wanted extra clinical services and 68% or more non-clinical services e.g. immigration advice.

**Conclusions:** Patient preferences were conflicting as they stressed the importance of maintaining confidentiality through environmental design e.g. joint entrances/waiting areas, yet they also wanted to access HIV specific information and talk to other patients within this space. The positive response to the provision of non-clinical services e.g. housing advice and waiting areas separated by gender highlights the social need and diversity of this population, where HIV is only part of a complex of needs. These findings indicate the importance of involving patients and understanding their needs within service design.

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**Results:** and sources of support. Open questions inviting free text responses from each clinical centre. Respondents were asked a range of closed BHIVA & BASHH members and clinicians were asked to respond jointly young people are required. However, the adult ward did not meet some of their healthcare needs and dedicated inpatient services for event for young people born with HIV. However, the adult ward did not meet some of their healthcare needs and dedicated inpatient services for important in developing transitional care services. This study illustrates which are comparable to sub-Saharan Africa. We aimed to determine findings of previous years in the light of ongoing NHS change. The survey is expected to show not only comparative data on the impact in the NHS and in patient load affected sexual health services in the previous year. In 2009 the surveys were extended to cover the whole UK. This paper addresses clinician views across the UK.

**Methods:** Questionnaires were sent electronically and on paper to all BHIVA & BASHH members and clinicians were asked to respond jointly from each clinical centre. Respondents were asked a range of closed questions about their experience in the previous year, with an opportunity for open comment at the end of the questionnaire. Issues covered included budget management, patient involvement, resources and sources of support. Open questions inviting free text responses included what had most helped or hindered service provision in the last year and what would best enable further progress locally in the future.

**Results:** At time of abstract submission the responses are still coming in. The conference will be presented with full data analysis of clinician views and preliminary conclusions, with final data to be fully published in May. The survey is expected to show not only comparative data on the impact of different health systems across the UK, but also develop themes and findings of previous years in the light of ongoing NHS change.

**Conclusions:** To be presented at Conference.

**P8**

**Disturbing Symptoms 7: how clinicians viewed the state of sexual health work in 2008–2009**

L Power, V Sheard and P Ward

Terrence Higgins Trust, London, UK

**Background:** Disturbing Symptoms is an annual review, now in its 5th year, analyzing English clinician and commissioner views of how changes in the NHS and in patient load affected sexual health services in the previous year. In 2009 the surveys were extended to cover the whole UK. This paper addresses clinician views across the UK.

**Methods:** Questionnaires were sent electronically and on paper to all BHIVA & BASHH members and clinicians were asked to respond jointly from each clinical centre. Respondents were asked a range of closed questions about their experience in the previous year, with an opportunity for open comment at the end of the questionnaire. Issues covered included budget management, patient involvement, resources and sources of support. Open questions inviting free text responses included what had most helped or hindered service provision in the last year and what would best enable further progress locally in the future.

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**Conclusions:** To be presented at Conference.

**P9**

**HIV–positive patient retention at a north London clinic: high rates of loss to clinical follow-up among pregnant women**

P Stamoulos, TJ Barber and C Wood

North Middlesex University Hospital, London, UK

**Background:** Effective HIV care depends on regular follow-up of patients but results from recent studies demonstrate adherence rates which are comparable to sub-Saharan Africa. We aimed to determine the frequency of patients who are lost to follow up (LFU) from our North London HIV clinic and identify any possible predictive factors.

**Methods:** Adult patients seen 01/01/1996–31/12/2008 were retrospectively audited to ascertain those who had not attended for >6 months. These were matched against a national register of HIV-positive patients receiving care in the UK to determine those receiving care at another UK HIV centre and those with no further UK follow-up (LFU). Deceased patients were excluded. We analyzed the demographic characteristics of LFU patients and reviewed their records in order to identify any precipitating reasons for their decision.

**Results:** Of 1783 patients registered at our clinic, 833 had not been seen for >6 months. Of these, 147 (17.6%) had not received care elsewhere in the UK (LFU); 106 (72%) were Black African and 87 (60%) women. In this patient group, 71 (48.9%) had been on antiretroviral drugs and 16 (11.5%) had a CD4 count <200 at their last visit. Twenty-four patients (16%) were pregnant women and only 1 had a HIV viral load <200 copies/mL. Initial data suggests that only 10 (7%) patients had given notice of their intentions to leave the clinic.

**Conclusions:** Our study confirms a high rate of LFU in our HIV+ cohort. Another key finding is the high proportion of pregnant women who are LFU which has not been shown in any other UK study to date. Further analysis is planned to better understand this data, to establish the reasons for LFU in this particular group and to engage better with these patients in the future.

**Reference:**


**P10**

**Housing and HIV: the impact of housing on the health and well-being of people living with HIV – an analysis**

Y Azad and J Anderson

NAT, London, UK

**Background:** Although housing is known to be a key concern for people living with HIV, particularly those experiencing poverty, there is little data on the scale or impact of this in the UK. A survey of people living with HIV in 2002 found that almost a quarter of respondents had experienced housing related problems during the previous 12 months. To further explore the relationship between HIV and housing and assess the impact of poor housing on the health of people with HIV an analysis of the current situation has been carried out by NAT and Shelter.

**Methods:** The existing literature (peer reviewed and grey) on HIV, housing and homelessness was reviewed. Representatives of organisations providing housing support to people with HIV were interviewed either by telephone or face-to-face. Interviews were conducted with individuals from ten specialist organisations.

**Results:** The analysis demonstrated that people living with HIV have particular needs which put them at greater risk of ill-health when their housing needs are not met; too often these needs are neglected or misunderstood by housing professionals. The themes that emerged from the analysis reinforced the undermining impact of poor quality, inappropriate housing on an individual’s health. Examples included the ways in which poor housing made adherence to treatment difficult, increasing individual vulnerability to TB, predisposing people to ill-health and associated detriment in immune function, and acting as a major cause of stress and depression with an impact on treatment success. The findings form the basis of a recent report published by NAT and include recommendations for local authorities and the government to ensure that the housing needs of people living with HIV are met.

**Conclusions:** HIV is an issue that needs to be on the housing agenda and vice versa. NAT and Shelter are using the data from this analysis to develop guidance for housing professionals on HIV and its impact on housing needs. This guidance will be published and disseminated in the first quarter of 2009.

**P11**

**Is being HIV-infected a barrier to accessing dental care?**

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2Lothian Salaried Primary Care Dental Service, Edinburgh, UK

**Background:** The Medical Foundation for AIDS and Sexual Health (MedFASH) recommended standards for NHS HIV services include the provision of timely dental care for those living with HIV. In addition, the UK General Dental Council (GDC) policy states that it is unethical for a dentist to refuse to treat a patient solely on the grounds that the person has a blood-borne virus. We therefore undertook a prospective,
questionnaire-based study to ascertain the current dental care arrangements and experiences of accessing dental care in a cohort of HIV-positive patients and a control population who were not known to be HIV-infected.

Methods: In total 100 questionnaires were distributed to HIV-positive patients and 100 to control patients with return rates of 59% and 92% respectively.

Results: Only 56% of HIV-positive patients surveyed were currently registered with a dentist compared with 80% of control patients ($P < 0.005$) and HIV-positive patients were more likely to have experienced difficulties accessing dental care ($P < 0.06$). HIV-positive patients were significantly less likely to have most recently been seen by an NHS dentist (18/59 patients compared with 58/92 controls, $P < 0.0005$) and were more likely to have last been seen at an emergency dental service (7/59 compared with 0/92 controls, $P < 0.005$). Overall, one quarter of HIV-positive patients surveyed (15/59) expressed concern about disclosing their HIV-status to a dentist and 18% (6/33) of HIV-positive patients currently registered with a dentist had not disclosed their HIV status to their regular dentist. Five patients in the survey felt they had been refused dental treatment as a result of their HIV status. The majority of HIV-positive patients (39/59, 66%) stated that they would utilize a dedicated dental unit specifically for HIV patients if provided.

Conclusions: Despite MedFASH and GDC guidance HIV-positive individuals still experience significant barriers to accessing dental treatment and many patients remain reluctant to disclose their HIV status. Continued efforts to reduce HIV-associated stigma are essential in order to improve dental care for people living with HIV.

P12 Meeting the challenge: seeing all new diagnoses within 2 weeks? E Draeger and H Noble Newham University Hospital, London, UK

Background: BHIVA standards for HIV care were released in 2007. Patients should be offered assessment by a doctor who provides HIV care within 2 weeks of diagnosis. In our clinic, time to next available routine appointment exceeds 6 weeks for all doctors. In late 2007 our clinic began to ring-fence a total of nine new patient slots per month spread between 2.5 doctors working in 33 outpatient clinics per month. In addition intervals between routine appointments for stable patients were lengthened from 3 months to 4 or 6 months. Retrospective notes review.

Methods: Time to first appointment was compared for new patients presenting to the clinic from January–August 2007 and January–August 2008. Data were analyzed using an Excel database.

Results: 153 new patients in that time, 123 sets of notes reviewed – 89 new diagnoses (52 in 2007, 37 in 2008), 31 transfers of care (13 in 2007, 18 in 2008), three returners. In 2007 mean time between date given diagnosis and first offered doctor appointment was 16 days. 57.7% were offered in 2 weeks, 82.7% in 4 weeks, 94.2% in 6 weeks. In 2008 mean time was 25 days. 32.4% were offered in 2 weeks, 54% in 4 weeks, 83.8% in 6 weeks. Those with CD4 count less than 200 were offered appointments sooner – in 2007 79.2% within 2 weeks and in 2008 53.8% within 2 weeks. The DNA rate was low – only 8.3% of the initial appointments offered were not attended.

Conclusions: Time to first offered appointment has lengthened despite interventions designed to reduce it. Between January and August 2008 a mean of 10 new patients a month presented to the clinic and overall our clinic numbers are increasing. In order to achieve the BHIVA standard more new patient appointments need to be created at our clinic. Further interventions such as a nurse-led stable patient clinic are being implemented but considerable innovation will be required to meet the target.

P13 Newly diagnosed HIV infection in an inner London genito-urinary medicine (GUM) clinic V Apea, P Khan, A De Masi, M Kali, T Chadborn and I Reeves

1 Homerton University Hospital, London, UK, 4 Health Protection Agency, London, UK

Background: The BHIVA standards for HIV clinical care recommend that all patients with newly diagnosed HIV infection should be assessed within two weeks. This study aimed to assess whether our inner London GUM clinic met these standards.

Methods: Patients with newly diagnosed HIV infection between 01.01.07 and 31.12.07 were identified. Patient data were obtained from a prospective clinical database and case notes review. Patients diagnosed in our service who then attended elsewhere were identified using the Health Protection Agency’s Survey of Prevalent HIV Infections Diagnosed (SOPHID) database.

Results: Of 88 patients, 50 (67%) were women, 60 (68%) were of Black African/Caribbean ethnicity. The predominant transmission route was heterosexual (82%). The median age was 40 years. Routine screening in GUM/ante-natal identified 57 patients, 11 tested in primary care and 20 in secondary care. Fifty-eight (66%) patients were of non-B subtype. Advanced disease was common: 21% had an AIDS diagnosis at presentation and 37 (42%) were diagnosed with a CD4 count <200. Overall 93% of our total cohort was seen within 2 weeks but 30 did not attend further follow-up. Of those with CD4 <200, 95% were seen within two weeks but 8 patients did not attend again. Treatment initiation was delayed in two late-presenting patients because of patient reluctance. Seven patients who did not re-attend were confirmed as attending services elsewhere.

Conclusions: BHIVA standards were met in 93% of our cohort. However, there was significant attrition in attendance for further care, including those with advanced disease. A significant number have not attended other HIV services which may be due to the complex psychosocial difficulties faced by our clinic population. New initiatives are urgently needed to ensure that this complex, at-risk group are fully engaged with HIV services.

P14 Promotion of sexual health services to men who have sex with men, offering Hepatitis B vaccinations in known gay venues S Toomer, J Sweeney and W Wasef Blackpool PCT, Blackpool, UK

Background: Sexual health promotion is vital for prevention of sexually transmitted infections (STIs) particularly among high-risk population. An outreach project of accelerated courses of Hepatitis B vaccination programme took place to raise sexual health awareness in gay bars and to promote Hepatitis B vaccination.

Methods: The vaccination programme was implemented in a town centre bar over a thirteen week period. The team consisted of one HIV specialist nurse, one health advisor, one health care assistant and two volunteers from a local HIV organization. The volunteers visited local gay bars every Thursday evening to promote the service. Each client was given clinical information sheet and an evaluation questionnaire.

Results: Fifty-eight clients completed the evaluation sheet from which forty (84%) completed the full vaccination course. Eight had prior vaccination so received booster injection whilst ten didn’t complete the vaccination course. Additionally, seventeen clients also requested information about HIV, four of which booked appointments for HIV testing. Sixteen clients requested more information about STIs whilst one booked an appointment for sexual health screening. Ten requested more information regarding safer sex. Ninety-eight percent of clients said that they would like to see this type of service extended.

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Conclusions: This study showed that sexual health promotion could be improved by delivering services in the community especially amongst a high-risk population.

P15
Sexual and reproductive health of HIV-positive women – survey from a provincial centre
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Background: In our service sexual and reproductive health (SRH) issues are dealt with within the general HIV clinic. Recent reports of dedicated one-stop SRH clinics indicate improved care provision. This survey was undertaken to ascertain the sexual practices, contraception use and pregnancy plans of HIV-positive women using our service and thus establish the potential for a dedicated SRH clinic.

Methods: All women aged 18–50 years attending the HIV clinic during Nov 07–April 08 were asked to fill an anonymous questionnaire which included the following details – previous pregnancies, pregnancy plans, current sexual relationships, condom use and contraception. Women were directly asked their views regarding a dedicated SRH clinic.

Results: 73% (114/156) respondents completed the questionnaire. Mean age was 34.4 years. Ninety-six percent were aware of the benefits of antiretroviral therapy in pregnancy and 39% of them were planning a future pregnancy. Seventy-four percent women reported consistent condom use. However, this decreased when another contraceptive method was used. Long acting, reversible contraception (LARC) use was higher in our group compared to its use in the general population (15% versus 9%), and was provided mainly by family planning or own doctor. Seventy-nine percent women indicated that a SRH clinic would be useful. The survey also identified limitations of the existing service.

Conclusions: Further information regarding the SRH of HIV-positive women accessing our service will be discussed. Data highlights differing practices with regard to sexual activity and contraceptive use compared to the general population. In spite of high awareness of the benefits of HAART in pregnancy, women remain at risk of unplanned pregnancy. Condom use was sub-optimal and an interesting observation was this being sought from non-NHS providers. Establishing a dedicated SRH clinic could optimize counselling, contraceptive provision and effective safe sex practices without fear of HIV status disclosure and drug interactions and is likely to be well received locally.

P16
Targeting hard-to-reach groups: moving outside the HIV clinic
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Background: Teenagers and intravenous drug users with HIV can find it difficult to attend clinic appointments due to a variety of psychological, social and physical problems. This study describes two community-based HIV clinics aimed at increasing access to HIV care in these two groups

Methods: A community-based adolescent centre, offering support for a wide range of social, emotional and physical issues affecting teenagers, established an HIV clinic in January 2008. An HIV consultant worked in conjunction with a range of non-clinicians and general physicians and delivered the full range of outpatient HIV care in a community setting. A similar model was adopted in the substance abuse unit, where an HIV consultant and drug workers worked together to provide complete outpatient HIV care, including directly observed therapy of antiretrovirals alongside methadone replacement therapy

Results: The client numbers accessing the service (No), those fulfilling BHIVA criteria for commencing antiretroviral treatment (Need ART), those receiving HAART (On ART) and those lost to follow-up (Lost) are shown in the table. Illustrative case histories will be provided.

<table>
<thead>
<tr>
<th>Prior to community clinic</th>
<th>After community clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Need ART</td>
</tr>
<tr>
<td>SAU</td>
<td>18</td>
</tr>
<tr>
<td>teens</td>
<td>16</td>
</tr>
</tbody>
</table>

Conclusions: The community-based clinics were successful at engaging hard to reach individuals and attracted additional clients. The number of clients appropriately starting ART rose from 13/27 to 22/30, and those lost to follow-up reduced from 22 to 7. Although labour-intensive, it appears that offering a holistic model of care by a multi-disciplinary team including non-HIV specialists may be an effective method of targeting hard-to-reach groups

P17
The importance of providing voluntary sector advocacy and peer support workers in HIV clinics
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Background: HIV-positive patients may have many different kinds of issues and problems to deal with in their daily life. The voluntary sector (VS) and peer support (PS) workers are uniquely placed to help patients address many of these issues in a non-medicalised way and independently of the medical team. We describe nearly 10 years experience of working closely with VS advocates and PS workers based in our clinic.

Methods: We reviewed the voluntary sector and peer support activity in our clinic during an 8 month period starting August 2007. We gathered data from a patient survey and feedback from staff.

Results: One hundred and sixty patients were seen in this 8 months period, either by the voluntary sector advocate or the peer support worker. The issues they dealt with included: housing, immigration; pregnancy, disclosure, stigma, destitution, and emotional support to newly diagnosed patients. They were closely involved with patients requiring intensive adherence support. Patients and staff expressed high levels of satisfaction with the services.

Conclusions: VS and PS workers have greatly added to services that we are able to provide in our clinic. Immediate access to them has improved the quality of service both from the perspective of healthcare providers and patients. They have been particularly invaluable in complex hard to reach cases relating to denial and non-acceptance of HIV diagnosis, disclosure and poor adherence to therapy. We believe that there should be access to these services for all patients attending HIV services in the UK. We recognize that some clinics may not have voluntary sector support locally. However, peer support workers can be developed in any clinic with appropriate prioritization, this issue should be addressed at national level so that funding is readily available. We believe it is time to recognize the invaluable services that voluntary sectors and peer support workers provide to the statutory sector and the statutory sector needs to take some responsibility to ensure, availability, provision and continuity of these services.

P18
The provision of HIV health trainer services in London – evaluation of the first year’s experience
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Background: Health trainers play an important role in supporting people to make healthier lifestyle choices. In 2007/08 THT opened the first condition-specific service in the UK HIV field. These were funded by London PCTs with the aim of providing health support to people with HIV in HIV outpatient clinics, THT centres, by telephone and at home where applicable.
Methods: An evaluation of Year One operation of the service was undertaken in January 2009. This has two parts – an audit of people using the services and presenting issues, and an evaluation of organisational learning relating to the delivery of the service.

Results: Demographics – 61% of people using the service identified as Black African Caribbean or Black other, 43% described themselves as asymptomatic with 34% describing themselves as asymptomatic. Fifty percent of the service users were women. Full data will be presented at the conference. Common presenting issues are advice and practical support with a new HIV diagnosis, healthy living with HIV, and managing HIV treatment in relation to adherence and side effects. The home outreach element has had great success in re-engaging patients that were lost contact with clinical services.

Learning: key learning issues are (i) the importance of multiple service access points as a way of overcoming any access barriers in HIV clinics and as a way of tailoring access to meet individual needs (ii) the importance of having the Health Trainer service accepted by the HIV clinic as an important part of the service it offers (iii) negotiating territory with health advisors so the service is complementary not duplicative (iv) the user desirability of the peer delivery aspect of the service.

Conclusions: (i) the HIV Health Trainer service is an acceptable way of serving PWHIV in greatest need; (ii) the principal areas of service need are those which aren’t necessarily a main part of the role of health advisors, and therefore the service is meeting hitherto unmet need; (iii) service usage is highest where there is a good relationship between the clinic and health trainer service.

Understanding the sexual and reproductive health needs of women living with HIV

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Background: This study looks at assessing the healthcare needs and service access of HIV-positive women within an outpatient HIV department.

Methods: Questionnaire-based study in which a convenience sample of 69 HIV-positive women between the ages of 19 and 45 years and who were attendees of an HIV department were asked to complete an anonymous questionnaire. Topics covered included; knowledge of cervical smear screening frequency, access of sexual health screening and contraception provision and where women wish to access services in the future. Women were also asked about fertility desires and access to preconception counselling. Serodiscordancy and disclosure within sexual relationships were also addressed. Results were analysed using SPSS 16.0.

Results: The study suggested that women who had regular sexual health screens largely did so in their HIV departments (61%), of those who would consider having a sexual health screen in the future, 67% would prefer to do so in HIV departments. Contraceptive provision was sought mostly in HIV departments (56%) however there was increased interest in accessing these services both within the HIV department (61%) or G.P. services (25%). Sixty-six percent of women could identify that they required yearly smear tests, however only 49% of women stated that they had a cervical smear done in the last 12 months. Sixty-eight percent of women stated they were considering getting pregnant in the future and 85% of those would value preconception advice. Fifty-one of the 69 women were in a regular relationship. Fifty-nine percent of partners were known HIV+ and 6% did not know. The majority of women disclosed their status to their regular partners. Of the 13 women who had casual partners 42% had a HIV+ partners and 42% didn’t know. One third of women stated they never disclosed their status to their casual partners.

Of those who had casual partners, 9 were in regular relationships. Overall reported condom use was 60% and notably in those whose partners’ status was reported to be HIV negative, 75% used condoms always. Condom use in casual relationships was 61%. Fifty percent of women who answered the question on if they would like advice from health professionals on discussing their HIV status with their partners, 50% reported no.

Conclusions: While this is a small study results suggest that women would value a comprehensive sexual health service within their HIV outpatients departments. Of note a large number of HIV+ women are considering pregnancies and would welcome preconceptual care. The study also indicates a need to support Health Promotion topics such as cervical smears, condom use, and disclosure. Women’s interest in accessing certain services at their GPs would suggest a need to work more collaboratively with level 1 services to support this service.

User preference of models of HIV and non–HIV care delivery

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Background: Primary care needs are increasing as the HIV cohort ages and co-morbidities requiring poly pharmacy become more prevalent. We aimed to determine users’ preference regarding models of HIV and non-HIV care delivery.

Methods: An anonymous questionnaire was given to all HIV+ patients attending our outpatient clinic between 29.09.08–24.10.08. Data regarding demographics, health status and use of services was recorded. Users ranked in order of preference the following four models of care (i) current model (CM), (ii) an in house GP service for all patients (GPACA), (iii) in house GP service for local residents only (GPCL) or (iv) GPs providing non-complex HIV care and complex HIV care provided in HIV clinic (HIVGP). Likert scales were used to assess responses and associations with patient preference were tested using Mann–Whitney tests.

Results: Four hundred and fifteen of 520 (80%) users completed the questionnaire. Demographics of respondents were similar to our HIV cohort; 79% male, 70% homosexual and 70% Caucasian. Median age: 42 years. Seventy-three percent were on antiretroviral therapy, of which 40% were also receiving medication from their GP, 25% reported other co-morbidities and 20% had been hospitalized in the previous year. Ninety-two percent were registered with a GP. Seventy-seven percent had disclosed their HIV status to their GP. The median number of attendances/year were 4 (HIV clinic) and 2 (GP). Overall only 17% thought their GP had a good knowledge of HIV; this was significantly higher among Black African compared to Caucasian patients (P = 0.02).

First rankings were achieved by CM (37%), GPACA (44%), GPCL (13%) and HIVGP (5%). Overall 58% would prefer an in house GP above our CM of care. Users were more likely to rank an in house GP above our CM of care if they were younger, had not disclosed their HIV status to their GP, attended their GP practice less often and were not receiving medication from their GP (P < 0.05).

Conclusions: User preferences of model are influenced by age and previous use of GPs. Further evaluation is warranted to ensure acceptable GP services are available to all.
P21
What do court transcripts reveal about judges’ understanding of the medical impact of HIV infection and what are the implications for healthcare professionals giving advice to the court?
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Aims: To compare the understanding of judges about HIV in the cases of alleged criminal transmission of HIV with available medical knowledge. To identify what medical information is provided to courts about defendants, complainants and HIV itself.

Methods: Transcripts from 13 of the 16 trials for reckless HIV transmission and the two Appeal Court judgments in England and Wales were analyzed for judges’ descriptions of the impact of HIV infection and the routes and likelihood of HIV transmission.

Results: Judges’ beliefs about HIV are generally out of date, seeing HIV as a fatal disease with highly complex, arduous and/or purely palliative treatments. Diagnosis with HIV of complainants is perceived as a traumatic event generally leading to a life of ill-health while awaiting death. There is little consideration of the physical, psychological and behavioural impacts of an HIV diagnosis on the defendant.

Conclusions: More must be done to provide judges and courts with balanced and up-to-date information on all aspects of HIV. This can be achieved both through interventions by the Judicial Studies Board but also by careful explanation from healthcare professionals when asked to advise or give evidence in such cases.

P22
What do people with HIV really think clinics and HIV organizations are good for?
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Background: The What Do You Need survey was commissioned by THT and the Department of Health to elicit views of people living with HIV (PWHIV) on current needs, in order to influence the development and provision of services and better understand appropriate ways of supporting people with HIV. The survey was undertaken by Sigma Research.

Methods: 1777 PWHIV completed booklet questionnaires on paper and online. Responses, largely tick-box, were sought to nine comparable questions on 20 areas of need, recent problems and capacity to benefit. Recruitment was through geographically and demographically diverse services and by word of mouth.

Results: Less than 3% reported no problems, while a third identified between four and seven needs, with another third having between eight and 12 needs. Asked to identify where they sought support for each need, respondents gave a clear picture of what they believe clinics, HIV organizations and various other sources of support are most use for. Clinics were a particular source of help and support around problems with eating and drinking, mental health, self-confidence, partner relations and sex. They were least likely to provide support in relation to money problems and desires for training/skills. HIV organizations were seen as providing particular support on immigration, housing, money and friendship and least likely to help with sleep problems. PWHIV in work reported particular problems in accessing all types of service at suitable hours.

Conclusions: Both clinics and NGOs need to be aware of how PWHIV view them and the needs they can meet. In particular, clinics are identified as having a greater role in managing sex and relationships then they may realize and this impacts upon many current concerns such as prosecutions for transmission. Since clinics and NGOs are very different in the uses made of them, opportunities for joint/collaborative working should be explored.
CD4 count was 80 cells/mL at week 48. The individual who failed to suppress had additional adherence support and has subsequently achieved VL <50 copies/mL.

Conclusions: The use of RGV, a new class of drug, in combination with other active antiretroviral agents, leads to an excellent virological response in highly treatment experienced patients. In our cohort all but one individual achieved an undetectable viral load at week 48, setting a new target for patients in salvage therapy.

**P26**

**Etravirine use in clinical practice: 48-week data from a single-centre cohort**

C Scott, A Teague, M Bower, B Gazzard and M Nelson

**Chelsea & Westminster Hospital NHS Foundation Trust, London, UK**

**Background:** Etravirine (ETV/Intelex) is a next generation non-nucleoside reverse transcriptase inhibitor (NNRTI) which demonstrates activity against both wild type and NNRTI resistant HIV–1. This study retrospectively analyzed data from all patients who received ETV from the Chelsea & Westminster patient cohort.

**Methods:** Individuals received ETV 200 mg bd plus nucleoside analogues or an optimized background regimen (OBR). OBR consisted of reverse transcriptase inhibitors ± protease inhibitors ± entry/fusion inhibitors ± integrase inhibitors. Patients who received ETV were antiretroviral experienced. No antiretroviral naïve patients received ETV as their first combination. Baseline patient characteristics were analyzed. CD4 cell count and viral load (VL) were measured at baseline, 12, 24, 36 and 48 weeks. Any adverse events were documented.

**Results:** Ninety-eight patients received ETV. Data were available for 98, 97, 91, 70 patients at weeks 12, 24, 36 and 48 respectively. Forty-five patients had 1 or more NNRTI resistance associated mutations (RAMs). Thirty-five of 45 individuals were identified with ETV RAMs. Median ETV resistance mutation score = 2.5. Fifty-four of 98 patients commenced ETV with a detectable HIV VL. The proportion of these patients achieving HIV VL <50 copies/mL (ITT) at week 12 was 67%, 76% at week 24, 71% at week 36 and 74% at week 48. Forty-four patients commenced ETV with an undetectable HIV VL. Ninety-six percent of these patients maintained virological suppression (ITT) at week 48. Seven of 98 patients discontinued ETV and 2/98 patients were lost to follow up. Virological rebound due to poor adherence observed in 5/98 individuals. No ETV resistance identified in these five patients.

**Conclusions:** ETV + OBR is an effective antiretroviral combination in treatment experienced patients. ETV is a suitable alternative antiretroviral in patients who need to switch therapy. There was no loss of virological control in the subset of individuals who switched therapy to a regimen that included ETV.

**P25**

**Clinical experience with maraviroc (UK 427857 or Celsentri®) with an optimized background regimen in highly treatment–experienced patients**

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**Background:** The CCR5 antagonist Maraviroc (MVC) is a novel class of antiretroviral agent licensed for the treatment of HIV-positive, drug–experienced individuals. The aim of this study was to investigate the immunological and anti-viral benefits of Maraviroc when used in clinical practice.

**Methods:** The clinical and treatment database of all HIV-positive individuals was analyzed for those who have received Maraviroc. To ensure full case ascertainment this was cross-checked with a separate record of all scripts held by the pharmacy. Demographics, genotypic resistance, prior HAART regimens, optimized background therapy (OBT), reason for Maraviroc use and adverse events were recorded. CD4 count and viral load (VL) were recorded at baseline and at weeks 4, 12, 24, 36 and 48.

**Results:** Seventeen patients received MVC, all of whom CCR5 tropic, 13 as part of a new regimen following virological failure, 2 as substitution for a poorly tolerated agent and two for possible improvement in immunological parameters. In those receiving MVC for virological failure, mean VL was 161000 copies/mL and CD4 count of 229 cells/mL at baseline. Median number of active drugs in the OBT was 2 (range 1–3) All patients had a >1 log drop in VL at week 4. Seventy-eight percent of patients achieved a viral load of below <50 copies/mL by week 12. Mean increase in CD4 counts at weeks 4, 12, 24, 36 and 48 were 68, 53, 102, 284 and 536 respectively. One patient had viral rebound following suppression at week 36, CD4 count rise at this stage was 34 cells, repeat tropism testing is under way. Of the 4 patients who received MVC with viral loads <50, the mean CD4 count rise in these patients was 14, 154, 201 and 160 for weeks 4, 12, 24 and 36 respectively. All patients remained undetectable.

**Conclusions:** In those individuals taking MVC, good CD4 count rises were seen in both those with virological failure or suppression at baseline. In individuals failing HAART, who are CCR5 tropic, MVC is an effective antiretroviral when used with other active agents achieving high rates of virological suppression.

**P27**

**Evaluating HIV-1 co-receptor tropism in a diverse clinic population**

M Rogers and J Reeves

**Homerton University Hospital, London, UK**

**Background:** Clinical trials of CCR5 antagonists have mainly recruited patients from countries with predominant subtype B infection. Patients of African origin are more likely to have non-B infection and to present late, perhaps making R5 tropism less likely. Subtype should not affect response to this drug class but may be associated with different patterns of co-receptor usage. Our aim was to investigate tropism in a clinic population of largely non-B infected individuals.

**Methods:** From May 2008 tropism assays were performed in patients starting first-line antiretroviral therapy and in those switching therapy after treatment failure or interruption. Patients not meeting viral load threshold for testing were excluded. The Trofile (Monogram Biosciences) assay was used. Demographic information was collected at time of initial diagnosis and HIV-1 subtype predicted from the sequence generated at baseline genotypic resistance testing.

**Results:** Of 25 patients tested, 76% were of Black African/Caribbean ethnicity, 52% were women and 64% were treatment-naive. Non-B subtypes were present in 80%. The median CD4 count was 280 (range: 13–677). R5 tropism was found in 76%; three patients had dual/mixed and three had assay failure – of the latter two were subtype K. None of the patients have started therapy with an R5 antagonist although this is planned in one individual.

**Conclusions:** The majority of these patients were infected with RS tropic virus. The number of patients with CD4 <200 was small suggesting that the test took low priority in patients with more advanced disease. Patients experiencing treatment failure with VL <1000 are also not represented. Should future data show that tropism does not change whilst patients take effective therapy, pre-treatment tropism testing will expand the choices available to patients wishing to switch due to treatment-related tolerability/toxicity.

**P28**

**Experience with ritonavir/atazanavir in HIV-positive antiretroviral–naive individuals commencing therapy**

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**Background:** Atazanavir (ATV), an azapeptide protease inhibitor (PI) with once-daily dosing, has recently been licensed for use in treatment-naive individuals boosted with ritonavir (r) and in combination with other
antiretrovirals. We describe our clinical experience of boosted atazanavir in a naïve population of patients.

Methods: We retrospectively collected data, by interrogation of our clinical database, of all antiretroviral-naïve individuals who commenced ATVr within our directorate. Baseline demographics, NRTI backbone and adverse events were recorded. CD4 count, viral load, bilirubin and cholesterol were recorded at baseline and weeks 4, 12, 24, 36 and 48.

Results: One hundred and thirty-three patients commenced ATVr as part of their first line combination therapy. Mean age at baseline was 40 years. Ninety-four percent were male patients and 6% were female. At baseline, mean viral load was 121198 copies/mL. Mean CD4 count was 221 cells/mL. Fifty-three percent of individuals had a CD4 count <200 and 63% had a viral load of >100,000 copies/mL. One hundred and three commenced a tenofovir and emtricitabine/lamivudine backbone, 6 with abacavir/lamivudine and 24 with an alternative backbone. Mean change in CD4 count at week 48 was 152 cells/mL. With ITT analysis, at week 48, 114 individuals had a VL <50 copies/mL and 121 individuals had a VL <500 copies/mL. At week 48, average change in total cholesterol was -0.5 mmol/L (baseline 4.2) and total bilirubin (umol/L) was 0–25 in 28%, 26–50 in 40%, 51–75 in 17% and >75 in 15%. Eight individuals stopped ATVr, with the main reasons for cessation of treatment being jaundice and simplification of treatment.

Conclusions: Boosted atazanavir is a safe and effective PI, with a favourable lipid profile, when used in combination with other antiretrovirals in a treatment-naïve cohort with 89% of individuals achieving an undetectable viral load at week 48 (ITT).

P29
High risk of early failure of anti-retroviral therapy with Truvada/nevirapine and associated resistance mutations

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Background: A high rate of early virological failure on the antiretroviral combination Truvada and nevirapine (Truvada/NVP) has previously been described in controlled clinical trials. We report the occurrence of a number of treatment failures in our cohort of approximately 800 HIV+ patients.

Methods: We retrospectively analyzed the outcome of all of our patients on Truvada/NVP to determine whether similar findings are seen in routine clinical practice, in the light of some early virological failures seen in our clinic.

Results: Between June 2005 and April 2008 16 patients started Truvada/NVP. Seven of these were already suppressed on another regimen (two on tenofovir, lamivudine and nevirapine). Nine patients started Truvada/NVP with unsuppressed plasma viral load (one patient switched from combivir/NVP and another patient previously had a single dose of kivexa/NVP). Of these nine patients, five had switched therapy at the time of analysis (December 2008). Three failed therapy; one was switched because of recurrent, intermittent, low-level detectable viral load (blips) and one was switched after 5 weeks because of concern over the fragility of this combination. Of the 3 true treatment failures only one was due to non-adherence, this patient had an unstructured treatment interruption. Therefore, of the 7 patients who were on Truvada/NVP for long enough to suppress the viral load and were adherent, 2 (29%) failed therapy. This is similar to the proportion that we have seen in previous controlled trials. Neither of these patients achieved viral suppression, both had nevirapine levels in the therapeutic range and they were switched at 16 and 22 weeks. Another case of Truvada/NVP failure within 24 weeks was seen in our department from outside the region. All three patients experiencing early failure had K65R, M184V/I and Y181C mutations. One patient had K103N and another had A62V and V106A. Similar mutations were seen in the patient who was non-adherent.

Conclusions: We conclude that, consistent with previous trial data, there is significant risk of early failure with significant resistance mutations in patients starting the combination Truvada/NVP.

P30
Is there a role for etravirine in patients with NNRTI resistance? – an update using a weighted ETV resistance associated mutation score

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Background: Etravirine (ETV) is a next generation NNRTI which demonstrates activity against NNRTI resistant HIV–1 virus. Patients may sequence to an ETV containing antiretroviral regimen following NNRTI resistance if they have ETV susceptible HIV–1. Susceptibility and virological response to ETV was previously determined using the number of ETV resistance associated mutations (RAMs) present. Analysis using this method predicted 89.5% of patients in our cohort would be susceptible to ETV. ETV RAMs are now weighted. The total ETV RAM weighted score (WS) can be used to predict the virological susceptibility to ETV.

Methods: The Chelsea & Westminster Hospital HIV-1 phenotypic resistance database was used to identify the number of patients with NNRTI resistance that may benefit from sequencing to ETV. Data was retrospectively analysed from all patients who had acquired phenotypic NNRTI resistance following exposure and failure on an efavirenz (EFV) or nevirapine (NVP) containing regimen. Resistance to EFV, NVP and ETV was defined using IAS-USA 2008 drug resistance mutations.

Results: A total of 989 patients were identified as having developed NNRTI resistance following exposure to an NNRTI containing antiretroviral regimen. Five hundred and fifty-four patients (62%; failed on an EFV containing regimen and 435 patients (38%) failed on a regimen containing NVP. The most frequently occurring NNRTI mutations identified were K103N and Y181C. Median ETV score was 1.5 (range 0–8). Following regimen failure containing EFV or NVP, 66.1% of patients were predicted to have the highest response (WS = 0–2), 23.9% of patients were predicted to have intermediate response (WS = 2.5–3.5) and 10.0% patients predicted to have reduced response to ETV (WS >3.5).

Conclusions: Using the ETV RAM weighted score we predict that the majority of patients (90%) in our cohort who have failed on EFV or NVP with NNRTI resistance will be ETV susceptible (WS <4). This value is comparable to the previously predicted majority.

P31
Lopinavir/ritonavir (LPV/r) combined with raltegravir (RAL) provides more rapid viral decline than LPV/r combined with tenofovir disoproxil fumarate/emtricitabine (TDF/FTC) in treatment–naïve HIV–1-infected subjects

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Background: RAL combined with nucleoside reverse transcriptase inhibitors (NRTIs) produces a more rapid decline in plasma viral load (VL) than efavirenz (EFV) in antiretroviral (ARV) naïve subjects. Subjects receiving RAL were significantly more likely to have undetectable plasma VL (<50 copies/mL) at day 15 compared with those receiving EFV (≥30% versus 11%). Here, we examine the initial VL decline with an NNRTI-sparing regimen of RAL+LPV/r, compared with LPV/r-TDF/FTC.

Methods: Study M10–336 (PROGRESS) is an ongoing randomized, open-label 96-week trial of LPV/r 400/100 mg BID with either RAL 400 mg BID (n = 103) or TDF/FTC 300/200 mg QD (n = 106) in ARV–naïve subjects. VL was determined using the Abbott Real-Time HIV–1 RNA assay (LDO = 40 copies/mL). Regimens were compared using Fisher’s exact test.

Results: Two hundred and nine subjects were enrolled. Mean baseline (BL) VL was 4.28 log_{10} copies/mL for both groups, and mean BL CD4+ T-cell counts for LPV/r+RAL and LPV/r+TDF/FTC were 294.1 and 290.4 cells/mm^3 (P > 0.05), respectively. VL results by the observed data method are shown. Mean changes in CD4+ T-cell count from BL to week 8 were 124.7 cells/mm^3 for LPV/r+RAL and 118.9 cells/mm^3 for LPV/r+TDF/FTC (P = 0.798).
Conclusions: Through 8 weeks of treatment, the novel NRTI-sparing regimen of LPV/r+RAL results in a more rapid VL decline and a statistically significantly higher proportion of subjects with VL below the LOQ compared to LPV/r+TDF/FTC. These results are consistent with the rapid rate of decay previously observed with RAL+2 NRTIs, and show that a 2 drug NRTI-sparing regimen can also achieve such rapid HIV-1 RNA suppression.

P32 Patient acceptability of atazanavir formulations: size versus pill burden
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Background: Atazanavir is licensed to be taken in a dose of 300 mg with ritonavir 100 mg. In 2008, a 300 mg atazanavir capsule was licensed which is similar in length, but smaller in volume, compared to ritonavir 100 mg capsules. Prior to this, patients took two smaller 150 mg atazanavir capsules with ritonavir 100 mg. We aimed to evaluate patient acceptability of the new formulation.

Methods: Patients already receiving combination therapy with atazanavir/ritonavir (300/100) were included. Between November 2008 and January 2009 all patients presenting prescriptions for atazanavir/ritonavir to pharmacy (300/100) were invited to participate. Patients were shown samples of both atazanavir formulations with ritonavir and asked to choose which they preferred to take. Reasons for remaining on 150 mg capsules were recorded.

Results: Ninety-five patients participated. Median age 41 (range 22–74); Male (46%); Female (54%). Most were Black African (54%) followed by White (36%) and other ethnicities (10%). Seventy-seven of 95 (81%) patients selected the 300 mg capsule and 18/95 (19%) chose to remain on the 150 mg capsules. Age, gender or ethnicity were not associated with choosing the 150 mg formulation (P > 0.05). Fifteen of 18 (83%) gave reasons for choosing 150 mg capsules; 6/18 (33%) felt the size of the 300 mg capsule was ‘too big’ or that ‘ritonavir was already too big’; 6/18 (33%) felt that they ‘didn’t want to change’: 1/18 (6%) had pill-box size limitations; 1/18 (6%) had swallowing difficulties and 1/18 (6%) would ‘switch next time’.

Conclusions: In this mixed cohort, the majority of patients felt size was not an issue in choosing the 300 mg capsule. A minority chose the higher pill burden with 150 mg capsules despite the new formulation being no bigger than the ritonavir capsule. This was an effect seen across age, gender and ethnicities. Potential increased patient acceptability with reduced pill burden regimens may be offset by increases in pill size in some patients. Clinics should be mindful of formulation changes where size increases with lower pill burden.

P33 Patient treatment satisfaction after simplification to a fixed dose combination of Efavirenz/Emtricitabine/Tenofovir
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Background: Studies show that simplifying drug regimens improves treatment satisfaction and adherence. Such studies involved substantial reductions in pill burden/dosing frequency and changes of drug components. We aimed to evaluate patient treatment satisfaction changes after switch from Tenofovir/Emtricitabine & Efavirenz (2 tablets) to fixed dose combination (FDC) of Tenofovir/Emtricitabine/Efavirenz (1 tablet). Immunological and virological responses were secondary objectives.

Methods: All patients seen from July to October 2008 on fixed dose Tenofovir/Emtricitabine and Efavirenz who were eligible to switch to FDC were included. Baseline patient treatment perceptions were established using the HIV Treatment Satisfaction Questionnaire (HIVTSQ) status and repeated 3 months following switch to the FDC tablet. The HIVTSQ change was used to further evaluate change in treatment perception in those scoring highly at baseline.

Results: Of 89 enrolled patients, data for 16 are pending leaving 73 with complete data for analysis (further results will be presented). At baseline 95–98% of patients reported high to very high treatment perceptions per dimension (score 4–6). Following switch to FDC there was a median increase in total HIVTSQ score of 0.5 points (95% CI) 0–2 P = 0.016. The proportion of patients with a maximum satisfaction score was 21.4% at baseline and 32.1% following switch P = 0.05. The mean HIVTSQ change score (over -30 to +30) was +17.6 (±2.8). There were no significant virological rebounds or significant change in CD4 count.

Conclusions: The vast majority of patients taking fixed dose Tenofovir/Emtricitabine and Efavirenz report high treatment satisfaction scores. There was a significant improvement on switching to FDC; however this effect was small overall with a ‘ceiling effect’ created by the large proportion of patients scoring highly at baseline. The HIVTSQ change demonstrated an improvement in patient treatment satisfaction following switch to FDC Tenofovir/Emtricitabine/Efavirenz.

P34 Simplifying to Atripla: not always simple?
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Background: The availability of Atripla since December 2007 in the UK has afforded HIV+ patients a one pill once a day regimen. We undertook an audit to determine the reasons for and outcomes of individuals switching to Atripla.

Methods: From the electronic pharmacy information system (PIMS) we identified HIV+ patients who commenced Atripla between 1 February 2008 and 30 June 2008. Information regarding demographics, disease stage, antiretroviral therapy (ART) and outcomes following the switch was obtained from a retrospective case notes review.

Results: A total of 177 patients (157 men, 20 women) were identified. The majority were Caucasian (63%), 18% Black African. At the time of switching the median (range) age was 42 years (24–69), CD4 count; 435 (74–1100) and HIV viral load (VL) <50 (<50–1200 copies/mL). Patients switched from the following regimens: 83% from truvada and efavirenz (EFV), 10% from EFV and two nucleosides (combivir n = 7, kivexa n = 11), 4% from a boosted protease inhibitor regimen (PI). One person switched from trizivir to Atripla. Fourteen of 17 who were taking abacavir switched due to concerns regarding cardiovascular risk. Outcomes following switching include continuing Atripla with no side effects (S/E) (86%), continuing Atripla but reporting increased/new S/E (5%), Seven of nine had previously received EFV for a median of 10 months, discontinued EFV after experiencing S/E after a median of 8 weeks (8%). Twelve of 14 had previously received EFV for a median of 10 months and one individual stopped due to difficulty swallowing Atripla. Of those individuals reporting S/E after switching from EFV to Atripla 65% had increased central nervous system S/E. Viral rebound occurred in one patient which was attributed to pre-existing resistance.

Conclusions: We report a surprisingly high level of discontinuation of Atripla among our patients despite many having previously tolerated both truvada and EFV. Furthermore simplification to Atripla was uncommon in patients stable on a boosted PI regimen.

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P35
Switching to raltegravir; a successful strategy in treatment-experienced patients with toxicity? 48-week data
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Background: The integrase inhibitor raltegravir (RGV) is a novel class of antiretroviral agent with a favourable side effect profile. An expanded access programme allowed its use in treatment experienced individuals with HIV-1 in combination with other antiretroviral agents. The aim of our study was investigate the safety and efficacy of switching to raltegravir, in patients with an undetectable viral load, from a poorly tolerated component of their cART.

Methods: We prospectively followed up patients enrolled in the expanded access programme from January 2007 who switched to raltegravir with an undetectable viral load. Demographics, genotypic resistance, prior cART regimens, optimised background therapy (OBT) and AEs were recorded at weeks 4, 8, 12, 24, 36 and 48.

Results: Twenty-six individuals received RGV. Seven switched from enfuvirtide (T20), 19 from a protease inhibitor. All were triple classed experienced. Median number of prior antiretroviral regimens was 10 (range 2–21) As part of the optimised background therapy (OBT) 11 patients received darunavir. Nine etravirine. Median number of active drugs was 2 (range 1–3). Mean baseline CD4 count was 365 cells. One patient died of pre-existing progressive multifocal leucoencephalopathy. All of the remaining patients remained undetectable at week 48. The Mean rise in CD4 count was 73 cells/ml.

Conclusions: In treatment experienced patients, intolerant of a PI/T20, substitution of this agent with RGV is a successful strategy. Our data show sustained virological suppression to week 48.

P36
The evolution of co-receptor tropism in patients interrupting suppressive HAART
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Background: Drug-related adverse events are an important cause of treatment failure and switching therapy can help manage these. The CCR5 antagonist maraviroc (MVC) could be a switch option in patients with tolerability or toxicity issues. Tropism determination by the standard phenotypic assay (Trofile) requires HIV-RNA so can’t be performed if viral load is suppressed. We aimed to demonstrate if tropism evolves during viral suppression by analyzing stored samples before and after HAART in patients interrupting therapy.

Methods: Using our prospectively collected database we identified patients who achieved viral suppression on HAART and interrupted therapy for reasons other than virological failure. All patients had stored plasma within 3 months of initiating/stopping their drugs. Frozen samples were tested by Trofile enhanced sensitivity assay, and tropism before and after suppressive therapy was compared.

Results: We identified 37 (33 male) patients. Of 74 samples 19 did not amplify (26%) leaving 26 patients with paired samples. Median time between sample collection and tropism for samples that amplified was 82 months (range 4–133) compared with 68 months (range 3–123) for non-amplifiable samples. Median line of therapy was 2nd (range 1st to 11th) and median number of prior virological failures was 0.5 (range 0–6). Median VL of amplifiable samples was 69905 (4.84 log10) compared with 12412 (4.09 log10) copies/mL for non-amplifiable samples. Eighteen patients had R5-tropic virus pre-treatment; 1 had DM virus after treatment interruption. Of 8 subjects with baseline DM virus 1 switched to RS. Both patients with tropism change were highly treated experienced (7th/8th line of therapy and 2/4 prior virological failures respectively). Most patients maintained VL <50 before interruption; 5 experienced blips (VL 50–500 preceded and followed by <50).

Conclusions: Change in tropism during viral suppression is uncommon and or most patients a stored sample Trofile can reliably guide treatment switch. Both patients who demonstrate tropism change were highly treatment-experienced.

P37
Use of a prescription refill-based measure of antiretroviral therapy adherence to predict subsequent virological rebound in patients with stable undetectable HIV viral loads
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Aims: To assess whether a simple, routinely available measure of adherence to antiretroviral therapy (ART) – the proportion of days covered by drug prescriptions in the previous 6 months – predicted viral rebound at the next HIV viral load (VL), in patients who were previously virologically suppressed.

Methods: The analysis was performed on a cohort of HIV-infected individuals. Each drug coverage-VL episode consisted of a 6 month period immediately prior to a VL<50 copies/mL (time-zero) over which drug coverage was assessed. It was required that the patient had been continuously on ART throughout the period, with VL<50 copies/mL. The next VL after time-zero was used to assess the outcome (whether rebound, defined as >200 copies/mL). Drug coverage was calculated as the proportion of days that the individual had a valid prescription for at least three antiretroviral drugs (ARVs). Each patient could contribute more than one episode to the analysis. Poisson regression was used to describe the effect of prescription coverage on the probability of rebound.

Results: Three hundred and seventy-six (2.4%) VL rebounds occurred in 15660 ’drug coverage – VL episodes’, after a median of 2.7 years on ART (interquartile range [IQR]:1.3–4.6). The median time from time-zero to the subsequent VL measurement was 94 days (IQR: 73–119). Coverage was 100% for 37% of episodes, 96–99% for 18% of episodes and below 60% for only 5% of episodes. The risk ratio (RR) of rebound associated with a 10% increment in prescription coverage was 0.91 (95% CI: 0.87–0.95), which was unaffected by adjusting for the potential confounding variables (RR = 0.93; 95%CI: 0.88–0.97). The results were similar when coverage by at least one drug was considered sufficient. When restricted to regimens in common use (PI/f or NNRTI) 8466 drug-coverage episodes and 185 rebound events) the adjusted RR was 0.92 (95% CI: 0.85–0.99).

Conclusions: ARVs prescription coverage assessed at the time of a VL measure in patients with undetectable VL seems to be clinically useful for predicting VL rebound on the next measured VL.

P38
Utility of Therapeutic Drug Monitoring (TDM) in a cohort of perinatally HIV-infected adolescents
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Background: PENTA guidelines 2004 suggest use of TDM in HIV-infected children for virological failure, drug–drug interactions or where dosage information is limited. There is little evidence for utility of TDM in HIV-infected adolescents.

Methods: Retrospective case note review of all TDM requests at an adolescent HIV clinic in a London teaching hospital 1 January 2003 to 31 January 2008. Poor data on antiretroviral (ARV) dosing in this group resulted in routine ARV TDM over this time. Using a
P39  
**Gender and race-based efficacy and safety analyses in ARV-naïve patients treated with boosted protease inhibitors (PIs): results from the CASTLE study**  
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**Background:** The CASTLE study has shown that ATV/r is non-inferior to LPV/r in antiviral efficacy in treatment-naïve patients, with significantly less elevation of lipids and better GI tolerability. Race and gender-based differences in efficacy and safety have been reported among HIV-infected individuals receiving HAART, however, data from randomized clinical trials are limited.

**Methods:** CASTLE is a randomized, open-label prospective study comparing once-daily ATV/r with twice-daily LPV/r, both in combination with fixed-dose tenofovir/emtricitabine in 883 patients. The proportion of subjects with HIV RNA <50 c/mL (confirmed virologic response, CVR), CD4 cell count changes, adverse events (AEs), and fasting lipid changes were analysed by race and gender through Week 48.

**Results:** CVR rates [and median CD4 cell increase from baseline in cells/µl] at Week 48 by race for ATV/r and LPV/r respectively were: White: 77% [226] versus 73% [204]; Black: 71% [142] versus 76% [190]; Asian: 83% [198] versus 90% [220]; Other: 83% [188] versus 76% [193]. CVR rates [and mean CD4 increases] at Week 48 for ATV/r and LPV/r respectively by gender were 76% [199] versus 73% [221] for females and 79% [205] versus 78% [219] for males. Rates of grade 2–4 treatment-related gastrointestinal (GI) AEs differed across racial subgroups for ATV/r and LPV/r with rates of nausea and diarrhea being consistently higher in LPV/r treated patients. This pattern was also observed in female and male subgroups. Mean percent changes in fasting total cholesterol (TC), non-HDL cholesterol (non-HDLc), and triglycerides (TG) were consistently lower in ATV/r treated patients compared to LPV/r treated patients, across racial and gender sub-groups.

**Conclusions:** Once-daily ATV/r and twice-daily LPV/r varied in efficacy and immunologic response by race but not by gender. Subjects on ATV/r had less elevation in TC, non-HDLc and TG and fewer GI AEs, regardless of race or gender.
reported by 75% of men, the majority of whom (90%) engaged in sex whilst under their influence. A history of IDU in the previous 6 months was reported for 15% of men.

Conclusions: Our findings indicate that few MSM with recently acquired HCV had a history of IDU and provides evidence of sexual transmission of HCV among MSM in London and the South East. MSM with recently acquired HCV were almost all HIV infected and the majority had engaged in UAI and/or fisting. Furthermore, these data highlight the need for HCV evaluation for all MSM with abnormal LFTs and as well as routine screening of all HIV-positive MSM.

P42
The acceptability and effectiveness of home-sampling for sexually transmitted infections in HIV-positive men who have sex with men
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Background: It is well recognized that although sexually transmitted infections (STIs) facilitate HIV transmission and that HIV-positive men who have sex with men (MSM) are disproportionately affected, screening for STIs in HIV outpatient clinics is frequently suboptimal. Home-sampling kits (HSKs) may provide an acceptable alternative to conventional STD testing, and have previously been shown by this group to be comparable in performance to routine clinical testing methods.

Methods: HSKs were offered prospectively to HIV-positive MSM attending an HIV outpatient clinic from January 2008 to July 2008 without any symptoms suggestive of an intercurrent STI. Specimens were self-collected from the buccal mucosa [using an Orase device], rectum, pharynx and urine and were tested for syphilis [ICE EIA]; Gonorrhea (GC) & Chlamydia (CT) [Gen-Probe APTIMA Combo 2 assay nucleic acid amplification test]. Acceptance of the HSK, return rate and any STI diagnoses made were recorded. Rates of uptake and STIs were compared to historical STI screening data for the same time period 1 year previously in this cohort.

Results: Three hundred and sixty-four HSKs were offered to eligible participants. Uptake of HSKs amongst those offered was 81%, (295/364); HSK return rate amongst accepters was 44.5% (130/295). Seventeen extra diagnoses of STIs were made using HSK (2 syphilis, 4 GC, 11 CT) giving an STI prevalence of 13%. The overall STI testing rate in the cohort with HSK use increased from 12.8% (139/1086) in the previous year to 18.9% (220/1164) during the study period (P = 0.0001).

Conclusions: Home-sampling offers an acceptable alternative to conventional clinic STD testing for some HIV-positive MSM, and significantly increases overall rates of testing for STDs in MSM attending an HIV clinic. A significant proportion were identified with an STI and therefore onward transmission of HIV as well as STDs may be reduced.

P43
An audit of cervical smears in HIV-infected women attending an infectious diseases unit
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Background: HIV-infected women are at increased risk of cervical abnormalities. Therefore an audit was performed to assess current practice at an infectious diseases unit, where all HIV infected women should be offered a yearly smear in accordance with BHIVA-BASHH guidelines.

Methods: A retrospective review of 100 casenotes of women attending HIV clinics between 1 January 2005 and 1 September 2008 was carried out.

Results: Women had an average age of 38 years (range 20–68). Seventy-six percent had Black ethnicity, 21% White and 3% Asian. Thirty-seven percent were known asylum seekers, 15% UK nationals and the rest were other or unknown. Eighty-three percent were on HAART. Forty-one percent of 124 smears documented in 3 years were abnormal. Twenty-seven percent of asylum seekers had smear abnormalities compared to 20% of UK nationals. There appeared to be no correlation between smear results and current CD4 count. However those with a detectable viral load or nadir CD4 <200 appeared to have an increased risk of abnormality (detectable viral load: 39% abnormal and 25% normal; nadir CD4 <200: 38% abnormal, 20% normal). Nadir CD4 <200 appeared to be beneficial as 19% had abnormal smears and 38% normal. Smears are performed either by the GUM clinic, their GP or by the gynaecologists. We had access only to those results recorded in the casenotes or those available in the local pathology laboratory. Therefore only 44% of patients had documented evidence of a smear in the past year and 66% in the past 3 years. Thirteen percent of patients had been given documented advice to have a yearly smear in the past year and 20% in the past 3 years.

Conclusions: These data suggest that smear abnormalities are more likely in those with a low nadir CD4 count, a detectable viral load and in asylum seekers. A high nadir CD4 may be beneficial. Improved communication between the Infectious diseases unit, GP and GUM clinics may help increase smear uptake as well as determine compliance with guidelines.

P44
Burkitt’s non-Hodgkin lymphoma presenting as an isolated Bell’s palsy in HIV-positive patients
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Background: Bell’s palsy (lower motor nerve palsy of seventh cranial nerve) is common in individuals with HIV disease. It is generally benign with most patients showing complete recovery without therapy. We present three patients initially presenting with Bell’s palsy who were later diagnosed as Burkitt’s lymphoma. The Bell’s palsy failed to resolve in all three patients.

Methods and Results: Patient A presented with a left Bell’s palsy. He received a course of prednisolone and aciclovir, but the weakness persisted. Three months later he developed proximal leg weakness and a right 3rd cranial nerve palsy. CD4 520, VL 1586 on Kaletra monotherapy. MRI brain and spine were normal. LP was contraindicated due to profound thrombocytopenia. Patient B developed a right Bell’s palsy, and 1 month later was admitted with pancytopenia. CD 147, VL 89 on Truvada and efavirenz. MRI brain and spine were normal. LP revealed a lymphocytosis, low glucose (0.3), high protein (7.5). Burkitt’s lymphoma was diagnosed on lymph node biopsy. Patient D developed a right Bell’s palsy and 1 month later was admitted with pancytopenia. CD 147, VL 89 on Truvada and efavirenz. MRI brain was normal. LP was contraindicated due to profound thrombocytopenia. Burkitt’s lymphoma was diagnosed on bone marrow examination. Patient C attended the emergency department with a right Bell’s palsy and was treated with aciclovir and prednisolone. The weakness persisted. Three months later he developed proximal leg weakness and a right 3rd cranial nerve palsy. CD4 570, VL 1586 on Kaletra monotherapy. MRI brain and spine were normal. Lumbar puncture showed lymphocytes, low glucose (0.6) and high protein levels (3.5). Burkitt’s lymphoma was diagnosed on gastric biopsy.

Conclusions: In HIV-positive patients, Bell’s palsy can be the presenting sign of Burkitt’s non-Hodgkin lymphoma. A non-resolving weakness should prompt early investigation for NHL since this can result in earlier detection and better prognosis.
P45
Comparing liquid–based cervical cytology (LBC) and colposcopy in a group of women living with HIV/AIDS (WLHA)
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Background: New guidelines for cervical cancer screening for women living with HIV/AIDS (WLHA) recommend annual cervical cytology instead of annual colposcopy. There has been debate surrounding the accuracy of cervical pap smears in this group and there have been no studies on the newer liquid-based cytology (LBC) technology. We compared the cytological findings of LBC and colposcopy in WLHA when both were routinely performed annually.

Methods: Retrospective casenote review of colposcopy examinations and cervical cytology performed in WLHA from 2005 to 2007 in a combined GUM/HIV unit. Fifty two LBC cytology results taken from this group of women were compared to their subsequent colposcopy findings. All colposcopies occurred within a period of 6 months from the LBC sampling.

Results: The colposcopic findings in 61.5% of examinations were consistent with LBC results (matched), 38.5% of examinations demonstrated a differing colposcopic finding in grade of abnormality compared to LBC (unmatched). Of those unmatched LBC examinations, 45% (17.3% of total LBC) under-graded any abnormality, Fifty five percent (21.2% of total LBC) over-graded any abnormality. There was no association with CD4 T lymphocyte count and matched or unmatched LBC and colposcopy.

Conclusions: The majority of liquid–based cytology samples were consistent in their findings compared to colposcopy. Although in those samples which were unmatched there was a trend towards over-estimation of the histological grade, a significant proportion of LBC results under graded the colposcopic findings. Further larger studies which include several colposcopy centres are needed to identify if this is a true trend.

P46
Diagnosis, treatment and outcomes of malignancies in HIV in the post–HAART era
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Background: In the post–HAART era the incidence of AIDS-related malignancies has decreased. Outcomes have improved with the addition of HAART to standard chemotherapy regimens. Over time there has been a significant shift in our patient demographics. Along with the recent publication of new BHIVA guidelines, this prompted us to review the malignancies diagnosed in our cohort.

Methods: We reviewed the charts of 42 patients diagnosed with a malignancy from 2000–2007. We collected data on patient gender, age, mode of HIV acquisition, malignancy diagnosis, CD4 count at time of cancer diagnosis, use of HAART and outcome of cancer treatment. We compared the data to previously published data from the same centre in the pre–HAART era.

Results: 1715 patients actively attended the service from 2000–2007. There was an increase in heterosexual mode of acquisition from 9.6% to 49.5%. There were 43 diagnoses of malignancies in 42 patients. 41.8% non-Hodgkin’s lymphoma, 16.3% Kaposi’s sarcoma, 18.6% Hodgkin’s lymphoma, 11.65% anal carcinoma and 11.65% other non-AIDS defining malignancies. There was a decrease in the number of MSMs diagnosed with a malignancy, in keeping with a significant decrease in the incidence of Kaposi’s sarcoma from 3.2% in the pre–HAART era to 0.46%. The incidence of NHL remained stable at 1%, but survival improved from 0% to 55% with the addition of HAART to standard chemotherapy. Fifty-four percent of patients diagnosed with a malignancy had a CD4 count of <200.

Conclusions: With the advent of HAART, AIDS defining malignancies are becoming less common and outcomes are improving with improved immune function. Poorer outcomes are associated with low CD4 counts and late diagnoses, emphasizing the importance of early diagnosis and treatment with HAART. Non-AIDS defining malignancies are increasing and this highlights the need for prospective surveillance in an ageing HIV population.

P47
Grade of cervical intraepithelial neoplasia (CIN) is not related to the degree of immunosuppression in a multi-ethnic cohort of HIV–infected women undergoing colposcopy
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Background: CIN is common in HIV-infected women. This study aims to explore the relationship between CD4 cell count, CIN grade and outcome of CIN treatment.

Methods: Retrospective review of all HIV-infected women attending the colposcopy clinic between 1 January 2006 and 1 December 2008 and receiving HIV care at our centre. Demographics, HIV laboratory values and colposcopy data were extracted from clinical databases and patient notes. Chi-squared tests, ranksum, Kruskal–Wallace and Student’s t-test were used to compare proportions, medians and means respectively.

Results: Sixty-one women were identified, with a mean age of 37 years (SD 8.3). Fifty-three of 61 were black. At colposcopy, the women had been diagnosed with HIV for a median of 2.9 years (IQR 1.4, 5.6). The median CD4 cell count was 317 cells/mm3 (IQR 212.5–448) and 57% had an undetectable HIV viral load. The median nadir CD4 cell count was 165 cells/mm3 (IQR 41–272). Seventy-eight percent had previous abnormal smears, 52% had high-grade referral smears. Thirty-two of 61 (53%) required treatment. Of these, 30% showed CIN2/3 in 15% (22/32), CIN1 in 16% (5/32) and no CIN in 16% (5/32). Of 27 treated women post-treatment smears available, 15 had normal smears. Subsequent recurrence of abnormalities was seen in four women (three minor/one high grade). Six of the treated women required further treatment, five due to persistence of lesion on follow-up smear and one due to subsequent recurrence. Demographics and colposcopy parameters did not differ between the treatment, CIN resolution and recurrence of CIN groups (P > 0.05). CIN grade was not associated with CD4 count, CD4 nadir or undetectable viral load (P > 0.05).

Conclusions: In this cohort of HIV infected women undergoing colposcopy, severity of CIN was not associated with CD4 count or CD4 nadir. This may relate to the majority being on antiretroviral therapy. Treatment of CIN was successful in most women but a significant number had recurrence or non-resolution of disease, highlighting the need for careful follow-up.

P48
Comparison of the clinical and demographic characteristics of HIV-infected pregnant women with HIV-infected non-pregnant women seen for care in England, Wales and Northern Ireland
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Background: Routine offer of HIV testing to women attending antenatal care, potentially provides pregnant HIV-infected women with the opportunity for earlier diagnosis and is successful at detecting previously undiagnosed infections. SOPHID (Survey of Prevalent HIV Infections Diagnosed) collects data on individuals accessing HIV-related care in England, Wales and Northern Ireland (EWNII); this includes date of first
P49
Disseminated tuberculosis and its complications in three HIV-positive pregnant women
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Background: We present three cases of disseminated Mycobacterium tuberculosis (MTB) infection presenting in HIV-infected pregnant women seen at our unit in a 2-year period. All three women had complicated psychosocial circumstances that contributed directly to the complexity of their medical care. We wish to raise awareness of the possible occurrence of MTB in HIV-positive pregnant women and to discuss potential difficulties in their diagnosis and management.

Methods: Retrospective casenotes review.

Results: Case 1 was diagnosed HIV-positive prior to her pregnancy. She had defaulted from care for 4 years and presented unwell at 27 weeks gestation. Her care was complicated by poor attendance due to family issues. By the time of delivery she had developed signs suggesting MTB-IRIS (immune reconstitution inflammatory syndrome) with massive lymphadenopathy in her neck and elsewhere. Case 2 was also diagnosed HIV-positive prior to her pregnancy and had defaulted from care. She re-presented unwell at 21 weeks gestation. Case 3 was diagnosed HIV-positive on her antenatal booking bloods. She again defaulted from follow up until re-presenting at 30 weeks gestation – admitted with ascites, lymphadenopathy, pericardial effusion, and epistaxis. She had not disclosed her HIV status to her partner and was too frightened to return to hospital. All women were started on antiretroviral therapy (ART) and quadruple MTB therapy for presumed MTB (later confirmed) at the time of their presenting illness. All three women had pyrazinamide-related arthropathy and made full recoveries from this and MTB. The children remain MTB free and HIV negative.

Conclusions: Management of MTB in HIV-positive pregnant women is a challenging clinical problem due to atypical presentations and the frequent need to start MTB therapy/ART simultaneously. All the three cases had significant pyrazinamide toxicity and at least one had an illness consistent with MTB-IRIS. With appropriate management of medical and psychosocial problems affecting our patients, all three cases had positive outcomes for the mothers and their children.

P50
Don’t forget the children: the dangers of undiagnosed HIV infection in children with HIV-positive parents attending adult HIV services
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Background: The number of undiagnosed HIV-positive children in the UK is unknown. This includes undiagnosed HIV-positive children whose parents attend adult HIV services. Most vertically infected HIV-positive children show signs of HIV disease within the first 1–2 years of life, although some may remain asymptomatic for years, and a small number may not be diagnosed until well into their teens. These undiagnosed HIV-positive children are at risk of potentially avoidable HIV-related morbidity and death. We know of one case in 2008 where an undiagnosed HIV-positive 10-year-old boy died within 48 hours of presenting with his first diagnosed HIV-related illness. Both of his parents were HIV-positive and attending adult HIV services for their own HIV care. We believe that this death may have been avoided had his HIV status been known prior to his final illness. We decided to organize a multi-sector conference to increase awareness and knowledge; develop models of best practice and make recommendations to improve clinical standards around the issue.

Methods: We submitted a proposal to BHIVA and CHIVA (British and Children’s HIV Association respectively). Working closely with Mediscript we raised money to fund the Conference and a detailed Conference report. Attendees included: clinicians, epidemiologists, psychologists, health advisors, social workers, child protection and legal experts, the HIV Voluntary sector and people living with HIV.

Results: There was unanimous agreement that the great majority of Adult HIV Statutory and Voluntary Services do not have effective systems in place to identify undiagnosed HIV-positive children of the adults attending their services. The number of undiagnosed HIV-positive children is not known, but epidemiological models are now being explored to quantify the problem. Barriers to the HIV testing of children were identified and models of best practice developed. The legal and child-protection implications were also explored.

Conclusions: It is imperative that more efforts are made to reduce the number of undiagnosed HIV-positive children. The ‘Don’t Forget the Children’ Report will be available at the BHIVA Spring Conference.
C = 15 (57.7%). Median delivery VL: A = 49; B = 49; C = 49. Percentage of spontaneous vaginal delivery: A = 50.6; B = 45; C = 34.6. Percentage of caesarean section: A = 57.8; B = 55.0; C = 65.3. Median birth weight (BW) (kg, range): A = 3.13 (0.65–5); B = 2.63 (0.65–4.5); C = 2.45 (0.65–3.6). % BW <1.5 kg A = 1.9; B = 8.3; C = 11.5. % BW <2.5 kg A = 10.5; B = 36.7; C = 50. Median gestational age (GA) (weeks, range): A = 39 (25–44); B = 39 (25–42); C = 39 (25–42). % <32 GA A = 2.5; B = 6.7; C = 11.5. % <37 w GA: A = 10.7; B = 28.3; C = 26.9. General antenatal population: median maternal age range (years) = 30–34; BW <1.5 kg = 2.2%; BW <2.5 kg = 5.8%; GA <32 w = 1.9% and GA <37 w = 5.7%. Positive babies (n): A = 0; B = 1; C = 0.

Conclusions: With multidisciplinary intervention MTCT can be prevented in chaotic drug users in pregnancy. Babies born to such women are more likely to be delivered abdominally, at earlier GA and have lower BW than other groups.

P52
Getting pregnant women on to HAART (highly active antiretroviral therapy); developing a strategy for advanced prevention of mother-to-child transmission of HIV (PMTCT+) in rural Tanzania
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Background: Tanzania was slow to roll out HAART, and PMTCT with single-dose nevirapine (SDNVP) began only in 2004. When the first HAART programme began in March 2005, medical staff in a rural district hospital worked with UK links to assess the feasibility of bringing HAART to some pregnant women and zidovudine/lamivudine (AZT/3TC) in addition to nevirapine to others.

Methods: A PMTCT+ protocol was introduced in 2005 with HIV testing of all pregnant women, CD4 testing of HIV positives with rapid introduction of long-term HAART for those who qualified under treatment guidelines, and for other women AZT/3TC for 1 week after single dose nevirapine with or without AZT in pregnancy (SDNVP+). Training was organized for staff and a PMTCT clinic was set up. Observation was made of introductions to the protocol, and data were collected of the numbers tested, the numbers positive and the number of those accessing treatment.

Results: In 2002 there were 71 women tested; in 2007, 6488 were tested, 75% of the total number of pregnant women in the district estimated in census data. Of these, 465 were HIV positive, 232 of whom attended the PMTCT clinic for CD4 testing and treatment. Other women from rural areas were unable to travel to the clinic and received SDNVP from their local health centre. National treatment guidelines required staging of HIV disease for those with CD4 between 200 and 350; staging proved problematic for midwives and the protocol was changed to HAART for all women with CD4 less than 350, and SDNVP+ for other positive women. In 2008, 145 women began HAART; but only 39 babies were HIV tested at 9 months and 25 at 18 months; four were positive.

Conclusions: The PMTCT+ protocol led to a high uptake of HIV testing by pregnant women, and HAART reaching an increasing number of those needing it. Difficulty in attending clinics when pregnant was the main bar to women accessing treatment. Improvements in testing for babies would allow assessment of the effect of PMTCT+ on HIV transmission.

P53
HIV infection in children aged 2–59 months with non-severe pneumonia attending a paediatric assessment centre in Uganda
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Background: In developing countries over 10 million children die each year before reaching their fifth birthday, many at less than 1 year, and often due to infections such as pneumonia. The World Health Organization (WHO) recommends screening sick children for HIV. We studied children under 5 years of age attending a paediatric assessment centre in Uganda to determine the rate of HIV infection and whether any clinical factors were associated with HIV.

Methods: A study was made of 539 children who fulfilled the WHO/IMCI (Integrated Management of Childhood Illnesses) criteria for non-serious pneumonia. Clinical findings and sputum culture results were noted at recruitment. A policy was in place at the centre for HIV antibody testing for children aged 18 months, and HIV DNA/PCR (polymerase chain reaction) for children aged less than 18 months. Data were entered into Epi-info 6.4 software and analyzed using an SPSS package.

Results: Thirty-four children were HIV positive; 6.9% of those aged less than 1 year, 5.9% of those aged 1 year or more, an overall prevalence of 6.3%. The commonest bacterial organisms in positive isolates were Streptococcus pneumoniae in 55.9% (19) and Moraxella catarrhalis in 33.3% (10). Factors significantly associated with HIV by bivariate analysis were diarrhoea (OR = 2.663, P = 0.005); hepatomegaly (OR = 3.550, P = 0.001); splenomegaly (OR4.339, P ≤ 0.001); S. pneumoniae (P = 0.049); Klebsiella pneumoniae (P = 0.002) and Salmonella P = 0.000). Two factors were independently associated with HIV: diarrhoea (OR = 2.203, 95% CI 1.062–4.573, P = 0.034) and splenomegaly (OR = 3.104, 95% CI 1.462–6.592, P = 0.003).

Conclusions: Children under 5 years of age attending an assessment centre in Uganda with non-severe pneumonia had an HIV prevalence of 6.3%. The factors independently associated with HIV in this group of children were diarrhoea and splenomegaly.

P54
How do children with HIV present to a regional network?
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Background: Increasing numbers of HIV-infected children are being seen in the UK, particularly outside London. We wanted to review how children with HIV were diagnosed in a regional Children’s HIV Network.

Methods: A case note audit was performed of HIV infected children who had been seen in a regional Children’s HIV Network. Information was obtained on age at diagnosis, year of diagnosis, main reason for HIV testing, where the test had been done and who had arranged the test.

Results: One hundred and twenty-one HIV-infected children had been seen in the network between 1993 and 2008; 48 were born in the UK. Most children were of African origin (n = 83; Caucasian 19, mixed race 15). Median age at diagnosis was 4 years (range 1 month–16 years). Fifteen children had been diagnosed in Africa before moving to the UK. For children tested in the UK, maternal HIV infection was the main reason for HIV testing (n = 52; 43%). Forty-seven (40%) children were HIV tested because of clinical features; pneumocystis/CMV pneumonitis (17), recurrent respiratory infections (9), FIT/diarrhoea (5), lymphadenopathy/hepatosplenomegaly (5), parotid swelling (3), raised IgG (2), severe chickenpox (2), TB (1). Children who were diagnosed because of maternal infection were significant older (6 years versus 1 year; P = 0.006), more likely to be diagnosed by an HIV team (62% versus 29%; P = 0.0009) and more likely to present after 2003 (60% versus 27%; P = 0.003).

Conclusions: Children with HIV can present at any age. Half are tested because of their mother’s HIV status, mostly by HIV paediatricians. Many of these children were asymptomatic; highlighting the importance of testing all children born to HIV-infected women. However 40% of HIV-infected children were the first person diagnosed with HIV in their family. They presented with a variety of clinical features suggesting HIV and were diagnosed in primary, secondary and tertiary care, often by non-HIV specialists.
Impact of dedicated multidisciplinary team on management of pregnant HIV-positive women at a large UK teaching hospital

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Background: There have been significant improvements in the management of women with HIV resulting in a decrease in the risk of mother-to-child transmission. This has been made possible by advances in antiretroviral therapy (ART), the use of caesarean section and avoidance of breastfeeding. More recently vaginal deliveries have been offered to women with undetectable viral loads on antiretroviral therapy without an increase in the mother-to-child transmission (MTCT) rates. We reviewed the outcome of pregnant women with HIV managed in our institute from 2000 to 2008.

Methods: This was a retrospective review of pregnant women with HIV managed at a large UK teaching hospital. Variables studied included maternal age, parity, ethnicity, and timing of HIV diagnosis, mode and gestation of delivery and mother-to-child transmission rates.

Results: During the study period 219 women with HIV booked at our hospital. One hundred and seventy-nine of these women delivered at our hospital while 25 of the pregnancies ended in a miscarriage or termination. The mean age of the affected women was 30 (range 20–48) and 46 (21%) were nulliparous. One hundred and seventy women (79%) were black African. Antenatal diagnosis was made in 91 women (41%). The viral load was undetectable in 109 women (61%) prior to delivery. In 52 (29%) women the viral load did not become undetectable despite treatment and resistance developed to ART in 4 women. Sixty-seven (37%) women delivered by elective caesarean section, 37 (21%) women by emergency caesarean section and 75 women (42%) delivered vaginally. Six babies had congenital abnormalities. There were three HIV-infected babies from our study cohort (1.7%).

Conclusions: The multidisciplinary management of HIV pregnant women in our unit involving obstetricians, genito-urinary physicians, dedicated specialist midwives, pharmacists and neonatal team over an 8-year period resulted in a 1.7% MTCT rate with a significant vaginal delivery rate of 42%.

Linkage of the UK Collaborative HIV Cohort (CHIC) study and National Study of HIV in Pregnancy and Childhood (NSHPC) to assess ART patterns in pregnant women

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Background: A linkage project has been established between the UK CHIC Study (which includes information on pregnancy) and the NSHPC (which collects maternal antenatal data) to assess ART patterns in pregnant women and enhance future analyses.

Methods: Women in UK CHIC were linked to women who delivered after 01/01/1996 in the NSHPC dataset using date of birth (DOB). Antenatal CD4 counts/viral loads (VL), delivery hospital and HIV-diagnosis date from the NSHPC were compared to the CHIC equivalent to confirm whether linked women were correct matches. Demographics, CD4 counts and VLs of the matched women were assessed and antenatal ART patterns described.

Results: Of the 5961 women in UK CHIC and 5336 women in the NSHPC dataset, 5591 records (3284 women) were linked using DOB. Of those with an exact CD4 date match, 64% (98%) were confirmed as correct matches. Two hundred and forty-three (45%) women with month/year of CD4 date matched and 280 (11%) of those with missing CD4 counts were defined as correct matches, resulting in a total of 1247 (18%) pregnant women in UK CHIC. These women were mostly of Black African ethnicity (71%) and had a median age of 31 (IQR: 27, 35) at delivery. Median CD4 count/VL at start of pregnancy was 398 (268, 560) cells/mm³ and 83 (50, 6180) copies/mL respectively. Three hundred and fifty-one of 1247 women had >1 pregnancy, resulting in a total of 1689 deliveries. Of the 309 women who were on ART at conception of their first child, 200 (65%), 52 (17%) and 57 (18%) had started >1 year before, 6–12 months before and <6 months before respectively. Six hundred and seventy-five (54%) women started ART for the first time during their first pregnancy, 10 (1%), 227 (34%) and 438 (65%), within 3, 6 and 9 months respectively; the median length of exposure to antenatal ART for these women was 2.6 (1.7, 3.4) months.

Conclusions: This linkage will allow adjustment for pregnancy in future analyses, and will enable investigation of research questions which neither study could investigate independently, such as the impact of pregnancy on HIV disease progression.

Management of pregnancy in an HIV elite controller

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Background: Elite control of HIV infection has been defined as spontaneous and sustained maintenance of HIV RNA to <50 copies/mL in the absence of therapy. It is estimated to occur in approximately 1 in 300 HIV-infected individuals.

Case report: We present the case of a Zimbabwean woman who tested positive for HIV-1 infection on routine antenatal bloods at 15 weeks gestation. Her CD4 count was 500 cells/mm³; however HIV-1 RNA viral load measured below the level of detection on several assays (Roche Cobas Amplicor version 1.5 PCR, bioMerieux NucliSens EasyQ and Versant bDNA v3.0). COBAS AmpliPrep/COBAS TaqMan HIV-1 real time PCR was qualitatively positive but quantitatively less than 40 indicating very low level viremia of between 10–40 copies/mL. Pro-viral DNA was positive using LTR primers. Sequencing from pro-viral DNA demonstrated subtype C virus. Zidovudine monotherapy (250 mg BD) was commenced at 24 weeks for the prevention of mother-to-child transmission (PMTCT). She was keen for a standard vaginal delivery, having had one previously. Screening for other sexually transmitted infections (STIs) was negative and a healthy baby was delivered without complications at 39 weeks gestation. The neonate received 4 weeks of Zidovudine and remains negative for HIV infection to date (6 months old). To provide additional reassurance that this is not a case of under-amplification we await the result of a Cavidi ExaVir reverse transcriptase assay, which does not rely upon sequence-based amplification. Her CD4 count remains stable.

Conclusions: Management of pregnancy in presumed HIV-1 ‘elite controllers’ presents some dilemmas; the option of combination therapy may provide more reassurance about PMTCT despite potential toxicity issues and the limiting of future treatment options, whereas monotherapy is probably adequate for PMTCT and has an established safety profile in pregnancy. Ruling out STIs which may increase viral load locally is important. Patient preferences regarding mode of delivery remain influential.

Planned vaginal delivery in HIV-positive women: how do they actually deliver?

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Background: Following the 2005 and 2008 BHIVA pregnancy guidelines more HIV-infected women are being offered a planned vaginal delivery. Evidence suggests that there is an increased rate of mother-to-child transmission and surgical complications in women having emergency
caesarean sections (CS) compared with those who have a planned CS. In our centre we manage approximately 60 pregnancies per year. This large cohort gives us the opportunity to assess the actual mode of delivery in HIV-positive women being offered planned vaginal deliveries.

Methods: Retrospective data is being collected for all HIV-positive pregnant women in our trust. For this analysis, data for women who booked and subsequently delivered since January 2007 were included. Data being collected include obstetric history, HIV disease parameters, planned and actual mode of delivery and neonatal outcomes.

Results: In a preliminary analysis of 32 women the parity was:p0 = 9, p1 = 13, p2 = 6, p3 = 2, p4 = 2. In total there were 10 (31%) vaginal deliveries, 12 (38%) planned pre-labour CS and 10 (31%) emergency CS. Planned vaginal delivery, dependent on viral load, was indicated for 5/9 nulliparous women at booking and of these the plan was unchanged for 4 women at 36 weeks. Only one of the nine nulliparous women actually had a vaginal delivery with five requiring an emergency CS. Ongoing data collection will allow further analysis to be presented.

Conclusions: In light of the 31% emergency CS rate observed within this cohort, compared to the 10% rate within our trust, these women should be counselled early in pregnancy regarding the risk of emergency CS, particularly in nulliparous women, and the implications that this has on mother-to-child-transmission and maternal morbidity. More data regarding pregnancy outcomes are required to allow HIV-positive women making these important choices to give fully informed consent.

P59
Preconceptions about pre-conception? Development of a dedicated pre-conception clinic for people living with HIV

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Background: As the life expectancy of people living with HIV (PLWH) increases, more HIV-positive individuals are choosing to become parents. There is significant inter-clinic variation on the level of expertise and advice available on this issue. Despite the existence of BHIVA guidelines upon which these complex discussions can be based, this is inevitably a time-consuming process requiring a highly individualized approach. Following a needs-based assessment we have established a specific ‘pre-conception’ clinic for both HIV-positive men and women who wish to have children. As part of this assessment we were able to determine our patients’ current attitudes and understanding of existing parenting options available to them.

Methods: We surveyed consecutive HIV-positive patients attending general HIV outpatient services by means of an extensive, self-completed questionnaire.

Results: Ten percent of respondents believed that it was not possible for HIV-positive women to have HIV-negative children and a further 21% were unsure. Only 21% were aware of the magnitude of the risk reduction afforded by appropriate mother-to-child intervention. Twenty-one percent believed that HIV-positive men could directly transmit HIV to their baby. Fifty percent thought that having started antiretroviral medication in pregnancy, a woman would stay on treatment lifelong, regardless of her immune status. Only 40% knew that caesarean section was not mandatory for delivery but 52% were aware that breastfeeding was contraindicated. Only 33% of respondents would consider adoption.

Conclusions: There is currently a paucity of knowledge and understanding about preconception and parenting options for PLWH. A dedicated preconception service with standardized protocols and written information for patients addressing issues surrounding conception and the sexual transmission of HIV may serve to dispel some of these misconceptions and provide a meaningful service for those who wish to have children.

P60
‘Testing the children’ – are we diagnosing the undiagnosed?

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Background: National guidelines recommend testing all children of parents who are HIV-infected. With a recent study showing that young people with vertically acquired HIV infection are surviving childhood without ART and being diagnosed in adolescence, and a similar case within our cohort, we endeavoured to assess the standard of our practice with regard to testing the children of newly diagnosed HIV-positive patients.

Methods: Casenotes were reviewed of 100 patients who had attended at least 6 months of follow-up between January 2006 and December 2007. Data collected included documentation of the details of patients’ children including current country of residence, age, discussion of their HIV status and subsequent HIV screening.

Results: A total of 50 female and 50 male patient case notes were reviewed. Fifty-nine per cent had children with 104 offspring in total, 69/104 (66%) were under 16 years of age and only 45/104 (43%) children were resident in the UK. In only 11% of cases (all male) parenthood was not documented at all.

We documented discussion of HIV testing of children in 29/59 (49%) patients with offspring. In those 32 parents who had offspring resident in the UK we discussed HIV testing of their children with 19/32 (59%) and 16/19 (84%) had their children tested for HIV.

Of the 45 children resident in the UK, 19 (42%) were tested and none were found to be HIV-positive. Twenty-six of 45 (58%) children resident in the UK were untested and the discussion regarding their HIV testing had not been had with the majority of their parents.

Conclusions: To diagnose undiagnosed HIV within this high risk and vulnerable group we must first assess parenthood and then implement discussion of HIV testing. If discussed, the majority of parents agreed to have their children tested. We must standardize our care such that these discussions take place with every patient, regardless of their gender and the age or health of their children, as soon as possible after diagnosis.

P61
The next generation – a shared care experience of babies born to young women with perinatally acquired HIV–1 infection

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Background: The first generation of perinatally infected women have reached child-bearing age, some are highly treatment experienced with long-term toxicities. Minimal data are available regarding their desire to have children, fertility, pregnancy and outcomes for their offspring. We describe the pregnancy outcomes for young women with shared care at a tertiary referral centre.

Methods: Casenote audit of a cohort of perinatally infected young women receiving shared care in a young persons’ tertiary service.

Results: Twenty-four perinatally infected young women, median age 18.9 years (range 16.3–24.9), 67% black African, 25% Caucasian, reported eight pregnancies in seven women, at a median age 18.1 years (range 16–20.1), four Caucasian, two black African and one mixed race. Two women had 1st trimester miscarriages, two elective terminations and four live births. Of the live births: one mother conceived on HAART, three commenced HAART in pregnancy having previously declined, despite CD4 counts <200 cells/µL. All had prior AIDS diagnoses with a median of five previous ARV regimens. Three had dual-class resistance mutations. In pregnancy one adhered to HAART, two were admitted for.
P62

The value of providing an antenatal and postnatal support group for HIV-positive women

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Background: We have been providing a monthly antenatal and postnatal support group for nearly last 10 years. HIV-positive pregnant women have to deal with many difficult issues, and have very different expectations and goals during pregnancy and after childbirth as compared with HIV-negative women. They are often very isolated and fearful of disclosure of their HIV infection, and the associated stigma. The groups are run by a local voluntary sector organization and an antenatal peer support worker, who is herself an HIV-positive mother. Our HIV specialist midwife attends. The women choose the topics discussed and invite speakers.

Methods: We performed an audit of the women attending the group over the last 18 months. Attendees completed a satisfaction survey after each meeting. We have also had feedback discussions.

Results: In the 18 month period more than 30 individual women have attended at least 1 support group. The average number of attendees was 15 women per group, and they are a variable mix of antenatal and postnatal women. Two hundred and seventy questionnaires have been collected over this time. The overwhelming majority of the women found the meetings to be good or excellent and found the content of the meetings worthwhile. All of them valued the opportunity to meet other women in their situation, including many who had been initially sceptical or reluctant to participate. Issues discussed in the meetings included: HIV therapy; mode of delivery; breastfeeding; disclosure; GPs; obstetric units; HIV sero-discordance; stigma; exercise; isolation; immigration issues; and partner-related issues.

Conclusions: Our antenatal support groups have been very successful and popular with the women. We believe that these findings have wide potential applicability and that all HIV antenatal services should strive to provide at least some kind of support groups for HIV-positive pregnant women and mothers. The Voluntary sector and peer-support workers are an integral part of the success of this process and their contribution should be recognized and formally supported by the statutory sector.

P63

Developing antenatal classes specifically for HIV-positive pregnant women

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Background: In our HIV unit we manage between 30 and 45 HIV-positive pregnancies per year. We have become increasingly concerned that these HIV-positive pregnant women have not had the option to attend routine antenatal classes in our hospital. Antenatal classes are regarded as worthwhile and NICE (National Institute for Clinical Excellence) recommends that all pregnant women in the UK be offered antenatal classes. We decided to explore the opinions of some of our HIV-positive women and HIV-positive mothers regarding the issue, and to review the content of our local antenatal classes.

Methods: We had a consultation process including our antenatal HIV multidisciplinary team including a Voluntary sector advocate, HIV peer-support worker (an HIV-positive mother herself) and HIV-positive pregnant women and mothers. We systematically reviewed the content of our local ‘general’ antenatal classes with a view to redesigning them specifically for HIV-positive pregnant women.

Results: There was overwhelming support for the idea of antenatal HIV classes specifically for HIV-positive women. Almost all HIV-positive pregnant women felt uncomfortable with the idea of going to generic antenatal classes. There are many specific issues relevant to HIV-positive pregnant women, which are not addressed in generic antenatal classes, such as disclosure, discordance and detailed discussion on mode of delivery, HIV-positive women focused on practicalities of bottle-feeding and the stigma of bottle-feeding in social situations. They were also very keen to have yoga classes.

Conclusions: Our research has shown a very significant gap in the provision of optimal antenatal care for HIV-positive women. As far as we are aware these are the first antenatal classes developed specifically for HIV-positive pregnant women, at least in the UK. We have now developed a programme of antenatal classes tailored for women with HIV and are currently refining this in an ongoing process of consultation. We hope that this will be useful in other antenatal HIV settings. We would encourage other units to explore the issue in a similar way.

P64

Acute hepatitis C infection in HIV-1 seropositive subjects with undetectable plasma HIV RNA affects neurocognitive performance

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Background: Central nervous system (CNS) manifestations of chronic hepatitis C (HCV) and HIV infections include neurocognitive impairment. The impact of acute HCV infection on the CNS has not been well described.

Aims: To assess differences in neurocognitive performance between subjects with chronic HIV infection and an undetectable plasma HIV RNA, with and without acute HCV.

Methods: HIV-1 positive subjects on combination anti-retroviral therapy (CART) were eligible to participate. Group 1 (acute HCV) was defined by a positive plasma HCV PCR with a negative PCR in past 6 months. Group 2 (no HCV) required a negative HCV IgG or PCR in past 12 months and normal liver enzymes thereafter. A validated computerized battery assessment (CogState™) was performed. Overall neurocognitive performance and individual task scores were compared between the two groups. Associations were assessed by linear regression modelling.

Results: Ten subjects in Group 1 (mean age 38 years, SD 8) were compared with 45 subjects in Group 2 (mean age 48 years, SD 11). All subjects were receiving CART and had a plasma VL<50 copies/mL. Four of 10 (40%) of Group 1 and 14/45 (31%) of Group 2 met standard criteria for asymptomatic neurocognitive impairment when compared to normative data (P = 0.596, r = 0.07). Analysis of individual cognitive domains revealed Group 1 had statistically significant deficits in the monitoring (divided attention) task (P = 0.038, r = 0.281) when compared to Group 2.

Conclusions: Acquisition of acute HCV in subjects with chronic HIV infection adversely impacts the monitoring domain of neurocognitive performance. This may be related to the chronic fatigue and impaired concentration previously described in chronic HCV infection. Clinicians should be aware of early CNS involvement when assessing and treating subjects with acute HCV infection.
**P65**

**Acute hepatitis C is not associated with abnormal fibroscan readings**

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**Background:** There is an epidemic of acute Hepatitis C, initially described in the UK, and now prevalent throughout Europe and America. Some authors have reported fibrotic changes on liver biopsy, associated with acute Hepatitis C infection, whilst others have reported changes in fibroscan readings associated with this condition.

**Aims:** To assess fibroscan readings in HIV-positive individuals with proven acute Hepatitis C.

**Methods:** Individuals with acute Hepatitis C underwent fibroscanning on a single occasion. Fibroscanning was performed by a single physician experienced in this technique.

**Results:** Twenty-five individuals with acute Hepatitis C were fibroscanned. Median CD4 count (cells/mL) was 461 (range 260–1097), and median HIV viral load (copies/mL) was <50 (range <50 to 391, 572). The median time from acquisition of acute Hepatitis C (as defined by time from first abnormal liver function test), to fibroscanning was 2 weeks (range 1–8). Median ALT (u/L) at time of fibroscan was 155 (range 17–701), and median peak ALT prior to fibroscanning was 307 (21–4918). Fibroscan readings consistent with greater or equal to F2 disease, ie >28 kpa, occurred in one patient.

**Conclusions:** Abnormal fibroscan readings do not occur with acute Hepatitis C. Fibroscanning is therefore not necessary as part of the standard work-up in individuals presenting with acute Hepatitis C.

**P66**

**An observational study of HIV/TB co-infection: presentation and management in an urban NGO clinic in India**

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**Background:** Through the Revised National TB Control Programme in India, efforts are being made to co-ordinate HIV and TB care to facilitate timely commencement of antiretroviral therapy (ART) in those on anti-tuberculous treatment (ATT). We compare TB episodes in HIV-positive and negative patients and describe presentation and ART initiation in HIV-positive patients.

**Methods:** Analysis of all TB presentations from July 1997 to November 2008 taken from clinic database. Further review of 341 most recent consecutively attending TB infected HIV-positive patients. Data gathered on baseline CD4 counts and time to starting ATT.

**Results:** One thousand one hundred and nineteen TB diagnoses were made in 1149 HIV-positive patients and 250 diagnoses in 251 HIV-negative patients. HIV-positive individuals were more likely to present with lymph node TB (P < 0.0001), abdominal TB (P = 0.08) and TB meningitis (P = 0.024) than their HIV-negative counterparts. Of 341 HIV patients, 161 (47.2%) were new HIV diagnoses. Two hundred and twenty-eight of 341 patients had baseline CD4 counts available at TB diagnosis; median CD4 131 cells/µL (range 6–931) for those with pulmonary TB and 111 cells/µL (range 13–625) for those with extra-pulmonary TB. Ninety of 228 (40%) presented with CD4 count <100 cells/µL, 80/228 (35%) with CD4 100–200 cells/µL and 58/228 (25%) with CD4 >200 cells/µL. Thirty of 341 patients already on ART, 110/341 started ART after TB diagnosis; 36/110 (33%) started after induction phase ATT with median CD4 71 cells/µL, 34/110 (31%) started >180 days after starting ATT with median baseline CD4 108 cells/µL. In 50 patients ART was delayed (CD4 <100, ART started >60 days; CD4 100–200, ART started >180 days); 5 had ATT toxicity, 7 had clinical relapse/treatment failure, 6 had an intercurrent illness, the rest had patient related reasons or the reason was not known.

**Conclusions:** HIV/TB patients are presenting late and with more EP disease. There are significant delays in starting ATT for reasons which are not always clear. We emphasize the need for strengthening collaboration between TB and AIDS control programmes.

**P67**

**Characteristics that distinguish disseminated Mycobacterium tuberculosis (MTB) and non-tuberculous mycobacterial infection (NTM) in HIV-infected patients**

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**Background:** Features distinguishing disseminated MTB and NTM in advanced HIV disease in the HAART era remain poorly studied. We describe clinical, laboratory and radiological features of disseminated MTB and NTM and identify discriminating parameters.

**Methods:** Multicentre, retrospective review of all patients with culture-proven disseminated mycobacterial infection (≥2 non-contiguous sites, or positive blood or bone marrow cultures) from 2005–2007. Patients were stratified by causative pathogen. Clinical, laboratory and radiological features were described and compared by Fisher’s exact test or by rank sum test.

**Results:** Forty patients (73% Black African, 50% male, median age 35 years) had disseminated mycobacterial infection (28 MTB, 12 NTM [11 due to M. avium complex]). Clinical characteristics were non-discriminatory. Patients with NTM had lower CD4 counts (all had CD4 <100 cells/µL) (P = 0.01), more often prior/concomitant AIDS-defining illnesses (P < 0.001) and more often initiated HAART prior to mycobacterial disease (P = 0.01). Patients with MTB more often had parenchymal lung disease (P = 0.06), whilst thoracic/abdominal lymphadenopathy was common in both groups (P = 0.69). Although no patients with NTM had positive respiratory acid fast bacilli (AFB) smears, yield of mycobacterial culture of respiratory specimens was similar (P = 1.00). Blood cultures were more often diagnostic in patients with NTM (P = 0.05). Bone marrow smears were diagnostic in all patients. Immune reconstitution disease was common (43% MTB versus 33% NTM, P = 0.72), and mortality 7% among MTB and 33% in NTM cases (P = 0.05).

**Conclusions:** Clinical and laboratory characteristics of patients with MTB and NTM overlap, but prior/concomitant AIDS-defining illnesses, recent initiation of HAART, and CD4 <100 cells/µL favour NTM, whilst parenchymal lung changes and positive respiratory AFB smears favour MTB. NTM patients have more advanced HIV infection and higher mortality. A diagnostic and treatment algorithm will be presented at the conference.

**P68**

**Detecting, preventing and monitoring hepatitis B infection in HIV-positive patients**

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**Background:** BHIVA recommends that HIV-infected individuals should be screened for Hepatitis B virus (HBV) infection and all non-immune patients vaccinated. This audit addresses our performance in appropriately screening for, vaccinating against and monitoring HBV infection.

**Methods:** Case notes of 150 consecutive patients who have been attending our clinic for their HIV care for at least a year were retrospectively reviewed. In each case, HBV serological testing and vaccination status was recorded.

**Results:** One hundred and thirty-three (89%) were appropriately screened for HBV infection. Thirty-five patients (23%) had evidence of previous or current HBV infection. Of the 98 patients deemed eligible for vaccination, 80 (82%) had completed at least one course of vaccination, 2 commenced but did not complete and 16 were not vaccinated. At time of analysis, 39% (31/80) were successfully vaccinated against HBV infection, with documented HBV surface antibody (HBsAb) titres >100 IU/L. Despite receiving a second course of vaccination, 30% (24/80) had no detectable HBsAb. Nineteen had low level HBsAb (10–100 IU/L) and six did not have a post-vaccination HBsAb measured. Thirty-two of the 150 patients were
HBV core antibody (HBeAb) positive but surface antigen (HBsAg) negative. Thirty-eight percent (12/32) had HBV DNA performed in the last year to monitor for HBV reactivation.

Conclusions: Most of our patients were screened in keeping with BHIVA guidelines. A significant proportion remain at risk of HBV infection as a result of failing to respond immunologically to vaccination and should be screened annually for HBV infection. We plan to extend the study to include our entire HIV cohort. Improvements in documentation and vigilance of medical are paramount for effective prevention and detection of HBV infection in HIV-positive patients.

P69
Effect of raltegravir on ALT in subjects coinfected with HIV and hepatitis C
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Background: Raltegravir is an HIV integrase inhibitor with low rates of toxicity in clinical trials. Alanine transferase (ALT) elevations are a common antiviral side effect particularly in those with hepatitis C (HCV) co-infection.

Methods: A prospective, longitudinal, single centre, cohort analysis was performed. Patients coinfected with HIV and HCV were switched to a raltegravir-containing regimen. ALT levels were documented at 3 months and 1 month prior to switch, then at baseline, 1 and 3 months after switching raltegravir. Individuals who commenced HCV treatment during this period were excluded.

Results: Thirteen patients coinfected with HIV and HCV were switched to raltegravir, seven from a PI-based regimen, four from an NNRTI and two from an NRTI-only combination. Mean (SD) ALT at baseline and three months was 247 U/L (111) and 176 U/L (223) respectively. Eight patients experienced sustained improvements in their ALT at 3 months. The reduction in mean ALT from baseline to 3 months after commencing raltegravir was not statistically significant (P = 0.1, Wilcoxon signed rank test). All had undetectable HIV viral load prior to switch and one patient had undetectable viral load (2641 copies/mL) 6 months after switch.

Conclusions: HIV and HCV coinfected individuals appeared to show improvements in their mean ALT following switch to a raltegravir-based regimen. Although this result was not statistically significant, further investigation in larger cohorts is warranted.

P70
Entecavir safety and virological response in lamivudine- and tenofovir-experienced HIV/HBV co-infected patients
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Background: Entecavir (ETV) has been approved for use as first-line treatment in HBV mono-infected patients by NICE since 2008. There has been only one study using ETV with tenofovir (TDF) as a rescue therapy in chronic HBV infected patients with prior treatment failures. ETV has been reported to have anti-HIV activity and there are reports of HIV resistance appearing following ETV usage without ART. We report data using ETV along with anti-retroviral therapy (ART) in HIV/ HBV co-infected patients with previous HIV therapy failure or inadequate suppression.

Methods: Retrospective data collection of demographic (age, sex, origin), HIV (previous and current ART, HIV VL) and HBV (previous and current HBV therapy, HBV VL, HBV eAg/eAb/sAg/sAb).

Results: Eleven HBV/HBV co-infected patients taking ETV identified (10 males, 1 Caucasian, mean age 43 years, median time of HIV infection 11 years (4–22), median time of ART 46 months (16–192), all HBeAg positive). Eight patients with previous exposure to TDF and LAM/FTC [median 15 months (6–96) anti HBV therapy] as part of ART (all PI based) had ETV added to their therapy as HBV was not suppressed [median HBV VL 6494 IU/mL (339–2 × 10^6)], while HIV VL was <40 copies/mL in 4 and <500 copies/mL in the other four patients. Following a median of 39 weeks (24–76) of ETV/FTC/DF therapy HBV VL decreased to median 25 IU/mL (7–809) while HIV VL was totally suppressed in 7/8, 105 copies/mL in 1 pt. ART was modified in 1 patient during this period. One of 8 patients lost eAg during observed period. In the other three patients TDF was stopped due to renal toxicity and ETV was added to their ART regimen [median ART 156 months (44–168); median anti HIV therapy 99 months (10–125)]. Median HBV VL decreased from 1.2 × 10^7 IU/mL to 809 IU/mL after median 45 weeks (18–71) of ETV therapy. There were no ETV-related adverse reactions reported and no decline in eGFR during the observed period.

Conclusions: Entecavir is safe in HBV/HIV co-infected treatment experienced patients with ARV treatment, with 1/11 losing HBeAg.

P71
Integration of routine symptomatic TB screening in resource-limited HIV clinic settings
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Background: Kenya has been ranked as one of the 22 countries that contribute to 80% of the world’s TB cases. Intensified case finding was identified as one of the key strategies in the fight against TB and HIV co-infection in Kenya. Liverpool VCT Care and Treatment (LVCT) piloted routine TB screening for all patient visits in 3 outpatient HIV care clinics in Nairobi and Kisumu in Kenya. The objective was to show that screening of all HIV patients during their clinic visits is a simple, practical and effective way to detect TB early and improve treatment outcomes.

Methods: All patients visiting HIV clinics for initial or routine visits were assessed for presence of TB symptoms through the use of a simple TB symptom check list attached to patient files. This was carried out at every contact with the HIV clinician. The TB symptom checklist enquired about the presence of cough for two weeks or more, night sweats, fever, weight loss or contact with a TB patient. Patients with positive responses were all referred for sputum for acid fast bacilli and chest X-ray.

Results: During the period February–December 2008, symptomatic screening was carried out for a total of 11,628 client visits. Of all these screened, 438 patients (3.7%) were referred for investigations (sputum and chest X-ray) for TB, and 60 patients (0.51%) were diagnosed with TB. Those diagnosed had low CD4 accounts averaging 123 cells/uL prior to diagnosis. These patients included those who had failed to report TB symptoms as their main complaint during the visit.

Conclusions: Symptomatic TB screening in HIV clinic settings can be done in resource limited settings and should be rolled out to all centres as a way of reducing the burden of TB on PLWHA.

P72
Introducing a protocol for diagnosing and treating latent tuberculosis in newly diagnosed HIV patients: feasibility and cost-effectiveness
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Background: Due to the synergy between tuberculosis and HIV infection and the increased risk of progression from latent to active TB in co-infected patients, there is some evidence that we should screen and treat our HIV patients for latent TB. Thus far, interferon gamma release assays have not been routinely used in our HIV service. We aimed to assess the potential impact of introducing latent TB screening for newly diagnosed HIV patients.
Methods: We audited TB screening in all 101 newly diagnosed HIV patients in 2007. The data were cross-referenced with the TB Clinic. Costs for introducing a screening programme using Quantiferon TB Gold were estimated.

Results: Seventy (70%) patients with newly diagnosed HIV were born in Africa, 18 (18%) were UK born. Eighty-three (83%) patients had chest X-rays at diagnosis. Three patients were screened for latent TB at the time of their HIV diagnosis. A further 21 were screened as part of other screening programmes. Of the 24 patients screened, four tests were found to be abnormal and three patients received treatment for latent TB infection. Introducing a new screening and treatment programme would cost between £12,760 and £23,720 per year (latent TB rate 20–40%). This compares with costs of treating the cases of active TB of £14,776 to £53,194 (progression rate latent to active TB 20%–40%).

Conclusions: A minority of newly diagnosed HIV patients are currently being screened for latent TB infection. The majority of patients (70%) are eligible for screening as part of the new entrant screening programme reflecting the fact that our cohort is at high background risk of TB infection. In consultation with Microbiology, Public Health and the TB Clinic we propose a protocol for screening newly diagnosed HIV patients. We are cognizant of the limitations of Quantiferon TB Gold in those with low CD4 counts, the importance of excluding ‘atypical’ active TB in those who test positive and the need to avoid both delay in the initiation of antiretrovirals and burdensome polypharmacy.

Telbivudine (LdT) has activity against HIV-1
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Background: LdT is a L-nucleoside analogue of thymidine with activity against hepatitis B virus (HBV). Recommendations from the HIV-HBV International Panel state that LdT has no activity against HIV and it is suggested as a treatment option for HBV infection, when HIV does not require therapy. We report the case of a patient with HIV/HBV coinfection in whom LdT therapy suppressed his HIV viral load (VL) to less than 50 copies/mL.

Case report: A 45-year-old man with HIV-1/HBV coinfection was noted in February 2006 to have reverted from HBeAg-negative and anti-HBV-positive to HBeAg-positive and anti-HBV-negative with a serum HBV DNA rise from 8,820 copies/mL to 33,600,000 copies/mL. He was antiretroviral and HBV therapy naïve. His CD4 count was 613 cells/mm³ and HIV VL was 14,462 copies/mL. In January 2008 his dual therapy for his HBV alone. With a CD4 count of 640 cells/mm³ it was decided to treat with adefovir (ADV) and LdT. After 2 months his HBV DNA fell to 2,782 copies/mL and his HIV VL to less than 50 copies/mL. This was confirmed on repeat blood tests 4 weeks later. LdT was discontinued 5 months after it was commenced. At the time of discontinuation of LdT his HIV VL had increased to 127 copies/mL and then rebounded to 3903 copies/mL 1 month later. Three months after discontinuation, the patient agreed to re-challenge with LdT for 2 weeks. On the day of re-starting his HIV VL was 1074 copies/mL, at 1 week it was 177 copies/mL and 2 weeks later 71 copies/mL (Roche VL detection assays readings were 429 at baseline, 227 at 1 week and less than 47 copies/mL at 2 weeks). The patient had remained on adefovir since commencing antiviral therapy in February.

Conclusions: We believe that LdT may have activity against HIV and until further trials have been done it should no longer be recommended as a treatment for chronic hepatitis B in HIV-positive individuals who do not require therapy for their HIV.

The frequency of hepatitis C virus (HCV) persistence in peripheral blood mononuclear cells (PBMCs) of patients with previous HIV/hepatitis C co-infection
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Background: Although hepatocytes are the primary site for HCV replication there is evidence of replication in PBMCs, especially in HIV-positive individuals. Loss of plasma HCV RNA due to spontaneous or therapeutic clearance is thought to indicate clearance of the virus from PBMCs and the liver. However in recent data there are conflicting reports on the persistence of HCV RNA in PBMCs and livers of mono-infected individuals who achieve a sustained virological response (SVR) to anti-HCV therapy. This has not yet been assessed in HIV/HCV co-infected individuals.

Methods: Participants were identified from the combined HIV/Hepatitis clinic. Patients were recruited if they fulfilled one of the following criteria: previous spontaneous clearance of HCV, previous acute or chronic HCV achieving a SVR following therapy, HCV PCR was performed using the Roche Amplicep/COBAS TaqMan system. Written informed consent was obtained from all participants. Ethics approval was obtained from the Ealing & West London Mental Health Trust Research Ethics Committee on the 9th May 2007. Funding was received from BHIVA Research Awards 2007.

Results: Twenty-five individuals were recruited, of which 7 had spontaneously cleared HCV, 7 had achieved SVR following therapy for acute HCV and 11 following therapy for chronic HCV. No participants demonstrated HCV persistence in either plasma or PBMCs.

Conclusions: The absence of HCV RNA in PBMCs of 25 previously HIV/HCV co-infected individuals is reassuring. Persistence of HCV RNA in reservoir sites could lead to HCV relapse in immunocompromised patients. The fact that persisting HCV RNA cannot be detected in PBMCs suggests that loss of serum HCV RNA 6 months after therapy can be used as a marker of treatment success. Patients can be reassured that achieving a SVR correlates with viral clearance. In addition the absence of HCV RNA in PBMCs in these individuals adds weight to recent studies suggesting that individuals with subsequent HCV positivity is due to re-infection rather than relapse. (BHIVA Research Award Winner 2007: Study to assess the frequency of persistence of hepatitis C virus in peripheral blood mononuclear cells of patients with previous HIV/hepatitis C co-infection, Emma Low)

The impact of hepatitis B and C co-infection on antiretroviral outcomes in Malawi
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Background: Few data exist on the effect Hepatitis B [HBV] and C [HCV] co-infection on antiretroviral therapy [ART] in developing world HIV cohorts. We describe the first prospective cohort study from a typical developing world HIV cohort to investigate key first-year ART outcomes according to chronic viral hepatitis (CVH) status.

Methods: We prospectively followed 300 adult Malawians starting stavudine, nevirapine and lamivudine within the national ART program. Monthly clinical follow-up and regular laboratory monitoring took place. CVH status (HBsAg and HCV Ag/Ab) was determined post hoc. After 1 year adverse events and ART outcome measures were assessed according to CVH status.

Results: Of 300 patients, 14% had CVH co-infection (HIV/HBV 6.7%; HIV/HCV 5.7%; HIV/HBV/HCV 1.7%). There was no significant difference in baseline characteristics of those with or without CVH. Seventy percent of patients completed 1 year ART (CVH– 70% versus CVH+ 76%). There
was no significant difference in the reason for stopping ART between the 2 groups including death (CVH- 13.6%, CVH+ 11.9%), abscended (CVH- 2.3%, CVH+ 2.4%) and side effects (CVH- 4.6%, CVH+ 0%). No major differences in morbidity occurred, including severe skin rash and hepatotoxicity. ART markers of success (viral load, CD4) were similar after 1 year.

Conclusions: Among Malawians starting nevirapine, lamivudine and stavudine under routine circumstances, CVH was very common but does not appear to have a significant negative influence on ART outcome and side effects after 1 year. This is likely to be due to the huge impact of other opportunistic infections. In resource poor settings, costly monitoring of CVH appears not a priority.

P76 A descriptive study of anti-retroviral therapy combinations in patients with HIV-related neurocognitive impairment

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Background: Despite a decreased incidence of severe HIV-related neurocognitive impairment (HRNCI) due to improved anti-retroviral therapy (ART), late presentation of HIV means that HRNCI remains a significant clinical problem. Further, HRNCI may develop despite ART, and an ageing HIV-positive cohort presents additional risks for other neurocognitive impairment. Evidence is conflicting as to whether ART cerebrospinal fluid (CSF) penetration correlates with improved neurocognitive outcomes in the management of HRNCI. This study explores physician prescribing of ART if HRNCI has been diagnosed. A retrospective descriptive casenotes review of ART prescribed by physicians referring patients to an urban centre for HRNCI rehabilitation.

Methods: Cases had an HRNCI diagnosis and were on ART at admission. HRNCI was categorised: HRNCI only; HRNCI with risk factors (alcohol, recreational drugs, hepatitis C) or HRNCI with intracranial opportunistic infection (OI) (with and without risk factors). ART were scored according to an available rank of CSF penetration effectiveness (CPE): low (0); intermediate (0.5); high (1). Each combination was given an additive score.

Results: Fifty-seven cases were reviewed: 40% female; median age 43 (20–72); 40% Black African; 24% MSM; 16% IDU; 45% new HIV diagnoses. CD4 median 70 (0–608). Forty-seven percent had additional HRNCI risk; 33% had intracranial OI. Fifty-one percent had depression. ART CPE scores: ≤1: 37%; 1.5–2: 38%; 2.5–3.5: 25%. Of the new HIV diagnoses, 35% had a CPE score of ≥2, though 33% were not on a high rank ART. ART score did not vary according to severity of HRNCI, nor whether there was no additional HRNCI risk versus OI. 17.5% of cases appeared to have been prescribed a specific or additional ART for the purposes of CSF penetration.

Conclusions: A proportion of patients with HRNCI were not on drugs with a high CPE rank. In some cases ART had been selected or added for the purpose of increased CSF penetration. Physician choice of ART in HRNCI appears highly variable.

P77 Anaemia in a rural cohort of HIV-infected Ugandans receiving either AZT or non AZT-containing antiretroviral regimens

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Background: There is a high background prevalence of HIV associated anaemia in sub-Saharan Africa and there is concern that this may be exacerbated by ART roll-out. We present the incidence of anaemia in patients treated with AZT or non-AZT containing ART regimens within a rural HIV infected Ugandan cohort.

Methods: One thousand five hundred and nineteen HIV-infected adults (CD4 <200 cells/ul) were studied in a double blind randomized controlled trial of primary prophylaxis of cryptococcal disease in rural South West Uganda (200 mg fluconazole 3x/week versus placebo). Participants received a backbone of two nucleoside/nucleotide reverse transcriptase inhibitors [AZT, 3TC, d4T, emtricitabine (FTC) or tenofovir (TDF)], depending on the service provider and availability of supply, in combination with either nevirapine or efavirenz. Hb was measured at screening, every 2 months and if the participant was unwell. Eight hundred and seventy participants who commenced ART a minimum of 48 weeks before the end of the trial were analyzed.

Results: One hundred and sixty-three participants (18.8%) received AZT/3TC, 640 (75.5%) received 3TC/d4T and 66 (7.6%) received a TNF-based regimen (one patient received a non-standard regimen). The baseline mean Hb was 13.4 g/dL (95% CI 11.3–15.1). After initiating ART there were 17 cases of severe anaemia over 48 weeks (cumulative incidence rate 2.0%) with a median time to the first episode of 38 days (IQR 14 to 60 days). The cumulative incidence of severe anaemia by ART regimen was 2.5% (4/163) on AZT/3TC, 1.7% (11/640) on 3TC/d4T and 3.0% (2/66) on TNF-based regimens. The mean increase in Hb was 1.3 g/dL (95% CI 1.1–1.4), with a mean increase per regimen of 1.0 g/dL (95% CI 0.6 to 1.3) on AZT/3TC, 1.4 g/dL (95% CI 1.2 to 1.6) on 3TC/d4T and 0.8 g/dL (95% CI 0.2 to 1.3) on TNF-based regimens.

Conclusions: Although mean Hb increased in participants on all ART regimens, significant anaemia occurred after starting ART in patients who received both AZT or non-AZT containing regimens. Monitoring of Hb should be emphasized in roll out programmes irrespective of ART regimen.

P78 Are we adequately considering drug interactions when prescribing statins to patients on cART with dyslipidaemia?

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Background: HIV and combination antiretroviral therapy (cART) are associated with increased cardiovascular risk. HMG-coenzyme A reductase inhibitors (statins) are commonly used in HIV-positive patients and are subject to pharmacokinetic and pharmacodynamic drug interactions with cART, resulting in loss of effect or toxicity.

Methods: Patients prescribed cART plus a statin were identified. Lipid profiles were audited against the Joint British Societies’ guidelines standards (total cholesterol (TC) <5; calculated LDL <3). Statin doses were compared to local guidelines that consider interactions with cART.

Results: Five hundred and fifty patients were identified. Statins comprised atorvastatin 482 (87.6%), pravastatin 43 (7.8%), rosuvastatin 24 (4.4%) and simvastatin 1 (0.2%). Thirteen percent were prescribed other lipid lowering agents (e.g. fibrates, ezetimibe). Concomitant cART contained an NNRTI 267 (49%), PI 232 (42%), NNRTI-PI 40 (7%) and no NNRTI or PI 11 (2%). Thirty-eight percent of patients prescribed a statin on NNRTI-based cART were currently achieving TC <5 (atorvastatin 40%, pravastatin 24%, rosuvastatin 17%) compared to 46% on PI-based cART (atorvastatin 49%, pravastatin 22%, rosuvastatin 25%). Similar results were seen with calculated LDL and TCHDL ratio. Patients on NNRTI-based cART were frequently prescribed statins at doses lower than recommended (atorvastatin 32%, pravastatin 40%). Sixteen percent on PI-based cART+ atorvastatin were prescribed the maximum atorvastatin dose recommended or above. In patients failing to achieve TC targets, all on NNRTI-based cART had the potential for an increase in statin dose.

Conclusions: Many patients fail to achieve target lipid parameters. There is evidence of suboptimal dosing of statins in patients on NNRTI-based cART. Seemingly appropriate dosing of patients on PI-based cART does not translate to adequate TC response. Managing hyperlipidaemia in HIV-positive patients
on cART is complicated by drug interactions; however other factors such as poor adherence to statins or diabetes may contribute to this complexity.

P79
Cardiovascular risk assessment and reduction in patients on abacavir
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Background: The use of abacavir (ABV) may be associated with an increased risk of cardiovascular disease and myocardial infarction in HIV-positive patients.

Methods: Patients on ABV attending the Infectious Diseases Unit from October 2007 to October 2008 were stratified according to predicted 10-year risk of coronary heart disease (CHD), as determined by the Framingham equation. Patients were classified as high (>20%), moderate (10–20%), low (<10%) or unknown risk. The case notes of patients classified as high or moderate risk were reviewed, and data was collected on smoking status, hypertension and dyslipidaemia. Risk reduction was reviewed in terms of provision of smoking cessation advice, anti-hypertensive therapy, lipid-lowering medication and dietary assessment.

Results: Of the 189 patients identified, eight patients were classified as being at high 10-year risk of CHD and 18 at moderate risk. Of these 26 patients, 17 were classed as current smokers, nine of whom had been counselled regards cessation. Twenty patients were classified as dyslipidaemic, 50% of whom were on lipid-lowering medication. Of those patients with high lipids, 18 had received dietary advice and one had been offered advice but declined. Of the 17 patients classified as hypertensive, nine had been commenced on anti-hypertensive medication. One patient had a myocardial infarction (MI) whilst taking ABV and a further four patients had cardiovascular events. Discussion of the potential increased risk of cardiovascular disease in patients on abacavir was documented in only five of 26 cases, and a change in therapy suggested in three of these cases.

Conclusions: (1) Cigarette smoking remains a significant risk factor in HIV-positive patients on highly active anti-retroviral therapy. (2) Treatment of hypertension and dyslipidaemia needs to be optimized in patients taking abacavir. (3) More accurate documentation of cardiovascular risk assessment and management is required.

P80
Cardiovascular risk is dramatically increased when Framingham risk is adjusted for anti-retroviral therapy in an HIV-positive cohort
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Background: Framingham risk percentages are often used in clinics and in this study we adjust risk percentages using the relative risks obtained from the D:A:D study to examine the impact on the cohort.

Aims: The study aimed to identify patients who should be considered for medical treatment to prevent cardiovascular disease (CVD) when their Framingham risk was adjusted for anti-retroviral therapy.

Methods: Case note review of 328 consecutive patients attending two HIV clinics. Demographics were collected and Framingham risk percentages were calculated and then adjusted for male South Asian ethnicity and current antiretroviral drug use. Patients whose adjusted risk exceeded ten or twenty percent were identified and examined further as these patients may benefit from medical therapy to reduce their CVD risk.

Results: Three hundred and twenty-eight patients were included. The mean adjustment to the CVD risk was 55%. The mean adjusted risk was higher in smokers (8.9 versus 8.5; P = 0.73), patients aged above 40 (14.4 versus 4.6; P < 0.0001) and men (11.1 versus 2.2; P < 0.0001). Sixty-two (19%) of patients had adjusted risks greater than ten or twenty percent compared to the unadjusted score. These patients had similar CD4 counts (mean 451 versus 460; P = 0.79), but were older (median 46 versus 37; P < 0.0001), more likely to have hypertension (27% versus 10%; P = 0.0006) or hyperlipidaemia (39% versus 13%; P = 0.001) but were not necessarily smokers (29% versus 34%; P = 0.55).

Conclusions: Adjusting for antiretroviral drug use in our cohort dramatically increases the estimated CVD risk and may necessitate medical therapy where it was previously not thought to be indicated. These findings were apparent in older, hyperlipidaemic and hypertensive patients, but not smokers. The medical care of HIV-positive patients has to be adapted to the medical needs of the ageing population.

P81
Change in plasma homocysteine not a possible biological mechanism for potential increased risk of MI seen in patients taking abacavir
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Background: Elevated levels of plasma homocysteine, has been implicated as a potential risk factor in the pathogenesis of cardiovascular disease. Recently, use of abacavir has been reported to be associated with a 90% increased risk of myocardial infarction (MI). We postulated that the potential increased risk seen with abacavir might be associated with an increase in plasma homocysteine level and conducted a small pilot study to investigate such association.

Methods: This was a prospective pilot study on 10 consecutive patients, attending an HIV outpatient clinic at University Hospital Birmingham, who were currently taking a Highly Active Antiretroviral Therapy (HAART)-based regimen containing abacavir. Consenting patients were invited to attend the Department after a 12-hour fast for measurement of plasma homocysteine.

Results: Nine of the 10 patients invited to take part in this pilot study agreed to participate. Eight of the nine study patients had a viral load of less than 40 copies/mL, and CD4 counts of above 350 cells/mm³. At the time of study, patients have been on abacavir-containing HAART regimens for a median of 96 (54,192) weeks. Their cumulative exposure to abacavir was 227.6 person years. Five patients had a 10-year CVD risk of more than 20% on Framingham score. The median homocysteine level of study patients was 9.8 (5.9, 11.3) micromol/L (reference range 5–15 micromol/L).

Conclusions: No relationship between current use of abacavir and elevated homocysteine was found.

P82
Nevirapine hypersensitivity in Malawi: a prospective cohort study
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Background: At least 1 million patients need antiretroviral therapy in Malawi. Nevirapine (as part of HAART) is given first line to all patients without prior CD4 count monitoring. Nevirapine hypersensitivity has been observed worldwide, but data on its epidemiology in African countries are lacking. Caucasian patients who have rapid dose escalation, abnormal baseline liver function tests (LFT) or are females with CD4 cell counts>250 are at higher risk.
Methods: Antiretroviral naïve patients (n = 800) commencing nevirapine-based therapy were followed up for 26 weeks March–December 2007 at the Queen Elizabeth Central Hospital, Blantyre, Malawi. All patients underwent careful clinical assessment, with monitoring of laboratory parameters. HSR was defined as either severe rash requiring treatment interruption and/or jaundice. Asymptomatic patients with abnormal LFTs were closely monitored according to local guidelines.

Results: Forty-one individuals (5.1%) developed a HSR. Of these, 27 (65.8%) had a maculopapular eruption, 5 (12.2%) developed Stevens-Johnson syndrome and two patients developed toxic epidermal necrolysis. Six (22%) patients discontinued due to clinical jaundice. Five patients developed ALT> 5x ULN but remained asymptomatic; their LFTs subsequently returned to normal despite continuing on nevirapine. Overall, male patients were 1.6 times more likely to develop HSR than female patients but this was not statistically significant. Analysis by gender showed that females with CD4 >250 were not at higher risk (RR 1.48, 95%CI 0.58–3.80). Abnormal baseline LFTs and a BMI<18.5 did not predispose to the development of HSR. Seventy-eight patients (9.8%) died from opportunistic infections, while 1 patient died from fulminant liver failure caused by nevirapine.

Conclusions: Our data show that the incidence of nevirapine hypersensitivity is similar to that reported in Caucasians, but the risk factors seem to be different.

P83 Didanosine-induced liver disease: report of three cases
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Background: Recently didanosine (DDI) has been implicated in causing chronic liver disease (CLD) and portal hypertension after prolonged exposure. We report three cases of CLD associated with prolonged DDI exposure and rapid biochemical improvement after substituting different antiretrovirals (ARV) for DDI.

Case reports: (1) A 49-year-old white male taking DDI from January 2003 to May 2007. Liver function tests (LFTs) became deranged in 2003 shortly after commencing DDI. Ultrasound in 2006 showed an echobright liver. Endoscopy in 2007 showed portal hypertension (varices). Liver biopsy showed cirrhosis with steato-hepatitic features. Hepatitis B, C and autoimmune disease were excluded. LFTs began to improve 2–3 months after changing the ARV regime. (2) A 44-year-old black female taking DDI from April 2004 to December 2007 developed ascites and deranged LFTs towards the end of 2007. Endoscopy revealed gastritis and varices. Serum-ascites albumin gradient was 22. Albumin was initially normal but then dropped. Abdominal CT showed hepatic architectural changes and ascites. Liver biopsy showed non-cirrhotic portal hypertension. Hepatitis B, C and autoimmune disease were excluded. LFTs began to improve soon after substituting abacavir for didanosine. (3) A 46-year-old white male taking DDI from December 1999 to January 2005. He had multiple AIDS-defining illnesses including abdominal Mycobacterium avium infection. He had resolved hepatitis B infection and suspected, but not confirmed, portal vein thrombosis. Active hepatitis B, C and autoimmune disease were excluded. He had de-ranged LFTs for many years including before starting DDI, but these worsened after starting DDI. Serial ultrasounds showed an echobright liver. Endoscopy in 2000 showed varices. Liver biopsy in 2005 showed mild portal fibrosis and collagen deposition.

Conclusions: These cases are consistent with observations linking DDI to liver disease. The time to observed improvement of LFTs after substituting DDI for different ARVs was 2–3 months in these patients, which is shorter than has previously been described.

P84 High rates of asymptomatic neurocognitive impairment (aNCI) in HIV-1-infected subjects receiving stable combination antiretroviral therapy (CART) with undetectable plasma HIV RNA
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Background: In the post-CART era neurocognitive impairment (NCI) remains prevalent affecting quality of life and adherence to antiretroviral therapy. A paucity of data exists describing the prevalence of NCI in HIV-1 infected patients stable on CART.

Aims: To assess the percentage of HIV-1 infected subjects stable on CART with asymptomatic NCI (aNCI) in a large UK clinic.

Methods: Patients receiving CART with plasma HIV RNA <50 copies/mL for a minimum of 3 months with no neurological symptoms were eligible. After appropriate training, a validated computerized neurocognitive assessment was performed (CogStateTM). aNCI was defined as per standard criteria: performance greater than 1SD below the age-stratified normative mean in at least two cognitive domains. Factors associated with the presence of aNCI were assessed by linear regression modelling.

Results: Forty-five (84% male) patients participated. Mean age 48 (SD 11) years and mean current CD4 count 546 (SD 271) cells/uL. aNCI was observed in14/45 (31%) subjects. No statistically significantly associations were observed between current or nadir CD4 count, time since HIV diagnosis or type of HAART (NNRTI versus boosted PI) and presence of aNCI (P > 0.27 for all observations). Interestingly aNCI was statistically significantly associated with younger age (P = 0.03, r = 0.32, 95%CI -0.026, -0.001). aNCI was present in 54, 27, 36 and 9% of subjects in ascending inter-quartile age groups [24–39; ref, 40–49; P = 0.164, 50–56; P = 0.351 and 57–67; P = 0.019, years; individual P-values respectively, P-value for trend = 0.118].

Conclusions: We have observed high rates of aNCI in a UK cohort of patients stable on CART, particularly in younger individuals. Possible explanations for these findings include an increased susceptibility of younger adults to the effects of HIV on the brain or differing education and socioeconomic status between our cohort and control data.

P85 Abstract withdrawn
P86
Opportunistic infections in Sri Lankan HIV patients and their relationship to CD4+ T cell counts

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Background: Over the past years there has been a gradual increase in the incidence of HIV in Sri Lanka. Many patients were identified when they presented to hospitals with various opportunistic infections (OIs). The pattern of OIs can vary from one country to another. We wished to document the common OIs among Sri Lankan HIV patients.

Methods: Patients with HIV admitted to the Infectious Diseases Hospital from 1 July 2003 to 30 June 2008 were studied. Demographic patterns, clinical findings and CD4+ T cell counts were recorded serially. The correlation between the CD4+ T cell counts and the observed OIs were analyzed and compared with data from Thailand.

Results: One hundred and thirty-three HIV patients were admitted during the study period. Mean age 38.1 years (SD – 11.2 years), M:F ratio was 1.3:1. The OIs seen were tuberculosis (TB) (21%), oesophageal candidiasis (OC) (17.2%) and Pneumocystis pneumonia (PCP) (17.2%). While PCP and OC occurred in patients with CD4+ T cell counts less than 200, TB occurred in patients with even higher CD4+ T cell counts. Eighty percent of the TB was extrapulmonary.

Conclusions: While the prevalence of TB, OC and PCP among Sri Lankan HIV patients was similar to Thailand there are significant differences in the frequency of some other OIs such as Cryptococcal meningitis and Salmonella septicaemia which were uncommon in the Sri Lankan cohort. Herpes zoster and Kaposis sarcoma commonly seen in the African cohorts was also uncommon. Understanding the pattern and frequency of OIs among Sri Lankan HIV patients helps us with suspecting, diagnosing and managing our HIV patients.

P88
Thalidomide use in the treatment of persistent hypertrophic herpes simplex virus ulceration in an HIV-positive patient

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Background: Herpes simplex virus (HSV) ulcerations are more common in immunocompromised individuals and in HIV-positive patients are more frequently resistant to conventional treatment regimens.

Case report: We report a case of a 36-year-old HIV-positive man who presented with hypertrophic HSV lesions on his penis. His initial presentation to the GU services was 4 years ago with painful penile ulcers and HSV type II was isolated on culture. His nadir CD4 count was 160 (6%) and he was commenced on HAART consisting of lamivudine, didanosine and efavirenz. He had rapid immune recovery with a CD4 count of 370 cells (10%) 4 weeks after initiation of HAART. At this time, he presented with an indurated mass on the left side at the base of the penis which responded to high-dose valacyclovir therapy. The lesion healed after 9 months and the patient remained asymptomatic for 3 years. A year after HSV suppression therapy was discontinued he presented with a hypertrophic lesion on the penile shaft. His CD4 count was 296 (20%) and his viral load was undetectable on his current HAART regimen of truvada, atazanavir and ritonavir. Swabs from the ulcer confirmed the presence of HSV. Biopsy of the lesion showed a non-specific ulcer. High-dose Valacyclovir at 1 gm three times a day was ineffective. The patient was commenced on thalidomide 100 mg daily for 2 weeks, after which the dose was increased to twice daily. The ulcer responded well to treatment with thalidomide. The patient had a total of 14 weeks of treatment. He has not any further recurrence of HSV lesions and remains on valacyclovir suppression therapy.

Conclusions: Review of the literature shows that thalidomide is highly effective in the treatment of persistent hypertrophic HSV ulcers in HIV-positive patients.

P87
Safety of usage of HSV prophylaxis with aciclovir (ACL) together with tenofovir (TDF)-based antiretroviral therapy (ART) in HIV patients

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Background: TDF has been part of ART since licence in 2001. TDF is renally excreted by a combination of glomerular filtration (GF) and active tubular secretion. It is reported that <1% of patient using TDF developed impaired renal function. ACL is also eliminated via kidneys by the same combination of mechanisms. Competition for renal tubular secretion by ACL and TDF using organic anion transporter 1 (hOAT1) can cause increased serum concentration of TDF when given concurrently.

Methods: We compare decline in renal function among 62 HIV-positive patients on TDF-based therapy (300 mg od) alone and 37 patients on ACL prophylaxis (400 mg bd) along with TDF-based ART. Retrospective data collection (demographics, ART, ACL therapy, HIV VL, CD4, creatinine level, weight, other medication) were recorded. Rates of creatinine clearance (CrCl) were estimated using the Cockcroft-Gault (C-G) and Modification of Diet in renal Disease (MDRD) equations.

Results: Baseline characteristics did not differ among the two groups (mean age 41.6 and 41.2 years, 79 and 87% Caucasians, 13 and 11% Afro-Carribean, 90% and 87% males in TDF and TDF + ACL group respectively). Mean time treatment in TDF group was 41 months (12–72) and 36 months (972) in TDF + ACL group. There was no significant difference in decline of C-G or MDRD estimations (-8.6 and -3.1 mL/min; -14 and -8.4 mL/min/1.73 m 2 respectively). TDF was stopped in three in TDF group and in 1 pt. in TDF + ACL group because of renal function decline while in one in TDF + ACL because virological failure. ACL was stopped in five patients, in three cases because of renal function decrease. None of the patients have decline of renal function below 50 mL/min.

Conclusions: Our retrospective study suggests that TDF and prophylactic ACL can be concurrently used without significant additional decline in renal function.
to take daily vitamin D3 (VD3) supplements: 2800 IU [25(OH)D < 10]; 1800 IU [25(OH)D = 10–20]; 800 IU [25(OH)D = 20–30]. All were advised to take 1 g calcium citrate daily. Adherence was monitored. Follow-up tests were performed on 20 subjects: 16 on TDF-containing HAART; 4 on non-TDF-containing HAART.

Results: TDF use and suboptimal 25(OH)D levels were strongly associated with PTH abnormalities. Among the 32 subjects with suboptimal 25(OH)D, mean PTH was 80 ± 32 pg/mL in those on TDF and 56 ± 19 pg/mL in those on non-TDF HAART (P = 0.02). Among subjects with suboptimal 25(OH)D, 37% (10/27) on TDF had PTH >ULN, indicating secondary hyperparathyroidism (SHPT), while none of the 10 subjects with low vitamin D on non-TDF HAART had SHPT (P = 0.03). On an intention-to-treat basis, follow-up of the 17 subjects advised to take VD3, 25(OH)D rose 9.8 ± 5.6 ng/mL (P < 0.001) and PTH fell 18.9 pg/mL ± 31.7 (P = 0.002). No patient developed hypercalcaemia. PTH rose 4.4 pg/mL among subjects in the bottom tertile of baseline PTH values. In contrast, it fell 5.3 pg/mL among subjects in the middle tertile, and fell 44.7 pg/mL among subjects in the top tertile (P = 0.001, ANOVA). All subjects in the top tertile were on TDF and all experienced a PTH decrease. At follow up SHPT was reversed in the four subjects who had SHPT at baseline. In these patients, 25(OH)D rose 12.5 ± 7.7 ng/mL and PTH fell 62.3 ± 9.0 pg/mL.

Conclusions: VD3/calcium supplements increased serum 25(OH)D and decreased PTH. Baseline PTH values were influenced by 25(OH)D levels and TDF use; PTH changes were dependent on baseline PTH values. Vitamin D3 and calcium are a safe and effective treatment for HAART-associated hyperparathyroidism.

P90
Acceptance of an opt-out HIV testing in an urban emergency department – a report from south India
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Background: Opt-out HIV testing (Routine HIV testing unless patient decline without pre-test counselling) was a new concept in the prevention and management of HIV population, recommended by Centers for Disease Control (CDC). This concept was tested in few sites across the world, but in the rest of the globe it was not tested.

Aims: To determine the acceptance of opt-out HIV testing in an Emergency Department (ED) and to estimate the prevalence of HIV infection in the ED.

Methods: This was a cross sectional study, conducted in an ED of urban medical college hospital from September 2008 to November 2008. HIV antibody testing by Enzyme Linked Immunossorbant Assay (ELISA) method was offered to patients in the age group of 13–64 years who were treated in ED for various medical conditions. HIV testing was performed, unless the patients decline.

Results: During the study period 387 patients were treated in ED, 292 patients were in the age group of 13–64 years. Of these 43 patients were unconscious and 14 patients (4.8%) knew their HIV status were excluded. Of the remaining 235, 23 (9.8%) patients refused HIV testing when offered. The mean age in those tested was 38 years and 69% (146) were male patients. Of those tested 122 patients (58%) were able to collect the results of the test, and 6 patients (4.9%) were found to be positive for HIV infection.

Conclusions: Opt-out HIV testing was feasible in ED, due to high acceptance rate (>90%), high prevalence rate (4.9%), and lack of awareness (95%) of HIV infection status in patients treated in ED. The main limitation of the study was small sample size and delay in getting their HIV test results (average 3 days).

P91
An audit of current HIV testing practices and awareness of the UK National Guidelines for HIV Testing 2008 among doctors working in a UK teaching hospital
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Background: In September 2008 the joint BHIVA/BASHH/BIS ‘UK National Guidelines for HIV Testing’ were published to facilitate an increase in HIV testing in all healthcare settings. A local audit was carried out to ascertain the degree of awareness of these guidelines as well as medical practitioners’ knowledge of HIV and their opinions around testing for it.

Methods: In December 2008 an e-mail questionnaire was distributed to 324 doctors, working in fields other than HIV, in a UK teaching hospital. One e-mail reminder was sent to people who hadn’t responded within 3 weeks.

Results: Seventy responses were received within the study period (34 consultants, 36 junior doctors) giving a response rate of 21.6%. Awareness of the guidelines – 67% respondents had not heard of the guidelines, 3% had both heard of and read them. Awareness of the problem – 57.5% doctors underestimated the scale of currently undiagnosed HIV in the UK and 65% underestimated the predicted life expectancy of someone on HAART. Current HIV testing practice – 53% doctors had not considered HIV in the differential diagnosis of any patient seen within the past year. Only 36% felt comfortable carrying out an HIV test, with 62% respondents preferring to defer to GUM services. The main barriers to testing were seen as lack of training (64%) and concerns around the pre-test discussion (60%). Clinical indicator diseases for adult HIV infection – a selection of 17 were given and clinicians were asked whether they would consider an HIV test. One respondent agreed testing was appropriate in all 17 scenarios, 30% of doctors would not have tested for HIV in any of the indicator diseases presented.

Conclusions: Medical practitioners lack confidence in testing for HIV. The majority questioned underestimated the current scale of the problem in the UK and were unaware of the recently published guidelines. To reduce undiagnosed HIV infection and therefore onward transmission, further education among medical practitioners is vital.

P92
Comparative evaluation of the performance of the Cavidi ExaVir Load Assay for the measurement of B and non-B HIV-1 RNA load in plasma
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Background: The ExaVir Assay is potentially affordable for viral load monitoring in resource-limited settings. We evaluated the Cavidi ExaVir version 3 assay relative to the Abbott HIV-1 RealTime assay and Roche Amplicor/COBAS TaqMan using HIV-1 plasma samples and dilutions of the international standard for HIV-1 RNA.

Methods: HIV-1 subtypes comprised 35B, 31C, 19A, 13 CRF02, 9D, 3 CRF01, 1 CRF06, 1 CRF12 and 4 complex mosaic strains. Assay agreement determined by linear regression analyses and Bland-Altman method.

Results: Seventy-seven of 119 clinical samples (64%) were quantified by all 3 assays. Twenty-five of 119 (21.0%) were not quantified. Eight of 119 (7%) samples that were quantified by Abbott and Roche were <200 cpsi/mL by ExaVir. One of 119 (0.8%) subtype D sample showed PVL values of 1253 cpsi/mL by ExaVir but was undetectable by Abbott and Roche Assays. One (0.8%), CRF01 showed values of 1535 cpsi/mL by ExaVir, 1,433 cpsi/mL by Abbott and <40 cpsi/mL by Roche. The coefficients of correlation were R2 = 0.97 and 0.94 for subtypes B and non-B respectively between Abbott and ExaVir assays and 0.95 and 0.91 for B and non-B respectively between ExaVir and Cobas TaqMan. Viral load
estimated by Abbott and ExaVir differed on average by 0.26 log_{10} (95% CI: 0.17 log_{10}–0.35 log_{10}). Viral load values between ExaVir and Cobas TagMan assays differed by 0.16 log_{10} (95% CI: 0.07 log_{10}–0.26 log_{10}). The differences were not significant as determined by the paired z test \( P = 0.5 \). Six samples (5%) and seven samples (6%) were outside 95% agreement between Abbot and ExaVir, and Cobas and ExaVir respectively. The Cobas and Abbott assays measured consistently over the WHO standard. The ExaVir assay generally measured below the expected value but within 0.5 log_{10}.

**Conclusions:** Although sensitivity of detection is reduced, the Cavidi ExaVir Assay showed excellent correlation and agreement with assays commonly used in high-income settings.

**P93**

**Diagnosing the undiagnosed – the real world experience from a northeast England regional infectious diseases unit**

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**Background:** The 2006 BHIVA audit found that at least 24% of deaths in HIV-positive adults were related to ineffective treatment due to delayed diagnosis. It is estimated that 1/3 of adults living with HIV are still undiagnosed. The UK National HIV testing guidelines were launched in September 2008 to facilitate an increase in HIV testing in all healthcare settings.

**Methods:** We undertook an audit of patients whose HIV care was initially managed by the Infectious Diseases Unit in 2008 to determine the number newly diagnosed with HIV in 2008. We categorized the number of patients who were late presenters (CD4 <200, AIDS at diagnosis) and examined the case notes of all those newly diagnosed in 2008. Clinical indicator diseases for adult HIV infection stated in the 2008 testing guidelines were then documented which might have facilitated earlier diagnosis and access to treatment for these individuals.

**Results:** In 2008, 90 patients had their HIV care initiated or taken over by our department of whom 46 (51%) had been newly diagnosed in 2008. Of the newly diagnosed patients, 27 (59%) were diagnosed as late presenters and their median CD4 was 83 cells/µl (range 4–440 cells/µl). Their median viral load was 183,325 copies/mL (range 1709–1,842,800 copies/mL). Ten of these 27 patients (37%) had a history of having a previous indicator disease with 13 of 27 (48%) having an AIDS defining illness on or prior to presentation. Fifteen of 27 late presenters were referred from physicians, five from GUM, with four diagnosed by their GP’s, two in the ID unit and one from the blood transfusion service.

**Conclusions:** Our audit confirms that late presentation is common in the North East. If adhered to, the new testing guidelines may improve access to HIV care and reduce late presentation.

**P94**

**Documentation and testing of existing children of HIV-positive women**

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**Background:** Many women diagnosed with HIV already have children when they are diagnosed. The UK National Guidelines for HIV testing state that testing should be offered in all cases at risk of vertical transmission. Increasing evidence shows that children infected vertically can survive into teenage years without being diagnosed. The aim of this study is to assess the documentation in medical notes of the presence of existing children of HIV-positive women, their HIV status and subsequent testing if necessary.

**Methods:** One hundred and forty case-notes were reviewed in January 2009 from a cohort of 329 female HIV-positive patients. These included 1 in 4 randomly selected patients under the care of infectious diseases physicians, and all patients under the genito-urinary physicians.

**Results:** In 15% of the case notes reviewed there is no documentation at all of the presence or absence of children. Seventy-six (64.4%) women are documented to have a total of 140 children. 60.5% of these women have children (total 71) living in the UK, and in 43% of their case-notes the child’s HIV status is not documented or is unknown. In total there are 78 (55.7%) children of unknown status who have had potential vertical exposure to HIV, and 20 of them are living in the UK. Of these 20, half have no documented discussion regarding their testing. Four women have a positive child, one of whom was diagnosed aged 14 after routine testing with no signs or symptoms suggestive of HIV infection.

**Conclusions:** A significant number of children are at risk of undiagnosed HIV infection, a substantial fraction (74%) living outside the UK. Where possible, children will be followed up. Formal documentation will be encouraged by staff education, provision of a specific area on the HIV-positive patient front-sheet for existing children to be documented, and formal protocols linked with paediatrics for follow-up and counselling if a woman refuses testing of her child. Targets for documentation and testing rates could be implemented, and re-audited.

**P95**

**Genotypic prediction of viral co-receptor tropism: correlation with enhanced Trofile**

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**Background:** Phenotypic assays are accurate methods for predicting HIV-1 co-receptor tropism, but are labour intensive, expensive, and have limited availability. Geno2Pheno-co-receptor predicts tropism using a support vector machine statistical learning model, taking into account both chemical and physical properties of the envelope V3 loop, with or without clinical data (nadir CD4, CD8, viral load). Data on its correlation with enhanced Trofile are limited.

**Objective:** To evaluate the concordance between enhanced Trofile and Geno2Pheno-co-receptor in samples collected in routine care prior to possible therapy with maraviroc, using V3 sequences alone or in combination with clinical data, and applying different interpretation settings (false positive rate, FPR 1–20%).

**Methods:** A total of 79 plasma samples were tested in parallel by enhanced Trofile at Monogram Biosciences and Geno2Pheno-co-receptor in house. V3 sequences were generated from a nested-PCR amplicon using automated population sequencing.

**Results:** Among 79 patients with matched results, 11 (13.9%) were infected with a variety of non-B subtypes (A, C, D, CRF02_cpx). Overall, 42 (53.2%) patients were drug-naïve and 37 (46.8%) drug-experienced. The median nadir CD4 count was 312 (2–950); the median viral load was 40,030 cp/mL (1582–922,477). Enhanced Trofile predictions were 68 (86.1%) R5 and 11 (13.9%) D/M. Concordance with Geno2Pheno-co-receptor ranged between 68.6% and 93.7%. Concordance was highest when combining V3 sequences with nadir CD4 count, nadir CD4%, viral load and CD8 count at an FPR of 10%. Among 5 discordant samples, 3 were D/M and 2 were R5 by enhanced Trofile.

**Conclusions:** In this pilot evaluation of the Geno2Pheno-co-receptor prediction system, we found excellent correlation with enhanced Trofile predictions, comparable to the correlation that can be observed between different phenotypic assays. While further work is required to expand the validation dataset, these initial findings indicate that genotypic prediction offers a suitable tool for assessing tropism.

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P96
HIV status of family members of patients on antiretroviral therapy in Malawi
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Background: HIV testing of partners and young children of patients who are HIV infected and on antiretroviral therapy (ART) is an important method of identifying people who are HIV infected and may benefit from treatment. There is currently no data on how frequently adult patients living with HIV in Malawi take their family members for HIV testing. The objectives of this study were to describe the frequency and pattern of HIV testing amongst family members of adults on ART in an HIV clinic in Malawi.

Methods: We conducted a descriptive survey between November 2006 and January 2007. Healthcare workers prospectively interviewed patients on ART during routine visits to the HIV clinic at a large teaching hospital in Malawi.

Results: Eight hundred and thirty-two patients (29% of all adult patients on ART in the clinic) were interviewed. Five hundred and twenty-six (63%) were female, comparable to the whole clinic population. The mean age was 37 years (range 13–78). Of the 1240 children under the age of 16 years that patients reported having, 1004 (81%) had not been tested for HIV. Eighty-two percent of children of male patients had not been tested, compared to 78% of children of female patients ($P = 0.11$). Only 70 children were reported to be on ART. Patients reported that they did not have any HIV tests. A large percentage of spouses and very high proportion of partners with risk factors and 6/37 (16%) paid sex. Twenty-six of 37 (70%) listed at least one HIV or AIDS indicator disease (range 1–10, 4%) responded from electronic mail out. Regarding HIV risk factors; 32/37 (86%) reported drug misuse/SDU, 30/37 (81%) MSM, 23/37 (62%) endemnic areas, 8/37 (22%) unprotected sexual intercourse, 7/37 (19%) partners with risk factors and 6/37 (16%) paid sex. Twenty-six of 37 (70%) (listed at least one HIV or AIDS indicator disease (range 1–10, median 4) and 29/37 (78%) had no concerns with testing or referral pathways. Seventeen of 37 (46%) suggested various improvements regarding clinical practices. Fifteen of 37 (41%) are interested in further support and training.

Conclusions: The majority of HIV cases were diagnosed among attenders at GUM and GP. It is unclear how many individuals from any setting already knew themselves to be HIV positive prior to testing, this is particularly relevant in SAU attendees. Newer initiatives diagnosed 14 cases of HIV who may not have accessed traditional HIV testing sites. Increasing the uptake of HIV testing to 100% in GP and GUM might have diagnosed an extra 76 cases.

P98
Improving the detection and diagnosis of HIV in non-HIV specialties – how useful was the CMO/CNO letter?
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Background: A recent BHIVA audit showed at least 35% of HIV related deaths occurred in individuals diagnosed too late for effective therapy. In response the Chief Medical Officer (CMO) and Chief Nursing Officer (CNO) wrote to all healthcare providers in an attempt to improve the detection of HIV in non HIV specialties. We designed a survey for general practitioners (GP) to assess the impact of the CMO/CNO letter and to evaluate knowledge of HIV risk factors and clinical presentations.

Methods: In collaboration with three local Primary Care Trusts, a survey was sent to every GP practice, either by post or electronic mail. Non responding practices that were contacted via electronic mail were then sent the survey via post. Questions included whether the letter was received, recollection of content, knowledge of HIV risk factors and indicator diseases, and attitudes to HIV testing. We assessed GP satisfaction with referral pathways and local HIV services, and need for further support and training.

Results: Overall 37/124 (30%) practices responded. Of these only three (8%) reported receiving the letter; of whom one remembered the content, but was unsure if it had impacted clinical practice. Only 3/74 (4%) responded from electronic mail out. Regarding HIV risk factors; 32/37 (86%) reported drug misuse/SDU, 30/37 (81%) MSM, 23/37 (62%) endemnic areas, 8/37 (22%) unprotected sexual intercourse, 7/37 (19%) partners with risk factors and 6/37 (16%) paid sex. Twenty-six of 37 (70%) (listed at least one HIV or AIDS indicator disease (range 1–10, median 4) and 29/37 (78%) had no concerns with testing or referral pathways. Seventeen of 37 (46%) suggested various improvements regarding local clinics. Fifteen of 37 (41%) are interested in further training and 3/37 (8%) have already attended a HIV course.

Conclusions: It would appear that the CMO/CNO letter has had little identified impact from our survey. Alternative strategies are required to raise awareness and support clinicians to increase HIV testing in non-HIV specialties.

P97
How can we diagnose undiagnosed HIV?
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Background: This study aims to assess what the impact would be of increased HIV testing in different venues in one inner city borough.

Methods: The number and outcome of HIV tests occurring in different venues were obtained from electronic databases. Denominators (D) were calculated as the total number of attenders. Data from initiatives running for less than 12 months were extrapolated to 12 months. The number of positive diagnoses (P) at each venue was divided by the denominator (D) to estimate the prevalence (P/1000). The number and outcome of HIV tests occurring in different venues were obtained from electronic databases. Denominators (D) were calculated as the total number of attenders. Data from initiatives running for less than 12 months were extrapolated to 12 months. The number of positive diagnoses (P) at each venue was divided by the denominator (D) to estimate the prevalence (P/1000).

Results:

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<td>23</td>
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<tr>
<td>Outreach*</td>
<td>867</td>
<td>867</td>
<td>100</td>
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*extrapolated data; + may include tests on individuals already known to be HIV positive; Δ = positive diagnoses; P = prevalence.

Conclusions: How can we diagnose undiagnosed HIV?
and sixteen (37%) had a baseline CD4 count below 200, 87 (28%) 201–350 and 111 (36%) above 350. Two hundred and three (65%) of newly diagnosed patients were eligible for antiretroviral therapy at diagnosis. Those with CD4 counts below 200 were significantly more likely to be men, be older than those with higher CD4 counts and have tested outside a routine screen. Forty-four percent tested because of symptoms, 44 (40%) were diagnosed with an AIDS defining illness within 3 months of HIV diagnosis, and a further three progressed to AIDS within one year. Seven died. Those with baseline count 200–350 were more likely to be women and to have tested as part of a routine screen, a majority diagnosed in pregnancy. Those with baseline CD4 counts above 350, were likely to be younger and to have tested via routine asymptomatic screening. Twenty-five percent of this group were men who have sex with men.

Conclusions: In this cohort of largely heterosexual, non UK born patients two thirds of those newly diagnosed with HIV are immediately eligible for antiretroviral therapy. Routine asymptomatic screening identifies those with higher CD4 counts. Those with the lowest CD4 counts at diagnosis are likely to be symptomatic heterosexual men. Health seeking behaviour in this patient population needs to be better understood in designing accessible and appropriate HIV diagnostic services.

P100 Poor uptake of an HIV testing service for men expecting a baby – the TOPAN experience

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Background: Since the success of universal offer of antenatal HIV testing, seroconversion with HIV during pregnancy is an important cause of mother-to-child-transmission (MTCT) in the UK. In this area of the UK HIV is predominantly diagnosed in the African heterosexual community. African men are less likely to know their HIV status than other high-risk groups in the UK and are more likely to present with advanced disease. It was hoped that TOPAN, a programme designed to encourage African men to test for HIV while expecting a baby would reduce rates of late diagnosis in this group and prevent some cases of MTCT.

Methods: A more streamlined HIV testing service was offered to all male partners of pregnant women attending local antenatal services. The service was advertised to the women in antenatal information and was advertised to men in the community. Community advertising campaigns were directed towards African men. A focus groups was held to explore attitudes towards HIV testing among African men. User satisfaction questionnaires were completed by and semi-structured interviews were held with service users to ascertain why men had chosen to use the service. Demographics and HIV results were compared between TOPAN users and general clinic users.

Results: In the first year of the service (February 2008–February 2009) 16 men tested for HIV via TOPAN. All tested negative. During this time 2668 men tested for HIV in the general GU clinic and 5248 women tested via antenatal service. In the latter part of the year a separate community-based Point of Care Testing service was set up and quickly achieved good service uptake and diagnosis rates.

Conclusions: Offering a hospital-based HIV testing service for partners of pregnant women is not an efficient use of resources. Further work is required to explore whether a partner's pregnancy might actually be a barrier to HIV testing among African men.

P101 Positive HIV tests in a south London hospital: Who did the test and what happened next?

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Background: The UK National Guidelines for HIV Testing 2008 recommend routine HIV testing of all patients with specific indicator conditions and in A&E in areas with high HIV prevalence. To improve systems for an anticipated increase in HIV testing, we reviewed the origin and patient outcomes of all Positive HIV tests over a 2 year period at King's College Hospital, London.

Methods: The patient details of all Positive and Indeterminate HIV tests performed throughout the hospital between September 2006 and September 2008 were reviewed for any record that the patient was known to have HIV. Individual identifiers for all remaining patients were then checked against the HIV Clinic database to see if they had been linked into the HIV clinic. Hospital notes and electronic patient records for the remaining patients were then individually examined for evidence that they had received their results and been linked into HIV services elsewhere.

Results: Three hundred and sixty-five individuals had at least one Positive (339) or indeterminate (26) HIV result. Two hundred and seventy-two (75%) were tested in GUM clinics, 7 (2%) in A&E, 43 (12%) were inpatients, 11 (3%) out-patients, 15 (4%) antenatal attenders, 11 (3%) in ITU and 6 (2%) elsewhere. Nine of 26 indeterminate results were negative on confirmatory testing. Fifty-six (15%) were known HIV positive and 11 (3%) had recently seroconverted. Two hundred and eighty of 356 (79%) remaining patients were linked into the HIV clinic. Of the rest, 12 (3%) left the UK, 22 (6%) were followed up elsewhere and 13 (4%) died. Thirteen (4%) could not be contacted and never received their HIV results. Seven (2%) actively disengaged from care. In nine non-GUM cases, it appears doctors did not receive the result or neglected to inform the patient.

Conclusions: A significant proportion of patients with newly diagnosed HIV do not receive their results or engage with care. In a small but worrying number of cases, appropriate follow-up was not arranged or results overlooked. HIV results on EPR, centralised follow-up of all Positive results and communication with GPs may reduce these potentially catastrophic losses to follow-up.

P102 Safe or sorry (SOS) sauna outreach project, are we doing enough to diagnose the undiagnosed?

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Background: Significant numbers of men attending gay saunas in our region are identified as heterosexual, bisexual or transsexual. This project aimed at providing an outreach service to those who fail to attend sexual health clinics and are unaware of their HIV status.

Methods: A 12 weeks outreach pilot study was conducted offering HIV and syphilis screening to clients attending gay saunas. Ora-Quick test was used for HIV testing backed up by conventional serology test for HIV and syphilis. Thirty-one clients were seen, of which 28 had both HIV & syphilis screening, one opted for syphilis test only and three declined both tests.

Results: From the 28 clients tested two (7%) were found to be HIV positive (new diagnosis) and 3 (11%) had positive syphilis serology (one new diagnosis and 2 old treated syphilis). One of the 3 clients who declined HIV test was admitted, 4 weeks later, diagnosed with AIDS defining illness. Pre-study questionnaire showed that over 80% of clients would like having sexual advice, STI screening and hepatitis B vaccination available in the saunas. Post study evaluation forms demonstrated the popularity and acceptance of this type of service delivery and unanimous support for extending the service to other venues.

Conclusions: Ora-Quick HIV testing had 100% sensitivity and specificity in this study and was found to be highly acceptable and convenient in outreach venues. The study highlights the benefit of delivering sexual health service in gay saunas providing the hard to reach, high risk group with easy accessibility.
P103
The acceptability and effectiveness of home-sampling as a method of HIV testing in men who have sex with men
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Background: There is a need to develop novel strategies to increase HIV testing amongst men who have sex with men (MSM) in line with recent national HIV testing guidance in order to reduce the proportion with undiagnosed infection for both individual and public health. Home testing may provide an acceptable alternative to conventional HIV testing settings and was evaluated prospectively within a larger study of home-sampling kits (HSKs) for sexually transmitted infections.

Methods: HSKs were offered prospectively to all asymptomatic MSM requesting STI and HIV testing via an STI clinic from January 2008 to August 2008 inclusive. Specimens were self collected from the buccal mucosa (Orasure), rectum, pharynx & urine and were tested for syphilis (S) [ICE Ela] & HIV [GACELISA]; Gonorrhoea & Chlamydia (CT) [Gen-Probe APTIMA Combo 2 assay nucleic acid amplification test]. Acceptance of the HSK, return rate and STI and HIV diagnoses were recorded. Testing rates & detection of HIV were compared to contemporaneous decliners and conventional clinic attenders.

Results: Eighty of 118 asymptomatic eligible MSM accepted a HSK. HSK return rate amongst acceptors was 77.5% (62/80). Eight (13%) subjects were diagnosed with an STI (7 CT, 1 S) Uptake of HIV testing in HSK acceptors was 86% (n = 69/80); no new HIV diagnoses were made (compared to 1/38 [3%] of the decliners). The positive rate was significantly higher at 7% (43/640) in asymptomatic MSM contemporaneously in conventional clinic testers (P = 0.026).

Conclusions: Home-sampling for HIV offers an acceptable alternative to conventional clinic testing for some MSM and may enable testing in those who have never previously tested or facilitate annual re-testing in line with national guidance. However, the lack of detection of HIV in this study suggests that this strategy may be more acceptable to those with lower risk of undiagnosed infection.

P104
Causes and outcomes of hospitalization of HIV patients in first 6 months of antiretroviral therapy (ART) in a teaching hospital in southwestern Uganda
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Background: The main burden of HIV disease is in Sub-Saharan Africa. While recent roll out programmes have increased access to antiretroviral therapy (ART), causes of subsequent hospitalisation are poorly documented. The aim of our study was to determine causes of hospitalisation in patients in the first 6 months of ART in Southwestern Uganda in 2008.

Methods: HIV-positive patients aged 18 years admitted to the medical ward within 6 months of ART introduction were included in the study. A study specific questionnaire collected data on demographics, ART history, nadir and latest CD4 counts, WHO clinical stage, cause of hospitalisation and outcome.

Results: Ninety-one patients were enrolled. Fifty-two were male (57.1%). Mean age was 35.7 years (range 20–58 years). Mean time on ART was 6 weeks (range 1–28 weeks). Half (50.1%) had been on ART for <1 month and 44% had CD4 <50 mm³ at start of ART. Reported adherence was complete in 91% and 98.9% were on septrin on admission. One third (32.9%) were in WHO Clinical Stage 4, the rest in Stage 3. Mean CD4 count on admission was significantly increased from baseline (148 mm³ versus 106 mm³, mean diff 41 mm³, 95%CI 9–73 mm³, P = 0.011). AIDS defining events (ADE) accounted for 42.9% of admissions. The most common causes of admission were anaemia (13.1%), pulmonary tuberculosis [PTB] (12.1%), community acquired pneumonia [CAP] (9.9%), extra-pulmonary TB (9.8%) and cryptococcal meningitis (7.8%). Almost one quarter (22.5%) died during admission and 45% of deaths were due to ADE. Commonest cause of death was TB (25%) and CAP (15%). Being in WHO clinical stage 4 on admission was significantly associated with risk of death (OR 7.4, 95%CI: 2.2, 24.8. P = 0.0001).

Conclusions: Our study shows that serious infections and death are not uncommon during the first 6 months of antiretroviral therapy in individuals with advanced HIV at start of treatment in resource poor settings. Mortality was high, with TB the commonest cause of death. The rate of TB is suggestive of unmasking.

P105
Changing demography and unique risk factors for HIV infection in Sri Lanka: Are we heading for a full-blown epidemic?
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Background: Sri Lanka has been a country with low HIV prevalence. However, in recent years the incidence has been gradually increasing. Case detection has been poor using sentinel surveillance that targeted traditionally recognized risk groups. Identifying risk groups and their demography are important for case detection and targeted prevention.

Methods: All HIV patients admitted to the Infectious Diseases Hospital, Sri Lanka from 1st July 2003 to 30th June 2008 were studied. Demographic data and possible risk factor associations of patients were analysed.

Results: One hundred and twenty-eight patients were admitted during the study period. There were 72 males (56.3%) and 56 females (43.7%). Male to female ratio was 1.3:1 in 2003 and become 1:1 in 2008. Mean age was 38.1 (SD = 11.2). One patient was an intravenous drug user, 5 (6.9%) were three wheel drivers, 6 (11.1% of women) were commercial sex workers, 22 (40.7% of women) were working in the Middle East. During 2004–2006, it is likely that many acquired the infection following exposure in a foreign country, while in 2007 and 2008 most acquired the infection from a local source.

Conclusions: The association between employment in Middle East and HIV infection of women in Sri Lanka is highly significant. This can have very serious economic and social implications. Three wheel drivers are another possible risk group. The changing male to female ratio and the increasing number of patients who possibly contacted the disease from a local source may be the warning signs of a bigger epidemic in the future.

P106
Cost-effectiveness of atazanavir compared to lopinavir in treatment-naive HIV-1 patients in Scotland
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Background: The purpose with this analysis was to investigate if atazanavir/ritonavir is cost effective compared with lopinavir/ritonavir for treatment naive patients in Scotland.

Methods: A life time Markov model was constructed with a cycle length of one year to predict cost and effects (life years and Quality Adjusted Life Years [QALY]). The model consisted of 1st, 2nd and 3rd line treatment; within each treatment line patients could suffer from a myocardial infarction, angina or a stroke. The incidences of diarrhea and lipid profile were derived from the 48-week CASTLE trial. Risk of cardiovascular
univariate and multivariate sensitivity analyses. Results: In the base-case model predicted that over-life time atazanavir would save £0.24 [0.11–0.41] QALY, 0.14 [0.00–0.34] Life Years and £17733 [-£54,900; £16,000] costs. Probabilistic sensitivity analyses showed that atazanavir would be in 85% of the simulations better both in terms of QALYs gained and reduced costs. In 15% of the simulations atazanavir was better in terms of QALYs gained but with subsequent costs. At a willingness-to-pay threshold of £20,000 per QALY, treatment with ATV/RTV has 91% chance of being cost-effective compared to treatment with LPV/RTV; the value increases to 93% if the threshold is £30,000 per QALY. Univariate sensitivity analysis showed that the most sensitive variable was the percentage of patients discontinuing treatment.

Conclusions: This analysis suggests that atazanavir has a favorable cost-effectiveness ratio for treatment of treatment naïve HIV patients in Scotland. These results were robust when changing the parameters in the univariate and multivariate sensitivity analyses.

P107 Demographics of the HIV-patient population in a major UK hospital
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University of Cambridge, Cambridge, UK

Background: Although HIV population statistics exist nationally and by region in the UK, only a handful of London hospitals have to date carried out a census of their own patients. We create a snapshot of our hospital patient demographic, and highlight key trends in mode of HIV acquisition, diversity of nationality, and immigration status. Through an improved awareness of the composition of our patient population, we can better address the social and cultural challenges they face, anticipate viral clades, and target our prevention efforts more effectively.

Methods: Data on age, sex, sexual orientation, country of origin, country of infection, and immigration status were mined from the paper records of 305 HIV-positive patients in outpatient clinic and the main hospital system.

Results: Forty-five nations are represented, 21 of these African. Only 33% of all infections – and 8% of heterosexually acquired infections – were contracted in the UK. Fifty-three percent of patients are non-UK born immigrants, and only 31% of these are legal immigrants.15% have been lost to follow-up.

Conclusions: A much higher number of patients than expected are illegal immigrants. Most of them are African, currently awaiting renewal of an expired visa, or making application for a visa extension. Some are asylum seekers, and some have already been detained by the authorities or deported. A concerning number are lost to follow-up. Nearly all are from countries where adequate HAART treatment is unavailable. Such data are scarce in the literature, and there is need for greater awareness and discussion of this bleak situation.

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Background: Immigration from Central and Eastern European (CEE) countries has increased following the accession of eight CEE countries to the EU in 2004. A number of CEE countries have higher HIV prevalence rates than Western Europe, with women representing a large proportion of the HIV-infected population.

Methods: Surveillance of obstetric and paediatric HIV is conducted through the National Study of HIV in Pregnancy and Childhood. Reports of pregnancies in HIV-infected CEE women between 1992 and 2007 were reviewed.

Results: Seventy-one pregnancies in 63 women were reported between 1992 and 2007, including 23 in 2007 alone. The proportion of pregnancies in CEE women rose significantly from 0.2% (7/4584) before 2004 to 1.1% since (64/5665) (P < 0.001). Most of the women were living in England (43, 68%), and Polish women formed the largest group (22, 34%). Likely risk factor for HIV acquisition was reported for 43% of women and included injecting drug use (11), sexual transmission (14) and blood transfusion in country of origin (2). One third (18/63) of women were diagnosed before their first reported pregnancy, two thirds antenatally (44/63), including 4 around delivery and 1 woman was diagnosed after delivery. Pregnancy outcomes included 61 live births (5 pre-2004), 3 miscarriages and 2 terminations; 4 women went abroad before delivery, and the outcome for one pregnancy has yet to be reported. Among pregnancies resulting in live births, antiretroviral therapy (ART) was received in 90% (55/61). Thirty-three infants (54%) were delivered by elective caesarean section (CS), 11 (20%) by emergency CS and 17 (28%) vaginally. One infant, born to a woman diagnosed just after delivery, is known to be infected.

Conclusions: Pregnancies in HIV-infected CEE women living in the UK/Ireland have increased significantly since before 2004, with a high proportion of women diagnosed antenatally. Continued monitoring of these pregnancies remains important in view of the increasing number of reports.

P109 Improving the quality of death data in the UK CHIC Study
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Background: Deaths in the UK Collaborative HIV Cohort (UK CHIC) study may be underreported due to patient loss to follow-up and lack of documentation of deaths in HIV clinical databases. Complete and correct death data would ensure more accurate determination of clinical progression rates in data analyses.

Methods: Processes to supplement existing death data from clinical centres were explored. We matched UK CHIC records with Office of National Statistics (ONS) death data (the algorithm used anonymised data) and with other UK surveillance data provided by the Health Protection Agency (HPA). Clinics are also requested to complete Coding of Death in HIV (CoDe) forms for deaths since 2006; these forms include information on the circumstances leading up to death and further details on the cause of death.

Results: Eleven clinical centres submitted data on a total of 36,809 patients seen for care since 1 January 1996; of these, 2,623 (7.1%) had a date of death. Matching to ONS data (2000–2007) identified a further 577 deaths. Matching to UK surveillance data (including more extensive ONS data, SOPHID and new diagnoses data) identified 340 more deaths, of which 293 had adequate matching of demographic data to add the death into UK CHIC. Of the CoDe forms returned, 11% provided additional death data. These processes increased the number of deaths to 3,493 (9.5% of the total individual records). After de-duplication of records from individuals attending multiple CHIC centres, a standard part of our dataset preparation, 3,308 individuals (9.9%) in UK CHIC are now believed to have died, a 26% increase on the original number.

Conclusions: Death data from a number of sources provide valuable additional information to the UK CHIC database. However, the processes have highlighted limitations in the linking between datasets, and in the timeliness and flow of information relating to deaths from hospital sources to clinic databases. Improvement of the quality of death data is essential to increase the accuracy of data analyses in the UK CHIC Study.

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The patient mounted a response to mitogenic stimulation that was lower than that of 12 HAART naïve, viremic HIV-1 chronic progressors, and indicative of late stage disease. Comparison to responses observed within clade B infected HIV controllers and HAART naïve, viremic chronic progressors lead to viral sequencing, confirmation of infecting clade and recommendation of HAART initiation.

Conclusions: We emphasize the growing need for awareness of possible limitations of the commonly used viral load assay, which can be relied upon too unreservedly in a clinical setting. Furthermore this study highlights the increasing need for more detailed investigation into both viral genetics and fitness when defining patients as HIV controllers or long-term nonprogressors.

**P110**

The symptom prevalence and burden in HIV-1-infected adults in rural Uganda

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**Background:** Knowledge of the burden of physical and psychological symptoms in HIV infected individuals in sub-Saharan Africa is sparse. We aim to describe the burden prior to antiretroviral therapy (ART) in a population representative of those who initially present to HIV/AIDS care and treatment services.

**Methods:** Uganda adults ART presenting at initial HIV diagnosis to a cryptococcal disease primary prophylaxis study completed the Memorial Symptom Assessment Scale Short Form. All ART naïve. This validated symptom assessment tool records the presence and severity of physical and 4 psychological symptoms. The mean burden scores of a set of symptoms are combined to produce the physical distress score (PHYS), the psychological distress score (PSYC) and the mean PSC 0.91 (95% CI 0.79; 1.03). In the multivariate analysis GDI was 1.29 (95% CI 1.18; 1.41), the mean PHYS 1.1 (95% CI 1.01; 1.19) and nervousness was 51.2%, 47.2% and 25.9% respectively. The mean number of symptoms. Being female was associated with PSYC. There was no association with CD4 count and any score.

**Results:** Two hundred and twelve subjects enrolled. Median CD4 count was 109 cells/μL (IQR 32–152). Four percent were WHO clinical stage 1, 28% stage 2, 62% stage 3 and 6% stage 4. The mean number of symptoms was 14.17 (95% CI 12.27; 15.08). The 10 most common physical symptoms were pain (77.4%), weight loss (70.8%), itching (66.5%), feeling drowsy (62.3%), lack of energy (60.9%), numbness/touching in hands/feet (57.1%), cough (53.8%) skin changes (52.4%), lack of appetite (48.6%) and hunger (45.8%). The frequency of worry, sadness and nervousness was 51.2%, 47.2% and 25.9% respectively. The mean GDI was 1.29 (95% CI 1.18; 1.41), the mean PHYS 1.1 (95% CI 1.01; 1.19) and the mean PSYC 0.91 (95% CI 0.79; 1.03). In the multivariate analysis WHO stage 3 and 4 was significantly associated with GDI, PHYS and total number of symptoms. Being female was associated with PSYC. There was no association with CD4 count and any score.

**Conclusions:** There is a high burden of symptoms in those presenting with HIV infection in Uganda. Symptom management is currently not being addressed and needs to be integrated into HIV/AIDS treatment services.

**P112**

HBV vaccine response of HIV-infected patients immunized with double dose Engerix® compared with vaccination response of HIV-uninfected patients vaccinated with standard dose of Engerix®

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**Background:** It is currently recommended that all newly diagnosed patients with HIV are tested for, and vaccinated against, hepatitis B virus (HBV). Following that their immune response should be determined through measurement of antiHBsAb titres.

**Aim:** To compare response to HBV vaccination of HIV infected patients with HIV un-infected patients.

**Methods:** This was a retrospective non-randomised observational analysis of response to HBV vaccination (antiHBsAb titre of more than 10 IU/L) of a cohort of HIV infected patients compared with a cohort of HIV uninfected patients vaccinated between June and December 2007. All patients received Engerix® intramuscularly. Vaccination of HIV negative patients was administered on days 0, 7 and 21 with a booster after a year. HIV infected patients received double dose (2 mL) of HBV vaccine (Engerix®) on 0, 1 and 4 months’ course.

**Results:** A total of 51 HIV infected patients and 48 HIV uninfected patients completed HBV vaccination course during the study period. AntiHBsAb >10 IU/L was detected amongst 33 (65%) of HIV infected and 44 (92%) of HIV uninfected patients (P = 0.002). HBV vaccination response was recorded amongst higher proportion of patients with CD4 count above 200 cells/mm³ (28 (68%)/ 41) compared to patients with CD4 count of less than 200 cells/mm³ (5 (55%)/9) (P = 0.7).

**Conclusions:** HBV vaccination response of HIV-un-infected patients was significantly higher than HIV infected patients. Even after administration of double dose of Engerix® to HIV infected patients, their vaccination response remained significantly less than that of HIV un-infected patients immunised with standard dose of Engerix®. HBV vaccination response was more likely amongst patients with CD4 count of above 200 cells/mm³.

**P113**

The role of CD8+ T cell-mediated immunity in HIV-1 disease progression: rapid, chronic and controlled

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**Background:** In contrast to dysfunctional HIV-1-specific T cells of HIV-1 chronic progressors (CP), HIV controllers (HIC) exhibit proliferative and perforin-producing anti-HIV-1 T-cell responses, whilst maintaining a functional thymus. Thymic output is reduced in CPs, T-cell responses to HIV-1 Gag inversely correlate with viremia and HLA-type is associated with disease progression rate; advocating a role for T cells in HIV-1 control.
Methods: Potential HIV-1 Gag CD8 T-cell epitopes, restricted to HLA-B*35 (linked to rapid progression), were identified by novel technology combining peptide and pentamer synthesis with binding and affinity assays. Functional and phenotypic responses to novel, and established, HIV-1 Gag, Flu, EBV and CMV CD8 T-cell epitopes, and HIV-1 recombinant antigens were assessed in 79 CBPs and 6 HCIs, by IFN-γ, IL-2, IL-4 and perforin ELISpot, 3H-thymidine incorporation and flow cytometry. To investigate whether deficient responses are due to inappropriate stimulation ex vivo, proviral gag from 10 HLA-defined CBPs was sequenced. Thymic output was assessed, in 6 HCIs and 46 HAART naïve age-matched CBPs. Nonparametric statistics and mixed models were used.

Results: Expected superior immunogenicity of novel epitopes correlated with T-cell responses. Skewed, dysfunctional responses to novel epitopes and multiple HLA-restricted Gag peptides by CBPs, contrasted the dual-functional, proliferation competent responses of HCIs. Thymic output in HCIs was 18 fold higher than age-matched CBPs. Only 3/24 MHC class I-restricted epitopes studied exhibited possible HLA-type-dependent selection on proviral gag, supporting the role of T-cell anergy and dysfunction, not only viral escape, in anti-HIV-1 deficiency.

Conclusions: Relatively unstable HLA-B*35:peptide complexes may explain the association with rapid progression. In contrast, high representation of HLA-B*27 in HCIs may contribute to HIV-1 control. Recognition of HIV-1 CD8 T-cell epitopes by CBPs, and modest evidence of cytoxic T-cell-mediated selective pressure, intimates anergy as a decisive cause of HIV-1 disease progression.

P114
A comparison of MRI versus CT brain imaging in HIV-positive inpatients presenting with neurological symptoms
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Background: Neurological symptoms in acutely unwell HIV+ patients are common. The two main imaging modalities used to assist diagnosis are computed tomography (CT) and magnetic resonance imaging (MRI). Whilst CT is more readily available, MRI is more sensitive at detecting small lesions, white matter changes and leptomeningeal enhancement. We sought to determine optimal imaging strategies for HIV+ patients presenting with neurological disease.

Methods: Retrospective casenote review of all HIV+ inpatients who received neuroradiology at an inner-city teaching hospital between April 2007 and August 2008.

Results: Sixty-six patients (68% male) were identified and had 92 episodes of neuroimaging (CT, n = 38; MRI, n = 54). Patients had a median CD4 count of 180 (IQR = 85–360) and 58% were receiving HAART. Of 38 patients who had a CT scan, 22 also had an MRI after a median of 4 days. Reviewing these paired CT/MRI scans, brain abnormalities were more commonly seen on MRI compared to CT (73% versus 50%), regardless of CD4 count or presence/absence of focal neurology. An additional 31 patients had an MRI at baseline, abnormalities were seen in 12/16 patients without focal neurology and 11/15 with focal neurology. Eleven of 26 patients who had a normal CT at baseline, abnormalities were found by MRI in seven cases. The majority of HIV+ patients with neurological disease imaged at our centre received MRI, which provided an enhanced diagnostic yield irrespective of clinical presentation or level of immunosuppression. Early MRI would avoid unnecessary duplication of scanning modalities, reduce radiation exposure and is more likely to provide the best image for diagnosis and future comparison. Our data reinforce the need for early MRI of patients with neurological disease, and early transfer of patients from centres that do not have rapid access to (or expert interpretation of) MRI scanning, to an appropriate HIV specialist centre which does.

P115
Adherence to darunavir/ritonavir (DRV/r) and lopinavir/ritonavir (LPV/r) in treatment-naive HIV-infected patients in ARTEMIS (AntiRetroviral Therapy with TMC114 ExaMined In naïve Subjects): 96–week data
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Background: ARTEMIS is a Phase III trial examining the efficacy and safety of once-daily DRV/r 800/100 mg versus LPV/r 800/200 mg total daily dose (q.d. or b.i.d.) in treatment-naive HIV-infected patients. Patient-reported adherence and its association with outcomes to week 96 were examined.

Methods: The Modified-Medication Adherence Self-Report Inventory validated questionnaire was used to assess treatment adherence by percentage of doses of DRV/r and LPV/r taken during the previous 30 days. Mean adherence across study visits from Week 4–96 was used to assess overall adherence (>95% [adherent] and ≤95% [non-adherent]).

Results: Overall adherence was high; 55 (17%) DRV/r patients and 70 (22%) LPV/r patients were non-adherent at one or more time points (P = 0.125). Response rates (<50 copies/mL, intent-to-treat analysis of time-to-loss of virological response) were higher in the adherent versus non-adherent patients, with non-adherence impacting response in LPV/r patients to a greater extent than in DRV/r patients (DRV/r: 82% versus 76% [P = 0.3312]; LPV/r: 78% versus 53% [P < 0.0001]). Non-adherent patients reported more adverse events (AEs). Gastrointestinal (GI) events dropped markedly after Week 12, making it difficult to assess impact on adherence after this time. At Week 12, 28% (DRV/r) and 23% (LPV/r) non-adherent patients reported GI AEs, versus 7% and 13% adherent patients respectively. Total distress scores (from 39 symptoms) were higher in non-adherent versus adherent patients.

Conclusions: Virological response rates were higher in adherent versus non-adherent patients. Non-adherence with DRV/r had a lesser effect on clinical outcomes compared with LPV/r. Non-adherent patients reported more AEs and GI AEs, suggesting that factors other than convenience are also substantial drivers of adherence.

P116
Comparison of acute hospital presentations of HIV patients during two time periods (1983–2001 and 2005–2007): opportunities for early diagnosis are still being missed
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Background: Late presentation of HIV is associated with increased morbidity and mortality. We assessed the time to diagnosis in patients presenting to hospital with their first HIV-related illness.

Aims: (1) To document the presence and detection of clinical clues to HIV diagnosis. (2) To identify length and reason for delays in HIV diagnosis. (3) To see if demographic change after 2001 affected modes of presentation and delays.

Methods: Retrospective case note review of HIV patients presenting to an ID unit between 1983 and 2001 (period 1) and 2005 and 2007 (period 2). We defined acute presentations as being of unknown HIV status when presenting to hospital with an HIV related illness. ‘Clues’ were defined as known risk factors, clinical stigmata of HIV disease and baseline investigations consistent with HIV infection. Clues in the initial clerking were recorded and compared to those identified by a specialist, and delays to diagnosis calculated.
Results: Period 1: 241/245 notes retrieved; 32 (13%) female, 207 (86%) from the UK and 19 (8%) from sub-Saharan Africa (SSA). Period 2: 136/ 146 notes retrieved; 53 (39%) female, 66 (49%) from the UK and 59 (43%) from SSA. Eighty (33%) and 99 (73%) presented acutely respectively ($P < 0.001$). Oral candidiasis, lymphadenopathy and dermatitis were the most common clinical signs in both groups. The most common haematological abnormalities were anaemia and lymphopaenia. The most common diagnoses were PCP (28%) and TB (24%) respectively. The mean (range) recorded clinical clues were 5.8 (1–12) and 4.5 (0–9), missed clues were 1.8 (0–9) and 4.0 (0–9) and mean delays to diagnosis of HIV were 98 and 28 days respectively ($P < 0.001$).

Conclusions: (1) As elsewhere in the UK, there has been a major demographic shift, and in the recent cohort there are more patients from SSA contributing to the increase in the proportion presenting acutely and with TB. (2) The numbers of clues ‘missed’ were similar in both cohorts, but in the later cohort were recorded less by non-specialists. (3) The mean time to diagnosis decreased in the second cohort but is still too long.

P117 Diagnostic yield of percutaneous image-guided needle biopsy of lymph nodes in the HAART era
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Background: Even in the HAART era, HIV-positive patients still present with fever and/or lymphadenopathy requiring investigation. Traditional diagnostic techniques have included fine needle aspiration (good for mycobacteria but poor for detecting malignancies) and full excision biopsy. Image-guided needle biopsy of lymph nodes (core biopsy) under local anaesthetic is an alternative. We present a series of 32 sequential cases where this technique was adopted.

Methods: Review of histology and radiology databases identified 32 HIV+ patients who had undergone core lymph node biopsy between July 2006 and July 2008. Case notes were reviewed to establish the final diagnosis, demographic data, CD4 count and HAART status of each patient. Specimens were obtained using 16–18 gauge needles with 1–6 passes. All specimens were routinely stained for mycobacteria, fungi, KSV and EBV. Further immunostaining was performed where the H&E stain was suspicious of malignancy.

Results: Of the 32 patients, final diagnosis was infection in 9 (2 MAI, 6 TB, 1 histoplasmosis), malignant disease in 13 (6 lymphoma, 1 Kaposi sarcoma (KS), 1 KS & Castleman’s disease (MCD), 4 MCD, 1 metastatic carcinoma). Two patients had immune reconstitution inflammatory syndrome (IRIS), and in the remaining cases final diagnosis would not have been detectable by lymph node biopsy. Core lymph node biopsy showed mycobacterial disease in 5/8 cases, histoplasmosis in 1/1 case, lymphoma in 5/6 cases, KS in 2/2 cases, MCD in 4/5 cases and metastatic carcinoma in 1/1 case. Overall core biopsy led to a positive diagnosis in 20 (83%) of 24 patients who had ‘lymph node diagnosable’ diseases. One patient developed a haematomata post biopsy. Infective diagnoses appeared commoner in patients with lower CD4 counts and those not on HAART whilst malignancies appeared commoner in patients with higher CD4 counts and those on HAART.

Conclusions: Percutaneous image-guided needle biopsy is a safe method with a high diagnostic yield in HIV-positive patients with lymphadenopathy and/or fever.

P118 Healthcare workers with HIV infection: do they refer themselves to Occupational Health?
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Background: An HIV-positive healthcare worker (HCW) was admitted to our unit with an acute infection. It became clear that he worked in an area where exposure-prone procedures (EPPs) were performed, but he had never been assessed by Occupational Health (OH). Following investigation, we decided to carry out an audit of all our patients to assess whether 2005 UK guidance HIV+ HCWs was being followed. This guidance makes clear that all HIV+ HCWs should be assessed by an OH physician, and that decisions about risks to others should not be made by the patient themselves.

Methods: We searched our database of 1600 current patients to identify HCWs; staff also notified us of HCWs under their care. Notes were reviewed to assess documentation of disclosure to OH.

Results: Twenty sets of notes belonging to HIV+ HCWs were identified (17 nurses, 2 doctors, 1 health care assistant). In 19, there was documentation of the need for the patient to be seen in OH. However, in only 4 was there information recorded about EPPs, and a letter from OH was present in 6 patients’ notes. Five patients stated that they deliberately did not disclose to OH for a specific reason (2 not carrying out EPPs; 3 concerned about impact on career or do not trust OH).

Conclusions: (1) Over 1% of all our patients are HCWs. (2) Documentation of patients’ obligations to be seen in OH was high, but evidence that they had actually been seen was present in the notes of only 30%. (3) At least 25% of patients had decided not to tell OH, in breach of DH/ GMC/NMC guidance. This should normally prompt clinicians to inform OH directly. (4) We have now developed a protocol for documentation of OH referrals to try and improve consistency and adherence to national guidance.

P119 Impact of transition to adult services on clinic attendance and virological control in HIV-infected adolescents
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Background: Since the introduction of highly active antiretroviral therapy (HAART), more perinatally HIV-infected children survive into adolescence and need support for the process of transition to adult services. This study aimed to review the impact of transition on engagement with services and disease management.

Methods: Retrospective notes review of perinatally-infected adolescents transitioning from paediatric services to a specialist adolescent service from May 2005 to March 2008. Data collected from the 12 months pre- and post-transition included rate of clinic attendance, CD4 count, viral load and details of HAART. Additional data on the perceived impact of transition on self-management were collected using a self-report questionnaire.

Results: Seventeen young people were identified. Age at transition ranged from 15 years 6 months to 17 years 11 months. All remained engaged with services at one year post-transition. Post-transition, 75% of patients had an increased non-attendance rate (mean rate rose from 21% to 43% ($z = -2.827$, $P < 0.005$)). Eight participants had existing adherence difficulties pre-transition, which persisted post-transition. One further patient became non-adherent. No statistical difference was found between mean CD4 count pre- and post-transition ($z = -0.047$, $P = 0.962$). The two patients with consistently undetectable viral load, and the six patients who had viral load <400 copies/mL pre-transition maintained this degree of viral control after transition.

Conclusions: The data suggest that adherence and virological control remained consistent post-transition; however, clinic attendance rates declined. This may imply potential long-term negative consequences for disease control, particularly relating to engagement with services, and highlights the need for close and dedicated support as transitioning adolescents take responsibility for independent management of their condition.
P120
Intensive care survival with HIV-infection is equivalent to HIV-negative admissions: a single centre in the Southeast
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Background: As the spectrum of HIV disease changes in the post HAART era, data has shown a reduction in HIV associated admissions to ICU and an improvement in survival. We describe our experience in the ten years post introduction of HAART.

Methods: A retrospective case finding strategy was employed to identify all ICU admissions with HIV infection (August 1996–November 2006). Patient demographic data, HIV and ICU parameters and ICU survival were recorded. ICU survival was compared to HIV negative admissions over the same period. Data were analysed using SPSS with Chi squared, odds ratios and multivariate logistic regression.

Results: Forty-five patients were admitted on 48 occasions. The median age was 37 years (23–71), 38 (84%) were male, 35 (75%) were caucasian, 9 (20%) were Afro–Caribbean, 29 (64%) were MSM. Twenty-eight (58%) cases were new presentations of HIV infection; half of these diagnoses were made in ICU. The median CD4 count was 50 cells/mm3 (4–925). The reason for admission was HIV related in 36 cases (75%). Thirty-four of 48 (71%) were respiratory admissions, 25/48 (52%) had Pneumocystis. Median APACHE score was 15 (2–29). Thirty-eight of 48 (79%) admissions received ventilatory support, of whom 25 were intubated. Thirty-six of 48 (75%) admissions with HIV were discharged from ICU versus 3265/4418 (74%) of all HIV negative admissions. The ICU survival rate for Pneumocystis was 18/25 (72%).

Univariate associations of ICU mortality were: HIV related admission (OR 1.44 (1.16–1.70) P = 0.045), CD4 count <100 cells/mm3 (OR 1.62 (1.24–2.11) P = 0.048) and intubation (2.1 (1.36–3.24) P = 0.008). Intubation was independently associated with mortality (P = 0.041) however survival rates post intubation were comparable for HIV-infected and HIV negative admissions, (15/25) 60% and (1055/2672) 62% respectively.

Conclusions: Equivalent ICU and post intubation survival with HIV and non-HIV admissions, inspite of a high burden of Pneumocystis (52% of HIV admissions), reflects improved outcomes in the post HAART era and an advance in Intensivist management of HIV disease.

P121
Profile of nonattendees at an inner city HIV clinic, disease outcomes and use of resources
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Background: Many HIV outpatient departments (OPD) face high rates of non-attendance. The clinical consequences of non-attendance and the impact on hospital resources is unclear. We hypothesised that intravenous drug users (IVDU) would miss more OPD appointments and this would result in worse treatment targets and more use of hospital inpatient resources.

Methods: A prospective chart review of non-attendees (missing one or more OPD appointments) at a busy HIV outpatient clinic from 1st July to 31st December 2008, recording patient demographics, treatment and disease related factors, number of missed OPD appointments and inpatient admissions over the previous 2 years. The group was divided into frequent (higher than average missed OPD appointments in past 2 years) and infrequent (lower than average) non-attendees. Non-parametric analyses compared between group comparisons and regression analysis identified independent predictors of frequent non-attendees.

Results: One hundred and sixty-two non-attendees missed a total of 1112 of 2505 scheduled OPD appointments over two years (an average of 44% missed appointments). Frequent non-attendees (>44% missed appointments) had HIV for longer (average 7 [SD 6] years versus 5 [5 years, P = 0.02), were more likely Irish (80% versus 53%, P < 0.001) and IVDU (72% versus 37%, P < 0.0001). Frequent non-attendees were also more likely to have multiple (>2) hospital admissions (N = 8 versus 2, P = 0.03), higher log HIV RNA (3.1 [1.4] versus 2.6 [1.2], P < 0.01) and those with CD4 <250 less likely to be on antiretrovirals (12/24 [50%] versus 23/27 [85%]). Despite this, significantly more IVDU frequent non-attendees attended drug treatment centres (DTC) for methadone (45/54 [83%] versus 18/31 [58%], P < 0.0001).

Conclusions: These data suggest less interaction with HIV OPD services by IVDU with associated increases in inpatient admissions. Consideration to providing HIV care through DTC may help improve effective care delivery in cohorts with high IVDU prevalence and improve outcomes in this challenging group.

P122
Proposed treatment algorithm for testosterone replacement therapy in HIV-positive patients
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Background: Testosterone replacement therapy (TST) has been shown to produce a wide range of benefits including improvement in libido, bone density, muscle mass, body composition and mood in patients with low to subnormal levels of circulating testosterone.

Methods: Multidisciplinary team approach to define biochemical tests and cutoffs; when to refer to endocrinologist or erectile dysfunction clinic and different treatment options. The MDT team comprised of a consultant endocrinologist, consultant HIV physician, clinical pharmacist and psychosexual physician.

Results: Detailed history and examination including total testosterone, gonadotrophins (LH and FSH), PSA and prolactin. Men over 45 would require a digital rectal examination (DRE). Patients with low/subnormal total testosterone levels (<8–12 nmol/l) and High/LH/FSH levels should be treated with TST. Low/normal LH/FSH – carry out pituitary MRI before referral to endocrinology clinic. High prolactin levels – refer to the endocrinology clinic. Abnormal PSA/DE – refer to urology clinic. Sexual dysfunction, low libido, loss of interest refer to erectile dysfunction clinic.

Patients with subnormal/normal total testosterone levels suffering from tiredness/fatigue – trial with low dose TST (Low dose patch 2.5 mg/24 hours or half tube of gel). First line TST is topical gel or patches. Second line is three monthly testosterone injection. Annual monitoring of total testosterone levels, LH/FSH, prolactin and PSA required.

Conclusions: Proposed treatment algorithm provides a clear, structured approach to managing patients who may testosterone replacement therapy.

P123
The new face of the epidemic? Sexually transmitted HIV and young people
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Background: The HPA reports a 300% increase in HIV diagnoses from 1998 to 2007 in young people in the UK. Extensive services are available for the vertically infected cohort, however there are only limited services for young people infected via alternative routes. Data from the USA suggests that the complex needs of young people may not be met from existing HIV services.

Methods: The database was interrogated to reveal all individuals diagnosed HIV positive aged ≤25 years. Our retrospective, descriptive audit reports demographics, place of diagnosis, reason for testing and route of transmission. CD4 counts, HIV subtype, baseline resistance, viral loads and antiretroviral(ARV) exposure, hepatitis status and attendance to clinic are described. Social circumstances, psychological comorbidity, sexual health and ongoing risk behaviours will also be reported.

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Results: One hundred individuals were identified of whom 76% are male. 58% are Caucasian, 21% Black African and 21% other ethnicities. The majority (70%) are MSM. Of the heterosexuals, 21 were infected sexually, with 5 possible and 3 proven vertical transmissions. Median age at diagnosis was 21 years (IQR 20–22). Over half (53%) were diagnosed within the local GUM service. Only 5% were symptomatic at diagnosis, 25% tested following risk and 10% were a contact of HIV. Almost half (43 MSM and 5 heterosexuals) had tested HIV negative a median of 13 months previously (IQR 7–28). Eighty-seven percent attended an initial appointment with a HIV specialist and 49% have been seen within the last 4 months. Thirty-eight percent were lost to follow up median 6 months from diagnosis (IQR 3–22). Half are ART experienced, of whom 45% are currently on therapy.

Conclusions: The majority of this cohort have acquired HIV sexually with half having had a previous negative test highlighting the need for improved prevention strategies. Current HIV services are not meeting the individual needs of this cohort, with over a third lost to follow up. A specialist <26 clinic has been developed aiming to improve standards of care for this vulnerable group.

P124
Tissue biopsy in HIV-infected patients: how often do samples get sent for microbiological analysis?
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Background: In order to make a diagnosis of many opportunistic infections and tumours in patients with HIV infection, biopsy of lymph nodes or other tissue is often needed. To maximise the chance of precise diagnosis, samples should be submitted for both microbiological and histological processing. Following several instances when tissue was sent only to histology, we performed a study to assess how often samples were inappropriately not sent for microbiological analysis.

Methods: We identified all tissue sampling undertaken on HIV+ patients between 2003 and 2008 at our hospital by reviewing hospital coding records from 2003 to 2008 and approximately 140 weekly ward lists from the HIV ward from 2006 to 2008. We then used the hospital pathology database to identify those specimens that were sent to histopathology and microbiology. Indications for sampling and final diagnosis/outcome were documented. Details were reviewed independently by four consultants in HIV Medicine and Infectious Diseases to identify those samples that should have been sent to microbiology.

Results: Sixty-two samples that would be expected to go to microbiology were identified. All were sent to histopathology but only 20 were also sent to microbiology. Out of 42 samples that were not sent to microbiology, request forms in 28 clearly stated TB or other infection as a potential diagnosis. Of these 42 samples, 13 samples from 12 patients subsequently had mycobacterial (n = 9) or other infection identified on blood cultures, re-sampling or histology.

Conclusions: Less than a third of tissue samples in HIV patients are sent to microbiology, resulting in many missed or delayed diagnoses. We have presented our results at HIV, surgical and radiology clinical governance meetings, and are developing clearer clinical pathways for tissue biopsy in HIV+ patients to try to eliminate the problem.

P125
Utilization of traditional and conventional healthcare in rural South African HAART initiators in the period before death
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Background: South Africa has a high HIV prevalence, and despite recent achievements in rolling-out antiretroviral programs, many infected individuals continue to access care from traditional healers. Traditional therapies may be toxic, interact with antiretrovirals and delay seeking of conventional healthcare. Our aim was to examine patterns of healthcare use, including use of traditional healers, in the period before home death in individuals previously initiated on highly active antiretroviral therapy (HAART).

Methods: A retrospective cohort study was conducted in the rural Bushbuckridge district in north-east South Africa. Adults initiated on HAART, who subsequently had home deaths were included. Data were collected from clinical records and from existing records of post-mortem interviews with household members. Patients were excluded if families could not be traced, if families refused consent to interview, or if files were incomplete.

Results: Between October 2005 and September 2007, 1353 patients (447 males; 906 females) were initiated onto HAART. Twenty-six, not meeting exclusion criteria, were found to have died at home following HAART initiation, 65.4% of whom were male. During the period of illness leading to death, 57.7% (15/26) used a traditional healer, 66.7% (10/15) of whom accessed a traditional healer as their first action of seeking healthcare. The remainder accessed private practitioners or public outpatient/ casualty departments as their first action.

Conclusions: Although fewer males than females initiated HAART, males were more likely to die at home, perhaps reflecting more advanced immunosuppression at initial presentation. Despite already being on a HAART program, more than half accessed traditional healers during the period of illness leading to death. A number of factors may contribute, including barriers to primary and secondary health care access (e.g. transportation, poverty, stigma) and cultural beliefs regarding the use of traditional medicine.

P126
Abstract withdrawn
P127
‘Sex, love and one-night stands: getting the relationship you want’: evaluation of a European sexual health workshop for HIV-positive young people

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Background: A week long residential conference for HIV+ young people was held in Switzerland in July 2008. Fifty delegates (15 males, 20 females aged 14–19 years; x = 17.25) and 11 males, 4 females aged 20–29 years; x = 22.5) from 12 European countries attended. They participated in a series of workshops including a 3 hour sexual health workshop aimed at increasing confidence about the negotiation of sexual relationships, increasing skill regarding condom use and strategies about HIV disclosure to sexual partners.

Methods: The sexual health workshop was focused on the acquisition of new skills regarding disclosure of status to sexual partners and condom use. Aims were to provide information about correct use of condoms by demonstration (using bananas), increase confidence in condom use by giving participants personal experience of using condoms and lubricant (using bananas), explore personal attitudes and skills with relating to condom use employing a story to illustrate challenges to condom use and explore attitudes, competency and appropriacy of HIV disclosure to sexual partners using prepared questions and small group discussion. The workshop was evaluated using an 8 item questionnaire.

Results: For evaluation purposes responses were separated into two age categories (below 19 years and 20+ years). Generally, participants felt that other people found them attractive, that HIV had not had a negative impact on self-image, and that following the workshop they were more confident about using condoms with sexual partners, having a satisfying sexual life, and talking about sexual feelings with their partners. They were confident that their sexual partners would accept their HIV. They were less confident in their ability to talk about HIV with their sexual partners. Females felt they had learned more than males about condom use (sig. P ≥ 0.05).

Conclusions: These results reflect the benefits of participation in structured sexual health workshops where there is a strong focus on peer support, development of self-esteem and the normalization of being a HIV+ young person.

P128
High rate of psychiatric comorbidity and low rate of rehabilitation referrals in patients with HIV-related cognitive impairment (HIVCI)

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Background: Patients with HIVCI have significantly improved survival rates in the highly active antiretroviral therapy (HAART) era but are left with chronic neurological impairments. The BHIVA Standards of Care recommend collaboration with HIV physicians and appropriate specialists. According to the National Service Framework guidelines for long-term neurological conditions, these patients should be offered neurorehabilitation.

Methods: A retrospective case note review of patients with HIVCI referred to a specialist HIV psychiatry team between May 2005 and May 2008.

Results: Fourteen patients of median age 36.5 years were referred for psychiatric assessment. The majority were male (71%), unemployed (86%), and were African or Afro-Caribbean (92%), 12/13). Ten of 14 were known HIV-infected and 6/10 of these were on HAART at the time of developing HIVCI. Four of 14 were concurrently diagnosed with HIV and HIVCI. Seven of 14 had psychiatric complications (PC) of HIVCI, including psychosis in 4/7. Ten of 14 displayed challenging behaviour (CB) including aggression (6/10) and sexual disinhibition (3/10). Eight of 14 had poor insight (PI) into their diagnosis of HIV or HIVCI, and 6/11 required support complying with any prescribed medication. Five of 14 were referred for rehabilitation.

Conclusions: This is a cohort of young patients with HIVCI complicated by high rates of PC, CB and PI who would have difficulty complying with complex treatment regimens. Most had migrated to the UK from abroad and were unemployed. This combination of social disadvantage and HIVCI makes them a very vulnerable group. The rate of referral for neuro-rehabilitation was low. This study highlights the importance of close collaboration between the HIV and psychiatric teams, a low threshold for referral for psychiatric assessment and intervention, and early consideration of neurorehabilitation for all patients with HIVCI. We recommend that clear care and referral pathways are established in order to optimise the long-term management of this group of patients.

P129
Mood, stigma and illness perception in HIV-positive African people with lipodystrophy syndrome (LDS)

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Background: LDS is associated with increased health risks and psychological barriers to adherence to ARVs. Changes to bodily appearance have been associated with negative emotional and social consequences e.g. lower self-esteem, mood, quality of life, and social withdrawal and stigma. LDS may make the experience of coping with HIV disease harder.

Methods: In this cross-sectional study 26 African people with physician diagnosed LDS (17 female, 9 male) completed a mood scale (Hospital Anxiety & Depression Scale), HIV Stigma Scale (HSS) and the Illness Perception Questionnaire (IPQ) to assess impact of LDS on psychological and social function.

Results: Age range was 35–60 years; mean = 46 years. Mean length of HIV diagnosis was 10 years (range 2–19) and mean length of LDS diagnosis was 6 years (range 0–17). Sixty-one percent were single and 29% were married/in a relationship. Most (84%) had not had Nufill for facial lipoatrophy. One hundred percent scored as moderately clinically anxious: none were clinically depressed although scores were elevated and approached caseness. Both males and females scored highly on the HSS demonstrating that participants felt they had suffered negative social and psychological consequences because of their HIV status. Females scored more highly on all stigma sub-scales including negative self-image, perceived stigma, disclosure concerns and public attitudes towards them. IPQ scores indicated that this group considered their HIV status to be extremely serious and had a very negative impact on them.

Conclusions: There is a dearth of British literature on the psychosocial impact of LDS in Africans. There were high rates of mood disorder, perceived stigma as a result of HIV and perceived high severity of HIV in this study. Earlier detection of mood disorder in this group may ameliorate some of these symptoms. Physicians should be aware that for this group of patients ARVs may be associated with negative psychological and social consequences. These factors will be explored in more depth in the study.

P130
Bronchoscopy yield in HIV-positive patients, ten years on from the introduction of highly active antiretroviral therapy

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Methods: From all bronchoscopies between 1 July 2007 and 31 March 2008, HIV (Human Immunodeficiency Virus) patients were identified and bronchoalveolar lavage (BAL) results reviewed.

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P131
New therapies for Pneumocystis jirovecii pneumonia: the role of echinocandins and nasal high flow gas therapy
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Background: Current first line therapies for PCP are associated with a number of adverse effects, and treatment discontinuation is often necessary. Furthermore, for patients with severe PCP, invasive ventilation is associated with risk of pneumothorax and death. We present our experience of the use of echinocandins therapy as a component of salvage for PCP and the role of Vapotherm high flow nasal oxygen therapy for respiratory support in patients with PCP and severe type 1 respiratory failure.

Methods: We identified all patients over a 4 year period who received either Caspofungin or Vapotherm at our institution. For all patients baseline demographics, CD4 count, PCP prophylaxis, radiological features, ABG analyses, PCP immunofluorescence, therapy, ventilatory support, adverse reactions and outcome were analysed.

Results: From a total of 80 patients treated for confirmed or probable PCP over a 4 year period (2004–2008) 67 patients were treated with cotrimoxazole as first line therapy. Twelve of these patients (17.9%) required treatment switch as a result of side effects. Twelve patients not responding to first line therapy received Caspofungin as a component of salvage therapy (10/12) or following first line drug toxicity (2/12). Ten of 12 patients receiving Caspofungin made a good response and survived. Two patients died, one with bilateral pneumothoraces predating treatment failure. Adverse effects attributable to Caspofungin were identified. A further 15 patients received ventilatory support with Vapotherm. All patients tolerated Vapotherm with no episodes of pneumothorax, and just one requiring intubation. Overall mortality over 4 years was 6.25% and 5.3% for those with confirmed PCP.

Conclusions: We have found that the use of Caspofungin and Vapotherm in severe PCP is well tolerated, and associated with good outcomes. Mortality rates in our unit compare favourably with those from recent PCP studies in similar settings.

P132
HIV–associated Multicentric Castleman’s disease (MCD) may present in the context of immune reconstitution (IR); highly active antiretroviral therapy (HAART) alone can modify clinical response and is associated with radiological response and suppression of Kaposi Sarcoma Herpes Virus (KSHV) viraemia
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Background: MCD is a rare lymphoproliferative disorder seen mainly in HIV-infected patients. A variety of treatment regimens have been used, usually in combination with HAART. There are few data on the use of HAART alone.

Methods: Between February 2007 and October 2008 seven patients presented with histologically proven HIV-associated MCD. We describe the clinical, radiological and virological response of four patients with MCD who were treated with HAART alone.

Results: All four patients presented with fever, peripheral lymphadenopathy and bone marrow suppression; none had generalised oedema, ascites, pleural effusions, jaundice or renal impairment. All had hepatosplenomegaly, intra-abdominal or intrathoracic lymphadenopathy on CT scanning and detectable plasma KSHV. Median CD4 = 170 (range 160–280). Three patients had begun HAART ≤6 weeks before onset of clinical symptoms. A clinical response occurred in all four within 6 weeks of starting HAART at the time of IR. Retrospective KSHV testing showed detectable viraemia up to 6 months prior to symptom onset, in two patients.

Conclusions: MCD may present in the context of IR. HAART alone can lead to clinical resolution of symptoms in HIV-associated MCD and both radiological and KSHV virological responses. These cases illustrate the importance of initiating, optimising and persisting with HAART once a diagnosis of MCD is made. Treatment with HAART alone represents a treatment strategy for those patients without significant organ failure at presentation.

P133
Association between ABCB1 3435C>T and CYP2B6 516G>T and high-density lipoprotein cholesterol (HDL-c) changes in antiretroviral-naïve patients receiving first-line efavirenz (EFV)-based regimens
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Background: Isolated studies have found a direct correlation between HDL-c and EFV exposure. Here we explore the impact of drug disposition variants associated with EFV exposure on HDL-c changes.

Methods: Seventy-six patients (22 Black African, 13 female) were assessed retrospectively. CYP2B6 516G>T and ABCB1 3435C>T were identified using real-time PCR. The mean change in HDL-c over 48 weeks
was compared between different genotypes. The cumulative effect of genotypes associated with mean HDL-c change ($P < 0.10$) was also assessed.

**Results:** At baseline age, weight, gender, ethnicity, CD4 count and the individual genotypes did not have a significant impact on mean HDL-c ($1.1 \text{mmol/L}$). There was a 37% increase ($+0.32 \text{mmol/L}$, $P < 0.001$) in mean HDL-c over 48 weeks that was univariately associated with gender [male $+0.26 \text{mmol/L}$, female $+0.55 \text{mmol/L}; P = 0.03$], ABCB1 3435 C>T [CT $+0.26 \text{mmol/L}$, TT $+0.17 \text{mmol/L}; P = 0.04$], pANOVA $= 0.003$] and CYP2B6 516 G>T [GG $+0.28 \text{mmol/L}$, GT $+0.29 \text{mmol/L}; P = 0.001$]. There was a significant association between cumulative number of predictive genotypes [CYP2B6 516 TT or ABCB1 3435TT] and mean HDL-c change: [Zero $+0.20 \text{mmol/L}$, One $+0.47 \text{mmol/L}$, Two $+1.00 \text{mmol/L}; P = 0.0001$]

**Conclusions:** In this analysis we have demonstrated the cumulative effect of drug metabolising and drug transport variants on mean HDL-c changes in patients on EFV. These findings need to be validated in independent cohorts. The mechanisms underlying EFV-induced HDL-c increases are yet to be elucidated.

### P134

**Co-administration of fluconazole increases nevirapine concentrations in HIV-infected Ugandans**

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**Background:** We performed a large double blind placebo controlled study of fluconazole (200 mg 3x per week) as prophylaxis for cryptococcal disease (CRYPTOPRO) in patients with CD4 counts $< 200$ in Uganda. Data from retrospective or uncontrolled studies have suggested that there may be an interaction between fluconazole and nevirapine, increasing nevirapine concentrations and potentially leading to hepatotoxicity.

**Methods:** Detailed pharmacokinetic studies were performed on 49 participants (22 on placebo, 27 on fluconazole) who had been on trial and nevirapine for more than four weeks. Samples were taken at baseline, 2, 4 and 8 hours after dosing of nevirapine. Nevirapine levels were assayed using validated LC-MS and pre-dose concentrations and baseline, 2, 4 and 8 hours after dosing of nevirapine. Nevirapine levels were compared using non-parametric tests.

**Results:** Data from 441 patients on LPV/RTV (69% 400/100 mg, 31% 533/133 mg) and 318 on ATV (with ATV: 60% 300/100 mg, 32% 400/100 mg; without ATV: 8% 400 mg) were included. With LPV, rifabutin was co-administered in 15 (3%) patients. Multivariable models revealed the following predictors (proporional increase/decrease (95% confidence interval)) for LPV concentration: weight (11% [0.4–6%] decrease per 100 kg; $P < 0.001$), dose (26% [4–52%] increase for 533/100 mg compared with 400/100 mg; $P = 0.018$) and rifabutin (115% [40–228%] increase; $P < 0.001$). There was no demonstrable effect of efavirenz (−12% [−29–11%]; $P = 0.28$; $n = 74$), nevirapine (7% [−18–39%]; $P = 0.63$; $n = 51$) or of any other antiretroviral drug. For ATV the predictors were dose (42% [15–75%] increase for 400/100 mg and 66% [76–51%] decrease for 400 mg, each compared with 300/100 mg; overall $P < 0.001$), and efavirenz (33% [51–8%]; $n = 30$ decrease; $P = 0.014$). There was no significant association with nevirapine (−15% [−40–22%]; $P = 0.38$; $n = 23$) or tenofovir (9% [−13–35%]; $P = 0.46$; $n = 210$).

**Conclusions:** This analysis confirms the effect of NNRTIs on ATV concentration, and there was a negative association of weight and LPV concentration. In contrast to some other studies we did not find an influence of tenofovir on ATV levels. The unexpectedly strong impact of concomitant rifabutin on LPV concentration should be studied further.

### P135

**Factors influencing lopinavir (LPV) and atazanavir (ATV) plasma concentration**

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**Background:** Aim of this study was to examine factors influencing exposure to LPV and ATV in a large UK cohort.

**Methods:** Data from the Liverpool TDM registry were linked with the UK CHIC Study. For each patient, the first measurement of LPV (400 or 533 mg twice-daily; ritonavir boosted) or ATV (300 or 400 mg once-daily; ritonavir (RTV) boosted or unboosted) with plasma concentration sampled at least 4 hour after intake was included. Multivariable linear regression was used to evaluate the association of dose, gender, age, weight, ethnicity, and concomitant antiretroviral drugs or rifabutin with log-transformed drug concentration, adjusted for time since last intake.

**Results:** Data from 441 patients on LPV/RTV (69% 400/100 mg, 31% 533/133 mg) and 318 on ATV (with RTV: 60% 300/100 mg, 32% 400/100 mg; without RTV: 8% 400 mg) were included. With LPV, rifabutin was co-administered in 15 (3%) patients. Multivariable models revealed the following predictors (proporional increase/decrease (95% confidence interval)) for LPV concentration: weight (11% [0.4–6%] decrease per 100 kg; $P < 0.001$), dose (26% [4–52%] increase for 533/100 mg compared with 400/100 mg; $P = 0.018$) and rifabutin (115% [40–228%] increase; $P < 0.001$). There was no demonstrable effect of efavirenz (−12% [−29–11%]; $P = 0.28$; $n = 74$), nevirapine (7% [−18–39%]; $P = 0.63$; $n = 51$) or of any other antiretroviral drug. For ATV the predictors were dose (42% [15–75%] increase for 400/100 mg and 66% [76–51%] decrease for 400 mg, each compared with 300/100 mg; overall $P < 0.001$), and efavirenz (33% [51–8%]; $n = 30$ decrease; $P = 0.014$). There was no significant association with nevirapine (−15% [−40–22%]; $P = 0.38$; $n = 23$) or tenofovir (9% [−13–35%]; $P = 0.46$; $n = 210$).

**Conclusions:** This analysis confirms the effect of NNRTIs on ATV concentration, and there was a negative association of weight and LPV concentration. In contrast to some other studies we did not find an influence of tenofovir on ATV levels. The unexpectedly strong impact of concomitant rifabutin on LPV concentration should be studied further.

### P136

**HIV-related medication errors: frequency, cause and outcomes in a specialist hospital outpatient clinic**

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**Background:** Medication errors are the second most reported patient safety incident and responsible for 6.5% of hospital admissions in the United Kingdom (UK). To date there are no published prospective data of HIV related medication errors in hospital outpatients. We aim to prospectively evaluate HIV related medication errors, causes, actual and potential outcomes in HIV outpatients attending a hospital based outpatient clinic in the UK.

**Methods:** All prescriptions for HIV outpatients were prospectively evaluated for medication error, cause, medicines, outcome and potential outcome if error undetected in March 2008. All errors were recorded in a database.

**Results:** Overall 126 (4.8%) errors were recorded from 2604 prescribed items. Errors involved antiretrovirals (ARV) 64 (51%) and other medicines 62 (49%). Prescribing errors 74 (2.8%), were due to unintentional slips 45 (61%), intentional mistake 18 (24%), no documentation or notes 9 (12%), other 2 (3%). A clinical pharmacist identified, confirmed and corrected 69 (93%) of errors on clinical screening, the dispenser identified 5 (7%) at labelling and no prescribing errors reached the patient. Clinical screening errors 7 (0.27%), due to slips following prescribing error 5 (21%), mistakes 2 (29%) were all identified and corrected at the labelling stage. Dispensing errors 43 (1.7%), from slips or lapses 31 (72%), mistakes 7 (16%), other 5 (12%) were identified and corrected during dispensing or at final check. Checking errors 2 (0.03%), 1 excess supply identified on patient collection and one incorrect strength which reached the patient. A total of 125 (99%) of errors were identified and corrected before reaching the patient. No errors resulted in harm, 58 (46%) of errors were classified with the potential to cause moderate to major harm.

**Conclusions:** We report a high frequency of errors related to prescribing and dispensing processes due to unintentional slips and intentional mistakes. A significant proportion had the potential to cause moderate to major harm, however no actual harm was done.
Once-daily darunavir (DRV) used in routine clinical care produces trough DRV drug concentrations in excess of 30x the protein corrected (PC) EC50 for wild type (WT) HIV

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Background: In clinical practice measured drug concentrations often exhibit significant differences to those published in clinical trials. This can impact on virological efficacy and drug toxicity. The aim of this study is to assess DRV concentrations achieved in a cohort of HIV-positive individuals using a non-standard dose of DRV 900 mg OD with RTV 100 mg OD.

Methods: Sixty-nine HIV-positive patients with no DRV resistance-associated mutations were commenced on antiretroviral therapy (ART) regimens with DRV/RTV 900/100 mg OD and were followed prospectively. Trough [DRV] (C24) actual and predicted were recorded and compared with published protein-corrected (PC) EC50 values for WT HIV (55 ng/mL) and (PC) EC50 for resistant HIV (550 ng/mL).

Results: Fifteen patients started DRV/RTV as their first PI-based regimen. Others changed for: ART simplification/move to OD ART (n = 17), gastrointestinal side effects (n = 15), low level viremia (n = 6), jaundice (n = 6), lipid abnormalities (n = 6) and perceived potency (n = 6). Regimens changed from were: LPV/r (n = 25), ATV/r (n = 20), FAPV/r (n = 2), double-boosted PI (n = 7). Twenty-nine patients provided actual trough samples (23–26.5 hrs post drug) (median 24 hour). The median trough [DRV] was 1593 ng/mL (range 413–582); this is 30x the PC EC50 for WT HIV. A further 21 patients provided blood samples a median of 15 hours (12.5–19 hour) post drug ingestion. Using a T1/2 of 15 hrs the projected C24 [DRV] was 2026 ng/mL (772–4558) representing 37x the PC EC50 for WT HIV. Furthermore, 50/51 levels were above the PC EC50 for resistant HIV. No patients have exhibited virological failure to date. Population pharmacokinetics (PK) of ritonavir (RTV)–boosted atazanavir (ATV) (300/100 mg q.d.) and darunavir (DRV) (900 mg OD) were obtained from the UK and Ugandan patients respectively. Non-linear mixed effects modelling (NONMEM versus VI 2.0) was used to estimate PK parameters, inter-individual variability and residual error, and the influence of different patient characteristics. The model was validated by means of simulation and visual predictive check.

Results: Sixty-nine HIV-positive patients with no DRV resistance-associated mutations were commenced on antiretroviral therapy (ART) regimens with DRV/RTV 900/100 mg OD and were followed prospectively. Trough [DRV] (C24) actual and predicted were recorded and compared with published protein-corrected (PC) EC50 values for WT HIV (55 ng/mL) and (PC) EC50 for resistant HIV (550 ng/mL).

Conclusions: Once daily Darunavir used in routine clinical care produces trough DRV drug concentrations in excess of 30x the PC EC50 for WT HIV. This is in keeping with data from randomised controlled trials.
identify important covariates impacting PK variability, and ii) simulate concentration-time profiles of lower unlicensed ATV doses (150 mg q.d., 200 mg q.d.).

**Methods:** Twenty-four hour PK profiles were combined from three studies. Non-linear mixed effects modelling was applied (NONMEM versus VI 2.0) and the following covariates explored: RTV area under the curve (AUC$_{0-24}$), HIV status, sex, ethnicity, weight and concomitant saquinavir (1600 mg q.d.). The model was validated by means of simulation and visual predictive check.

**Results:** Sixteen healthy volunteers and 30 HIV patients (9 female; 7 Black African, 6 Hispanic) were included (300/100 mg q.d., 1 profile per patient). A one-compartment model with first-order absorption and lag-time best described the data. Only RTV AUC$_{0-24}$ was significantly associated with ATV apparent oral clearance (CL/F) and volume (V/F) following multivariate analysis. Of 46000 simulated profiles for 300/100 mg q.d., 200/100 mg q.d. and 150/100 mg q.d., 10, 16 and 22% of trough concentrations respectively were below the recommended clinical cut-off for efficacy (<0.15 mg/L). In contrast, for 300/100 mg q.d., 39% were above the proposed threshold for increased risk of hyperbilirubinaemia (>0.85 mg/L) compared to 21 and 12% for 200/100 mg q.d. and 150/100 mg q.d. respectively. Of 214 ATV TDM trough samples (300/100 mg q.d.; 20–28 post-dose), 5% were <0.15 mg/L and 34% >0.85 mg/L implying some over-prediction of the frequency of achieving subtherapeutic concentrations.

**Conclusions:** RTV AUC$_{0-24}$ was significantly associated with ATV CL/F and V/F. The model was used to investigate other, particularly lower, dosing strategies.

**P141 Prevalence of potential drug–drug interactions in the Swiss HIV Cohort Study**

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**Background:** Drug–drug interactions (DDIs) related to HIV therapies continue to expand with new drugs, more complex ART regimens, and increasing age-related comorbidities. The identification, resolution and prevention of DDIs are important determinants for clinical management as it may prevent treatment failure and toxicity. This study investigates the prevalence of DDIs (HIV/HIV drugs and HIV/non-HIV drugs) within Swiss HIV Cohort Study (SHCS) patients.

**Methods:** Detailed SHCS medication forms were screened for potential DDIs during a 3 month period of time using a customised version of the University of Liverpool drug interaction database (www.hiv-druginteractions.org). Physicians were subsequently informed of clinically relevant DDIs.

**Results:** Medical prescriptions were analyzed for 771 ART-treated patients. ART-regimens were mostly PI-based (41%) and NNRTI-based (39%) with tenofovir/emtricitabine as NRTI backbone (38%). Five hundred and sixteen patients had a co-medication, of whom 337 had had at least one DDI. Of these, 11 patients (2%) had red flag DDIs (i.e. contra-indicated) and 333 patients (65%) had orange flag DDIs (i.e. potential dose modification or close monitoring). Thirty-five patients (7%) had HIV/HIV drug interactions, whereas 316 patients (61%) had HIV/non-HIV drug interactions. HIV/non-HIV drug interactions involved mainly ATV/r (21%), LPV/r (22%) and EV (26%) with methadone (14%), cardiovascular drugs (mostly B-blockers and Ca channel inhibitors; 13%), statins (20%) and CNS drugs (mostly SSRIs and BZDs; 23%). Sixteen patients (3%) had a DDI that could have lowered the HIV drug concentration. In the multivariate analysis, older patients (P < 0.001) and IDU patients (P = 0.001) were most likely to have a co-medication. Independent risk factors for DDIs were IDU patients (P = 0.005), PI + NNRTI-based regimens (P = 0.002) and >2 co-medications (P < 0.001). No association was found between DDIs and virological failure.

**Conclusions:** Clinically significant DDIs related to HIV therapy are common. The www.hiv-druginteractions.org database constitutes a valuable tool for the identification of DDIs in clinical practice.

**P142 Review of the use of therapeutic drug monitoring for antiretrovirals at a large London hospital**

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**Background:** BHIVA treatment guidelines state that Therapeutic drug monitoring (TDM) may be useful in certain scenarios including drug interactions, pregnancy, paediatrics, salvage therapy hepatic/renal impairment, suspected toxicity, and alternative drug dosing regimens.

**Aim:** To assess the indications for TDM requests at a large London HIV unit and identify what proportion of samples could not be interpreted due to sampling errors or data omissions.

**Methods:** All trough/predicted trough samples taken between 1 January 2007 and 31 December 2007 were catalogued and medical notes found. The drugs, doses, results and indication for request were analysed. Indications where compared against BHIVA 2006 guidelines.

**Results:** One hundred and forty-eight trough/predicted trough samples from 130 patients were taken during the 12 month audit period. Medical notes where available for 62% (92/148) of samples taken. Protease Inhibitors (PIs) consisted 85% of sample request, with lopinavir being the most common drug for analysis (50% of all samples). Sixty-four percent (59/92) of samples were taken within the BHIVA recommendations. If samples taken for local clinical trial protocols were excluded (13% [12/92]), then 73.75% (59/80) of samples were within guidelines. Unlicensed once daily therapy (19.6% [18/92]) and drug interactions (18.5% [17/92]) were the most common indications. Indications outside BHIVA guidelines included viral failure (7.6%) and adherence concerns (4.3%). Ten percent of samples had no documented or discernable indication. Where drugs could be dosed once or twice daily, there were significantly more sampling errors and data omissions for once daily (17.1%) than twice daily doses (6.7%, P = 0.03), driven by the need for true troughs for once daily lopinavir.

**Conclusions:** The majority of TDM requests were taken with the BHIVA guidelines. Improvements could be made in documentation and sampling times, although the frequency of errors in this audit was substantially lower than reported at other large centres.

**P143 Variability in steady-state raltegravir pharmacokinetics – impact of ezetimibe?**

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**Background:** The integrase inhibitor raltegravir (RAL) and lipid lowering agent ezetimibe (EZE) are metabolised in the liver via glucuronide conjugation involving the UDP-glucronosyltransferase UGT1A1, with subsequent biliary and renal excretion of the conjugates. This common metabolic pathway allows the potential for drug interactions. We have assessed the interaction in healthy volunteers.

**Methods:** HIV negative subjects were randomised to a prospective, open-label, crossover study. Group A received RAL 400 mg twice daily (BD), RAL + EZE 10 mg once daily (OD), wash-out, and EZE 10 mg OD. Group B received EZE 10 mg OD, RAL + EZE 10 mg OD, wash-out, and RAL 400 mg BD. All phases lasted 10 days. Steady-state full pharmacokinetic (PK) sampling was performed at days 10, 20 and 40 with dosing within 15 mins of a standardised breakfast. RAL PK parameters were determined by non-compartmental methods (WinNonlin) and comparisons in the presence of EZE measured by geometric mean ratio (GMR) and 90% confidence intervals (CI).
Results: Twenty subjects (10 female) completed the study. GM RAL $C_{\text{max}}$, $C_{\text{trough}}$ and AUC$_{0-12}$ were 605 and 686 ng/mL, 24 and 27 ng/mL, 2264 and 2616 ng/h/mL without and with EZE. The small increases in RAL $C_{\text{max}}$ (13%), $C_{\text{trough}}$ 12% and AUC$_{0-12}$ (16%) when dosed with EZE were not statistically significant. There were no significant changes in RAL $T_{\text{max}}$ or half-life. There was marked inter-individual variability [coefficient of variation (CV%)] in RAL $C_{\text{max}}$ and AUC$_{0-12}$; higher in the presence of EZE: 111 versus 140, 69 versus 93 respectively. $C_{\text{trough}}$ ranged between 4 and 283 ng/mL without EZE and 3 and 363 ng/mL with EZE, with 6 (30%) subjects having $C_{\text{trough}}$ lower than the reported IC50 (15 ng/mL).

Conclusions: There is marked inter-individual variability in the PK parameters of RAL administered after a standardised meal. There were no changes in RAL PK without or with EZE. With 30% of subjects having $C_{\text{trough}}$ lower than the reported IC50, there is a clear need to better understand the main determinants of the RAL PK-PD relationship.

P144
Are we failing our medical students? Education provided to UK medical elective students regarding HIV risk and post exposure prophylaxis
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Background: Research conducted in 1999 and 2002 suggested that medical schools were failing to provide the necessary level of support for students embarking on electives in areas with a high-risk of HIV. This study aimed to assess whether the situation has improved since 2002 with respect to the risk reduction provided to medical students by their home institutions.

Methods: A questionnaire was sent by email to all 29 UK medical schools offering an elective program.

Results: The response rate was 25/29 (86%). Of these, 23 (92%) required their students to obtain project approval with 13 (52%) considering HIV risk as part of their decision for project approval. All responders (100%) provided education regarding HIV risk and PEP in written format; 23 (92%) in the form of a lecture, and 23 (92%) provided additional information from experts. Only 16 (64%) supplied PEP starter packs to students where appropriate, with a further 8 (32%) offering guidance on where to obtain such packs. In total, 24 (96%) of responding medical schools advised PEP where appropriate, with a further 8 (32%) offering guidance on where to obtain such packs. In total, 24 (96%) supplied PEP starter packs to 19 (92%) in the form of a lecture, and 23 (92%) provided additional education regarding HIV risk and PEP in written format; 23 (92%) in the form of a lecture, and 23 (92%) provided additional information from experts. Only 16 (64%) supplied PEP starter packs to students where appropriate, with a further 8 (32%) offering guidance on where to obtain such packs. In total, 24 (96%) of responding medical schools advised PEP where appropriate, with a further 8 (32%) offering guidance on where to obtain such packs. In total, 24 (96%) supplied PEP starter packs to 19 (92%) where appropriate and only one medical school (4%) failed to offer PEP starter packs or advice on where to obtain one.

Conclusions: The situation regarding HIV risk education and provision of PEP to elective students has improved since 2002. However, there remains a discrepancy between advice given, supervision of projects and provision of PEP starter packs across UK medical schools. This highlights the need for national guidance provided to all medical schools so our students can undertake their elective without undue risk.

P145
How high is viral load in HIV seroconverters once they present to a clinic?
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Background: ART intervention in early infection has been suggested for public health benefit. Its impact, however, depends on how early infected individuals present to clinics. We describe HIV viral load (VL) at first clinic presentation, changes over time following seroconversion (SC), and factors associated with a high VL ($\geq 5 \log_{10}$ copies/mL) at presentation using data from persons with known HIV SC dates.

Methods: Individuals testing positive $\geq$1 January 1997 who were ART-naive at first VL were eligible for inclusion. Repeat VL measurements were used to describe median VL in the 3 years following SC, censoring follow-up on commencement of ART. Risk factors for high VL at first presentation were assessed using logistic regression and restricted to individuals testing positive within 1 year of negative test and with VL available within 1 month of positive test. We adjusted for sex, risk group, age at SC, presence of SC illness, ethnicity, year of positive test, and time from SC to first VL.

Results: Of 997 included in analyses, 85% were white, 93% male, 86% MSM, with overall median (IQR) age 32 (27–39) years. Median (IQR) VL at first presentation was 4.89 $\log_{10}$ copies/mL (4.18–5.45), at median 8 (2–19) days following first positive test. The proportion first presenting with VL $\leq$2.7, 2.7–4.0, 4.0–4.7, 4.7–5.0, $>5.0$ $\log_{10}$ copies/mL was 4, 16, 23, 12 and 45% respectively. Median VL fell considerably, as expected, from 5.53 to 5.05, 4.72, 4.70, 4.58, 4.43 and 4.40 $\log_{10}$ copies/mL from 1 week to 1, 3, 6, 12, 24 and 36 months post SC. Increasing age (aOR = 1.23 per 10 years; 95%CI = 1.00–1.50) and SC illness (3.05; 2.06–4.52) were significantly independently associated with high VL at first presentation. Women were significantly less likely to present with high VL (0.27; 0.09–0.83). No other factors examined were found to be independently associated with high VL.

Conclusions: Presentation with very high VL ($\geq 5 \log_{10}$ copies/mL) remained common for up to 6 months. Given high transmission rate at that level, ART intervention within 6 months of SC may be worthwhile from a public health perspective.

P146
Post exposure prophylaxis in the developed and developing worlds: different reasons for poor adherence to guidelines
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Background: Many published guidelines for the provision of post-exposure prophylaxis, occupational exposures (PEP) or sexual exposures (PEPSE) exist. Worldwide, much variation in clinical practice, including availability and uptake are observed. Few data from high prevalence regions particularly the developing world exists.

Methods: We compared a new PEP/PEPSE programme in a Malawian Teaching Hospital (2004–2008) with that in a UK HIV hub (2005–2008). We compared attendance, occupational risk, type of exposure, timing, appropriateness, and outcomes in each of the programmes. Occupational PEP and PEPSE attendances were included.

Results: In Malawi 197 cases were seen compared to 80 in a UK setting. Fifty-three percent of patients enrolled in Malawi were males, compared to 72% in the UK (P < 0.01). The major declared risk factor for exposure in Malawi was needle-stick injury 75%, compared to sex 66% and needle-stick 25% in the UK. PEP attributable to PEPSE has increased significantly in the UK centre. PEP was received within 48 hours of exposure by 69% in Malawi and 77% in the UK centre. Completion of 28 days of PEP was recorded in 73% in the UK centre, final HIV results at 6 months were only available for 30%. In Malawi only 3.5% attended for follow-up. Further data will be presented.

Conclusions: Despite adequate resources and clear guidelines poor database entry, documentation and follow-up prompted a revision of local and regional guidelines in the UK centre. In Malawi, inadequate follow-up and questionable adherence have necessitated an improved publicity campaign and on-going audit. PEPSE now makes up the vast majority of PEP episodes in this UK centre whereas occupational PEP still predominates in a developing world setting. Good logistic organisation, audit and funding of PEP programmes will help improve uptake of services and data collation, and help to reduce HIV transmission.
Pre-elective HIV post-exposure prophylaxis clinic for medical students: design, protocol, uptake and effectiveness
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Background: The elective period offers medical students a valuable training opportunity, but the risk of working in areas with high HIV prevalence must be recognised. The aim of this study was to evaluate the needs of medical students in relation to HIV post-exposure prophylaxis (PEP) prior to their elective and provide safe access to PEP.

Methods: Survey of 388 outgoing medical students to assess their elective plans. All were offered an appointment in a ‘Pre-elective HIV PEP Clinic’. All students that attended the clinic were assessed via a written protocol including knowledge assessment and baseline HIV testing. All students were provided with written information and a prescription for a PEP ‘starter-pack’ if criteria met. Following the elective a questionnaire was sent to these attendees to assess the acceptability of the clinic.

Results: Response rate for the pre-elective questionnaire was 232/388 (60%). Seventy-two of 232 (31%) planned to undertake their elective in areas of high HIV prevalence. Of these, only 32/72 (45%) took up the offer of the clinic. 31/32 (97%) met the criteria for the clinic protocol and received a prescription. Twenty-nine of 32 (90%) of the clinic attendees responded to the follow-up questionnaire. Every respondent rated the clinic as highly acceptable. The main concern was the cost of offer of the clinic. (31/32) 97% met the criteria for the clinic protocol.

Conclusions: Some students are embarking on their electives without adequate preparation. Our innovative ‘Pre-elective HIV PEP Clinic’ is an acceptable way to help prepare students to undertake a fulfilling elective at their chosen destination without unnecessary risk.

The effectiveness of a dedicated nurse-led post-exposure prophylaxis for sexual exposure (PEPSE) clinic in an inner London hospital
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Background: To evaluate and compare the effectiveness of a nurse led PEPSE clinic, established in September 2007, with a general Genito-Urinary Medicine based PEPSE clinic.

Methods: A retrospective notes audit based on the BASSH and local PEPSE guidelines of the nurse led clinic over the period September 2007 to March 2008. Results were compared to a previous audit of a GUM based PEPSE clinic from the same unit over the period 2004/2005.

Results: Forty-nine patients were seen, compared to 44 in the previous audit. The nurse led clinic were more likely to be male 96% versus 82%, MSM (88% versus 77%) and reported insertive and/or receptive anal sex (97% versus 57%) with 47% (versus 52%) having a known HIV-positive partner. More patients had previous PEP (16% versus 7%). Comparing service standards the nurse led clinic had a greater number who met the recommendations to start (96% versus 85%), were commenced within 72 hours (100% versus 85%), had a baseline HIV test (100% versus 97%), had a sexual health screen at 2 weeks (95% versus 42%) and completed the 4 week course (82% versus 39%). Post PEPSE 3 month follow up for HIV testing was similar (39% versus 30%). This is likely due to the 3 month follow-up being managed the general GUM clinic. This has now been transferred to the nurse-led service and it is expected that this will achieve higher attendance rates. Toxicity reports were higher in the nurse-led service (90% versus 30%), with the mean number of side effects being 2 (nausea and diarrhoea), range being 1 to 6 (also headache, vomiting, fatigue and taste disturbance). This higher reporting is likely to be due to the nurse led clinic being delivered by senior nurses with experience of antiretroviral side effect support and management. Service recommendations are identified.

Conclusions: The dedicated nurse-led PEPSE clinic showed significant improvement in all aspects of the standard of PEP care except 3 month follow up for HIV testing.

Understanding HIV-risk behaviour in HIV-serodiscordant couples – a novel approach
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Aim: To explore perceptions about and attitudes towards risk taking behaviour in HIV serodiscordant couples

Methods: Thirty-eight HIV-serodiscordant couples were followed up at 3-monthly intervals for 3 years. At each visit both partners were asked about sexual behaviour, perceptions of risk, and knowledge/use of post exposure prophylaxis (PEP). One-off qualitative interviews were carried out, separately with both partners in a couple in a subset of couples.

Results: Perceptions of HIV-transmission risk varied within couples (in 27/38 couples the infected partner perceived the risk to be higher than the negative partner, P = 0.04), and between positive and negative individuals (negative individuals were more likely to associate risk with viral load). Six of 38 (16%) HIV-negative and 12/38 (32%) HIV-infected individuals were aware of PEP (P = 0.105) and despite subsequent education, it was utilized only once. Risk taking behaviour did not change over time. The risk of HIV acquisition from outside a relationship was substantial as shown by one HIV acquisition, n = 10 incident bacterial STI and high numbers of casual partners. Qualitative interviews identified three key themes related to ongoing risk behaviours: inaccuracies in evaluating HIV transmission risk; a desire to show commitment to a relationship and low anxiety of the consequence of HIV-transmission occurring. These differed within a couple, between couples and broadly between HIV negative and HIV-infected individuals.

Conclusions: This study represents the largest investigation of HIV-serodiscordant couples undertaken in the UK and provides, for the first time, perspectives from both HIV-negative and HIV-positive individuals within a couple. Differences in perceptions of risk and justifications for risk behaviour within a couple, suggests that tailored couple-counselling to high-risk couples may be beneficial. HIV-positive individuals should communicate their anxieties regarding transmission to partners and HIV-negative individuals need to be educated on the impact HIV has on quality of life.

High-risk sexual behaviour and HIV-1 superinfection: an indication for early initiation of antiretroviral therapy?
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Background: Superinfection is defined as infection with a second HIV strain ≥1 month after a primary infection and following seroconversion. Its true incidence is the subject of much debate and studies in homosexual cohorts are limited.

Objective: We undertook a prospective pilot surveillance study of superinfection among HAART naïve HIV-1 infected homosexual males who engaged in unprotected receptive anal intercourse and showed an
increase in plasma viral load \( \geq 0.5 \log_{10} \text{cps/mL} \) during routine follow-up.

Methods: Population and clonal analyses of pol gene sequences (PR codons 1–99, RT codons 1–335) were performed on samples taken at the initial diagnosis and at the time of the viral load increase.

Results: Among 8 patients infected with subtype B, 2 showed evidence of superinfection with a different subtype B strain. In phylogenetic analyses of samples from multiple time points, early sequences formed separate clusters to late sequences, with no evidence of viral recombination. One patient had been first diagnosed HIV-positive 5 months earlier, following an acute seroconversion illness, and experienced a recurrence of the same symptoms at the time of superinfection within pol. He lacked neutralising antibodies against subtype B strains. Over the following 6 months he also acquired primary syphilis and genital herpes. A second patient had been first diagnosed HIV-positive 3 years earlier and experienced no symptoms and no other STIs at the time of superinfection. He controlled both the first infection and the superinfection in the absence of HAART, with a set-point viral load of 3.5 \( \log_{10} \) cps/mL and a CD4 count persistently >1000 cells/mm\(^3\).

Conclusions: HIV-1 infected patients who engage in high-risk sexual behaviour are at risk of superinfection both in the early and established phases of the disease, even in the presence of effective immune responses. Targeted screening based upon sexual history and viral load can achieve a high detection rate. There is a case for early HAART initiation in these patients, both as a public health measure and to address the risk of superinfection.

P152

Spot the difference: high rates of measles IgG seronegativity in HIV-positive adults post HAART

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Background: BHIVA guidelines advise screening for measles IgG in all HIV-positive individuals and for rubella IgG in women of child-bearing age. This pilot aimed to assess seroprevalence in HIV-positive individuals attending for routine blood appointments.

Methods: Measles (all) and rubella IgG (women) were performed in an unselected sample attending for routine bloods from October to November 2008. Demographics, CD4, viral load and antiretroviral history were recorded. Data were analysed in Stata version 8.0.

Results: One hundred and thirty-seven individuals were screened: median age 43 years (range 23–70); 80.3% MSM; 86.1% Caucasian. Recent or current CD4 count ≤500 cells/\text{mm}^3 (IQR 426–741); 96.4% had CD4 count >200; 16.8% had a previous AIDS diagnosis; 85.2% were currently receiving ARVs, 80.5% of whom had HIV VL <40 \text{c/mL}. Overall 14/137 (10.2%) were measles IgG seronegative. The table compares our pilot data to measles IgG seroprevalence in England and Wales (WHO serum bank survey published in 2008):

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<th>Age range</th>
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<tr>
<td>20–39 years</td>
<td>17.0% (9/53)</td>
<td>2.8%</td>
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<td>&gt;40 years</td>
<td>6.0% (5/84)</td>
<td>0.2%</td>
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No association was found between measles IgG serostatus and CD4 count, ARV use or previous AIDS diagnoses. Six of 14 were eligible for MMR vaccination (asymptomatic or mildly symptomatic individuals with CD4 >200). Black Africans were more likely to be measles IgG seropositive than Caucasians (16/16 versus 104/118). Twelve of 13 (92.3%) women had adequate rubella IgG titres.

Conclusions: To our knowledge these are the first UK data post HAART looking at measles IgG serostatus in HIV-positive adults. The data show a seronegative rate >6 times that of the general population, despite good CD4 counts and ARV use. Whether due to effects of HIV on vaccine induced antibodies (as shown in African children) or low rates of measles vaccination and exposure (less likely given cohort studied), these data highlight the importance of screening and support recent BHIVA guidelines.

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Low prevalence of transmitted drug resistance (TDR) in an inner London genito-urinary medicine (GUM) clinic cohort with predominantly heterosexually transmitted, non-B-subtype infection

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Background: BHIVA guidelines have recommended baseline HIV-1 genotypic resistance testing since 2005. Recent data has suggested a decreasing prevalence of TDR in the UK. This study investigated the prevalence of HIV-1 drug resistance in our clinic cohort.

Methods: We performed a retrospective analysis of all baseline resistance tests on patients between 1 December 2004 and 1 December 2008. Resistance mutations were as defined by IAS–USA.

Results: Three hundred and fifty-five baseline resistance tests were performed, of which 241 were in newly diagnosed patients. One hundred and ninety-nine of 355 (56%) were women. Sixty-five percent were Black African/Caribbean. Seventy-five percent were heterosexual infected. One hundred and thirteen of 355 (32%) presented with a CD4 count <200. Six tests were excluded: 4 did not amplify and 2 patients had HIV-2 co-infection. Non-B subtypes were present in 234/355 samples, 17 (16.2%) failed and 64 (61%), 23 (21.9%) and 1 (0.9%) documented R5, dual/mixed (D/M), X4 and failed tropism results were compared. Background characteristics of subjects describe treatment history, virological failures, nadir CD4, CD4 and HIV-RNA at time of tropism testing. Background characteristics of subjects with R5, dual/mixed (D/M), X4 and failed tropism results were compared.

Results: A total of 105 Trofile assays were performed in 91 subjects during this period, 24 treatment-naive and 67 treatment-experienced. Of 105 samples, 17 (16.2%) failed and 64 (61%), 23 (21.9%) and 1 (0.9%) exhibited R5, D/M and X4 tropic virus respectively. Median VL was 4.38 and 3.2 \log_{10}\text{vir} for amplifiable and failed samples respectively; 6/17 (35%) of failed samples were performed on samples with VL <1000 compared...
with 10/89 (11%) of successful tests. Comparing R5 to D/M/X4 tropic samples, mean line of therapy was three for both groups and mean number of previous virological failures was 2.8 and 2.2 respectively. Median CD4, nadir CD4 and viral load were 245 (18%), 145 (12%) and 4.38 for R5 tropic and 126 (8%), 72 (7%) and 3.2 for D/M/X4 tropic samples. The differences between current CD4 and nadir CD4 were statistically significant by Mann–Whitney testing. Similar proportions with R5 and D/M/X4 tropic virus were treatment naïve, 29.7% and 21% respectively. Of the 53 patients with R5-tropic virus, 15 (28.3%) started a MVC-containing regimen and a two entered a vicriviroc study.

Conclusions: The majority of Trofile assays sent from our cohort were successful and failed results were more likely to be from samples with a viral load less than 1000 copies/mL. Similar proportions with R5 and D/M/X4 tropic virus were treatment-experienced and tropism testing should be considered even in highly treatment-experienced subjects if MVC is an option.
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Hypersensitivity reaction (HSR),
Warnings and precautions:

Contraindications:
Hepatic impairment: Monitor closely in mild/moderate.

HSRs have sometimes been reported in patients who have re-started therapy, or in whom HSR cannot be excluded. HSRs may occur with rapid onset, including life-threatening reactions, have sometimes been associated with severe hepatomegaly and hepatic steatosis, has been reported with nucleoside analogues. Combination antiretroviral therapy has been associated with the redistribution of body fat, lipid and glucose abnormalities, which should be managed as clinically appropriate. Cases of osteonecrosis have been reported, particularly in patients with generally acknowledged risk factors, advanced HIV disease or long-term combined antiretroviral exposure.

Hypersensitivity syndrome. Common (>1/100, <1/10) include:
- fever, lethargy, fatigue, arthralgia, muscle disorders, nasal symptoms, cough and alopecia. Uncommon (>1/100, <1/1000): neutropenia and anaemia (both occasionally severe), thrombocytopenia and transient raised liver enzymes. Rarely (>1/10,000, <1/1,000), rises in serum amylose, pancreatitis, rhabdomyolysis, hepatitis. Very rarely (<1/10,000), pure red cell aplasia, peripheral neuropathy, paraesthesia, erythema multiforme, Stevens-Johnson syndrome and toxic epidermal necrolysis.

Nucleoside and nucleotide analogues may cause a variable degree of mitochondrial damage. Lactic acidosis, sometimes fatal, and usually associated with severe hepatomegaly and hepatic steatosis, has been reported with nucleoside analogues.

Combination antiretroviral therapy has been associated with the redistribution of body fat, lipid and glucose abnormalities, which should be managed as clinically appropriate. Cases of osteonecrosis have been reported, particularly in patients with generally acknowledged risk factors, advanced HIV disease or long-term combined antiretroviral exposure.

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Date of approval: 26th June 2008
KIV/BIN/09/40253/1

Adverse events should be reported. Reporting forms and information can be found at www.yellowcard.gov.uk.
Adverse events should also be reported to GlaxoSmithKline on 0800 221 441.

Kivexa Prescribing Information

Kivexa (abacavir + lamivudine) Prescribing Information

Start as you mean to go on
With you for the long run

Kivexa, abacavir + lamivudine