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ABSTRACT

Oral Abstracts

O01 | Self start HOME HIV post-exposure prophylaxis (PEPSE), to reduce time to first dose and increase efficacy: an RCT

Julie Fox[1,2]; Julianne Lwanga[1]; Achyuta Nori[1]; Amanda Clarke[3]; Ming Lee[4]; Orla McQuillan[5]; Lesedi Ledwaba-Chapman[2]; Suna Mantori[3]; Cassie Fairhead[2]; Fiona Ryan[1]; Yanzhong Wang[2]; Anatole Menon-Johansson[1]
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Background: Effectiveness of Post exposure prophylaxis (PEPSE) correlates with speed of uptake following HIV exposure. Time taken travelling to and obtaining PEPSE at sexual health/ emergency units can reduce efficacy and prevent people accessing PEPSE.
We hypothesised that advanced provision of a 5-day PEP starter pack (HOME PEPSE) for men who have sex with men (MSM) to keep at home and self- initiate if required, would reduce time to first dose following HIV exposure, but not impact HIV risk behaviour.
Method: Phase IV, randomised, prospective, open label, study. MSM at medium risk of acquiring HIV were randomized (1:1) to immediate (ARM A) or deferred (ARM B) Home PEPSE. Duration of study was 48 weeks (Arm A) and 72 weeks for (Arm B) who accessed PEPSE through standard of care from week 0-48 and received HOME PEPSE week 48-72.
Every 12weeks, participants self- completed mental health/ risk behaviour surveys and had HIV/STI testing. HOME PEPSE comprised a 5-day pack of FTC-TDF/ Maraviroc taken following potential exposure to HIV. Upon uptake, participants completed a risk questionnaire; PEPSE continuation was physician directed. Appropriate uses of PEP were included in primary analysis. Time to first dose between treatment arms was compared using a two-sided Mann-Whitney U test. Secondary outcomes included: missed opportunities for PEPSE uptake, sexual behaviour STI and HIV incidence.
Results: 139 participants were randomised: 69 (ARM A) and 70 (ARM B). Median age 30years [IQR: 26-39], 75% white, 55% UK born and 72% university educated. 33 in ARM A and 15 in ARM B were eligible for primary analysis. Median time from exposure to first dose was 7.6 hours [3.0,20.9] for ARM A and 28.5 hours [17.3,34.0] for ARM B ($p < 0.01$).
The most reported reason for PEPSE uptake was receptive anal sex with a man of unknown HIV status (81% cases). Uptake of HOME PEPSE was appropriate in 29/ 33 cases (88%, 95% CI: 73-95%).
ARM B had almost double the number (same median and IQR) of missed opportunities for PEPSE uptake than ARM A (268 versus 474 :$p = 0.625$): 9/12 (75%) participants reporting >10 missed opportunities for PEP were in ARM B. No change in number of condomless anal sex acts in previous 3 months from week 0 to 48 in Arm A or arm B (512 versus 911: $p = 0.215$). One person in Arm B acquired HIV. HOME PEPSE was well tolerated.
Conclusion: HOME PEPSE was taken appropriately by MSM, and dramatically reduced time from exposure to first dose, with no impact on safety. Furthermore, HOME PEP may reduce number of missed opportunities for PEPSE. This approach may be incorporated into HIV prevention guidelines.

O02 | HIV testing outcomes among pre-exposure HIV prophylaxis (PrEP) users accessing a regional online sexual health service (e-SHS)

Molly Dickinson[1]; Frances Lander[1]; Chris Kellett[2]; Sophie Strachan[1]; Sara Day[1]
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[2]*Preventx Ltd, Sheffield, UK*

Background: PrEP was nationally commissioned in 2020. HIV testing is a pre-requisite to initiating PrEP and is required regularly thereafter. Due to restrictions accessing clinics during the pandemic PrEP users were encouraged to obtain HIV/STI testing via e-SHS. We explore the HIV testing outcomes of this population.
Method: HIV testing outcomes from individuals that disclosed PrEP use whilst ordering a postal STI testing kit

from our regional e-SHS between 01/02/2021-04/02/2022 were reviewed.

Results: 502,458 kits were ordered by 318,348 service users. 31,098 (6.2%) of these orders were from 15,068 PrEP users. 21,325 blood samples, from PrEP users, were returned and successfully screened for HIV. 54 screens were reactive and 21,271 negative.

8/54 (14.8%) individuals with reactive results were already diagnosed HIV+ and hadn't completed the kit-order questionnaire correctly. The remaining 46 reactive samples came from 43 PrEP users (MSM 42, WSW 1, age range 18 to 55 years). Confirmatory outcomes are tabulated. One individual confirmed positive and transitioned to HIV services. E-SHS users are encouraged to attend clinic for confirmatory bloods but 15 opted to re-test online instead: 11 tested negative and 4 are pending.

Confirmatory outcomes of reactive online HIV screening tests:

Low reactive	**44**
Negative	33
Positive	0
Declined to test	4
Clinic tested*	2
Pending	5
Reactive	**10**
Known HIV+	8
Positive	1
Negative	1
Total	**54**

*tested in clinic but result unknown

High-risk activity (sex work, high-risk partner, sex parties, HIV/STI contact) was disclosed in 54% (25/46) cases. 8/43 (18%) individuals had experienced historical/serial false (low) reactive HIV results via e-SHS or clinics, and four declined further confirmatory bloods until the level of test reactivity changed.

Conclusion: During the pandemic our e-SHS provided uninterrupted access to STI/HIV screening. 6.2% of e-SHS kit orders were by PrEP users. 0.25% of HIV tests among this population were reactive, but only 2% (1/46) confirmed positive. Historic false HIV reactivity was frequently observed amongst PrEP users with reactive results and many disclosed high-risk activity, which together can complicate the management of PrEP users.

O03 | Experiences of PrEP stigma and discrimination in healthcare settings in the UK among a community sample of PrEP users

Amber Newbigging-Lister[1]; Phil Samba[2]; John Saunders[1]; Will Nutland[2]; Valerie Delpech[1]; Greg Owen[3]; Adamma Aghaizu[1]

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Background: Pre-exposure prophylaxis (PrEP) is routinely available in the UK. It is important to understand the experience of stigma and discrimination experienced in healthcare settings among people who are trying to prevent the acquisition of HIV through PrEP use as this may act as a barrier to uptake and access. We explored the experiences of stigma and discrimination in healthcare settings among a community sample of people who have used PrEP.

Method: 1,502 participants completed the online PrEP-user survey between Oct-Nov 2020. Participants were eligible if they had used or attempted to obtain PrEP since January 2017 and were UK residents at the time. We collected data on demographics, PrEP use, sexual behaviour, HIV and STI testing and diagnoses. Participants who reported PrEP use were asked if they felt they had been treated differently whilst on PrEP, and, if so, who they felt had treated them differently. A free text option was given to provide more details on this experience- this data was coded thematically.

Results: 88% (n = 1316/1502) of respondents reported PrEP use since 2017 with 18% (n = 238/1315) reporting that they felt they had been treated differently whilst using PrEP. 28% (n = 65/236) of these reported that they felt they had been treated differently by a healthcare provider. Judgemental attitudes, assumptions about lifestyle choices, extra testing, and the need to educate healthcare professionals were all reported as examples of experiences of stigma and discrimination. Some respondents mentioned specific examples of healthcare providers or settings they felt they had experienced this from and in-these included Accident and Emergency, sexual health services, nurses, doctors, dentists, and GPs.

Conclusion: Discrimination and stigma surrounding PrEP use is evident in healthcare settings and may pose a barrier to use. Judgemental attitudes and assumptions about lifestyle choices were both strong themes of stigmatising attitudes surrounding PrEP reported in healthcare settings. The settings in which these were experienced were wide ranging and included sexual health services where PrEP is currently provided. Sensitive PrEP awareness training should be offered across healthcare settings

to prevent further experiences of stigma and discrimination among those using or wanting to use PrEP.

O04 | Driving towards zero, bringing HIV testing and prevention to migrant communities across London

Poppy Vernon[1,2]; Anders Neilson[1,2]; Dee Wang[3,2]; Peter Bampton[4,2]; Renee West[2]
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Background: HIV prevalence and late diagnosis in black Africans (BA) remains high in London. Service placement is critical when working with these communities, many of whom are self-contained and isolated from mainstream services when it comes to sexual health and HIV. The objective of this project is to provide free and accessible HIV prevention directly to London migrants, with a special focus on BA communities.
Method: The GMI Partnership uses a mobile HIV testing bus to reach areas in London with identified high BA communities such as high streets, multi-cultural markets and community events. Outreach staff encourage opportunistic HIV testing and distribute free condoms to members of the public. Two on-board consultation rooms allow for confidential and non-judgemental pre-test discussions, providing a unique opportunity to deliver key prevention messages and signpost to other sexual health services. This approach normalises testing, challenges existing stigma and supports newly diagnosed people into care. The flexibility of the bus allows the project to mobilise quickly, post national COVID lockdowns, while GUM (GenitoUrinary Medicine) clinics remained closed.
Results: In 2021, the project provided 112 sessions and tested 1495 people in total, 511 (34.2%) were from BA communities. Among the 511 people, 465 were born overseas and 365 (71.4%) were from high HIV prevalence countries. Three reactive results were from BA. 28.8% of BA reported never having tested before and 46.8% do not test regularly. 85.7% of BA had never heard of PEP or PrEP and were given information on how to access this.
Conclusion: High uptake of HIV testing among BA communities during this project indicates this method alleviates key barriers such as lack of time, incentive to test and stigma among this demographic. The service demonstrates the benefits of a mobile community approach in accessing HIV testing and knowledge. Using a mobile testing unit also increases autonomy and flexibility regarding service provision under COVID restrictions and the ability to partner with other providers to further connect with diverse populations across London.

O05 | Estimating the number of people living with transmissible HIV in England in 2020

Veronique Martin[1]; Valerie Delpech[1]; Ross Harris[1]; Anne Presanis[2]; Daniela De Angelis[1,2]; Cuong Chau[1]; Ammi Shah[1]; James Lester[1]; Ann Sullivan[1,3]; Nicky Connor[1]; Alison Brown[1]
[1]*UK Health Security Agency, London, UK;* [2]*MRC Biostatistics Unit, University of Cambridge, UK;* [3]*Chelsea and Westminster Healthcare NHS Foundation Trust, London, UK*

Background: To achieve the ambition of ending HIV transmission by 2030 in England, we need to reduce the number of people living with detectable levels of virus. Here we estimate the number of people living with transmissible viral load in England in 2020.
Method: The HIV and AIDS Reporting System (HARS) is the comprehensive surveillance system for adults (≥15 years) living with HIV in England. Serial records for individuals are linked using limited information to monitor HIV treatment and care over time.
Categories of transmissible virus were defined as follows: undiagnosed (estimated using the Multi-Parameter Evidence Synthesis (MPES) statistical model); not linked to care (diagnosed in 2020 but not in HIV care); not retained in care (seen for care in 2019 but not 2020); diagnosed and not treated (in care in 2020 but no evidence of treatment); treated and no evidence of viral suppression (no viral load reported); and treated with detectable virus (viral load >200 copies/ml).
Results: In England, an estimated 19,800 people may have transmissible viral load, corresponding to 20% of the estimated 97,740 (95% credible interval [95% CrI] 96,400–100,060) living with HIV in England in 2020.
Of these, 4,660 people were estimated to be undiagnosed (95% CrI 3,640–6,980) constituting 24% of all individuals living with transmissible levels of HIV. Of the remaining 15,140 diagnosed individuals, there were 290 not linked to care; 6,960 not retained in care; 190 not on treatment; 1,880 on treatment with detectable virus; and 4,820 on treatment with no reported viral load.
Of those with transmissible viral load, individuals aged 15–44 years and gay/bisexual men were more likely to be undiagnosed, whilst individuals 45–59 years old were more likely to be disengaged from care.
Conclusion: Of those individuals living with transmissible levels of virus in England in 2020, only a quarter were estimated to be undiagnosed. To end HIV transmission,

we must reduce the number of people with transmissible virus through prevention and prompt testing, but also by ensuring those living with diagnosed HIV receive support to remain in care, on treatment, and virally suppressed with a good quality of life.

O06 | Mortality among people with HIV in the UK in 2020: findings from the National HIV Mortality Review

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Background: The National HIV Mortality Review (NHMR) was launched by the British HIV Association and the UK Health Security Agency (UKHSA) to better understand preventable mortality among people with HIV in the context of HIV elimination.
Method: Clinical HIV services across the UK were invited to report information on deaths among people with HIV at their site occurring in 2020. Data were submitted to the UKHSA using a secure online form. Cause of death was categorised by an epidemiologist and two clinicians.
Results: Overall, 120 services reported 624 deaths among people with HIV, covering approximately two thirds of all services. This is an increase from 2019, when 73 services reported to the NHMR. In 2020, 77% ($n = 480$) of deaths were among men; median age at death was 56 years [interquartile range (IQR): 47-65]. Cause was ascertainable for 87% ($n = 544$) of deaths, with the most common being non-AIDS-defining infections (28%), followed by non-AIDS-related cancers (23%), AIDS (14%), cardiovascular disease (CVD) (13%), substance misuse (7%), accident/suicide (4%) and other causes (6%). COVID-19 caused or contributed to 23% of all deaths. Fifty-five people (9%) died within a year of HIV diagnosis; 86% of these were diagnosed late (CD4 < 350 cells/mm^3) and 70% very late (CD4 < 200 cells/mm^3). Overall, 63 people had documented missed opportunities for earlier HIV diagnosis. Common lifestyle risk factors in the year prior to death included tobacco smoking (37%; 210) and excessive alcohol consumption (21%; 115). Reported chronic co-morbidities included CVD (45%; 249), cancer (38%; 205), mental illness (34%; 180) and respiratory conditions (26%; 136). Treatment coverage (98%; 603) and viral suppression (<200 copies/ml) (91%; 507) were high among people who died. Documented end of life care among those whose deaths were expected was 93% (237).
Conclusion: Reporting to the NHMR increased compared to the previous year, despite competing priorities. These important data highlight that in 2020, almost a quarter of deaths among people with HIV occurred in individuals diagnosed with COVID-19. Although most died from non-AIDS-related causes, one in seven people with HIV in the UK died from AIDS and at least 10% had a missed opportunity for earlier HIV diagnosis.

O07 | Improving short-term mortality of people living with HIV admitted to the intensive care unit: a 20-year study (2000–2019)

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Background: Intensive care unit (ICU) survival outcomes have markedly improved in people living with HIV (PLWH), due to the widespread use of effective combination antiretroviral therapy (cART), critical care advances and changing reasons for ICU admission. We retrospectively reviewed records of PLWH admitted to ICU in an HIV-referral centre to study trends in short-term mortality between 01/01/2000 and 31/12/2019.
Method: Short-term outcomes were in-ICU and in-hospital mortality. The odds of in-ICU/in-hospital mortality were modelled using logistic regression, considering only a patient's first ICU admission. Univariable models including ICU admission calendar year as a linear term were used to explore trends in in-ICU/in-hospital mortality over the study period. Multivariable models were fitted to further explore the calendar year effect adjusting for sex, age, APACHE-II score and CD4+ T-cell count.
Results: There were 221 PLWH (71% male, median [Interquartile range (IQR)] age 45 years [38-53]) admitted to ICU with median [IQR] ICU-stay length of 5 days [2-12], APACHE-II score 19 [14-25] and CD4+ T-cell count 122 cells/mm3 [30-297]; 46% (94/221) had an undetectable viral load (<50 copies/ml). Of admission diagnoses,

48% (106/221) were advanced HIV-related; the most common admission diagnosis category was lower respiratory tract infection (30%).

Overall, in-ICU mortality was 29% (64/221) and in-hospital mortality was 38% (85/221); median [IQR] time to death from ICU admission was 4 [1-12] and 7 [2-19] days, respectively. The odds of in-ICU and in-hospital mortality significantly decreased over the 20-year period, with an estimated decrease of 11% per year (95% Confidence Interval (CI): 0.84-0.94, $p < 0.001$) and 14% per year (95% CI: 0.82-0.91, $p < 0.001$), respectively. After adjusting for patient demographics and clinical factors, there was no evidence of a decreasing trend in ICU mortality (adjusted Odds Ratio: 0.96, 95% CI: 0.89-1.04, $p = 0.36$), however, there was evidence of a decreasing trend in in-hospital mortality, with an estimated decrease of 10% per year (95% CI: 0.84-0.97, $p = 0.008$).

Conclusion: Our study found that short-term mortality of critically ill PLWH admitted to ICU has continued to decline in the cART era; this may partly be due to changing reasons for ICU admission as well as improvements in critical care.

O08 | Addressing a significant health inequality: a project to re-engage patients lost to HIV follow up

Kate Childs[1]; Melanie Rosenvinge[2]; Lucy Wood[2]; Tony Maclaren[3]; Noeleen Bennett[1]; Rose Mower[4]; Julia Bilinska[4]; Ayoma Ratnappuli[1]; Julie Barker[1]; Steve Hindle[5]; Golaleh Haidari[4]; Hannah Alexander[4]
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Background: Loss to follow up (LTFU) in people living with HIV (PLWH) could impact the UK's aim of zero transmissions by 2030. We report a project to re-engage LTFU PLWH across South London funded by the Elton John AIDS Foundation.

Method: Three hospital trusts contributed. LTFU was defined as not attending clinic for >12 months or being off treatment. Initial data was cross referenced by Public Health England (PHE) to ascertain which patients were attending another UK clinic. Contact was attempted by phone, text, email, coordination with the GP or community teams. Demographic data was collected on re-engaged patients including Index of Deprivation (IOD).

Results: 1850 patients were identified out of a total cohort of 8448. PHE identified 351 patients in care, leaving 1499. Attempts were made to contact all patients revealing 470 in care and 66 have died. Thus 963 PLWH were potentially LTFU from these hospitals.

148/963 (15.3%) patients were re-engaged. 1/3 had a CD4 of <200 at re-engagement. (Table). 71% were of Black ethnicity and 56% were female. 67(47%) patients came from the 1st and 2nd decile of most deprived areas in the UK and 73% of these were of Black ethnicity.

Re-engagement required the equivalent of a specialist nurse per site. Patients were contacted 2.5 times before and 1.7 times after re-engagement and 53% booked appointments were not attended.

		$N = 148$ *n* (%)
Gender	Female/Male	83 (56)/65(44)
Age	Median age	45 (38, 53)
Ethnicity	Black African/ Caribbean	105 (71)
	Caucasian	29 (20)
Risk Factor	Heterosexual/MSM	105 (71)/32 (22)
CD4	Median CD4	305 (180, 523)
	CD4 < 350	79 (53)
	CD4 < 200	46 (31)

Conclusion: In 3 hospitals serving 8448 PLWH, 963 patients were potentially disengaged from care demonstrating that LTFU is a significant problem. Women, individuals of black ethnicity, and people in the most deprived areas were disproportionately affected. As such LTFU represents a significant health inequality. A high proportion of reengaged patients had advanced immunosuppression. The project utilised significant clinical time. However this data demonstrates the need for dedicated funding to ensure the most vulnerable are not left behind in the UK's HIV strategy.

O09 | Investigating the pregnancy and postpartum health experiences of women living with HIV: the NESTOR study

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Background: Pregnancy and the postpartum period is a difficult time for women with HIV and engagement with HIV care is often reduced in the postpartum period with implications for health and well-being. We aimed to explore the postpartum health experiences of women living with HIV in relation to engagement in HIV care.

Method: We conducted a qualitative semi-structured interview study exploring the postpartum health experiences of women with HIV who attend the Stonegrove centre of Sheffield Teaching Hospitals. 61 eligible women were identified from an associated audit of pregnancy and postpartum HIV care between 2012 and 2019. We used a purposive sampling technique to recruit women with differing levels of engagement in HIV care. Interviews were conducted via telephone or video call by a single researcher that was not directly involved in their prior care. Interviews were audio recorded and fully transcribed. We planned to conduct interviews until our data reached saturation. We used a thematic approach for data analysis and NVIVO software to support the process. Two researchers independently coded the data and established the key themes.

Results: Eleven women participated in the interviews, all of whom were fully engaged in care. Despite best efforts, we did not manage to recruit those who were poorly engaged in care. The three main themes were 'infant feeding decisions', 'managing the risk of mother to child transmission', and 'managing the knowledge of their HIV status'. These themes offer detailed insights into the significant psychological and emotional challenges these women had experienced during their pregnancy and the postpartum period, and the practical support from healthcare professionals in both HIV and maternity services that had enabled them to navigate those challenges.

Conclusion: Whilst there have been life-changing developments in the treatment and care for people living with HIV, even in the U = U era, traditional concerns about breastfeeding, risk of transmission to the infant and stigma continue to shape the postpartum experience of women with HIV and impact on their emotional and psychological wellbeing.

O10 | Pregnancy characteristics and outcomes of women with vertically acquired HIV in the UK

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Background: Despite globally increasing numbers of reproductive-aged women with vertically-acquired HIV (WVHIV), knowledge gaps on their characteristics and pregnancy outcomes exist. We present population-level pregnancy outcome data for this emerging cohort.

Method: In the UK surveillance of all pregnancies to women living with HIV, their infants and any children diagnosed with HIV has been ongoing for >30 years, with reporting to the Integrated Screening Outcomes Surveillance Service (ISOSS), part of the NHS Infectious Diseases in Pregnancy Screening Programme. We analysed data on pregnancies in WVHIV diagnosed at <14 years, reported by 31/12/2021.

Results: 202 pregnancies to 131 WVHIV (37% UK-born, 54% African-born) were reported since 2006 (none < 2006): 81 had one pregnancy, 34 had two, 16 had ≥three. The proportion of pregnancies in WVHIV increased from 0.3% (15/5011) in 2006-09 to 3.5% (83/2403) in 2018-21, $p < 0.001$. Median age at diagnosis was 6years (IQR:2,11). Most (81/131) were diagnosed in the UK, and 112/131 reported to ISOSS in childhood.

Median age at expected date of delivery was 24 (IQR:20,27) for pregnancies to WVHIV and 33 years (IQR:29,37) for women with heterosexually-acquired HIV (WHHIV), respectively. WVHIV conceived on ART in 81% of pregnancies, reaching 88% 2015-21 (vs 77% for WHHIV). WVHIV had significantly lower first pregnancy CD4 count than WHHIV (≥500 cells/μl in 35% vs 42%, $p < 0.001$) and fewer had undetectable delivery viral load (dVL): overall 79% vs 84% for WHHIV ($p = 0.127$) had VL < 50copies/ml, increasing to 85% vs 93% in 2015-2021 ($p < 0.001$). Among pregnancies conceived on ART, 82% in WVHIV had undetectable dVL vs 94% in WHHIV ($p < 0.001$).

Pregnancy outcomes for WVHIV were: 170 livebirths (84%), 10 miscarriages (5%), 18 terminations (9%) and 4 stillbirths (2%); 17% of livebirths were preterm and median birthweight was 3kg (IQR:2.5,2.8). Of infants with complete follow-up, one infant was diagnosed HIV-positive (1/150, 0.66%).

Conclusion: In this growing sub-population of WVHIV in the UK, HIV-related markers have improved over time, with one case of second-generation vertical transmission. Further research is needed to explore why WVHIV are more likely to have detectable delivery VL, as well as investigation of their sequential pregnancies and longer-term outcomes of their children born HIV-free.

O11 | Inflammatory biomarker clusters based on protein biomarkers measured in people living with and without HIV

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Background: People living with HIV (PLWH) exhibit chronic inflammation which may contribute to comorbidities. We derive inflammatory biomarker clusters from a subset of PLWH and demographically-similar HIV-negative controls in the Pharmacokinetic and clinical Observations in PeoPle over fiftY (POPPY) Study.

Method: The POPPY cohort includes 3 groups (PLWH ≥ 50 years, PLWH < 50 years and HIV-negative controls ≥50 years) in England/Ireland. We measured 31 biomarkers, covering inflammatory pathways of systemic inflammation, axonal injury, immune regulation, microbial translocation, innate immune activation, endothelial function, coagulation and atherosclerosis. Following Principal Component Analysis of the log-transformed biomarkers, agglomerative clustering was used to group participants based on component scores. Between-cluster demographic and clinical differences were assessed for significance using Kruskal-Wallis/Chi-squared tests.

Results: The 465 included participants (236 PLWH ≥ 50, 107 PLWH < 50, 122 HIV-negative) had a median (interquartile range [IQR]) age 54 [50-60] years, 80% were male, 88% white, 71% men having sex with men (MSM) and median [IQR] CD4 cell count (for PLWH) was 610 [470-785] cells/mm^3. Three clusters displaying distinct patterns of inflammatory biomarkers were identified: *Cluster* 1 (n = 209, 45% of subjects) included individuals with generally low levels of inflammation; *Cluster* 2 (n = 47, 10%) included those with increased markers associated with T-cell and B-cell activation and proliferation, and *Cluster* 3 (n = 209, 45%) identified those with elevated levels of biomarkers across a range of inflammatory pathways (Figure). Those in each cluster were similar for most demographic/lifestyle variables: median age (54, 56 and 55 years, p = 0.08); male (82%, 68%, 81%, p = 0.08); white (90%, 87%, 85%, p = 0.26); MSM (74%, 64%, 70%, p = 0.33); and current alcohol use (84%, 87%, 80%, p = 0.45). However, there were significant differences for HIV status (73%, 60%, 78%, p = 0.03); obesity (BMI ≥ 30 kg/m^2) (11%, 21%, 24%, p = 0.002); median systolic blood pressure (126, 135, 126 mmHg, p = 0.002); and history of cardiovascular disease (39%, 28%, 53%, p = 0.001) and arthritis of knee/hip (8%, 9%, 16%, p = 0.02).

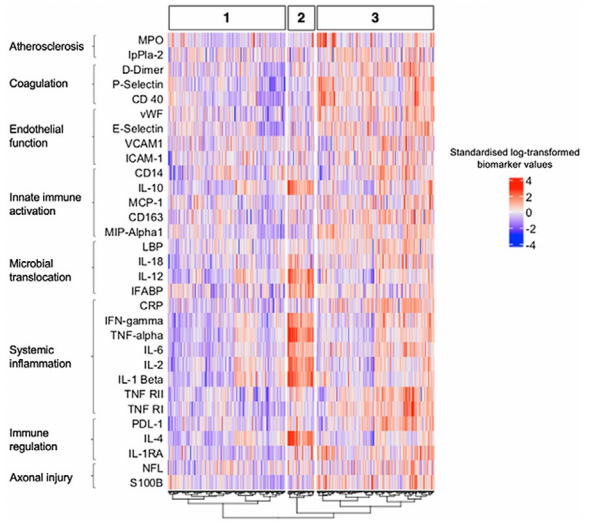

Figure Heatmap of clusters

Conclusion: The 3 clusters of distinct inflammatory patterns, associated with differences in important cardiometabolic features suggests the presence of biological phenotypes that may contribute to clinical outcomes. Whether this personalised approach can inform disease prevention and improved treatment for PLWH with multimorbidity requires further study.

O12 | Exploring frailty and frailty screening for older people living with HIV

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Background: People living with HIV (PLWH) experience a disproportionate amount of comorbidities and geriatric syndromes including frailty and cognitive deterioration, often at younger ages than the general population. Evidence is limited as to how PLWH feel about frailty, or best practice for screening and managing PLWH at risk of or living with frailty. This study aimed to describe the nature and impact of frailty among older people living

with HIV (50 and over) and assess acceptability of routine screening for frailty.

Method: In-depth qualitative interviews were conducted with a purposive sample of PLWH recruited from UK outpatient HIV clinics in London and Brighton. Verbatim pseudonymised transcripts were analysed using thematic analysis in NVIVO.

Results: 45 participants were interviewed ($n = 30$ male, $n = 15$ female, mean age = 60.24). Ethnicity, $n = 33$ white, $n = 11$ Black African or Caribbean, $n = 1$ Black and White Caribbean. Frailty was described as a series of losses around: mobility, robustness, independence, mental acuity and being unable to do things that you once could. Frailty negatively impacted on physical and mental wellbeing, due to poorer socialisation, difficulties with pain, mobility and feeling vulnerable and frustrated. Whilst participants felt screening for frailty would be beneficial and improve care for older PLWH, language used when discussing frailty was considered of great importance. It was felt discussions of frailty may cause offence, particularly as PLWH at risk of frailty are chronologically younger than those usually affected. Therefore, sensitive in-person discussions, preferably with a member of their HIV care team were proposed as a way to do this. To improve acceptability, screening should be in undertaken in conjunction with provision of information of what services are available to them and advice on how to be proactive in slowing the progress of frailty.

Conclusion: Frailty is associated with a loss of physical and mental wellbeing. Whilst there is a clear desire among PLWH to be informed of frailty status, approaching conversations with understanding and compassion is vital given the significance of this information. For PLWH to gain the most from the screening, it is essential frailty status is shared in conjunction with a clear plan of the next steps in their care.

O13 | Anticholinergic medications associated with falls and frailty in people with HIV

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Background: Anticholinergic medications (ACMs) are associated with poorer age-related outcomes including falls and frailty. Drug interactions and comorbidities may increase the risk of ACM use in people with HIV (PWH). We investigate the associations of ACM use with falls and frailty among older (≥50 years) PWH in the Pharmacokinetic and Clinical Observations in People Over Fifty (POPPY) study.

Method: Anticholinergic potential of co-medications at baseline was coded using the anticholinergic burden score (ACB), anticholinergic risk score (ARS) and Scottish Intercollegiate Guidelines Network (SIGN) score; drugs scoring ≥1 on any scale were defined as ACM. Associations with falls (≥2 self-reported in 28 days) and frailty (modified Fried's, ≥3 of low grip strength, low gait speed, exhaustion and low activity) were assessed using univariate and multivariable logistic regression adjusting for (1) demographic/lifestyle factors, and additionally (2) number of non-ACM co-medications, comorbidities and depressive symptoms (PHQ-9).

Results: The 699 PWH had a median age of 57 years (IQR 53-62), 88% male, 86% White, 60% single and 34% unemployed or sick/disabled. 692 (99%) were on antiretroviral therapy, 642 (92%) virally suppressed and 607 (89%) CD4 > 350 cells/mm^3. ACMs were reported by 193 (28%) with 64 (9%) on ≥2 ACMs; common ACMs were codeine (12%), citalopram (12%), loperamide (9%), amitriptyline (7%) and diazepam (6%). Those on ACM were more likely to be White (92% vs 84%, $p = 0.005$), single (69% vs 60%, $p = 0.02$), sick/disabled (30% vs 15%, $p < 0.001$) and report recent recreational drug use (31% vs 23%, $p = 0.05$). 63/673 (9%) reported falls and 126/609 (21%) met frailty criteria. Those reporting ACM were more likely to report falls (17% vs 6%, $p < 0.001$) and frailty (32% vs 17%, $p < 0.001$). Use of ≥2 ACMs was associated with increased odds of falling

after adjustment for confounders (demographic/lifestyle factors only: OR 4.53 [95% CI 2.06-9.98]); +clinical factors (3.58 [1.37-9.38]). Similar, although weaker, associations were seen with frailty (2.26 [1.09-4.70] and 2.12 [0.89-5.0], respectively).

Conclusion: ACMs are commonly prescribed for PWH. There is strong evidence for an association between ACM use and falls, and to a lesser extent frailty. Clinicians should be alert to this association and reduce ACM exposure where possible.

O14 | Taxonomic reclassification of Kaposi sarcoma identifies disease entities with distinct immunopathogenesis

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Background: The taxonomy of Kaposi Sarcoma (KS) is based on a classification system focused on the description of clinicopathological features of KS in geographically and clinically diverse populations. The classification includes classical, endemic, epidemic / AIDS related and iatrogenic KS, and KS in men who have sex with men (MSM). We assessed the medical relevance of the current classification of KS and sought clinically useful improvements in KS taxonomy.

Method: We reviewed the demographic and clinicopathological features of 676 patients with KS, who were referred to the national centre for HIV oncology at Chelsea Westminster hospital between 2000-2021. The 676 patients were assigned: 572 AIDS -KS, 41 MSM-KS, 23 Classical KS, 21 Iatrogenic KS and 19 Endemic KS.

Results: Demographic differences between the different subtypes of KS exist as tautological findings of the current classification system. However, no definitive differences in clinicopathological, virological or immunological parameters at presentation could be demonstrated between the classical, endemic or MSM KS patients. Reclassifying patients as either immunosuppressed or non-immunosuppressed, showed that the immunosuppressed group had a significantly higher proportion of adverse disease features at presentation including disseminated skin ($\chi 2\ p < 0.0001$) and extensive oral involvement ($\chi 2\ p < 0.0001$), and a trend towards higher pulmonary ($\chi 2\ p = 0.07$), gastrointestinal ($\chi 2\ p = 0.06$) and other visceral involvement ($\chi 2\ p = 0.08$). Immunosuppressed patients had lower CD4 counts and higher HHV8 levels compared to non-immunosuppressed patients, however overall survival was similar across groups.

Conclusion: The current system of KS classification does not reflect meaningful differences in clinicopathological presentation or disease pathogenesis. Reclassification of patients based on the presence or absence of immunosuppression is a more clinically meaningful system that may influence therapeutic approaches to KS.

O15 | Closing the circle: use of a data visualisation application (Qlik Sense) to support quality improvement in HIV services

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Background: Clinical audit can be labour-intensive, standing apart from routine practice. However modern data visualisation software (e.g. QlikSense®), typically only used by senior NHS management, can present complex data sets in simple ways and could make clinical audit a live, real time dynamic process.

We built a QlikSense® app to make service-wide and patient-level data accessible in routine clinical care. We report its impact on key audit outcomes.

Method: Since the 2018 BHIVA monitoring guidelines audit the HIV service has recorded specific clinical interventions (e.g. FRAX scores) in patients' electronic records using NHS SNOMED terms. We linked tables in the Trust's data-warehouse holding HIV clinical data to Qlik Sense® to build an app.

The app displays real-time changes key performance indicators, highlights patients at risk of treatment failure or loss to follow-up and shows patients attending each day needing specific interventions. Patients are identified by hospital number to protect confidentiality. Individual clinicians can track their own data. After staff training it went live in June 2021. Outcomes were reviewed in monthly team meetings.

Using Kaplan-Meier survival analysis, we compared SNOMED data for smoking, cardiovascular and fracture risk before and after the app was introduced. We compared July-December 2019 and 2021 because the clinic was disrupted by the pandemic in the intervening period.

Results: The department serves 3240 adults living with HIV; 53% are aged over 50. Completion rates by SNOMED coding for smoking, CVD and fracture risk before and after the app was introduced are shown below:

	Patients seen (*n*)	Smoking		CVD risk		Fracture risk	
		Assessment due (*n*)	Completed *n* (%)	Assessment due (*n*)	Completed *n* (%)	Assessment due (*n*)	Completed *n* (%)
July-Dec 2019	2890	1987	335 (18%)	1138	183 (16%)	718	115 (16%)
July-Dec 2021	3076	1410	674 (48%)	889	446 (50%)	530	276 (52%)
Hazard ratio (95% CI)			3.0 (2.7-3.4)		3.8 (3.3-4.7)		4.0 (3.3-5.0)
p-value			<0.001		<0.001		<0.001

Conclusion: The QlikSense® data visualisation platform can be successfully adapted to support HIV service delivery by identifying patients at most need of an intervention and tracking audit data in real time. Its introduction was associated with significant improvements in key audit outcomes.

O16 | Incidence of metabolic complications among treatment-naïve adults living with HIV-1 randomly allocated to B/F/TAF, DTG/ABC/3TC or DTG + F/TAF after 3 years

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Background: Metabolic comorbidities including diabetes (DM) and dyslipidaemia pose challenges to the long-term care of persons with HIV (PWH). Incidence of cardiovascular disease and DM are reported at higher rates in PWH than the general population. Obesity is broadly prevalent in both the general population and PWH, and higher body mass index (BMI) can contribute to metabolic complications. We present longer-term follow up on incidence of DM, hypertension (HTN), BMI categorical shifts, and lipid changes over 144 weeks of blinded treatment from two trials of PWH initiating antiretroviral therapy

Method: We assessed incidence of metabolic complications in adult PWH in Study 1489: bictegravir-emtricitabine-tenofovir alafenamide (B/F/TAF) vs dolutegravir-abacavir-lamivudine (DTG/ABC/3TC) and Study 1490: B/F/TAF vs DTG+F/TAF. Treatment-emergent (TE) metabolic comorbidities were defined by standard MedDRA search lists. CDC-defined BMI categories were compared from baseline (BL) to Week 144. Analyses by sex at birth and race were performed, and for lipid changes.

Results: Among 1,274 total participants, median (range) age was 33 years (18-77), 90% men, 33% Black. In study 1489, BL prevalence of DM and HTN was 4.5 and 12.1% with TE DM and HTN in B/F/TAF being 0.7% and 10%, and for DTG-ABC-3TC 1.3% and 6.9%, respectively. In study 1490, BL prevalence of DM and HTN was 6.8 and 18.8% with TE DM and HTN in B/F/TAF being 2.1 and 5.8%, and for DTG+F/TAF 2.3 and 6.5%, respectively. BMI shift from Normal to Obese: B/F/TAF 0%, DTG/ABC/3TC 3.2%, $p = 0.12$ (1489); B/F/TAF 2.5%, DTG+F/TAF 2.9% $p = 1.00$ (1490). Subgroup analyses by gender/race showed similar findings for TE DM, HTN, and BMI changes. Median changes from BL lipids were small.

Conclusion: Through over 144 weeks of follow up, PWH randomised to initiate B/F/TAF, DTG/ABC/3TC or DTG+F/TAF had low rates of incident DM or HTN-related AEs, with no statistically significant differences by regimen. BMI changes/categorical shifts from BL did not significantly differ by regimen, and no clinically significant change or difference by regimen in lipids were observed. While data are limited by three years of follow up, they are strengthened by randomised study design of three widely used initial ART regimens.

O17 | Safety profile of cabotegravir + rilpivirine during oral lead-in and through long-acting therapy: pooled analysis of the Phase 3 FLAIR, ATLAS and ATLAS-2M studies

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Background: Cabotegravir (CAB) and rilpivirine (RPV) is the first guideline-recommended complete long-acting (LA) regimen for the maintenance of HIV-1 virologic suppression. In Phase 3 studies, oral CAB+RPV given once daily was utilized as an oral lead-in (OLI) for ≥4 weeks prior to initiating LA dosing to assess individual safety and tolerability. The First Long-Acting Injectable Regimen (FLAIR) extension phase demonstrated that initiating CAB+RPV direct-to-injection (DTI) had comparable safety, tolerability, efficacy, and pharmacokinetics compared with initiating with an OLI, offering a practical treatment simplification strategy. This *post hoc* analysis compares the safety of CAB+RPV during the OLI to LA administration periods across the Phase 3 program.
Method: Week 48 data from participants naive to CAB+RPV in the FLAIR, Antiretroviral Therapy as Long Acting Suppression, and Antiretroviral Therapy as Long Acting Suppression every 2 Months studies were pooled. Safety outcomes were summarized separately during OLI and LA periods for those randomized at baseline to CAB+RPV, and also for those switching from oral comparator to CAB+RPV (either via DTI or OLI) during the FLAIR extension phase (Week 100–Week 124).
Results: 1245 participants were included in the pooled population; 918 and 327 received CAB+RPV LA Q4W and Q8W following an OLI, respectively. Further, 232 FLAIR extension-switch participants received CAB+RPV LA Q4W, either DTI ($n = 111$) or following an OLI ($n = 121$). The OLI period was well tolerated, with few Grade 3/4 adverse events (AEs; 1%, $n = 15/1245$), serious AEs (<1%, $n = 9/1245$), or AEs leading to withdrawal (<1%, $n = 10/1245$); after continuing to LA therapy, AE rates were comparable between participants electing to receive OLI or DTI (**Table**). No drug hypersensitivity reactions or other serious AEs occurred during the 4-week OLI that prohibited transition to LA therapy.

Table. Safety summary (excluding injection site reactions) among Phase 3 participants receiving CAB+RPV LA (with oral lead-in or direct-to-injection) through Week 48

Parameter, n (%)	Pooled CAB+RPV LA Q4W + Q8W During ~4-week OLI N=1245	Pooled CAB+RPV LA Q4W During LA through 44 weeks* n=918	ATLAS-2M CAB+RPV LA Q8W During LA through 44 weeks*† n=327	FLAIR extension OLI group, Q4W During ~4-week OLI n=121	FLAIR extension DTI group, Q4W During LA through 24 weeks n=111	FLAIR extension OLI group, Q4W During LA through 20 weeks* n=121
Any AE	396 (32)	763 (83)	241 (74)	30 (25)	88 (79)	83 (70)
Any Grade 3 to 5 AE	15 (1)	54 (6)	14 (4)	2 (2)	4 (4)	4 (3)
Drug-related Grade 3 to 5 AEs	5 (<1)	9 (<1)	2 (<1)	0	1 (<1)	0
Drug-related AEs	102 (8)	221 (24)	58 (18)	6 (5)	22 (20)	21 (18)
AEs leading to withdrawal	10 (<1)	23 (3)	4 (1)	0	1 (<1)	1 (<1)
Any SAE	9 (<1)	31 (3)	14 (4)	0	4 (4)	5 (4)

Conclusion: A 4-week OLI of CAB+RPV was well tolerated in >1200 participants across the Phase 3 program. The safety profile of CAB+RPV LA dosing was similar regardless of whether participants received OLI or proceeded DTI, supporting optional CAB+RPV DTI as a simplification strategy.

O18 | The acceptability of offering rapid antiretroviral therapy to people living with HIV in east London: a qualitative study

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Background: The World Health Organization recommends rapid initiation of antiretroviral therapy (ART), within 7 days of HIV diagnosis. Potential benefits include improvement in clinical and immunological outcomes. International studies show that the acceptability of rapid ART is mixed. This study aims to examine the acceptability of rapid ART offered as part of routine care, to people newly diagnosed with HIV in London.
Method: Using purposive sampling, 18 in-depth, semi-structured interviews were conducted between December 2020 - September 2021 with people offered rapid ART through the East London Immediate ART service at Barts Health NHS Trust. Participants (aged 22-69 years) included 15 cisgender men, 3 cisgender women, with 5 identifying as heterosexual and 13 gay and bisexual men. Their ethnic identities were: 6 White Non-UK, 5 White

UK, 3 Black Caribbean, 2 South Asian, and 2 East Asian. Interviews explored feelings about the new HIV diagnosis, attitudes to ART, and barriers and facilitators to starting rapid ART. Thematic analysis of transcribed interviews was undertaken to evaluate the acceptability of rapid ART.
Results: All participants had started ART and were taking it at the time of interview. Reasons for starting included the desire to get well, stay well, and reduce their likelihood of passing on HIV. Facilitators included being given comprehensive information about the effects of treatment and managing potential side-effects, and a supportive clinical team. Support specified included a non-judgemental attitude, approachability, reassurance, encouragement and information about peer support. Most participants expressed that they could not understand why people would not begin treatment, but suggested needing more time to decide and denial of diagnosis as possible barriers.
Conclusion: To our knowledge this is the first qualitative study exploring the acceptability of rapid ART in the UK. Rapid ART was highly acceptable to an ethnically diverse, predominantly male sample of people newly diagnosed with HIV. Findings emphasise the importance of the quality of the relationship with the HIV clinical team, and the need to provide comprehensive information when offering rapid ART. Future research should include strategies to recruit a more gender diverse sample and those who did not start, or stopped rapid ART.
BHIVA Research Awards winner 2019

O19 | HIV and mental health: improving generic NHS talking therapy services for people living with HIV in England

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Background: People living with HIV are disproportionately affected by poor mental health. Many value accessing mental health support through HIV clinics or voluntary sector HIV support services. However, these services are not available to all who need them. Increasingly, people living with HIV instead rely on generic mental health services such as IAPT (Improving Access to Psychological Therapies). National AIDS Trust set out to investigate the suitability of IAPT for people living with HIV.
Method: NAT conducted an online survey of people living with HIV in England. 123 respondents had accessed NHS talking therapy, of whom 58 had accessed IAPT specifically. NAT also conducted in-depth interviews with 12 respondents.
Using these research findings, NAT developed recommendations for service improvements with the support of the project's expert advisory group. This included people living with HIV, HIV support services and mental health professionals.
Results: The project found that while IAPT can work for some people living with HIV, issues such as a lack of HIV literacy and poor integration with HIV care hamper its effectiveness. 2 in 5 respondents reported that their mental health did not change as a result of therapy provided by IAPT services, while 1 in 10 reported that it became worse. Less than half of respondents who had accessed IAPT described their therapist's understanding of HIV as quite or very good, and over a third did not feel their therapist understood the ways in which HIV affects mental health. Less than half of respondents said they would be happy to use the same service again, and a quarter felt that their HIV status negatively affected the way they were treated.
Conclusion: IAPT services alone cannot meet the mental health needs of all people living with HIV, but have the potential to be significantly more effective. This requires basic training on HIV and HIV stigma to be added to the national IAPT curriculum and the development of HIV pathways within IAPT for long-term condition (IAPT-LTC) services. IAPT services must also be better connected to the wider healthcare system, more culturally competent, and supported by improved data collection and reporting.

O20 | Rebuilding the missing link to the fourth 90: addressing the mental health needs of an urban population of people living with HIV in a Greater London clinic

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Background: The 'Missing link' report revealed that people living with HIV (PLWH) are twice as likely as the general population to have a mental health illness in their life-time but due to decommissioning of mental health services nearly 40% of HIV clinics now do not have access to a psychological or mental health professional within their multidisciplinary teams (MDTs).
Mental health support improves adherence to HAART by 83% in people with depression.
Method: In 2019 we presented data showing that most HIV inpatient days involve those defaulting care. They have high rates of addiction, unstable housing and poor mental health.
Our HIV cohort is over-represented in groups with the highest rates of HIV stigma: Black-Africans, heterosexual

men and women (65%, 27.5%, 50%). In 2020 we reported data showing high rates of insomnia, anxiety and depression in our HIV cohort using validated screening tests.

These reports formed the basis of a quality improvement project (QIP) and business case which was approved to fund a MDT comprising a consultant liaison psychiatrist, specialist psychologists and specialist mental health nursing.

In June 2021 we implemented HIV and psychiatry weekly MDT ward rounds and complex case discussions to provide responsive specialist mental health support.

Results: Over six months 343 complex HIV cases were discussed of which 117 (34%) involved inpatients.

150/343 (44%) required psychiatry input involving 60 patients (60% male, 40% female, 40% Black ethnicity, 36% White, 54% heterosexual, 30% MSM).

Only 49% patients had a viral load (VL) < 50 copies/ml (58% VL < 200) with 27% VL > 200 copies/ml (15% VL unknown).

42% patients had depression (50% of whom were suicidal or had a previous attempt). 41% had addiction problems (29% drugs, 12% alcohol). 31% disordered thoughts (20% Psychosis, 7% Schizophrenia, 3% bipolar). 17% HIV stigma or denial.

Conclusion: Patients with poor mental health have low rates of undetectability and high morbidity. They represented 44% of our complex HIV workload. This QIP has provided high quality mental health support with rapid interventions and treatments to help improve outcomes. Specialist mental health support is essential to ensure a good quality of life for PLWH and achieving the 4th 90.

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ABSTRACT

Themed Poster Abstracts

TP01 | Mental wellbeing during COVID-19 pandemic in people with HIV

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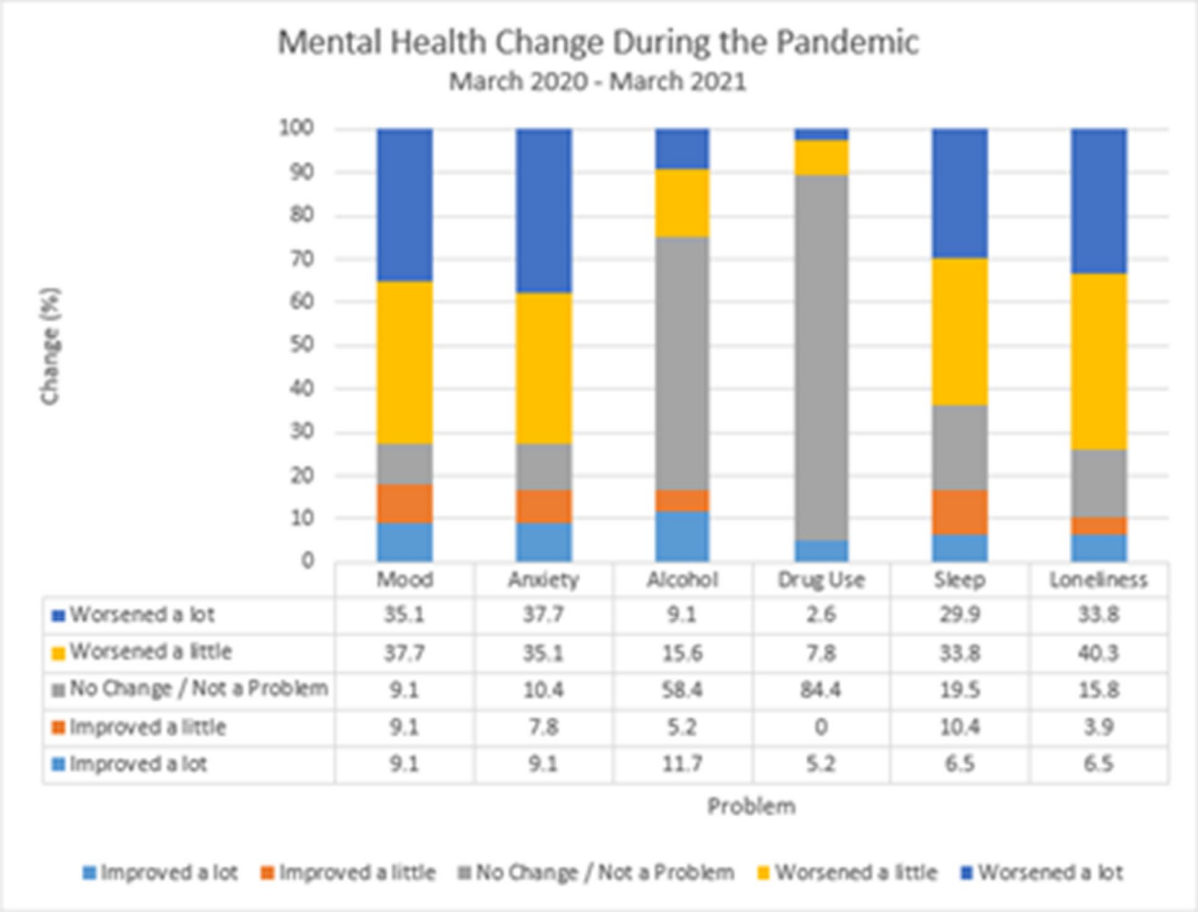
Background: People with HIV experience higher rates of mental health problems than the general population. Anticipating this would be exacerbated during the COVID-19 pandemic, we ran a series of webinars to provide an additional avenue of support. Here we determine the utilisation and patient satisfaction of the psychology service, webinars and mental health experiences during the pandemic.

Method: Psychology referrals within a large London HIV clinic from March 2020–March 2021 were reviewed. A patient survey was undertaken to explore patients' experiences of the service and webinars.

Results: There were 245 psychology referrals; 228 (93.1%) outpatient; 17 (6.9%) inpatient. Of these 193 (78.7%) underwent psychological assessment and intervention; 21 (8.5%) were referred on; 19 (7.7%) did not attend; 12 (4.8%) did not need any therapeutic input. A majority opted for face-to-face sessions (76/39.4%) and mixed therapy approaches (134/69.4%). Main reasons for referral were depression (75/30.6%), anxiety (46/18.8%), HIV issues (adjustment/disclosure (26/10.6%)), new HIV diagnosis (20/8.2%) and substance misuse (19/7.8%).



Four online webinars were delivered to 138 participants, 74 (53%) completed feedback. The vast majority (82%) found the webinars helpful and would recommend. Increased confidence in coping with: anxiety (71%); sleep problems (75%), loneliness and grief (73.3%), and trauma (75%) were reported post webinars.

The survey was offered to all psychology service users (193), response rate was 77 (40%). During the pandemic, depression, anxiety, sleep, and loneliness problems were exacerbated (graph1). 47 (70.1%) were very satisfied with their psychology sessions. Improvements were identified with regards to the mode of contact; whilst some highlighted the challenges with remote working, others are still choosing to access therapy remotely. Additionally, patients would like to continue being asked about their mental health during HIV consultations (55.8%) and be referred for mental health support (44.2%).

Conclusion: The results show a high demand for psychological interventions during the pandemic. Mental health issues particularly anxiety, depression, sleep, and loneliness worsened. Patient feedback for additional COVID webinars has been extremely positive. We identified that offering greater patient choice in type of appointment and additional webinars during the pandemic has been well received. This will now become a standard part of the service.

TP02 | Beliefs associated with COVID-19 vaccine uptake among people of Black ethnicities living with HIV: the Necessity Concerns Framework

Lucy Campbell[1]; Zoe Ottaway[2]; Rachel Hung[1]; Laura Cechin[2]; Birgit Barbini[2]; Beatriz Santana-Suarez[1]; Leigh McQueen[2]; Sarah Barber[3]; Amy John[3]; Denis Onyango[4]; Shema Tariq[5]; Robert Horne[6]; Frank Post[1,2]

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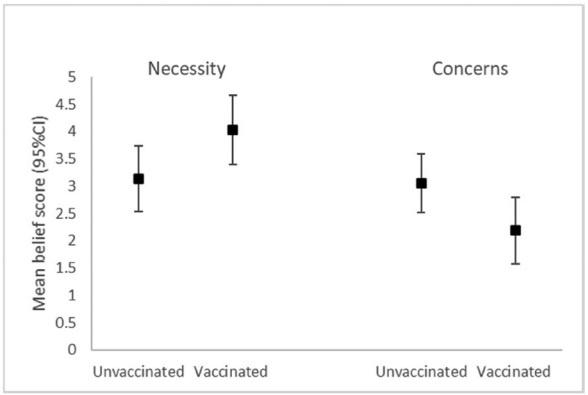
Background: Despite an increased risk of COVID-19 acquisition, morbidity and mortality, people of Black ethnicities have lower COVID-19 vaccine uptake than those of white ethnicity. We examined associations between COVID-19 vaccine uptake and vaccine beliefs using the Necessity Concerns Framework amongst people of Black ethnicities with HIV.

Method: A questionnaire study was conducted in GEN-AFRICA participants (people of self-reported Black ethnicity living with HIV in South London) between June–December 2021, supplemented with demographic and clinical data. Clinicians obtained a history of COVID-19 illness (with or without laboratory confirmation) from the study participants and recorded the number of COVID-19 vaccine doses and date of first administration. Participants completed the validated Beliefs about Medicines Questionnaire (BMQ), adapted for COVID-19 vaccination, assessing beliefs about vaccine necessity (e.g. health benefit and protection from COVID-19) and concerns (e.g. adverse effects and undesirable properties) using a five-point Likert scale. Vaccination Necessity and Concern scores were generated for vaccinated and unvaccinated participants and compared by T-Test. Higher scores indicate greater vaccine necessity/concern.

Results: This analysis includes 266 participants (242 vaccinated, 24 not vaccinated, mean age 50.2 [9.3] years, 54% women, 85% Black African, 12% Black Caribbean, 4% mixed/other Black ethnicity, 87% born in sub-Saharan Africa or the Caribbean) with longstanding (mean 14.3 years) and well controlled HIV (95%); 43% reported hypertension, 10% diabetes, 6% cardiovascular disease, 54% obesity, and 23% an illness suggestive of COVID-19. Uptake of COVID-19 vaccination was not associated with these demographic or clinical characteristics. Being vaccinated was associated with knowing a person who had died with COVID-19 (47% vs. 22%, $P = 0.04$). Unvaccinated respondents had lower Vaccination Necessity scores (mean difference −0.89 [95% CI −1.20, −0.59], $P < 0.001$) and higher Vaccination Concerns scores (mean difference 0.86 [95% CI 0.58, 1.14], $P < 0.001$) (Figure).



Conclusion: In this predominantly Black African population with HIV, both beliefs about the need for vaccination and concerns about the vaccine were associated with COVID-19 vaccination status. Continuing community engagement and education are required to address these beliefs in order to improve vaccine uptake and address vaccine hesitancy.

TP03 | Impact of the COVID-19 pandemic on HIV consultations in England

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UK Health Security Agency, London, UK

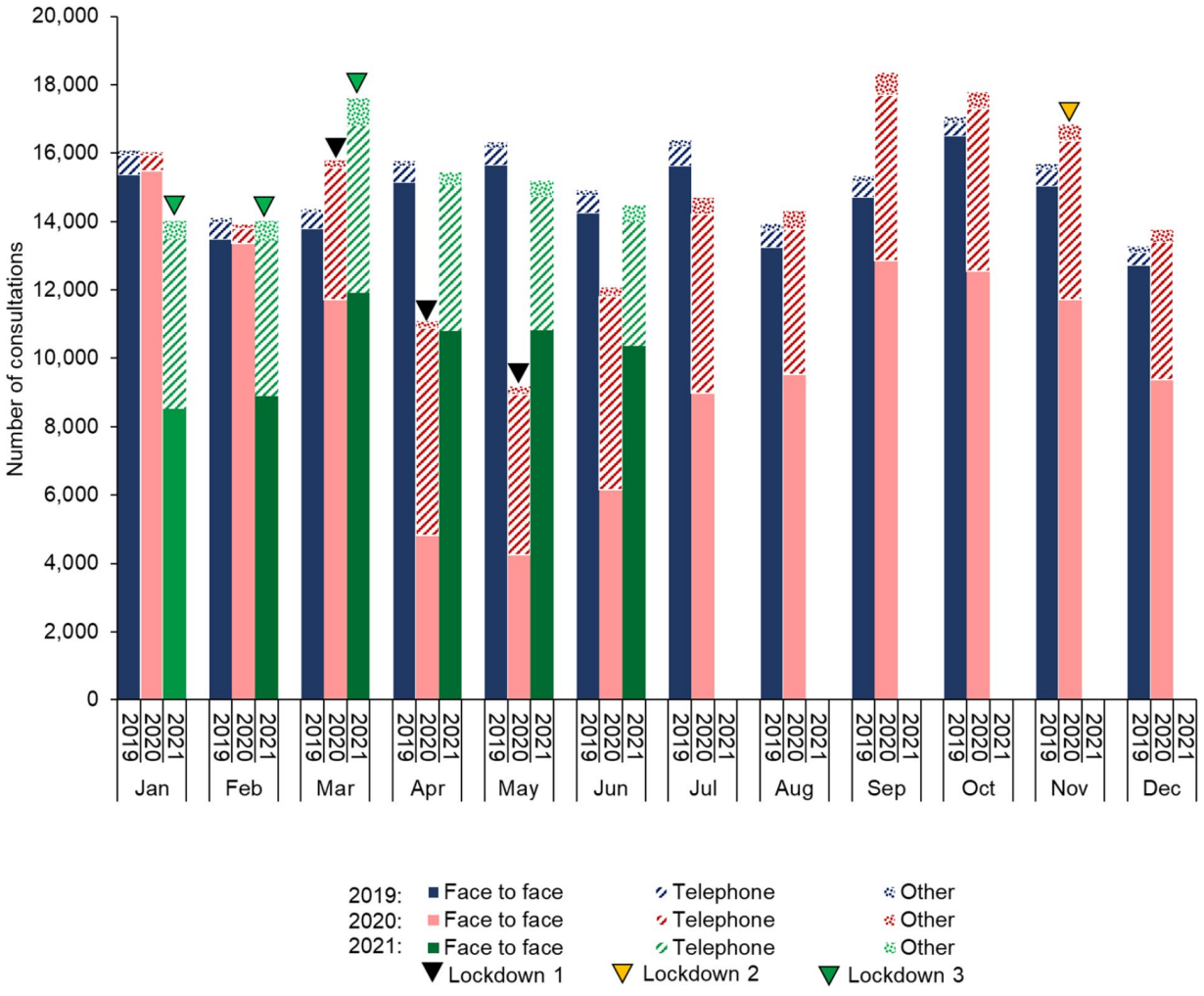
Background: The COVID-19 pandemic has affected access to HIV outpatient services. We compare consultation patterns among people accessing HIV care.

Method: We assessed consultations reported to the HIV and AIDS Reporting System (HARS) in England between January 2019 and June 2021. Clinics that submitted complete data were included (102 clinics, 62% of all English HIV clinics). Patient care was categorised according to clinical complexity: new (newly diagnosed or newly on treatment), stable and complex. Consultations were classified according to consultation medium (face-to-face, telephone and other). Data were categorised into three time periods: Pre-COVID-19 (2019), COVID-19 lockdown (March–May 2020, November 2020, and January–March 2021) and COVID-19 non-lockdown. Patient records were linked using limited identifiers to assess annual retention in care.

Results: Consultations in the pre-COVID-19 period (186,163) were 45% and 8% higher than COVID-19 lockdown and COVID-19 non-lockdown periods, respectively. It was expected that 93,780 people with diagnosed HIV infection would access HIV care in 2020, while 88,800 people did; meaning that 6,960 people were not retained in care in 2020 compared with 3,600 in 2019.

From July 2020 (after the first lockdown), consultations were broadly in line with equivalent months in 2019, with the highest number of consultations in September 2020 (18,850); however, the shift observed during the lockdown period to around 30–40% of all consultations being via telephone was sustained (Figure 1).

Older age groups were more likely to have consultations in the COVID-19 periods and more likely to have telephone/other consultations compared to younger counterparts; 50–64 year individuals had 7% and 16% more telephone and



other consultations respectively, compared to 30–49 year individuals. Between 2019 and 2020, consultations classified as complex increased by 8% to 37,021 however consultations classified as stable or new decreased.

Conclusion: HIV care delivery has changed since March 2020 with virtual consultations sustained into 2021. However, the number of people not retained in care may have doubled in 2020; services will need support to re-engage this population back into care. Future research will assess patient experience of service acceptability and accessibility together with the risk of less frequent monitoring.

TP04 | The impact of deferred monitoring in people living with HIV during the COVID-19 pandemic

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Guy's and St Thomas' NHS Foundation Trust, London, UK

Background: Deferred monitoring during COVID gave us an opportunity to evaluate whether selected stable people living with HIV (PLWH) need to be seen every 6 months for monitoring. We aim to determine the number of PLWH with abnormal renal and liver function tests (LFTs), detectable viral loads (defined VL >200 copies/mL) and resistance before and after the period of deferred monitoring.

Method: Retrospective observational cohort study was conducted using electronic medical records. Target population: all PLWH who had deferred monitoring during UK COVID lockdown (Mar–Jul 20). Data was captured on return to clinic after deferred monitoring and compared to the previous year where routine monitoring was done (Mar–Jul 19).

Results: 1618 people were identified as having their routine monitoring deferred. Out of these 46 developed new detectable viral loads, of which 85% had a history of non-adherence and 59% were able to re-suppress. 4 people on return to clinic developed new resistant mutations (Table 1), all had a history of non-adherence and the only person not able re-suppress was due them stopping taking their treatment.

Conclusion: Deferred monitoring did not result in any significant difference in detectable viral loads, resistance, renal or liver abnormalities. 6 monthly routine monitoring could be extended to annually as an option in selected groups of PLWH with prior counselling and risk stratification. Concerns are virological failure, transmission and development of resistance however in this analysis we did not see any difference with deferred monitoring. Raised liver enzyme and creatinine levels due to pre-existing conditions or caused by ART that block renal transporters were not excluded therefore this data may be overestimated. The findings are also limited by not including the impact on mental health.

TABLE 1 Virological outcomes and pathology results

	Routine monitoring (Mar–Jul 19)	Deferred monitoring (Aug 20–Jan 21)
Detectable VL >200 copies/mL	31/1618 (2%)	46/1618 (3%)
New acquired resistance (number)	5/1618 (<1%)	4/1618 (<1%)
New acquired resistance (mutations)	1: M184V 2: M184V 3: V106VI 4: M184V, L100LI, E138K, H221H 5: M184V, V108I, F227L, Y181C	1: F77Fl 2: H221Y 3: V179E 4: M184V
Raised ALT	14%	14%
Raised proteinuria (>15)	32%	39%
eGFR <60 mL/min	18%	24%

TP05 | Serological responses to SARS-CoV-2 vaccination in people with HIV: the SCAPE-HIV study

Tristan Barber[1,2]; Fiona Burns[1,2]; Jack Brown[3]; Colette Smith[3]; Nnenna Ngwu[1]; Nargis Hemat[1]; Sara Madge[1]; Marc Lipman[1,3]; Sanjay Bhagani[1,3]; Alan Hunter[1]; Tabitha Mahungu[1]; Margaret Johnson[1]; Dimitra Peppa[1,4]
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Background: People with HIV (PWH), despite efficient virological suppression on antiretroviral therapy (ART) often display blunted responses to vaccination. There is a need to establish correlates of vaccine efficacy in PWH to tailor vaccine strategies to maximise protection against disease and new emerging variants. To address this we set up the SCAPE-HIV Study (SARS-CoV-2 antibody prevalence in an HIV cohort) to determine antibody responses in PWH following SARS CoV2 infection and vaccination and evaluate parameters/clinical variables relating to antibody seroconversion/seropositivity.s

Method: SCAPE-HIV is an ongoing cross-sectional study in our adult cohort of PWH. This interim analysis is restricted to 384 participants recruited between July-September 2020 reporting 2 doses of SARS-CoV2 vaccines. Participants completed questionnaires about sociodemographics, medical history, prior COVID19, and SARS-COV2 vaccine uptake. Anti SARS-CoV2 spike and nucleocapsid antibodies were quantified using the commercial Roche assay at least 2 weeks post the last vaccine dose.

Results: 73.69% white; 82.55% male; 96.35% virally suppressed. 382/384 (99.47%) generated SARS-CoV2 anti-spike antibodies. 2/384 (organ transplant recipients) failed to seroconvert post two vaccines. Antibodies to nucleocapsid were detected in 80/384 (20.8%) consistent with prior infection. 91/384 (23.69%) had a titre that fell below the lowest level reported in a health care workers study (<400 after second dose vaccine). Low titre was associated with age ^{3}60y ($P = 0.018$). Sub-responders had a median age of 57 [IQR 51–62], median CD4 nadir 208 [79–302], median CD4 602 [423–752] and 88/91 (96.7%) had an undetectable viral load. No clear associations were observed with current CD4 count or CD4 nadir. As expected participants with history of SARS-CoV2 infection had higher anti-spike antibody titres ($P < 0.001$).

Conclusion: The SCAPE-HIV Study is ongoing. Seroprevalence studies are a valuable tool to reveal the extent of seroconversion rates post vaccination guiding management of the pandemic. This preliminary analysis shows high levels of seroconversion in our study population (the majority of whom are well controlled on ART) and highlights an inverse relationship between age and antibody responses. It remains to be determined how antibody titres corelate with functional protection against reinfection and cross protection against variants of concern, especially in people with suboptimal serological responses.

TP06 | What would people living with HIV do if faced with the poorly worded patient information leaflet for Paxlovid (nirmatrelvir/ritonavir) a new treatment for COVID-19 infection?

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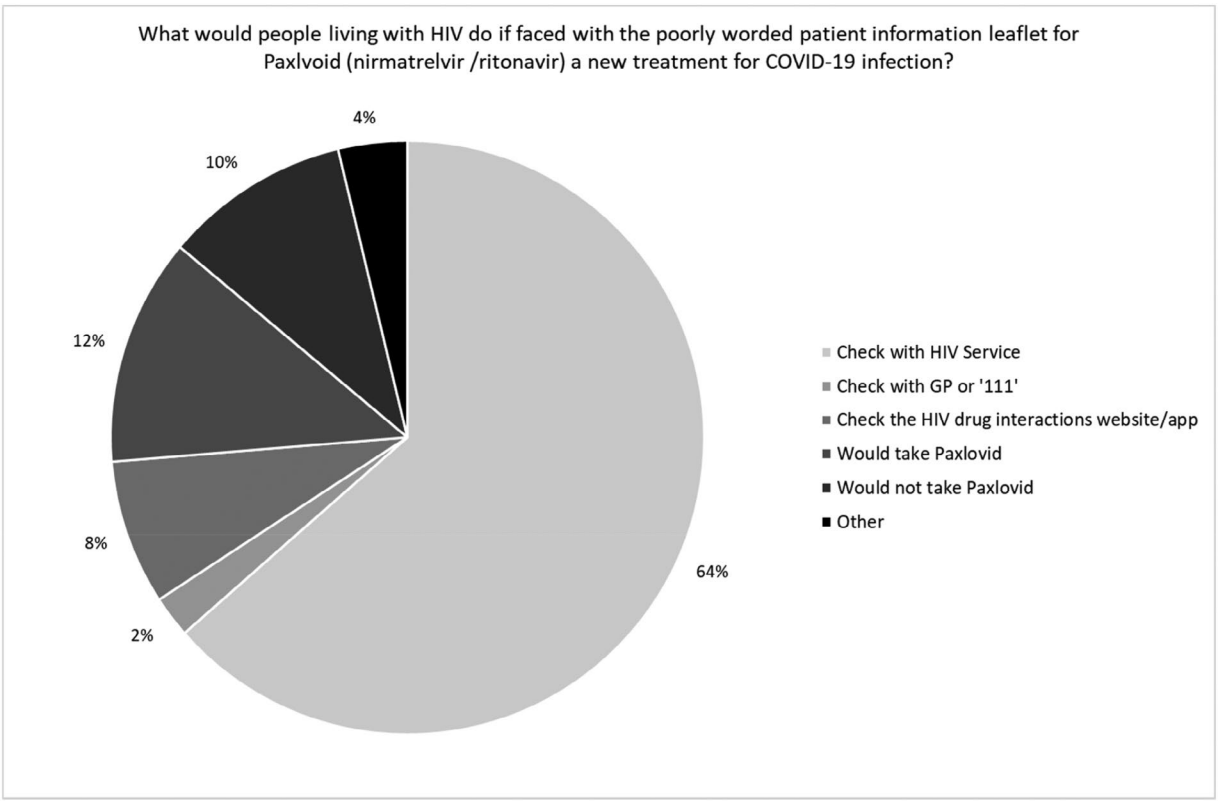
Background: The MHRA recently approved oral Paxlovid (nirmatrelvir/ritonavir) for the treatment of mild/moderate COVID-19 infection. Paxlovid reduces the risk of hospitalisation and death within 28 days by 89% compared to placebo. Drug-drug interactions between Paxlovid and



antiretrovirals are minor, but the patient information leaflet warns 'it may result in medicines used to treat HIV becoming less effective'. We aimed to identify what people living with HIV would do if they were prescribed Paxlovid then read this warning.

Method: With input from community members a rapid online survey explaining the information above was circulated via the UK-CAB and other UK community organisations. Respondents were asked to choose which one thing they would do in this scenario from five pre-selected responses plus an additional free-text option.

Results: Within 48 hours there were 266 responses. 64% ($n = 169$) would contact their HIV service, 8% ($n = 21$) would check the HIV drug interactions website/app, 2% ($n = 6$) would speak to their GP or '111'. 12% ($n = 33$) would take Paxlovid despite the warning whereas 10% ($n = 27$) would not. 4% ($n = 10$) highlighted other sources of advice including friends, BHIVA and NAM. Several people highlighted in actuality they would do multiple things. The brevity of the warning was negatively received, with people wanting to know more e.g., if the risk was equal for all antiretrovirals, as well as clarity on what 'less effective' meant i.e., risk of viral rebound versus resistance. Those who would take Paxlovid said they felt the risk from COVID-19 would be immediate and greater, outweighing the effect of any brief interruption to the effectiveness of their medication. Other themes included concerns around clinicians unfamiliar with HIV prescribing for them, existing challenges to accessing COVID-19 treatments and that homogenising all people living with HIV as 'high-risk' for worse outcomes from COVID-19 was stigmatising and that only those deemed eligible for treatment as per BHIVA guidance should be considered as such.

Conclusion: People living with HIV should have access to comprehensive information about how COVID-19 medications could affect them or their treatment. Poor communication risks eligible people delaying or avoiding a potentially lifesaving treatment as well as perpetuating stigma.

TP07 | Has the omission of routine blood monitoring of stable patients living with HIV (PLWH) during COVID adversely affected their health?

Eleanor Swift[1,2]; George Upton[1,2]; Jonathan Roberts[2]; Yvonne Gilleece[1,2]; Colin Fitzpatrick[2]; Amanda Clarke[1,2]
[1]*Brighton and Sussex Medical School, UK;* [2]*University Hospitals Sussex NHS Foundation Trust, Brighton, UK*

Background: British HIV Association (BHIVA) COVID guidelines advocate routine blood monitoring may be omitted for up to 12 months. The impact of these changes on the HIV and medical health of PLWH is unknown.

Aims: To assess any changes in blood tests in PLWH during COVID.

Method: From April 2020–March 2021, routine blood appointments were replaced by virtual consultations, in stable patients, defined as HIV viral load (VL) <50 copies/mL for 18 months, on antiretroviral treatment (ART), CD4 >200 cells/mm^3 and no active health concerns. Demographic and HIV data was collated. Statistical analysis was performed using paired student t-tests.

Results: 767/2410 clinic patients had bloods cancelled. 89% were male, median age 50 years (range 22–87), 68% white British and 81% MSM. Median CD4 count 711 cells/mm^3 (227–2356).

Group A: 524 stable patients not seen for 12 months. 10 (1.9%) developed VL >50 (range 51–5229 copies/mL), 8 subsequently re suppressed within median 30 days (14–100 days). Reasons for VL >50 included running out of ART, adherence issues and COVID infection/vaccine related or blips. 2 patients did not resuppress (1 stopped treatment, 1 defaulted further bloods but remained on ART, VL 67). Both remain in care. There was no statistically significant change in creatinine. Although there was a statistically significant change in ALT and ALP this was not clinically significant (median ALT 22.0 vs. 23.0 IU/mL, $P = 0.042$, median ALP 77.0 vs. 80.0/mL, $P < 0.0001$).

Group B: 243 stable patients with omitted blood tests but were seen earlier for various reasons: 1 had a blip of VL 62 c/mL post ART switch and resuppressed.

Where VL became detectable, interventions with adherence and ART support plus additional VL monitoring meant that only 2/767 (0.3%) patients with omitted visits during COVID remain detectable.

Conclusion: Planned omission of routine blood monitoring for the majority of stable PLWH did not have a negative impact on the HIV, hepatic, or renal health. Only 2 patients remain detectable but are still in care.

TP08 | Evaluating the mental health (MH) impact of omitting routine monitoring for stable patients with HIV during the COVID-19 pandemic

George Upton[1,2]; Eleanor Swift[1,2]; Amanda Clarke[1,2]; Yvonne Gilleece[1,2]; Colin Fitzpatrick[2]; Jonathan Roberts[2]
[1]*Brighton and Sussex Medical School, UK;* [2]*University Hospitals Sussex NHS Foundation Trust, Brighton, UK*

Background: The COVID-19 pandemic has caused significant psychological morbidity to people living with HIV (PLWH). WHO Europe suggest 40% of PLWH have experienced mild-severe psychological distress since the COVID-19 outbreak, with 70% becoming more depressed/anxious.
Aim: To understand the impact of omitting routine monitoring on the MH of PLWH.
Method: From April 2020 to March 2021, stable patients' routine appointments were replaced by virtual consultations, meaning no face-to-face (F2F) contact for 12 months. Stable was defined as HIV VL <50 copies/mL for 18 months, on antiretroviral treatment (ART), CD4 >200 cells/mm^3 and no active additional health concerns. Demographic data was collated. All patients undertook a PHQ-4. Those with a score >4 completed a GAD-7 (anxiety index) and PHQ-9 (depression index) pre and post omitted appointment.
Results: 643/2410 (27%) stable patients from a clinic cohort had appointments cancelled. 584 (91%) male, median age 50 years (range 22–87), 433 (67%) white UK, 525 (82%) MSM. Median CD4 count 720 (227–2055). 200/643 patients required early review for various reasons and 22 patients had a PHQ-4 >4 but no PHQ-9/GAD-7 leaving 421 patients for analysis.
Of the 421 patients, 315 had an initial PHQ-4 ≤4 of which 275/421 (65%) had follow-up PHQ-4 scores ≤4 indicating stable mental health. 106/421 (25%) completed an initial PHQ-9 score of which 73/106 (69%) scored mild – moderate and 33/106 (31%) scored moderately severe – severe. Overall scores worsened in 52/421 (12%), improved in 55/421 (13%) and remained the same in 39/421 (9%). 9 severely depressed patients fully recovered while 8 initially euthymic became severely depressed. 104/421 (25%) completed an initial GAD-7 score of which 73/104 (70%) scored mild – moderate and 31/104 (30%) scored moderately severe – severe. Anxiety worsened in 47/421 (11%), improved in 51/421 (12%) and remained the same in 48/421 (11%). 19 severely anxious fully recovered while 18 without anxiety became severely anxious.
Conclusion: Overall omitting F2F appointments did not significantly impact the mental health of patients. This data acknowledges the complex nature of MH in PLWH, showing that some patients improved while others worsened, highlighting the need for individualized MH care.

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ABSTRACT

Poster Abstracts

P001 | Two years' experience with doravirine

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North Manchester General Hospital, UK

Background: Doravirine is a non-nucleoside reverse transcriptase inhibitor (NNRTI) approved for use for treatment of HIV-1 in Europe in November 2018. Its novel resistance pathway allows retention of in vitro activity against common mutations such as K103N and Y181C. Non-inferiority to efavirenz and fewer side effects were demonstrated in randomised controlled trials in both naïve and treatment experienced patients. We investigated real-world experience of 72 individuals currently receiving doravirine at our tertiary centre.

Method: We reviewed the health records of 72 people treated with doravirine identified using pharmacy records. We collected data on age, sex, number of previous regimens, previous treatment regimen, reason for switch, follow up time on doravirine and reason for stopping.

Results: The mean age was 47 years and 60% were male. The mean number of years on treatment was 11.5 and the mean number of previous regimens was 3. Amongst treatment experienced patients the six most commonly identified reasons for switching to a doravirine based regimen are included in the table below:

Reason for switching regimen	Number of patients
Pill burden or drug interaction	17
Weight gain	12
Mental health side effects	9
Gastrointestinal side effects	7
Sleep issues	6
Musculoskeletal side effects	4

Nine individuals chose to change their regimen due to a variety of side effects such as headaches, dizziness, acid reflux, disturbed sleep, alopecia and bleeding. Four patients had a detectable viral load whilst on doravirine. One due to poor adherence, one patient had a viral blip which subsequently resolved, one due to T215D NRTI resistance and one was detectable as they were treatment naïve.

Conclusion: Doravirine containing regimens were well tolerated with 88% continuing treatment at the time of our review after a mean follow up time of 25 months. Nearly a quarter of treatment-experienced individuals switched to doravirine to reduce pill burden or due to drug interactions. Doravirine regimens also appeared to be particularly well tolerated in those who switched due to weight gain. Ongoing reviews of patient satisfaction with doravirine regimens will be important for the future.

P002 | Performance of dolutegravir-based two-drug regimens (DTG-2DR) in a large real-world cohort of people with HIV

Conor Bowman[1]; Alissa Ambrose[1]; Pedro Simoes[1]; Katia Florman[1]; Tanmay Kanitkar[1]; Abhishek Katiyar[1]; Alan Hunter[1]; Jennifer Hart[1]; Tristan Barber[1,2]
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Background: Evidence supports DTG-2DR use in appropriate people. In our centre regimens include DTG/3TC, DTG/RPV, DTG/FTC (multiple tablet regimens (MTR)) until single tablet regimens (STR) available. Since 2015 we prescribed DTG-2DR for 620 people (total cohort 3133 (19.8%)). 4 ART naïve people initiated on DTG-2DR; remainder switched when virally suppressed.
Method: Clinic database search 01/01/15–31/10/21 conducted for all receiving DTG-2DR. Demographic, tolerability and HIV related data were analysed.
Results: 620 people identified; 561 had complete data. 446 male (79.5%); median age 54y (IQR 46–59). 343 (61.1%) MSM. Median time to DTG-2DR from diagnosis 16 years. 4 initiated naïvely became undetectable and remained suppressed (100%). 550/557 stable switch (98.7%) remained suppressed at data censor. 74/557 (13.3%) received DTG/RPV. 483/557 (86.7%) DTG/XTC.
4 (0.7%) died, but cause not related to HIV. 70 (12.5%) switched off DTG-2DR due to side-effects (13 DTG/RPV, 57 DTG/XTC); top three reasons insomnia (n = 13,18.6%), psychiatric (low mood n = 12, 17.1%), or weight gain (n = 10,14.3%).
41 episodes of blip (1 off>50 copies/ml) occurred in 30 people (30/561, 5.3%). 11/41 on DTG-RPV (n = 7 MTR, n = 4 STR). 30/41 on DTG-XTC (n = 26 MTR, n = 4 STR). These prompted switch to alternate regimens in 5; the remainder resuppressed on regimen.
6 people (1.1%) encountered failure (confirmed VL >200 copies/ml or persistent LLV) (n = 4 DTG-3TC STR, n = 1 DTG-3TC MTR, n = 1 DTG-RPV MTR). Four failures were at LLV only and rapidly resuppressed on switch. One failure due to non-adherence and the individual switched to triple therapy. One failure was on DTG-3TC MTR to higher VL. Resistance tests performed for 5/6. No treatment associated mutations were detected bar latter person with high VL failure on MTR DTG/3TC who had developed triple class resistance (further details to be presented).
Conclusion: Majority of DTG/3TC use is in stable switch. A minority of patients switch due to tolerability. Low number of virologic failures noted, though one developed INI resistance; VF associated with MTR and it is imperative switch to STR occurs when available, commensurate with trial data showing no failure with resistance if DTG/3TC STR used. Overall DTG-2DR demonstrates high efficacy in a real-world setting.

P003 | Approaches to optimise recruitment of historically underrepresented Black and Hispanic/LatinX MSM, transgender, and gender non-binary individuals into the lenacapavir for PrEP (PURPOSE 2) trial

Michelle Cespedes[1]; Jill Blumenthal[2]; Theo Hodge[3]; Ayana Elliott[4]; A.C. Demidont[4]; Chauncey Watson[4]; Christoph Carter[4]; Alex Kintu[4]; Moupali Das[4]; Jared Baeten[4]; Cindy Elliott[5]; Onyema Ogbuagu[6]
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Background: Black and Hispanic/Latinx gay and other men who have sex with men (MSM), transgender women (TGW), transgender men (TGM), and gender non-binary individuals (GNB) have been historically under-represented in HIV prevention trials despite being disproportionately affected by the disease. Therefore, studies of pre-exposure prophylaxis (PrEP), a highly effective intervention for reducing HIV incidence, should include these individuals, and doing so would promote generalisability of the findings.
Method: PURPOSE 2 (GS-US-528–9023) will evaluate a twice-yearly long-acting subcutaneous, first-in-class capsid inhibitor, lenacapavir, for PrEP in MSM, TGW, TGM, and GNB in the US, Brazil, Peru, and South Africa. The study team adopted a multifactorial approach to address historic under-representation. This included a literature review to assess successful evidence-based approaches for increasing enrollment of Black and Hispanic/ LatinX MSM, TG, and GNB individuals. We engaged with community and patient advocates as well as key stakeholders to solicit feedback prior to protocol development.
Results: We established a trial-specific Global Community Advisory Group and implemented their recommendations for site selection, investigator and staff diversity, and strong linkage with community-based organisations. We recruited new community-based research sites and principal investigators (PIs) to mirror historically under-represented populations and emphasised mentorship of junior sub-Is by seasoned PIs to support enrollment and retention. We developed required trainings for all study and site staff on good

participatory practices for PrEP, anti-racism and transgender cultural humility. We established recruitment goals of 50% Black and 20% Hispanic/LatinX MSM in the US, and 20% TGW study-wide. Our strategy to ensure achievement of these overall goals involves nuanced site-specific recruitment goals considering site capacity, local demographics, and HIV incidence data. We will review metrics weekly during enrollment and make any necessary adjustments.

Conclusion: Using novel approaches, we have carefully chosen with whom, where, and how we will collaborate to increase the diversity, equity, and inclusion in the PURPOSE 2 trial.

P004 | Lenacapavir as part of a combination regimen in treatment-naïve people living with HIV: week 54 results

Samir Gupta[1]; James Si[2]; Cynthia Brinson[3]; Daniel R. Coulston[4]; Godson Oguchi[5]; Craig Dietz[6]; Angela SY Liu[7]; Laurie VanderVeen[7]; Hadas Dvory-Sobol[7]; Martin S. Rhee[7]; Jared Baeten[7]; Ross Hamilton-Shaw[8]; Ellen Koenig[9]
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Background: Lenacapavir (LEN), a potent first-in-class inhibitor of capsid function, is in development for treatment and prevention of HIV-1. CALIBRATE is an ongoing, open-label, phase 2 study evaluating subcutaneous (SC) and oral LEN, in combination with other antiretrovirals, in treatment-naïve people with HIV-1 (PWLH).

Method: Participants were randomised (2:2:2:1) to 1 of 4 treatment groups (TG). TG1 and TG2 both received SC LEN + oral daily (OD) F/TAF for 28 weeks, after which virologically-suppressed participants continued a 2-drug maintenance regimen: SC LEN with OD TAF (TG1) or OD bictegravir (B, BIC) (TG2). TG3 received oral OD LEN + F/TAF and TG4 received oral OD B/F/TAF throughout. We report the primary endpoint at W54. The study did not have prespecified formal statistical comparisons between TGs.

Results: 182 participants (7% female, 54% Black) were randomised and dosed (n = 52, 53, 52, 25 in TG1 to TG4). Median age was 29 years; 15% had VL>100,000 copies/mL. At W28 (as previously reported), 94%, 92%, 94%, and 100% had VL <50 copies/mL in TG1 to TG4. At W54, 90%, 85%, 83%, and 92% had VL<50 copies/mL by FDA Snapshot algorithm in TG1 to TG4; in TG1 to TG3, the majority of the remaining participants had discontinued study drug or achieved VL <50 copies/mL later. Among those with VL <50 copies/mL at W28 when starting the 2-drug maintenance regimen in TG1 and TG2, 94% (46/49) and 92% (45/49) had VL <50 copies/mL at W54. No participant experienced a study drug-related serious adverse event (SAE). Two participants in TG2 discontinued LEN due to AEs (both Grade 1 injection site induration). Injection site reactions (ISRs) included erythema (17%), swelling (16%), and pain (15%), which were mostly mild or moderate. The most frequent non-ISR AEs were headache and nausea (13% each).

Conclusion: LEN, given subcutaneously or orally in combination with TAF, BIC, or F/TAF, maintained high rates of virologic suppression at one year and was well-tolerated. These results support ongoing evaluation of LEN, as both injectable and oral formulations, in combination with other antiretroviral agents for the treatment of HIV-1 infection in individuals with diverse needs.

P005 | *In vitro* forgiveness of oral and long-acting INSTI-containing regimens at drug concentrations simulating variable adherence

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Background: Integrase inhibitors (INSTIs) are included in most daily oral HIV-1 treatment regimens, including bictegravir/emtricitabine/tenofovir alafenamide (BIC/FTC/TAF), dolutegravir (DTG)+FTC/TAF, DTG/lamivudine (3TC), and DTG/rilpivirine (RPV). Recently, the long-acting injectable regimen cabotegravir (CAB)/RPV was approved for monthly and 2-month dosing. Here, relative time to *in vitro* viral breakthrough (VB) and resistance barrier using simulated human drug exposures at either full or suboptimal treatment adherence to each regimen were compared.

Method: Wild-type HIV-1 (IIIb)-infected MT-2 cells were exposed to combinations of BIC+FTC+TAF, DTG+FTC+TAF, DTG+3TC, DTG+RPV, or CAB+RPV for up to 35 days or until VB. Fixed drug concentrations were the human plasma-free adjusted clinical trough concentrations (C_{min}) corresponding to full adherence, or, for daily oral regimens, concentrations simulating missed doses. Drug resistance was assessed by next-generation sequencing at ≥2% frequency.

Results: C_{min} concentrations of BIC+FTC+TAF, DTG+FTC+TAF, DTG+3TC, and DTG+RPV prevented VB (Figure 1). Differentiation for these regimens began at drug concentrations simulating C_{min} minus 2 missed doses (C_{min}-2); the greatest differences were seen at C_{min}-4 (Figure 1) where all DTG+3TC and DTG+FTC+TAF wells had VB by day 12, DTG+RPV had 94% VB by day 25, and BIC+FTC+TAF had 50% VB by day 35. Emergent C_{min}-4 RT and IN drug resistance was seen for all regimens but at differing frequencies; DTG+RPV had the most resistance development. The long-acting injectable regimen CAB+RPV prevented VB at C_{min} concentrations (monthly and 2-month dosing).

Conclusion: At concentrations simulating high adherence, these INSTI-based regimens all had high *in vitro* forgiveness and resistance barriers, which are important factors in long term treatment. When simulating multiple missed doses of daily drug, all oral regimens had some VB and developed resistance; however, BIC+FTC+TAF had the highest forgiveness and barrier to resistance. Further studies with CAB+RPV are needed to understand forgiveness at the PK tail of this long-acting regimen.

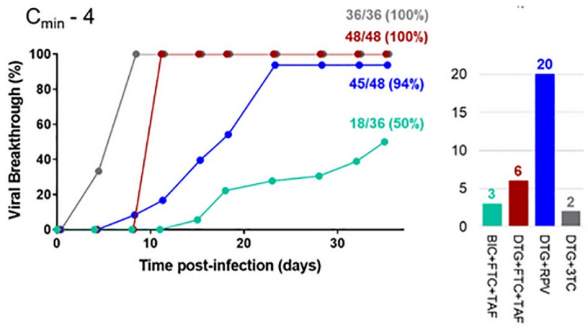

Figure 1 Time to Viral Breakthrough and Resistance Development of INSTI-Containing Daily Oral Regimens at *In Vitro* Drug Concentrations Simulating Suboptimal Adherence (C_{min}^{-4})

P006 | Long-acting lenacapavir in people with multi-drug resistant HIV-1: week 52 results

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Background: Lenacapavir (LEN), a potent first-in-class inhibitor of HIV-1 capsid function, is in development for treatment and prevention of HIV-1 infection. CAPELLA is an ongoing, phase 2/3 study in heavily treatment-experienced (HTE) people with HIV-1 (PWLH) with multidrug-resistance and ongoing viremia (≥ 400 c/mL).

Method: In the randomised cohort (Cohort 1), participants were assigned (2:1) to add oral LEN or placebo to their failing regimen. At D15, those on oral LEN received subcutaneous (SC) LEN 927 mg every 6 months; those on placebo started the 2-week oral lead-in, followed by SC Q6M. All randomised participants initiated an investigator-selected, OBR at D15. In the non-randomised cohort (Cohort 2), participants started OBR concurrent with LEN (oral lead-in → SC). We report the secondary endpoint of W52 efficacy by FDA-snapshot algorithm in the randomised cohort and additional available efficacy and safety from both cohorts.

Results: 72 participants were enrolled: 36 in each cohort. Overall, 25% were female, 38% Black, median age 52 years, 19% VL > 100,000 c/mL, 64% CD4 <200 cells/μL, 46% had HIV-1 resistance to all 4 major classes, and 17% had no fully active agents in OBR. At W52, in Cohort 1 83% (30/36) had VL< 50 c/mL; most in Cohort 2 have not reached W52 yet. At W52, CD4 count increased by a median 74 cells/μL (Q1 to Q3: 21 to 142, $n = 37$). Eight participants had emergent LEN resistance (4 in Cohort 1 and 4 in Cohort 2); other than 1 who died at W10 (previously reported), all 7 either had evidence of poor adherence to the OBR ($n = 4$) or had no fully active agents in the OBR ($n = 3$). No participant experienced a study drug-related serious adverse event. One participant discontinued LEN at W52 due to a Grade 1 injection site nodule. LEN-related injection site reactions (ISRs) occurred in 63% (45/72) and were mostly mild or moderate (43/45). The most common non-ISR AEs were nausea and diarrhoea (13% each) and COVID-19 (11%).

Conclusion: Subcutaneous LEN in combination with OBR led to high rates of virologic suppression and immunologic recovery in HTE PWLH at one year and was well tolerated.

P007 | History of drug resistance mutations and virological outcomes for two-drug regimens: data from COMBINE-2

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Background: This analysis assesses history of drug resistance mutations (DRMs) prior to initiating a two-drug regimen (2DR) of dolutegravir (DTG)+ rilpivirine (RPV) or DTG + lamivudine (3TC) and associated virologic outcomes in a real-world clinical setting.
Method: Adult people living with HIV (PLWH) in the COMBINE-2 Study initiating a 2DR of DTG+RPV or DTG+3TC on or after 01JAN2014 were selected from NEAT-ID Network in Europe. Analysis was restricted to ART-experienced PLWH switching to a 2DR while suppressed [viral load (VL) <50 copies/mL]. PLWH were observed from regimen start date (baseline) until 96 weeks post-baseline, regimen discontinuation, loss to follow-up, or death. Suppression, viral blips (single VL>50 copies/mL), and failure (2 consecutive VLs ≥50 copies/mL or a VL≥50 copies/mL + discontinuation) were evaluated through 96 weeks.
Results: 101 PLWH initiated DTG+RPV and 175 initiated DTG+3TC. For DTG+RPV users, 43.6% had a history of ≥1 resistance test occurring a median (IQR) 103 (9–174) months before baseline. Overall, 39.6% of DTG+RPV users had a history of DRMs (NNRTI: 8.9%; NRTI:33.7%; PI:21.8%; INI: 0.0%), of whom 52.5% had DRMs in multiple ARV classes. 1.0% had a prior DRM associated with reduced susceptibility to RPV. (Table) For DTG+3TC users, 29.1% had a history of ≥1 resistance test occurring a median (IQR) 77 (19–150) months before baseline. Overall, 22.3% DTG+3TC users had a history of DRMs (NNRTI: 9.7%; NRTI: 10.9%; PI:11.4%; INI:0.0%), including 35.9% with DRMs in multiple ARV classes. 8.6% of DTG+3TC users had prior NRTI DRMs associated with reduced susceptibility to 3TC (93.3% with M184V/I). No 2DR user experienced virologic failure or >1 viral blip over 96 weeks follow up. Three PLWH on DTG+RPV and 3 on DTG+3TC experienced a viral blip, none of whom had a history of DRMs associated with reduced susceptibility to their 2DR.

Table. History of drug-resistance mutations prior to DTG-based 2DR initiation among PLWH in the COMBINE-2 Study

	DTG+ RPV N=101 n(%)	DTG+ 3TC N=175 n(%)
History of any resistance mutations	**40 (39.6)**	**39 (22.3)**
NRTI DRMs	34 (33.7)	19 (10.9%)
NNRTI DRMs	9 (8.9)	17(9.7)
PI DRMs	22 (21.8)	20 (11.4)
INI DRMs	0 (0.0)	0 (0.0)
Single ARV class resistance	19 (18.8)	25 (14.3)
Two ARV class resistance	16 (15.8)	11 (6.3)
Three ARV class resistance	5 (5.0)	3 (1.7)
Four ARV class resistance	0 (0.0)	0 (0.0)
Prevalence of specific DRMs[1]		
DRMs associated with reduced 3TC susceptibility		
M184V	24 (23.8)	11 (6.3)
M184I	3 (3.0)	2 (1.1)
K65R/E/N	2 (2.0)	1 (0.6)
M184 and K65 mutations	2 (2.0)	1 (0.6)
DRMs associated with reduced RPV susceptibility		
Y181C	1 (1.0)	2 (1.1)

DRM: drug resistance mutation; DTG: dolutegravir, RPV: rilpivirine; 3TC: lamivudine; NNRTI: non-nucleoside reverse transcriptase inhibitors; NRTI: nucleoside reverse transcriptase inhibitors; PI: protease inhibitor; INI: integrase inhibitor

Conclusion: In the real-world setting of the COMBINE-2 Study, most PLWH initiated a DTG 2DR with no documented history of resistance testing. Among those with resistance data, small proportions had history of DRMs associated with reduced susceptibility to their current 2DR. Regardless of resistance history, DTG 2DRs were highly effective, with no virologic failures over 96 weeks.

P008 | Top practices for implementing cabotegravir (CAB) and rilpivirine (RPV) long-acting (LA) in European clinics

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Background: Cabotegravir And Rilpivirine Implementation Study in European Locations (CARISEL), is a

mixed-methods phase 3B hybrid study, that examines strategies to support implementation of CAB+RPV LA every 2 months across 5 European countries. This interim analysis extrapolated top implementation practices for CAB+RPV LA implementation at Month 1 (M1) and Month 5 (M5) from staff study participant (SSP)-reported data.

Method: Data on top practices were extracted and derived from Continuous Quality Improvement calls with a subset of SSPs, as well as from semi-structured qualitative interviews, and quantitative questionnaires with 70 SSPs at M1 and 68 at M5, from 18 clinics across Spain, France, the Netherlands, Belgium, and Germany.

Results: At M5, 81% ($n = 55$) of SSPs felt positive or extremely positive about implementation of CAB+RPV LA in their clinic. Each clinic took steps to set-up implementation in their clinic; trends emerged in the first months of implementation. The top three practices across all countries were: (1) educating clinic staff on clinical efficacy of CAB+RPV LA; (2) training staff on injection administration and management of potential pain/discomfort after injection; and (3) creating an implementation plan (Table 1). SSPs in CARISEL gained knowledge about clinical efficacy via presentations and printed materials. The majority (67%) of SSPs expressed satisfaction with overall training, noting that injection training, in person or virtual, was key for injectors who are not familiar with gluteal intramuscular injections. SSPs noted that pain and discomfort decreased over time and some noted communicating that message to patients was helpful to alleviate concerns. Implementation planning included coordinating with the pharmacy, staff schedules, and room availability. Notably, having a plan to differentiate between the CAB and RPV vials was also important. Additional best practices are listed in Table 1.

Table 1. Top Practices for Early Implementation in CARISEL

Top Practice Topic	Recommendations
Clinical Efficacy	• Obtain training on clinical efficacy and comparison to oral antiretroviral treatment • Obtain education about the importance of the dosing window
Injection Education	• Obtain education about intramuscular injections • Education on potential anticipated pain/discomfort with first few injections and pain management techniques
Implementation Plan	• Create plan for how the medication will get to the clinic (staff versus patient) • Impact of medication collection on appointment time • Impact of pharmacy hours on injection appointments • Identify injectors and how many are needed to provide coverage • Identify number of injections/day for the clinic • Identify space for the injection administration • Identify process for vial differentiation

Conclusion: SSPs identified several top implementation practices within the first 5 months of CAB+RPV LA implementation. While some practices may be context-specific, clinical efficacy, education around administering injections and potential pain/discomfort after injections, and implementation planning were identified as the most common implementation practices for future integration into routine care. Data from CARISEL can be used to support implementation across a variety of HIV clinics with similar healthcare delivery systems.

P009 | Two cases of NNRTI resistance developed through planned interruption to long-acting injectable (LAI) cabotegravir/rilpivirine to facilitate conception

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Background: NICE have approved long-acting Cabotegravir and Rilpivirine intramuscular injection for treating HIV-1 infection in adults. With pregnant women nearly always excluded from phase 3 anti-retroviral therapy (ART) clinical trials, there is little trial data supporting ART use in pregnancy despite 1.5 million women living with HIV becoming pregnant each year.

Method: Descriptive case report.

Results: Two female patients with perinatally acquired HIV, accessed LAI on the compassionate access programme. Both planned to conceive, therefore interrupted LAI and took oral therapy during LAI 'washout'. Both have subsequently developed NNRTI resistance, precluding ongoing LAI therapy.

Patient 1: 34 year old, commenced oral Cabotegravir and Rilpivirine (July 2019) alongside Darunavir/Ritonavir and switched to LAI only (August 2019) maintaining an undetectable viral load (VL). She switched to Descovy and Dolutegravir (September 2020) to prepare for conception, including a 1 year 'washout'. Due to psychological problems, she stopped her oral ART (August 2021). By November 2021 she had a VL of >50,000 copies/ml and a resistance test showed a new Y181C indicating intermediate Rilpivirine resistance. Her last injectable was almost a year prior and she had a VL of <20 copies/ml in the intervening period. She had no previous NNRTI exposure.

Patient 2: 28 year old, on Odefsey with variable adherence, commenced LAI in June 2018 following lead-in with oral Cabotegravir and Odefsey. At initiation and throughout LAI she maintained virological suppression (<20 copies/ml). She switched to Eviplera in July 2020 for a 'washout' period as she was planning conception. Virological rebound occurred at 3 months (VL 421 copies/ml) although resistance failed to amplify, adherence was difficult. She switched to Tenofovir/Emtricitibine and Dolutegravir. Virological control was achieved with intermittent adherence. Subsequent resistance results (May 2021) have shown a new V106I indicating low level Rilpivirine resistance.

Conclusion: These patients experienced significant stigma and psychological burden from oral ART. LAI offered an excellent alternative which has now been lost. Following approval of LAI ART more patients will commence on injectable treatment. Clinicians should be wary when stopping injectable ART as resistance in these cases appear to have developed late and will limit future treatment options.

P010 | Bictegravir/emtricitabine/tenofovir alafenamide (B/F/TAF) for the treatment of people living with HIV (PLWH): 12-month (12M) effectiveness, persistence and safety in a multi-country cohort study

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Background: BICSTaR is an ongoing, multi-national, observational cohort study evaluating real-world effectiveness and safety of B/F/TAF in ART-naïve (TN) and ART-experienced (TE) PLWH
Method: This 12M pooled analysis included PLWH starting B/F/TAF in clinical practice from June 2018 to September 2020 (latterly during the COVID-19 pandemic) in Europe/Israel/Canada. Outcomes included virological effectiveness (HIV-1 RNA <50 copies/ml [missing = excluded]), persistence, drug-related adverse events (DRAEs), and laboratory parameters.
Results: 1,135 PLWH were included. The TE group had older median age than TN. Of TE participants, 65%/20%/16% switched from INSTI/NNRTI/PI-based regimens (36% TDF/46% TAF/13% ABC); 12% had prior virologic failure. Baseline resistance was documented in 124/535 participants (NRTI/NNRTI/PI/INSTI = 6%/6%/3%/0.2%). Prevalence of comorbidities (47%/72% TN/TE) and concomitant medication usage was high.
At 12M, 97% (149/154) of TN and 96% (771/800) of TE participants had HIV-1 RNA <50 copies/ml, and persistence on B/F/TAF was high (91% [1032/1135]). Effectiveness measures are reported for subgroups. In a multivariable analysis, TE participants with neuropsychiatric disorder ongoing at baseline had lower odds for viral suppression (odds ratio = 0.45, 95% CI 0.21–0.96). There was no emergence of resistance to the components of B/F/TAF. DRAEs occurred in 13% (148/1135) of participants; gastrointestinal and neuropsychiatric DRAEs were the most common (3% each). Discontinuations due to DRAEs were low (TN 4%; TE 6%). Serious DRAEs were rare (0.2%; 2 TE participants with depression).
Conclusion: B/F/TAF was associated with high levels of effectiveness and persistence after 12M in this large real-world cohort of TN and TE PLWH with a high comorbidity burden. Effectiveness was demonstrated across key subgroups (females, older participants, late presenters). Importantly, there were no new or unexpected safety findings. Collectively, these real-world data continue to support the use of B/F/TAF in clinical practice.

P011 | B/F/TAF 5-year outcomes in treatment-naïve adults

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Background: Bictegravir/emtricitabine/tenofovir alafenamide (B/F/TAF) is a guidelines-recommended regimen for people with HIV-1 (PWLH). We present 5-year cumulative outcomes of two phase 3 studies of B/F/TAF in treatment-naïve PWLH
Method: We conducted 2 randomised, double-blind, phase 3 studies of B/F/TAF in treatment-naïve adults –

Study 1489 (1489) vs DTG/ABC/3TC and Study 1490 (1490) vs DTG+F/TAF. After 144W of blinded treatment, participants were offered continuation of B/F/TAF for 96W in open-label extensions (OLEs). Efficacy was assessed as proportion with HIV-1 RNA <50 copies/mL at each visit after starting B/F/TAF using missing = excluded analysis); safety by adverse events (AEs) and laboratory results. Bone mineral density (BMD) was measured in 1489 only. We present cumulative results for participants treated with B/F/TAF in randomised and/or OLE phases through a maximum of 240W of follow up.

Results: 314 participants in 1489 and 320 in 1490 randomised to B/F/TAF with 252 and 254 enrolled in OLE, respectively. 315 randomised to DTG/ABC/3TC in 1489 and 325 randomised to DTG+F/TAF in 1490 and 254 and 265 enrolled in OLE, respectively. Baseline (BL) demographics of B/F/TAF participants in 1489 and 1490 include: median age 31 and 33, 9% and 13% female, 37% and 30% Black/African descent, respectively. Efficacy was >98% after W48 at each study visit through W240 in both studies. No resistance to components of B/F/TAF was detected. During the OLE, 6/504 B/F/TAF participants experienced an AE that led to drug discontinuation, none were renal; ≤1.6% had a Grade 3 or 4 drug-related AE. Among B/F/TAF participants through W240, median changes in eGFR: −8.2 mL/min (1489) and −8.5 mL/min (1490). Median change in weight from BL to W240 was 6.1kg in B/F/TAF participants; median weight change for comparators at W144: 3.5kg (1489) and 5.0kg (1490), with 2.4kg and 1.3kg additional gains observed between W144 to W240, respectively. Mean % changes (SD) in hip and spine BMD through W240 in B/F/TAF participants were −0.29% (5.29) and −0.23% (5.16), respectively.

Conclusion: Over 5 years of follow up in treatment-naïve persons living with HIV, B/F/TAF was well tolerated and highly efficacious. These results confirm long term safety and efficacy of B/F/TAF.

P012 | Real life experience of doravirine in a large multi-centre HIV service

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Background: Doravirine (DOR) was approved for use in England in December 2019. It was heralded as the new preferred drug of its class; with high tolerability, low interactions, few restrictions for use, and a competitive price. We review our experience of DOR in our multi-centre HIV service.

Method: All patients prescribed DOR in our service from its availability until November 2021 were identified using pharmacy records. We reviewed the electronic patient records of these patients, capturing demographic, clinical, and laboratory data.

Results: 214 patients were identified (approximately 6% of our cohort), providing 155.2 patient years of follow up. The median duration of receiving DOR was 7 months (range from 0 to 76 months). The majority were White British (136, 63.6%), with 47 (22%) Black African. 176 (82.2%) were male of whom 147 (83.5%) were MSM.

179 (83.6%) took DOR as part of Delstrigo™. Switches accounted for 193 (90%) of patients, 15 (7%) were treatment naïve, and 6 (3%) re-started after a period off treatment.

44 (21%) patients reported side effects, most commonly sleep disturbance (17, 38.6%) and gastrointestinal upset (16, 36.4%).

A total of 30 (14%) discontinued DOR; 16 (53%) due to side effects, 3 (10%) due to sub-optimal adherence, 2 (6.7%) due to drug-drug interactions, 2 (6.7%) due to lack of safety data in pregnancy. Median time to discontinuation was two months (range 0–15 months).

No significant effects were seen on hepatic or renal functions; 24 (11.2%) had a transient transaminitis; 2 (0.9%) had decline in eGFR; both had additional contributing factors at this point.

Of those switched to DOR (193), a viral load increase occurred in 14 (7.3%) patients; 7 (50%) were blips, 5 (35.7%) due to poor adherence, and 2 (14.3%) were virological failures (one with new DOR resistance).

Conclusion: DOR appears to be a safe and effective treatment option in our cohort. We experienced similar side effect rate as reported in the key clinical trials. However, we saw a higher discontinuation rate as a result. Ongoing real-world evaluation is needed.

P013 | Real-world data of people living with HIV-2: experience of seven London clinics

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Background: HIV-2 is mainly restricted to West Africa, estimated around 1–2 million people worldwide. HIV-2 prevalence is low in the UK forming the minority of people living with HIV (PLWH). To date, there have been no published RCTs of ART for HIV-2. Most guidelines have been developed from evidence based on cohort and observational studies. Clinical impression is that there is much variation in prescribing and certain ART do not have activity against HIV-2. We aim to describe ART choices and virological outcomes.
Method: A retrospective observational study was conducted using electronic medical records of all PLWH-2 and co-infected with HIV-1. A data collection tool was piloted and a collaboration was established at the HIV Pharmacist London Leads meeting.
Results: 67 PLWH-2 were identified: 60% female, 85% black ethnicity, 73% heterosexual exposure risk, median age of 56yrs and a mean of 10yrs living with HIV. 84% of PLWH-2 are on treatment and 67% undetectable. Only 16 people had a baseline resistance test available on file. Of those on ART 63% was containing a PI or 2nd generation integrase inhibitor. 9 people were treatment naïve and of those 88% remain undetectable. The mean CD4 count was 499 with 31% having a CD4<350.

TABLE 1 ART summary

	HIV-2 ($n = 55$)	HIV-1 co-infected ($n = 12$)	Total ($n = 67$)
On ART	47	9	56
Treatment naïve	8	1	9
Off treatment	–	1	1
Unknown	–	1	1
Mean time on ART (years)	6	12	6
Mean number of ART switches	2	3	2

(Continues)

Conclusion: The majority of PLWH-2 are on treatment (84%) with a high genetic barrier (63%) and of those on treatment 67% are undetectable. Interestingly PLWH-2 who are treatment naïve 88% remain undetectable. However, this still does not meet the 3rd 90 target set by UNAIDs. To help meet the goal of ending the AIDS pandemic by 2030, new attention must be given to this neglected HIV cohort. With the recent publication of the BHIVA guideline our aim is to look at current prescribing and outcomes again in 1 year. The findings are limited by small numbers and missing data.

P014 | Real-world data of doravirine usage: efficacy and safety outcomes in a large urban HIV service

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Background: Doravirine was commissioned for use by NHSE in 2019 for the treatment of people living with HIV-1 (PLWH) with no evidence of NNRTI resistance. We aim to explore real world data of doravirine in an inner city London HIV clinic including efficacy and safety outcomes.
Method: A retrospective observational study was conducted using electronic medical records with all PLWH prescribed doravirine since 2019.
Results: 131 people were identified; 125 people switched and 6 newly started on doravirine. 72% male, 34% black ethnicity with a median age of 48yrs and a mean number of 11yrs living with HIV.
All people that remain on doravirine are undetectable except 4 LTFU and 1 new start yet to suppress after 4 months but has achieved a 3 log viral load reduction. 5 people had a viral load blip (VL>200) of which all re-suppressed and nil developed resistance.
People most commonly switched from a PI or NNRTI to Delstrigo (71%) mostly due to CNS disturbance or simplification to a single tablet regimen (STR).
52 people reported a total of 75 side effects; most described vivid dreams, insomnia and headache. 15 people discontinued mainly due to CNS toxicity; 9 switching to alternative ART and 6 switching back to their pre-switch ART.
13 people had an asymptomatic ALT rise up to 2x the upper limit of which 9 resolved with no intervention, 1 resolved after switching ART and all within a median time of 2 months. 3 remain persistently raised and are being actively follow up.

29 people gained an average of 5kg and conversely 29 people lost an average of 4kg.

Conclusion: The majority of people were switched to doravirine (95%) and all remain undetectable. Although 42% reported side effects, most of these resolved and there were low discontinuation rates (11%). 6% had an ALT rise which is a similar frequency to the SPC and most resolved after a short time. Doravirine has been shown to be a viable ART choice particularly those requiring a STR or rationalising off a PI due to metabolic complications. This is important for our aging population where polypharmacy is of increasing concern.

P015 | The safety and efficacy of the use of Biktarvy (bictegravir, emtricitabine and tenofovir alafenamide) with boosted darunavir in clinical practice

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Background: Biktarvy is indicated for use as a complete regimen not to be taken with any other antiretroviral. Bictegravir is a metabolite of CYP3A4 and tenofovir alafenamide is a substrate of p-glycoprotein. Coadministration of darunavir boosted with the inhibitors cobicistat or ritonavir is expected to increase bictegravir AUC by 74% and increase tenofovir AUC and Cmax by 105% and 142%, respectively. The aim is to evaluate the indications, safety and efficacy for switching to Biktarvy with boosted darunavir.

Method: A retrospective cohort analysis of people switched to Biktarvy with boosted darunavir were reviewed using electronic medical records.

Results: 7 people were identified on Biktarvy with boosted darunavir. All were treatment experienced living with HIV for a median of 21 years and all had more than 5(5–20) previous ART switches. All people had previous resistance with major mutations; 7 with NRTI, 4 with NNRTI and 4 with PI. 6 (86%) people had a viral load (VL) below 100copies/ml at 24 week follow up of which 4 people were detectable before switching. The remaining person had a detectable VL post switch which was documented as adherence driven. There were no discontinuations or reported ADRs and no biochemical changes to indicate toxicities. 4 people developed weight gain (1–14kg).

Table 1 ART and reasons for switch

Reason for ART intensification	
Resistance/ virological failure	4
Simplification/ adherence	3
Increased cardiovascular risk	2
CNS disturbance	2
Drug-drug interactions	1
TDF tubulopathy	1
Glycosuria	1
ART switch:	
Biktarvy/ Darunavir 800mg OD/ Ritonavir 100mg OD	3
Biktarvy/ Darunavir 600mg BD/ Ritonavir 100mg BD	2
Biktarvy/ Rezolsta (Darunavir800mg/cobicistat 150mg)	2

Conclusion: All people tolerated Biktarvy with boosted darunavir with no reported side effects or discontinuations and either maintained or achieved virological suppression. The fixed dosing formulation of Biktarvy restricts the dose modification of tenofovir alafenamide with boosted darunavir. The data is limited by the number of people and follow up time.

P016 | Antiretroviral regimen simplification for individuals receiving maraviroc

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Background: Maraviroc is a CCR5 chemokine receptor antagonist licensed for antiretroviral therapy (ART)- experienced individuals and recommended in treatment failure or drug resistance. Since licensing, maraviroc has been superseded by other options. We aimed to establish whether feasible switch options exist for individuals receiving maraviroc at our centre according to our local treatment algorithm. Potential benefits include decreased pill burden, polypharmacy, and cost.

Method: We interrogated pharmacy records to identify maraviroc prescriptions in the last 12 months and audited ART regimens against our local treatment algorithm. We collected demographic and clinical data using electronic patient records, identified potential for switch and calculated cost savings for each individual.

Results: Thirty-four people on maraviroc-containing regimens were identified: 71% male, 82% aged >50 years. They are highly treatment-experienced, on ART for mean 18 years (Table 1).

Table 1 ART history of 34 individuals taking maraviroc

	Median	Range
Years on ART	17	8–33
Years on maraviroc	8	1–13
Number of previous ART regimens	8.5	1–25
Number of regimens containing maraviroc	2	1–6
Years on current ART regimen	4	0–11

Regimens contained a median of 4 medicines (range 2–6) from a median 3 (2–4) ART classes. Although 82% had current HIV RNA <40 copies/ml, only 58% had HIV RNA <40 consistently since starting their current regimen.

In 18 individuals (53%) there was potential for simplification according to local treatment algorithm, considering previous resistance and concomitant medication. These 18 individuals take a median 5 daily tablets (2–10) with potential to reduce to 3 (range 1–8) post-simplification. The mean monthly ART cost for all 34 individuals presently is £670.67. ART simplification would reduce this to £503.98, saving £166.69 per patient. This translates to a potential cost saving totalling £5667.40 per month, £68,008.80 per annum.

Conclusion: Over half of people on maraviroc-containing ART regimens have potential for simplification and consequent significant cost savings. This study highlights the importance of regular review of ART regimens, particularly in experienced individuals and as newer agents are developed. Methods to identify or review both older and complex ART regimens are important to permit simplification for ART-experienced individuals, reduction of polypharmacy as well as cost savings.

P017 | Impact of treatment adherence on efficacy of dolutegravir + lamivudine and dolutegravir + tenofovir disoproxil fumarate/emtricitabine: pooled week 144 analysis of the GEMINI-1 and GEMINI-2 clinical studies

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Background: In GEMINI-1/-2, dolutegravir (DTG) + lamivudine (3TC) was non-inferior to DTG + tenofovir disoproxil fumarate/emtricitabine (TDF/FTC) in achieving HIV-1 RNA <50 copies/mL at Weeks 48, 96, and 144. At Week 48, lower treatment adherence (<90%) resulted in lower but comparable efficacy in both treatment groups. In this post hoc analysis, we evaluated the impact of treatment adherence on efficacy after 144 weeks in GEMINI-1/-2.

Method: GEMINI-1/-2 are global, randomized (1:1), double-blind (until Week 96, open-label thereafter), phase III studies evaluating efficacy and safety of once-daily DTG + 3TC or DTG + TDF/FTC in antiretroviral therapy–naive adults with screening HIV-1 RNA ≤500,000 copies/mL. Adherence was estimated using pill counts and categorized as ≥90% or <90%. Proportion with HIV-1 RNA <50 copies/mL was assessed using Snapshot (missing/switch/discontinuation = failure) and last on-treatment viral load (VL; not accounting for discontinuations for non-virologic reasons) for which adherence could be derived. Proportion of participants with HIV-1 RNA <50 copies/mL within treatment groups in each adherence category was calculated with exact unadjusted 95% confidence intervals.

Results: Overall, 1356 (95%) of 1433 participants had ≥90% adherence at Week 144. Baseline VL and CD4+ cell counts were similar across adherence categories. Proportion of participants with HIV-1 RNA <50 copies/mL was lower in the <90% adherence group than the ≥90% group but similar between the 2 treatment groups within the same adherence category (Table 1). In the <90%

Table 1. Proportion of Participants With HIV-1 RNA <50 Copies/mL at Week 144 by Adherence Level Using Snapshot and Last Available On-Treatment Viral Load Analyses

Efficacy endpoint	Adherence level category	DTG + 3TC n/N (%; 95% CI)	DTG + TDF/FTC n/N (%; 95% CI)
HIV-1 RNA <50 copies/mL (Snapshot)	≥90%	570/679 (84%; 81.0%-86.6%)	586/677 (87%; 83.8%-89.0%)
	<90%	14/35 (40%; 23.9%-57.9%)	13/34 (38%; 22.2%-56.4%)
HIV-1 RNA <50 copies/mL (Last available on-treatment viral load)	≥90%	659/679 (97%; 95.5%-98.2%)	659/677 (97%; 95.8%-98.4%)
	<90%	30/35 (86%; 69.7%-95.2%)	30/34 (88%; 72.5%-96.7%)

CI, confidence interval; DTG, dolutegravir; FTC, emtricitabine; 3TC, lamivudine; TDF, tenofovir disoproxil fumarate.

adherence group, 40% of participants in the DTG + 3TC group achieved HIV-1 RNA <50 copies/mL compared with 38% in the DTG + TDF/FTC group by Snapshot (86% and 88% by last on-treatment VL, respectively).

Conclusion: In GEMINI-1/-2, fewer participants with <90% adherence achieved HIV-1 RNA <50 copies/mL at Week 144, and the effect of lower adherence was similar with DTG + 3TC and DTG + TDF/FTC. Overall, the results suggest regimen forgiveness similar to standard-of-care 3-drug regimens.

P018 | Three- versus four-drug regimens for people with high and very high viral loads

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Background: Evidence regarding 4 drug regimens (4DR) versus 3 drug regimens (3DR) for people living with HIV with high/very high viral loads is conflicting. A systematic review showed no difference between 3DR and 4DR, but included no studies targeting people with high viral loads. We aimed to assess: 1) time to viral load suppression in people starting 4DR vs 3DR at high and very high viral loads, 2) viral rebound rates for 4DR vs 3DR.

Method: Data were extracted from the electronic patient record from a large, central London clinic. Data were included for all patients initiating antiretroviral therapy (ART) from 01/2015 to 12/019 (ensuring a minimum 12 month follow up period). Descriptive statistics and time to event analyses were completed on STATA.

Results: From 2015–2019, 383 initiated first-line ART, 86.1% were male, median age was 39 years, 56.8% were White and 31 (8.1%) started 4DR. There were significant differences at baseline in the 4DR group: higher median viral load (1819702 versus 18000 copies) and lower median CD4 count (220mm3 versus 460mm3). There was no significant difference between 3DR and 4DR in time to suppression, for patients with a viral load >100,000 copies average time to undetectable was 3.4 months on 3DR and 4.8 months on 4DR, $P = 0.437$. Time to suppression was also similar by baseline viral load >500,000 and >1million copies. Viral rebound rates were similar: 4.1% on 3DR and 6.9% on 4DR, $P = 0.362$, with no difference when restricted to viral load >100,000, >500,000 or >1 milion copies.

Conclusion: We found no difference between 3DR and 4DR in time to achieve viral suppression or risk of rebound. However, the small sample on 4DR (31) means that it was likely underpowered. Additionally, those starting 4DR had significantly higher baseline viral loads, and therefore took longer to reduce to a VL<50 than those with a lower baseline viral load. A larger study of matched patients is required.

P019 | Dolutegravir/lamivudine efficacy outcomes in people living with HIV with or without resistance results: 48-week pooled analysis

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Background: Dolutegravir/Lamivudine has durable efficacy and a high resistance barrier, supporting

recommendation in international guidelines. Resistance tests are not standard globally when selecting antiretroviral therapy. We present efficacy and safety in virologically suppressed participants with or without historical resistance results at screening.

Method: This pooled analysis included 48-week data from the phase 3 TANGO and SALSA trials in adults with no prior virologic failure and HIV-1 RNA <50 copies/mL for >6 months randomized to switch to once-daily dolutegravir/lamivudine or continue current antiretroviral regimen (CAR; TANGO: tenofovir alafenamide-based; SALSA: nonnucleoside reverse transcriptase inhibitor/boosted protease inhibitor/integrase strand transfer inhibitor-based). Primary and key secondary endpoints were proportions with HIV-1 RNA ≥50 and <50 copies/mL, respectively (Week [W] 48, Snapshot, intention-to-treat exposed).

Results: Of 1234 participants, 46% had no historical resistance results at screening. Median time on baseline regimen was similar among participants with (dolutegravir/lamivudine, 38 months; CAR, 44 months) or without historical resistance results (dolutegravir/lamivudine, 44 months; CAR, 47 months). Overall, 2 (0.3%) dolutegravir/lamivudine participants and 5 (0.8%) CAR participants had HIV-1 RNA ≥50 copies/mL (adjusted difference, −0.5%; 95% CI, −1.3%, 0.4%) at W48; outcomes were similar regardless of resistance results availability and consistent with overall findings (Table). Overall proportion with HIV-1 RNA <50 copies/mL was 94% for dolutegravir/lamivudine vs 93% for CAR; participants without resistance results at screening had similar outcomes (93% vs 91%, respectively). No dolutegravir/lamivudine participants, regardless of historical resistance status, had confirmed virologic withdrawal (CVW); 1 CAR participant had CVW (no resistance detected). Proportions of adverse events (AEs; dolutegravir/lamivudine vs CAR) were 77% vs 75%, AEs leading to withdrawal were 3% vs <1%, grade 2 to 5 AEs were 46% vs 49%, drug-related AEs were 15% vs 3% (3% vs <1% post-W24), and serious AEs were 5% vs 5%, respectively. Safety was similar regardless of resistance results availability.

Table. Week 48 Study Outcomes: Overall Population and by Resistance Results Availability at Screening, Snapshot Analysis (ITT-E Population)

	Dolutegravir/Lamivudine (N=615)			CAR (N=619)		
n (%)	HIV-1 RNA <50 c/mL	HIV-1 RNA ≥50 c/mL	No virologic data	HIV-1 RNA <50 c/mL	HIV-1 RNA ≥50 c/mL	No virologic data
Overall	**576 (94)**[a]	2 (<1)	37 (6)	**575 (93)**[a]	5 (<1)	39 (6)
Historical resistance results at screening						
Not available	**272 (93)**	1 (<1)	21 (7)	**253 (91)**	3 (1)	21 (8)
Available	**304 (95)**	1 (<1)	16 (5)	**322 (94)**	2 (<1)	18 (5)

CAR, current antiretroviral regimen; c/mL, copies/mL; ITT-E, intention-to-treat exposed.
[a]For the overall population, adjusted difference, 0.8% (95% CI, −2.0%, 3.6%); estimates and confidence intervals were based on a stratified analysis using Cochran-Mantel-Haenszel weights adjusting for baseline third agent class.

Conclusion: One year after switching to dolutegravir/lamivudine, proportion of participants maintaining virologic suppression was high among those without resistance results, with no CVWs. Dolutegravir/Lamivudine offers a robust switch option for suppressed individuals, irrespective of availability of historical resistance results.

P020 | Efficacy and safety outcomes by BMI category over 48 weeks in Phase 3/3b cabotegravir and rilpivirine long-acting trials

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Background: Cabotegravir (CAB) + rilpivirine (RPV) is the first guideline-recommended, complete long-acting (LA) injectable regimen for maintenance of HIV-1 virologic suppression. In a post-hoc, multivariable analysis, the presence of ≥2 of 3 baseline (BL) factors (archived RPV resistance-associated mutations [RAMs], HIV-1 subtype A6/A1, or body mass index [BMI] ≥30 kg/m^2) modestly increased confirmed virologic failure (CVF) risk. Efficacy, safety, and pharmacokinetics of CAB+RPV by BL BMI category among Phase 3/3b trial participants through Week 48 (W48) were evaluated.

Method: Data were pooled from CAB+RPV-naive participants receiving every-4- or 8-week dosing (Q4W or Q8W) in the Antiretroviral Therapy as Long Acting Suppression (ATLAS), First Long-Acting Injectable Regimen (FLAIR), and Antiretroviral Therapy as Long Acting Suppression every 2 Months (ATLAS-2M) studies. Baseline characteristics, HIV-1 RNA <50 and ≥50 copies/mL, CVF (2 consecutive HIV-1 RNA ≥200 copies/mL), injection site reaction (ISR) adverse events (AEs), and plasma CAB and RPV troughs were evaluated through W48 by BMI category (<30 or ≥30 kg/m^2).

Results: Among 1245 CAB+RPV LA participants, 213 (17%) had a BL BMI ≥30 kg/m^2 (Table). At W48, 92% vs. 93% of participants with higher vs. lower BMI, respectively, had HIV-1 RNA <50 copies/mL. There were 8 vs. 5 CVFs in the higher vs. lower BMI group. All CVFs in the higher BMI group had at least one other BL risk factor (archived RPV RAMs [$n = 3$], A6/A1 subtype [$n = 4$], both [$n = 1$]). No participant with higher BMI alone developed CVF at W48. Overall safety, including ISR AEs, was comparable between groups. Most ISR AEs were of short duration (median, 3 days); the most commonly reported ISR event, regardless of BMI or dosing regimen, was injection site pain (22% of all injections). CAB and RPV troughs remained above their respective protein-adjusted

concentration required for 90% viral inhibition values regardless of BMI or dosing arm.

Table. Participant Demographics and Virologic Outcomes for CAB+RPV LA (Q4W or Q8W) by Baseline Body Mass Index (BMI) Category (<30 or ≥30 kg/m²) in Phase 3/3b Trials Through W48

	BMI <30 (N= 1032, 83%)		BMI ≥30 (N= 213, 17%)	
	Q8W	Q4W	Q8W	Q4W
Parameter	n = 268	n= 764	n = 59	n = 154
Median age (years, range)	41 (20-83)	28 (19-68)	43 (32-71)	41 (23-74)
Female sex at birth (n, %)	48 (18%)	172 (23%)	25 (42%)	65 (42%)
Median BMI (kg/m², range)	24.4 (18-29.9)	24.2 (15-29.9)	32.5 (30-46)	33.2 (30-54)
HIV-1 RNA <50 copies/mL at W48 (n, %)	252 (94%)	505 (92.7%)	54 (91.5%)	142 (92.2%)
HIV-1 RNA ≥50 copies/mL at W48 (n, %)	1 (0.6%)	9 (1.2%)	4 (6.8%)	7 (4.5%)

Conclusion: CAB+RPV LA Q4W and Q8W maintained high virologic suppression rates through W48 in Phase 3/3b trials, regardless of BL BMI category. Injections were well-tolerated, with few ISR-related discontinuations. CAB+RPV offers a safe and effective long-acting treatment option in participants across a wide BMI range without need for daily oral dosing.

P021 | Multi-tablet, single-tablet, or long-acting antiretroviral treatment for HIV: a cross sectional study examining patient preference in two outpatient settings in the United States and Spain

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Background: Adherence to antiretroviral therapy (ART) is key to successfully treating HIV. Long-acting injectable ART (ILART) agents administered via an intramuscular (IM) injection have recently been approved but are not routinely given to patients.
Method: A cross-sectional survey was administered to people with HIV (PWH) in an outpatient centre in the United States (USA) (John T Carey Immunology Unit) and in Spain (Barcelona Check Point) to explore their preference regarding oral vs injectable ART. Participants were asked to choose between oral ART (any number of tablets multiple times a day, any number of tablets once a day, or one tablet once a day) or ILART (one IM injection once a month, or one IM injection once every two months). Chi-square tests were used to examine statistically significant correlations between variables ($p < 0.05$), combined with both univariate and multivariate testing.
Results: We recruited 55 participants in the USA and 141 in Spain between November 2020 and February 2021. The majority of participants were male (92.8%), White (60.7%), homosexual (78.5%), and 35 to 54 years of age (51.5%). 63.1% were diagnosed with HIV between 2009 to 2020, 87% were happy with their current ART, and 55.2% had previously received an IM injection. In the USA, oral ART is preferred over ILART (68.5% vs 31.5%), being one tablet once a day the preferred option (44.4%). In Spain, ILART is preferred over oral ART (66.9% vs 33.1%), being one IM injection once every two months the preferred option (61.9%). Factors statistically associated with a preference for ILART were: recent HIV diagnosis, lower satisfaction with current ARV, and experience of IM administration of any drug ($p < 0.05$).
Conclusion: Our study found high levels of acceptability of IM ILART among PWH in Spain, but not in the USA. Choosing between an oral or long-acting ART is a complex decision, with many factors that must be carefully taken into consideration. Further research, preferably employing mixed methodology, is warranted.

P022 | Antiretroviral therapy modification in an acute setting

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Background: Common reasons for changing antiretroviral (ART) regimens include virological failure, toxicity, co-morbidities and drug-drug interactions (DDIs). People living with HIV (PLWH) admitted to hospital may be medically complex with HIV or non-HIV related illness, diagnosed with new conditions or worsening of pre-existing conditions and require new medications. With increasing options of effective ART, regimens are often amended to accommodate these factors. This review aims to describe reasons for changing ART in hospitalised PLWH.
Method: A 3-year retrospective electronic note review was conducted for all PLWH admitted to a large urban hospital between January 2019 and December 2021 (pre-covid pandemic and during). Data collected included patient demographics, immune-status, ART history and reasons for switching treatment.
Results: ART changes were made for 86 hospitalised PLWH: 33 in 2019, 28 in 2020 and 25 in 2021. 84% were admitted secondary to a non-HIV condition.
Mean age was 52.6 years; 24% female (21/86); 49% white ethnicity (42/86); 34% black ethnicity (29/86).
Mean duration of HIV was 15.5 years (0–36 years).
Median CD4 prior to ART modification was 303 (6 - 1306 cells/μL); mean CD4:CD8 0.675 (0.06–3).
13 patients passed away during their admissions: 12 non-HIV related (1 secondary to covid-19 infection); 1 HIV-related.

ART modifications were made based on genotypic resistance (65 %), ART history and discussion with referring HIV clinician.
Reasons for switching ART: preventing DDIs (30%), renal dysfunction (14%), administration of ART via feeding tube and/or swallowing difficulties (13%), simplification (10%), cardiovascular comorbidity (9%), CNS toxicity (7%), intensification (5%), bone health (2%), hypersensitivity reaction (1%) and post-partum (1%). 6% had no reason documented. 34% changed to an alternative NRTI, 11.5% to an alternative INSTI, 11.5% from a PI to INSTI and 10% from cobicistat to ritonavir booster.
Conclusion: DDIs were the most common trigger for switching ART; the most frequent ART change was switching NRTI. The majority of patients were admitted for non-HIV related issues, highlighting the importance that all PLWH admitted to an acute setting should be reviewed by the HIV specialist team. The mortality rate of 15% represents the level of complexity in this patient cohort.

P023 | Effectiveness and tolerability of the two-drug regimen dolutegravir plus lamivudine in people with HIV-1: a systematic literature review of real-world evidence from clinical practice

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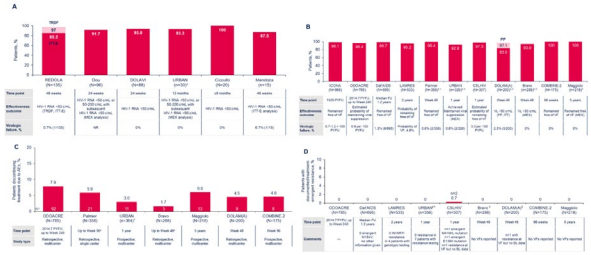
Background: In phase III studies, the 2-drug regimen dolutegravir plus lamivudine (DTG+3TC) has demonstrated durable efficacy up to 3 years, good safety and tolerability, and a high barrier to resistance in both treatment-naive and treatment-experienced people with HIV-1 (PWH). This study summarized all real-world data on effectiveness and safety of DTG+3TC in PWH.

Method: A systematic literature review was performed according to the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) statement. Ovid MEDLINE®, Embase®, PubMed, Cochrane library, and relevant international conference proceedings from January 2013 to October 2021 were searched to identify real-world observational studies of DTG+3TC (either dosed separately or as a fixed-dose combination) in treatment-naive and treatment-experienced PWH. Studies with <10 PWH, case reports, reviews, editorials, and preclinical studies were excluded.
Results: Forty studies were identified, representing 7259 PWH who received DTG+3TC in unique real-world cohorts across 11 countries. Of these, 7 and 2 studies included some or all PWH, respectively, whose baseline characteristics were not consistent with the DTG+3TC European label (aged >12 years, weighing ≥40 kg, no reported history of resistance-associated mutations [RAMs] to 3TC or integrase inhibitors). Overall, 555 PWH were treatment naive, and 5616 were virologically suppressed PWH who switched from another regimen (duration of virologic suppression, 0.6–12 years). Studies included a wide range of patient types, including those with a history of virologic failure (VF; 7 studies, $n = 938$) and prior RAMs (14 studies, $n = 291$). Among the studies reporting effectiveness outcomes in treatment-naive PWH (N = 384) and in treatment-experienced PWH (N = 5674; virologically suppressed, $n = 5616$; viremic at baseline, $n = 58$), high rates of virologic effectiveness were observed (Figure A-B). Consistent with previously observed trial data, incidence of VF was low, discontinuations due to adverse events were infrequent, and treatment-emergent resistance was anecdotal (Figure C-D).

Figure. Effectiveness outcomes reported in **(A)** treatment-naive and **(B)** treatment-experienced PWH, **(C)** treatment discontinuations due to AEs, and **(D)** treatment-emergent resistance among PWH who received dolutegravir plus lamivudine.



A TRDF analysis is only reported in the REDOLA study. FU, follow-up; ITT-E, intention-to-treat exposed; MEX, missing equals excluded; PP, per protocol; PYFU, person-years of follow-up; TRDF, treatment-related discontinuation = failure; VF, virologic failure; VL, viral load. *1 patient was excluded due to missing data. [b]Patients viremic at baseline: Palmier, n=15; URBAN, n=7; DOLAM(A), n=8; Bravo, n=16. [c]Data are available at a later time point but are not included. [d]Patients excluded due to missing data, not being treated per protocol, or discontinued during follow-up: URBAN, n=8; DOLAM(A), n=29; Bravo, n=222; Maggiolo, n=50. [e]Not all patients had reached this time point (Bravo, n=66 at Week 48; Palmier, n=82 at Week 96). [f]3 patients were excluded from URBAN due to missing data. [g]Patients viremic at baseline: URBAN n=7; DOLAM(A) n=8; Bravo n=16. [h]10 patients were excluded from the URBAN analysis due to missing data. [i]Patients did not have baseline resistance tests available.

Conclusion: Data from >6000 PWH with reported treatment experience who were treated with DTG+3TC in real-life clinical practice support results from phase III clinical trials and provide reassurance on the high effectiveness, durability, low discontinuation rates, and high

barrier to resistance of DTG+3TC in both treatment-naive and treatment-experienced PWH, including those with a history of VF and prior resistance.

P024 | Treatment-emergent resistance to bictegravir with minimal risk factors

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Background: Bictegravir is a second generation integrase inhibitor (INSTI), administered in combination with emtricitabine/tenofovir-alafenamide as a single tablet regimen (BFTAF). It has demonstrated high rates of viral suppression and a high barrier to resistance when used first-line or in suppressed switch. To date, only five cases of resistance to bictegravir have been reported, three with first-line use and two in treatment-experienced people, all with risk factors for resistance development. We describe a case of treatment-emergent resistance to bictegravir in a person with minimal risk factors.
Method: A 33-year old male presented with symptomatic mycobacterium avium-intracellulare (MAI) infection and newly diagnosed HIV, with a baseline viral load (VL) of 6 million copies/ml (wild-type) and CD4 count of 40 cells/mm3. HIV treatment was initiated with tenofovir-DF/emtricitabine/dolutegravir and switched after three days to tenofovir-AF/emtricitabine /darunavir/cobicistat due to a transient paranoid reaction and acute kidney injury.
Results: At month five the VL was 741, and at six months 4635 with an isolated M184V detected. The regimen was changed to tenofovir-AF/emtricitabine/bictegravir/darunavir/ritonavir, with suppression achieved by month eight. Subsequent VLs were 486, 112 and 589 with resistance testing showing M184V and an emergent R263K. Bictegravir was stopped and the VL remained consistently in the thousands; intensifying with maraviroc yielded no impact. HIV sub-type remained unchanged. Interventions included administration counselling, drug concentration measurement (therapeutic on two occasions), multidisciplinary input including psychology, and two months of video-observed therapy were satisfactory. Table 1 summarises our patients journey.
Conclusion: Bictegravir resistance emerged despite subjective and objective evidence of good adherence. Our case may represent expansion of clones originating in the viral reservoir. Better understanding of how bictegravir performs in the context of persistent viraemia is required.

P025 | Evolution of natural killer (NK) cell responses during acute HIV-1 infection with distinct viral subtypes

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Background: Understanding the early immune response to HIV-1 infection represents a unique opportunity for the identification of novel targets for prophylactic/therapeutic approaches. Natural killer (NK) cells are an important component of innate immunity that can modulate the pathogenesis of acute HIV-1 infection (AHI). However, the role of NK cells in mediating early host defence against infection with different HIV-1 subtypes, and clinical outcomes, remains poorly understood. Here, we studied the early imprinting effects of different HIV-1 subtypes and pro-inflammatory environment on the NK cell compartment in a unique cohort with AHI.
Method: Participants with AHI were sampled longitudinally in four different sub-Saharan African sites under "IAVI protocol C" ($n = 25$ subtype A, $n = 17$ subtype C, $n = 7$ subtype D). The median estimated days post infection for subtype A and non-subtype A was 32 and 35 days respectively (visit1), and 95 and 92 days (visit2). Multiparameter flow cytometry was used for phenotypic characterisation. NK cell ADCC responses were determined against antibody coated Raji cells. The metabolic profile was assessed by a Seahorse technology. Plasma soluble markers were measured using multiplexed assays.
Results: NK cell subsets with adaptive features expand during AHI with subtype A compared to non-A (visit1 $P = 0.008$, visit2 $P = 0.005$). This adaptive NK cell signature was delineated by lower expression of the transcription factor PLZF and signalling molecule FcεRγ, and was further enriched by higher expression of the activating receptor NKG2C. Individuals with high frequency of adaptive NK cells exhibited higher levels of IL-12p70 ($P = 0.03$). Increased frequencies of adaptive NK cells, were associated with lower HIV viral load ($P = 0.017$) and higher CD4 T cell counts (>500). These phenotypic attributes were accompanied by enhanced NK cell ADCC capacity and higher IFN-γ ($P = 002$) and TNF-α ($P = 0.016$)

production in subtype A versus non-A. Notably, NK cell IFN-γ production correlated inversely with HIV-1 viral load (r = -0.343, $P = 0.03$). The enhanced functionality of NK cells was reflected in their superior capacity for oxidative phosphorylation ($P = 0.035$).

Conclusion: These data suggest that specific NK cell subsets could confer better HIV-1 control, highlighting their potential role as a prognostic marker and as a new target for the development of novel immunotherapeutic and 'cure' strategies.

BHIVA Research Awards winner 2019 *(D Peppa)*

P026 | People living with HIV have higher frequencies of circulating endothelial colony-forming cells: steps towards patient-specific models to evaluate cardiovascular risk

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Background: Cardiovascular disease, which is driven in part by endothelial dysfunction, is more prevalent among people living with HIV (PLWH) for reasons that are unclear. Endothelial colony-forming cells (ECFCs) are circulating progenitor cells, which, after isolation, retain the donor's endothelial phenotypic characteristics. Although HIV acquisition and certain antiretrovirals (ARVs) can affect endothelial activation and are linked to increased cardiovascular risk, ECFCs have not been exploited within the context of HIV. It is not known whether ARV exposure or HIV-1 seropositivity impact ECFC frequency and isolation. We therefore aimed to isolate and characterise ECFCs from PLWH.

Method: Whole blood was obtained from PLWH on effective antiretroviral therapy (ART) ($n = 10$) or HIV-negative people accessing Pre-Exposure Prophylaxis (PrEP, $n = 10$) following informed consent. Peripheral blood mononuclear cells (PBMCs) were isolated and monitored for ECFC emergence and growth. Day of colony emergence, time to confluence, and ECFC frequency were used to determine ECFC isolation kinetics. A previously isolated HIV-negative, ARV-naïve control group were used as reference control group. Statistical significance was determined by one-way ANOVA with Tukey's multiple comparison test.

Results: Neither HIV-1 infection (when fully virally suppressed) nor ARV use in HIV-negative donors affected the isolation of viable ECFCs. ECFCs emerged in 8/10 PrEP users, 10/10 PLWH on ART and 12/13 controls from day 10.5 ± 2.3, 11.1 ± 2.1, and 11.1 ± 1.4 respectively (mean ± SEM). ECFCs isolated from PLWH on ART took 22.5 ± 1.5 days to grow to confluence from the first colony emerging, which was significantly longer than both PrEP donors (15.4 ± 2.1 days, $P < 0.05$) and ARV-naïve donors (14.9 ± 1.1 days, $P < 0.01$). PLWH also had higher ECFC frequencies (0.52 ± 0.15 colonies/1 × 10^6 PBCMs) compared to both the PrEP group (0.21 ± 0.06 colonies/1x10^6 PBCMs, $P < 0.05$) and the reference control group (0.13 ± 0.03 colonies/1 × 10^6 PBCMs, $P < 0.01$).

Conclusion: ECFCs from PLWH on effective therapy can be used to explore in detail the molecular effects of ARVs and HIV infection upon endothelial thrombo-inflammatory properties and cardiovascular health in PLWH. The significance of higher ECFC frequency and the longer time to grow to confluence in PLWH is currently unknown, but may provide a route to defining, preventing and treating endothelial dysfunction in this population.

P027 | Towards a prophylactic HIV vaccine: fine needle aspiration reveals cellular features of human lymph nodes compared with blood in the EAVI2020_01 study

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Background: HIV vaccine discovery would be enhanced by the study of cellular evolution in lymphatic tissue after immunisation. The safety, tolerability, and feasibility of ultrasound (US) guided fine needle aspiration (FNA) of lymph nodes was tested in a clinical study of rationally designed HIV envelope protein immunogens.

Method: Adult HIV negative volunteers in the EAVI2020_01 study (NCT03816137) were invited to take part after providing written informed consent. Volunteers underwent US guided FNA of an axillary lymph node ipsilateral and contralateral to the site of study injection and paired phlebotomy. Lymph node cells (LNC) and peripheral blood mononuclear cells (PBMC) were processed using standard protocols. The cells were examined for subset frequency and responsiveness to ex vivo stimulation using multi-colour flow cytometry (BD Fortessa

cytometer) and data analysed using GraphPad Prism v9.3.0 using non-parametric statistical tests.

Results: N = 11 volunteers underwent sampling between the first and second immunogen challenges (10th June to 5th August 2021). Participants were aged 20–46 years, 5/11 (45.5%) were female, and the majority, 10/11 (90.9%) identified as White. Adverse events such as bruising or tenderness were reported by 10/11 (90.9%) of participants, were all mild (grade 1), and resolved on the day or within 5 days. LNCs had yields of median (IQR) 1.15 (0.33 – 4.34) million cells with viability 90.60% (59.30%-96.90%) and were robust to viable cryopreservation. Compared with PBMC, LNC CD14+ monocytes were rare; median (IQR) 11.10% (8.30% to 12.13%) vs. 0.42% (0.28% to 0.70%), $P < 0.001$. LNC had a median CD4:CD8 ratio 2.7 times that of PBMC. Key vaccine responsive cell-types including classical Tfh and B cell subsets were readily identifiable amongst LNC and responded to ex vivo stimulation with a superantigen.

Conclusion: US guided FNA of axillary lymph nodes is a well-tolerated and feasible technique for the study of human immune responses to HIV immunogens. Immune cells are remarkably divided amongst LNC and PBMC, underpinning anatomical compartmentalisation of vaccine responsiveness. Embedding this enhanced human immunology in clinical studies will reveal vaccine induced processes not detectable in the blood and accelerate discovery of novel HIV immunogens and adjuvants.

P028 | Effective CD4 cell count restoration linked to SARS-CoV-2 seroconversion following BNT162b2 mRNA SARS-CoV-2 vaccine in people living with HIV (PLWH): a case report

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Background: Available data on SARS-CoV-2 vaccine responses in PLWH, particularly for those with profound HIV-related immune dysfunction, are scarce. PLWH with low CD4 counts generally demonstrate an attenuated response to vaccinations. There is increasing evidence that PLWH are at risk of worse COVID-19 disease outcomes. We present two patients with HIV-related immunosuppression and an evaluation of their responses to BNT162b2-mRNA vaccination following introduction of ART.

Method: Spike S1-specific IgG antibodies were measured using ELISA and neutralization activity via a pseudotyped SARS-CoV2 neutralization assay. Immunophenotyping was evaluated by flow cytometry and cellular responses via IFN-γ ELISpot. HIV-related clinical data were collected throughout the course of BNT162b2-mRNA vaccination, relative to ART initiation and immune cell reconstitution.

Results: The first patient presented with advanced HIV (CD4 20 cells/μL, HIV viral load (VL) 831764 copies/ml) and started bictegravir/emtricitabine/tenofovir-AF in February 2021. They had already received 2 doses of BNT162b2 prior to ART and, at presentation, showed no evidence of SARS-CoV-2 antibody seroconversion or cellular immune responses. Following effective virological suppression, antibody seroconversion was observed following the 3rd dose (CD4 190 cells/μL, 6 months on ART) with evidence of antibody neutralising activity following the 4th BNT162b2 dose (CD4 200 cells/μL, 8 months on ART).

The second patient presented with advanced HIV (CD4 20 cells/μL, VL 1819702 copies/ml) and started darunavir/cobicistat/emtricitabine/tenofovir-AF + dolutegravir in February 2021. They received 2 doses of BNT162b2, 4/6 months post ART initiation (CD4 70 cells/μL, VL<50 copies/ml) with no detectable responses post vaccine. Their CD4 count had remained low (100 cells/μL, VL<50 copies/ml) when they received a 3rd BNT162b2 dose and, in comparison to the first case, there were no detectable humoral or cellular vaccine responses.

Conclusion: In PLWH, CD4 count restoration can lead to improved immunological responses and seroconversion post BNT162b2 vaccine. Our findings support national recommendations for an additional vaccine dose in people with HIV-related immunosuppression. Better understanding of the correlates for suboptimal vaccine response may help guide individualised vaccine strategies in people with advanced HIV.

P029 | Increasing HPV vaccination uptake in PLWHIV: the need to improve both clinician training and patient health promotion

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Background: Human Papilloma Virus (HPV) vaccination is recommended for some people living with HIV (PLWHIV) including MSM up to 45 years old. HIV clinics are well placed to deliver HPV vaccination due to patients' regular attendance for routine monitoring and other health interventions. There is little recent evidence on the uptake and barriers to HPV vaccination in PLWHIV. A recent metanalysis suggested that MSM are receptive to HPV vaccination, but vaccine uptake and completion are below prediction and additional support & resources are needed to optimise vaccination rates.
Method: We reviewed the records of MSM under 46 years who attended for HIV care between January 2020 and June 2021. A random selection was attained by selecting every 4th attendance during the study period. Vaccine offer, uptake and completion were collected. In tandem, an anonymous electronic survey was emailed to clinicians working in HIV clinics in our network. Likert scales and free-text were used to measure confidence in HPV vaccination and identify barriers.
Results: 147 eligible records were selected for analysis. 113/147(77%) MSM were offered and 109/147(74%) accepted and received the first vaccination. 4/147(3%) declined and 34/147(23%) were not offered. Of the 109 MSM who received the first vaccination, 82% (N = 89) received the 2nd dose and 66%(N = 72) completed the course. Overall, 49%(72/146) of eligible MSM received the full vaccination course.
Thirty three clinicians working in HIV clinics from our network responded to the survey. All clinicians believed it was important or very important to offer PLWHIV vaccination and 75% (N = 24) felt it was more important to offer PLWHIV the vaccination vs people without HIV.
Free text responses identified the following barriers to HPV vaccination: lack of clarity on current guidelines, confusion around the best practice in managing missed or late doses, and clinicians lacked confidence in discussing HPV vaccination with patients who were skeptical about vaccines.
Conclusion: Facilitators for improving HPV vaccination rates include providing reminders for clinicians (including modernising EPR systems), and providing clarity around vaccination guidelines.
Improving the opportunities to inform and educate PLWHIV and engage with the HIV community around HPV vaccination may also improve uptake.

P030 | Long-term outcomes of participants on F/TAF for pre-exposure prophylaxis: results for 144 weeks of follow-up in the DISCOVER trial

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Background: In DISCOVER, a multinational randomised controlled trial, F/TAF demonstrated non-inferior efficacy compared to F/TDF for HIV prevention with improved bone mineral density and renal biomarkers at the primary endpoint (when all participants had reached 48 weeks [W] and 50% had reached W96) and at W96, the end of the blinded phase. We now report W144 outcomes for participants who were randomised to, and continued, F/TAF in the open-label extension (OLE) phase.
Method: All participants completing the randomised blinded phase could opt to receive F/TAF for at least 48 weeks in the OLE phase. We evaluated HIV incidence in participants on F/TAF through W144 and assessed changes in hip and spine bone mineral density (BMD) and in glomerular function (eGFR) from baseline to W144.
Results: 2,080 of the 2,694 participants initially randomised to F/TAF opted into the OLE phase, with 1,933 still on study drug through W144, leading to a total of 7,885 person-years (PY) of follow-up on F/TAF. Eight participants taking F/TAF acquired HIV in the blinded phase and 3 in the OLE phase. Dried blood spot analyses on the 3 OL infections found tenofovir diphosphate levels consistent with low adherence. Genotypic resistance testing showed no relevant resistance mutations for the 3 new infections. Among participants taking F/TAF, HIV incidence was 0.16/100 PY (95% CI 0.06–0.33) at the primary endpoint, 0.16/100 PY (95% CI 0.07–0.31) through 96 weeks and 0.14/100 PY (95% CI 0.07–0.25) through 144 weeks. Participants taking F/TAF had increases in hip BMD (mean percentage change +0.54%) and in spine BMD (mean percentage change +1.02%) from baseline to W144. Median eGFR increased over 144 weeks, with

a median increase of 2.6 mL/min from baseline to week 144. Participants in the F/TAF arm gained a median 2.3 kg (IQR -0.9–5.8) over 3 years of follow up.
Conclusion: The OLE of DISCOVER allowed for a long-term assessment (144 wks.) of F/TAF for PrEP. HIV incidence remained low with BMD and renal function parameters remaining stable through 144 weeks of follow-up. These findings demonstrate that F/TAF is a well-tolerated, effective option for long-term use in people who would benefit from PrEP.

P031 | 'Health tourism' in the UK: challenging negative beliefs affecting the healthcare rights of migrants living with HIV

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Background: Migration remains one of the most debated issues in UK politics. Allegations have been made about health tourism to the UK, generally, and in relation to HIV. As part of our research speaking to people born abroad and living with HIV, we were able to test this assumption and ascertain whether any evidence supported this perception.
Method: We utilised a peer-led research design model, where in-depth interviews were conducted with a diverse sample of 22 people across gender, sexual orientation, immigration status, and who were all born abroad and live with HIV in the UK. We also drew upon data by Public Health England (PHE), feedback from two focus groups held with migrants, an external advisory group, and a wider stakeholder roundtable.
Results: We found no evidence to demonstrate that HIV health tourism to the UK exists. Among interview and focus group participants, there was low, or no awareness of HIV care available to migrants in the UK before they travelled. Additionally, data by PHE showed most migrants diagnosed with HIV in 2019 were diagnosed for the first time in the UK (61%), meaning they either did not have, or knew they had, HIV when they arrived.
Our research identified that even among those who were aware of their HIV status when they arrived in the UK, there was no evidence to suggest that their motivation for migrating to the UK was to receive HIV treatment. In fact, many avoided HIV care on the assumption it was chargeable, with some participants bringing substantial supplies of HIV medications with them. Others were unaware of the modern realities of HIV as a treatable condition.
Conclusion: The myth of health tourism is used to refuse healthcare rights and access of migrants in the UK. There is little evidence of HIV health tourism existing, but the continuation of such narratives in the political discourse has a damaging impact on migrants living with or at risk of HIV, and broader public health outcomes. Therefore, any claims about HIV health tourism in the political arena and the media should be consistently challenged.

P032 | Terrence Higgins Trust and NHS Greater Glasgow and Clyde HIV testing campaign

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Background: Recent data shows that 33% of gay, bisexual and other men who have sex with men (GBMSM) in the Greater Glasgow and Clyde (GGC) area have not tested for HIV in the last 12 months; while 50% of high-risk GBMSM are not following guidelines to be tested more frequently (every 3 months)1.
NHS Greater Glasgow & Clyde commissioned Terrence Higgins Trust (THT) to design and run a marketing campaign with an aim to increase the frequency of GBMSM testing.
1. SMMASH Report, March 2020.

Method: The campaign marketing focused on paid social media. Adverts directed GBMSM to a local sexual health service website where they could find out more information and book a test online.
The campaign was split into three phases:

1. Phase 1 – creative testing of copy, characters and call-to-action
2. Phase 2 – focus on behaviour change; benefits to testing, testing options and frequency of testing
3. Phase 3 – focus on barriers to testing; stigma, fear of testing or results, denial of risk, ambivalence.

Out of home advertising was used as a secondary marketing channel. Bus stop adverts were placed in 80+ sites.
Results: To date, paid social activity for the campaign has:

- generated 390,163 digital impressions
- reached 65,579 GBMSM
- provided GBMSM with 5.95 opportunities to view the campaign
- encouraged over 7,600 GBMSM to visit the campaign website, spending an average of 2.5 minutes on the webpage.

The public had more than 260,000 opportunities to view out of home advertising.

Conclusion: Paid social advertising for this campaign was a success, with an overall click-through-rate of ~10%, showing engagement of GBMSM with the adverts. An average time on the local sexual health service webpage of 2.5 minutes shows that GBMSM are engaging with web content and messaging.
During out of home advertising, traffic to the website increased significantly. This tells us that the adverts resonated well with GBMSM.
Clinical results from the NHS have not been provided yet. This campaign is running until April 2022.

P033 | Optimising PrEP delivery: where and how people want to get PrEP. Findings from the 2020 PrEP User Survey

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[1]*UK Health Security Agency, London, UK;* [2]*PrEPster, The Love Tank CIC, London, UK.* [3]*iwantPrEPnow, London, UK*

Background: Pre-exposure prophylaxis (PrEP) is an important HIV prevention tool for communities at higher HIV risk. Currently, PrEP is only available through publicly funded sexual health services (SHS) and private providers. A key objective of the HIV Action Plan for England is to ensure equitable PrEP access including provision in settings outside of SHS, due to disparities in uptake. Here, we explored how PrEP experience could be improved for people who had used or tried to get PrEP.
Method: 1502 participants were recruited through social media to the online PrEP User Survey between October and November 2020. Participants were eligible if they had used or had tried to get PrEP since January 2017 and were UK residents at the time. Data were collected on demographics and PrEP use history. A free text question was asked on how respondents' experiences of PrEP could be improved; responses were categorised, and frequency of these presented.
Results: Nearly all (90%, $n = 1{,}352$) participants identified as gay men and most were aged 25–50 years (71%, $n = 1065$) and had used PrEP (88%, $n = 1316$). Half (46%, 580/1271) suggested new PrEP access points; 25% ($n = 321$) via a remote service e.g. online, phone or app, 14% ($n = 181$) via pharmacy/over the counter, 10% ($n = 126$) via GP, 1% ($n = 17$) other. 11% ($n = 144$) suggested improvements to SHS including reduced waiting times, more appointments, easier booking systems; 3% ($n = 40$) wanted less face-to-face appointments. 14% ($n = 172$) asked for reduced barriers to access (related to limited Impact trial places) and 4% ($n = 56$) less discrimination of sexual history/risk; 2% ($n = 20$) wanted better PrEP knowledge among healthcare staff. Less than one in five (18%, $n = 228$) thought PrEP services didn't need improving.
Conclusion: A minority of people who used or tried to access PrEP felt services didn't need improving. There was a high demand for alternative delivery settings with remote and pharmacy/over the counter services most popular. More research is needed to determine which delivery models will improve uptake in the most underserved groups.

P034 | Outcomes of a national complex HIV pre-exposure prophylaxis (PrEP) multidisciplinary meeting

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Background: As the number of individuals presenting for PrEP increases, it is evident that there is a small but significant cohort in whom TD/FTC agents are contraindicated. One large, urban centre currently providing care for 25,000 PrEP users, developed a complex PrEP advice service in the format of a virtual, monthly multidisciplinary meeting (MDM) with renal, pharmacology, pharmacy, and clinical PrEP expertise to support clinical decision making in this cohort. We report the outcomes from the first six months of this service.
Method: Retrospective case review of cases discussed from June 2021 to November 2021. Patient demographics, reason for referral and the outcomes are presented.
Results: In total, 31 cases, from 13 centres, were reviewed. The median age of patients was 44 years (IQR 33.5–54.5). The majority (93.5%) were men who have sex with men (MSM). Renal complications (eGFR <60, proteinuria) were the main reason for referral ($n = 19$; 61.2%), five (16.1%) due to bone issues, seven (22.6%) with complications such as absorption, intolerance, polycystic kidneys, indeterminate HIV status and lactic acidosis. Following review, 10 (32.2%) patients were either started or continued on TD/FTC daily and nine (29.0%) TD/FTC event-based dosing (EBD). Twelve (38.8%) patients were recommended TAF/FTC (11 advised to self-source, one to access via hepatology), two (6.5%) cabotegravir (CAB) and one (3.2%) either CAB or TAF/FTC (Figure 1). Input from different specialities was gathered for nine (29.0%) patients, including orthopaedics, renal, virology, cardiology, and hepatology.

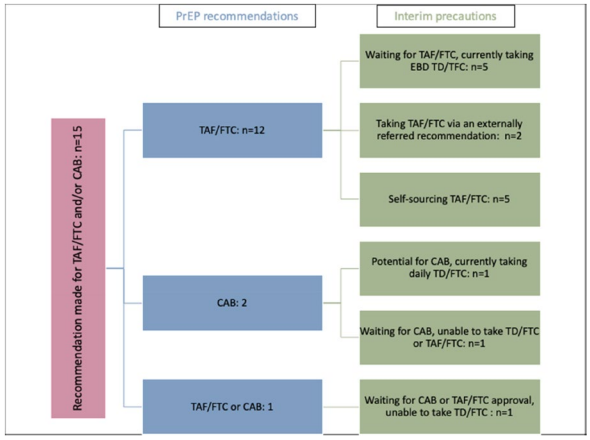

Figure 1: Flowchart of second line PrEP recommendations and interim precautions taken

Conclusion: As detailed, there is a small cohort of high risk individuals requiring more complex PrEP input. This group of PrEP users remain largely unstudied, having been excluded from most clinical trials. The complex PrEP MDM has proved a vital resource in ensuring PrEP access for all given the paucity of TD/FTC alternatives. In anticipation of non-TD/FTC PrEP availability, other centres may wish to develop a local complex PrEP MDT to facilitate case review and drug sign off.

P035 | Barriers of PrEP use among people who recently acquired HIV: qualitative study. Findings from the SHARE (Surveillance of HIV Acquired Recently) initiative

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Background: Several HIV prevention tools are free and widely available in England, yet many people continue to seroconvert. The English government has committed to eliminating HIV by 2030. To achieve this, a better understanding of barriers to HIV prevention tools among people at higher risk is needed. As part of the UKHSA SHARE (Surveillance of HIV Acquired Recently) initiative, we undertook qualitative interviews with recent seroconverters. Here, we explored their knowledge and experience of pre-exposure prophylaxis (PrEP).
Method: Between March and December 2021, we undertook 15 qualitative interviews with people who had recently seroconverted (evidenced by a negative HIV test in the previous two years or RITA positive test). Eligible participants were recruited by HIV clinic staff to attend a telephone interview with a member of the SHARE team. A rapid qualitative analysis approach developed by the University College London RREAL (Rapid Research and Evaluation and Appraisals) group was applied. Interviews were recorded and analysed thematically.
Results: We interviewed 12 MSM (2 of whom were injecting drug users), 2 women and 1 heterosexual man. All but one had had previous engagement with sexual health services (SHS), although recency of attendance varied greatly. Barriers to PrEP included lack of awareness, low perceived HIV risk (self and healthcare provider), cost and accessibility (prior to end of Impact Trial), stigma in attending SHS, stigma in taking PrEP and difficulty in predicting sexual encounters for event-based PrEP. Both women had had sexual partners from high risk countries who were living with HIV but were not on treatment or engaged in care. The heterosexual man had very little knowledge of HIV prior to diagnosis despite having been a regular SHS attender with previous sexually transmitted infections.
Conclusion: These interviews highlight a range of barriers to PrEP among people who have gone on to acquire HIV. Addressing these barriers is essential to improve the uptake of PrEP, a key objective in the HIV Action Plan for England. Reducing stigma and increasing awareness among different communities should accompany efforts to improve the promotion and accessibility of PrEP within sexual health and other services.

P036 | Psycho-social factors affecting treatment compliance: The need for a patient-centred approach

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Background: Despite the considerable advances in the availability of highly active antiretroviral therapies (HAART), suboptimal treatment remains a significant problem. Non-compliance leads to poorer health outcomes, higher transmission rates and the development of complex resistance profiles leading to treatment challenges. This project aimed to review the psychosocial context for patients with poor adherence.
Method: 115 patients were identified as "lost to follow-up" on the Bristol HIV database in December 2020. Patients were removed if they had moved out of area, improved their adherence, or had died. 46 patients' records were reviewed retrospectively. Clinical information was extracted from hospitals records and Connecting care.
Results: 35 patients were identified as having "poor adherence". This was defined as a detectable viral load of >50 copies/ml on 2 consecutive blood tests. 21 patients had attended appointments within the last year. This latter cohort was predominantly female (n = 13, 62%), aged 40–59 (n = 14, 71%) and born outside the UK (n = 13,

62%). Ethnicity was predominantly Black Afro-caribbean, Black British or mixed Black-White African ($n = 11$, 52%). Comparatively, the 14 patients who had not attended within the year were principally male ($n = 10$, 71%), and, aged 24 -39 ($n = 11$, 78%). 50% were Black African and Black British ($n = 7$), and, 50% White British ($n = 7$). 70% ($n = 6$) of men identified as gay and bisexual men (GBM). The most frequent barriers to adherence were mental illness (48.5%), substance misuse (28%), deprivation/housing problems (20%), uncertain immigration status (17%), poor ART tolerability (17%), travel (17%) and beliefs around HIV (17%). The primary misused substances were crystal meth, GHB/GBL and/or mephedrone during sexual activity ($n = 5$) and 3 disclosed intravenous use. 20% were identified as experiencing stigma. The true impact for the cohort could not be established without a valid screening tool.

High viral loads of >200 copies/ml were present for 21 patients (60%) and of these 7 patients were known to be engaging in sexual intercourse. 2 patients were injecting substances during sexual activity.

Conclusion: Mental illness and substance misuse were identified as principal factors influencing adherence. Screening patients' mental state allows for intervention at an earlier stage in patients care which could minimise non-compliance. These results led to the creation of a mental health screening protocol for patients annually. It includes the PHQ-9 questionnaire, a screening tool for depression, assessing patient's suicide risk and establishing their mental health history, drug history and current psycho-social circumstances. Skills teaching is due to take place before service-wide implementation.

A direct referral pathway to community mental health services has been identified for patients with high PHQ-9 scores who have declined liaison with primary care. Local support services for mental health, substance misuse, homelessness, sexual and domestic violence, and migrants, have been collated to allow for immediate provision of support.

P037 | An audit of management of HIV in pregnancy at an ISHS, compared to BHIVA guidelines for the management of HIV in pregnancy and postpartum 2020

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Background: The British HIV Association (BHIVA) produces guidelines on management of pregnant women with HIV. We performed an audit at an Integrated Sexual Health Service (ISHS), against the auditable outcomes within these guidelines, to highlight where improvements in patient care are needed.

Method: This audit was carried out through retrospective analysis of electronic patient records. All patients who became pregnant between January 2009 and December 2019 were included. All pregnant patients are routinely discussed in a Multidisciplinary Team (MDT) Meeting. We included the auditable outcomes which remained unchanged in the guidelines during the audit period.

Results: 194 women and 285 pregnancies were included in this audit. Mean age at conception was 31.3 (+/−5.54) years. Majority were black african (90.7%). 22.6% of patients had an undetectable viral load (VL) at conception, this increased to 91.5% at 36 weeks. There were no cases of mother-to-child transmission.

We performed well in monitoring liver function (LFTs) in those with Hepatitis co-infection, but not in starting combine antiretroviral therapy (cART) early, or in sexual health screening (Table 1). Many patients with a VL of >30,000 attended at or after 16 weeks gestation, which could be a cause for delay in starting treatment.

Table 1 Auditable outcomes and percentage achieved

Outcome	Percentage (%)
1. Proportion having a sexual health screen	80.8
2. Proportion of newly diagnosed women, requiring cART for their own health, starting treatment within 2 weeks of diagnosis	64.0
3. Proportion who commenced cART by beginning of week 24	73.2
4. Proportion with a baseline VL ≥30,000 copies/mL commencing cART at the beginning of the second trimester	22.2
5. Proportion with HBV/HIV co-infection who have LFTs performed 2 weeks after commencing cART	100.0
6. Proportion with HCV/HIV co-infection who have LFTs performed 2 weeks after commencing cART	100.0

Conclusion: Areas for improvement include timely commencement of cART and sexual health screening. BHIVA does not give a percentage standard for its auditable outcomes, which would aid evaluation of clinic performance. Further audit in different clinical settings may continue improving patient care. Good communication within the MDT and different trusts is paramount to delivering good quality HIV care.

P038 | Use of video-observed therapy as an adherence support for pregnant women living with HIV: a case report

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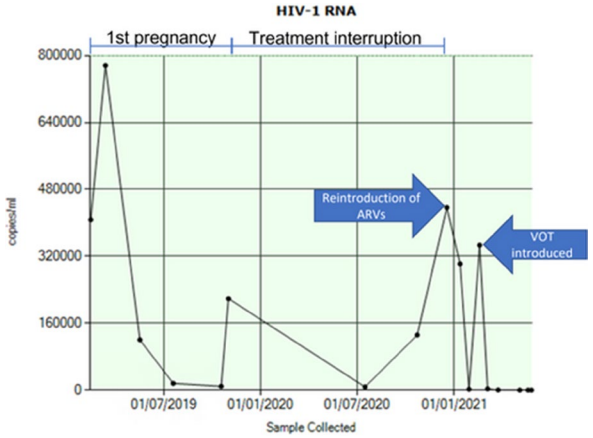
Background: Over 20,000 cases of vertical transmission of HIV were reported in the UK between 1998–2018. Neonatal mortality and risk of HIV transmission is higher in mothers with detectable viraemia at delivery, which can be minimized with strict adherence to antiretroviral therapy (ARV). Directly observed therapy (DOT) is an effective intervention to support adherence to ARV, with a significant impact on viral load reduction and consequently on the risk of transmission, development of resistance, and costs associated with neonatal HIV infection. Video observed therapy (VOT) is an alternative way to deliver DOT which is infrequently employed in HIV services.
Method: We describe a case report where VOT was used to support ARV adherence, in the context of antenatal HIV care.
Results: AV is a Black African antenatal patient, aged 30, who's adherence significantly improved with VOT. AV presented at 5 weeks gestation, during her second pregnancy, following treatment interruption for 1 year. Viral load and CD4 count at conception were 436,516 copies/ml and 43 cells/mm^3 respectively. There was a long history of poor engagement with care and due to safeguarding concerns, her first child was placed on a child protection order up until 2 years of age.
ARVs and PCP prophylaxis were reintroduced antenatally, however difficulties in adherence remained. VOT was subsequently employed using WhatsApp, as agreed with the Trust Caldicott Guardian. The patient sent daily video messages showing ARV self-administration and the HIV nurse responded every 48 hours with a SMS, acknowledging receipt or chasing up unsent videos. AV's viral load became undetectable within 4 weeks.
AV delivered at term via emergency C-section, for obstetric reasons, with undetectable viral loads for mother and child. Two weeks of neonatal post-exposure prophylaxis was administered, supported by daily visits from community midwives. She remains engaged with VOT 4 months post-delivery with undetectable viral loads.
Conclusion: Poor ARV adherence antenatally can have lasting effects on both mother and child. VOT is a novel approach that can reduce morbidity in patients with



significant adherence difficulties, during a crucial antenatal period, and has shown to be acceptable to the patient, safe, cost-effective and simple to implement.

P039 | Confinement: women, HIV and pregnancy during the COVID-19 pandemic in the UK

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Background: COVID 19 has significantly impacted the health and wellbeing of pregnant women. We describe key challenges faced by pregnant women living with HIV in the UK during the pandemic.
Method: 4M is a national Mentor Mother programme supporting women with HIV in pregnancy and beyond. Using a participatory approach, we synthesise qualitative data from key stakeholders and Mentor Mothers, obtained via webinar/email between May & October 2020.
Results: COVID-19 has negatively impacted women's wellbeing. Key themes emerged:

1. Psychological impact (including concerns about acquiring COVID-19, fears about attending appointments or giving birth alone, and threatened/actual domestic violence);
2. Constrained choices (including not having a birth companion, not being supported to breastfeed (reduced clinical services, limited viral monitoring availability));

3. Digital exclusion because of poor digital literacy, poverty, and confidentiality concerns;
4. Exacerbation of existing considerable socioeconomic deprivation. Mentor Mothers highlighted women's resilience, identifying key sources of support: a) Fully integrated multidisciplinary team, including specialist mid wives, clinicians, and Mentor Mothers; b) Peer support, which successfully adopted an online model, providing safe space for advice and support, combined with fostering social connections.

Conclusion: Policymakers and health and social care providers must be aware of multiple intersecting challenges women with HIV experience during pregnancy as a result of COVI D-19. Many of these, while not unique, are amplified by HIV. It is imperative that policy reflects women's lived realities in order to uphold their sexual and reproductive rights, and that peer support is recognised and funded as a key care component.

P040 | Exploring how women and birthing parents living with HIV make decisions about infant feeding in the UK

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Background: Over 800 pregnancies occur in women with HIV annually in the UK, with very low rates of vertical transmission (0.22%). Transmission risk via breastfeeding is greatly reduced by antiretroviral therapy (ART) but is not zero. Current UK BHIVA guidelines recommend exclusive formula feeding, however individuals should be supported to breastfeed if they choose to, and they meet certain criteria. We explored infant-feeding decisions among birthing parents with HIV in the UK.

Method: Between April 2021 and January 2022, we conducted remote semi-structured interviews with women and birthing parents with HIV who were either pregnant or had given birth within 12 months. Participants were recruited via HIV clinics and charities. Data were analysed thematically using NVIVO12 software.

Results: All 31 participants were cis-gender women: six were pregnant; 24 were postpartum; one was pregnant and postpartum. Five participants were diagnosed during their current pregnancy, the rest had known beforehand. All reported being virologically suppressed.

Half of all participants did not feel supported to breastfeed by their HIV healthcare providers (HCPs) and many had limited awareness of the updated BHIVA guidelines.

The majority of participants had chosen or intended to formula feed, thereby removing all risk of HIV transmission, and most were receiving free formula milk.

Of the participants who intended to (still pregnant) or had successfully breastfed, most were motivated by the health and wellbeing benefits, except one participant who reported breastfeeding to conceal her HIV status. The majority emphasised how important it had been for them to feel well-informed, and for their HIV HCPs to have actively supported them regarding breastfeeding.

Support from HIV HCPs was absent for two women who had tried breastfeeding. Three women reported seeking advice from private health providers or close personal contacts. Two participants reported their HIV HCPs had attempted to dissuade them from breastfeeding.

Conclusion: Despite updated 2018 national guidelines, women with HIV report inconsistent advice and support regarding infant-feeding, which constrains their feeding choices. Our findings highlight the importance of ensuring HCPs provide accurate information to parents with HIV, and create non-judgemental and supportive spaces in which they can make informed choices regarding infant-feeding.

P041 | Trends in maternal characteristics and pregnancy outcomes among women living with HIV in the UK: 2014–2019

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Background: The vertical transmission rate in the UK has remained <0.3% since 2012. We describe recent trends in characteristics and outcomes of pregnancies in women living with HIV (WLWH) in the UK in 2014–19.

Method: The Integrated Screening Outcomes Surveillance Service (ISOSS) part of the NHS Infectious Diseases in Pregnancy Screening Programme, conducts comprehensive, UK population-based surveillance of pregnancies in WLWH. Analyses covered pregnancies in WLWH diagnosed before delivery with estimated date of delivery (EDD) 2014–19, reported by 31/12/2021.

Results: There were 5,858 pregnancies among 3,353 women, with annual numbers decreasing from ~1,100 in 2014–15 to 800–900 in 2018–19.

Median age at EDD was 34years (IQR: 30.38). The proportion of pregnancies in women aged >40years increased from 12.5% (278/2224) in 2014–15 to 19.1% (316/1655) in 2018–19, $P < 0.001$. Pregnancies in women born in sub-Saharan Africa declined, from 72.0% (1575/2187) in 2014–15 to 64.1% (1052/1642) in 2018–19, while those among women born in Eastern Europe increased from 4.3% (95/2187) to 6.9% (114/1642), $P < 0.001$. The proportion of pregnancies in women with vertically-acquired HIV increased from 1.7% (35/2055) in 2014–15 to 3.7% (55/1500) in 2018–19, $P < 0.01$.

By 2018–19, 90.6% (1500/1655) of pregnancies were in women diagnosed before pregnancy, a significant increase from 86.8% (1925/2219) in 2014–15 ($P < 0.001$), with an associated rise in conception on ART from 67.2% (1453/2162) to 81.0% (1321/1630) ($P < 0.001$). Among women with antenatal diagnosis, there was earlier start of ART (19weeks [IQR: 16.23] in 2014–15, 16weeks [14.20] in 2018–19). The proportion of women with first antenatal CD4 count >500 increased from 51.2% in 2014–15 to 58.5% in 2018–19.

Over the period, >90% of delivery viral loads were undetectable (<50copies/ml) (91.3% in 2014–15, 93.1% in 2018–19). Vaginal deliveries increased from 44.3% to 47.4% in 2014–19, while emergency caesareans declined from 26.9% to 22.3% ($P = 0.018$); the preterm delivery rate remained ~12%. Supported breastfeeding cases increased from 1.5% (24/1595) to 5.8% (72/1240), $P < 0.001$.

Conclusion: Changes in the population of WLWH accessing antenatal care in the UK have implications for service provision and require monitoring. Clinical outcomes are reassuring and ISOSS will continue to monitor emerging areas of interest including infant feeding, inequalities, and the impact of Covid-19.

P042 | Pregnancy outcomes of women conceiving on ART at a London HIV clinic 2015–2020

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Background: Most women living with HIV who become pregnant in the UK have conceived on antiretroviral therapy (ART). However, pregnant women are routinely excluded from ART clinical trials resulting in a delay between new ART being licensed and pregnancy safety data becoming available. We examined pregnancy outcomes in women living with HIV receiving care at our London hospital, who conceived on ART.

Method: Prospectively recorded pregnancy outcomes for women living with HIV who conceived on ART, with an estimated delivery date (EDD) 2016 to 2021 and receiving care at St George's Hospital, were included in a descriptive analysis.

Results: A total of 84 pregnancies were recorded in 67 women. Of these 84: 14 ended in miscarriage; 1 woman transferred care before delivery; 69 ended in live birth with a total of 73 infants born. In live births, the majority (64%) of women were aged 31–40 (44/69), 25% were 21–30 (17/69) and 15% were ≥41 (10/69). Women's ethnicity was 74% Black African (51/69);13% Black Caribbean (9/69);12% White (8/69). Nearly two-thirds of live births were conceived on tenofovir disoproxil fumarate + emtricitabine (TDF+FTC) (43/69), 25% on abacavir + lamivudine (17/69), and 6 pregnancies were conceived on tenofovir alafenamide + emtricitabine. Efavirenz (EFV) was the most common third agent (28%; 19/69), followed by darunavir+ ritonavir (22%; 15/69), atazanavir+ ritonavir (14%, 10/69), dolutegravir (10%; 7/69); raltegravir (6%; 4/69); nevirapine (4%; 3/69); other 7% (5/69). Most women who conceived on EFV had EDD 2016–2018 (17/19). Most women (83%; 57/69) did not switch ART whilst pregnant. A total of 10% (7/69) of live births resulted in pre-term delivery (32–37 weeks); 2/7 were multiple births. Congenital abnormalities were detected in 4 infants. All 73 infants were uninfected.

Conclusion: The majority of women conceived on ART regimens consistent with national guidelines. There was some evidence that prescribing patterns changed over time. It remains important that women living with HIV are counselled on pregnancy safety data as part of routine care. Including women in clinical trials and improving ART pregnancy safety data should be an international priority.

P043 | Time to start testing for latent tuberculosis infection (LTBI): a quality improvement project

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Background: 2018 BHIVA TB guidelines recommend testing people living with HIV (PLWH) from countries with high and medium TB incidence for LTBI and from low-incidence countries if they have additional TB risk factors. We had not yet introduced this in our HIV service when 5 of our patients were diagnosed with TB between

February 2020 and May 2021. As a result we undertook a review of these 5 patients to see if they had TB risk factors and subsequently identified a cohort of PLWH who would be eligible for testing for LTBI.

Method: PLWH diagnosed with TB during 2020 and 2021 were identified from HARS coding. Their GUM and hospital notes were reviewed. PLWH born in countries defined as high risk for TB by Public Health England and the World Health Organisation and with additional risk factors for MTB were also identified.

Results: Of the 5 PLWH diagnosed with TB, 2 were originally from India, 1 from Kenya and 2 Zimbabwe. 4 had been diagnosed with HIV for at least 2 years and had CD4 counts over 350 on effective antiretroviral treatment. 3 had TB lymphadenitis, 1 pulmonary TB and 1 diagnosed from bone marrow. All 5 patients required hospital admission and specialist input due to complications of treatment, drug-drug interactions and co-morbidities.

We identified 165 PLWH eligible for LTBI testing in our cohort. We have procured a provider, secured the funding needed to be able to offer LTBI testing with interferon-gamma release assay to all recommended PLWH and have a care pathway for those testing positive.

Conclusion: PLWH have long been recognised to be at increased risk of progressing to active TB especially if they have low CD4 counts or originate from countries with high TB incidence especially Sub-Saharan Africa as our patients did. Had our patients been offered LTBI testing and treatment at HIV diagnosis they may have not gone on to develop active TB although 3 of them were diagnosed with HIV at least 7 years earlier. We plan to test all PLWH in our care with risk factors for TB and consider repeat testing following travel to high-incidence countries.

P044 | Cervical screening and HPV testing in young women living with perinatally acquired HIV: an interim assessment of the SHiP study

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Background: HIV increases the risk of HPV related cervical intraepithelial neoplasia (CIN) and cancer, and potentially women living with perinatally acquired HIV (WLPaHIV) may be at greater risk from an earlier age. Women living with HIV are eligible for annual screening by primary HPV testing aged 25–65, and the prevalence of high-risk HPV (hrHPV) in the general UK population is 16%. The SHiP study aims to explore the prevalence of hrHPV and abnormal cervical cytology in WLPaHIV.

Method: Eligible WLPaHIV are aged 18+, sexually active and able to give informed consent. Participants complete a short questionnaire for sexual, HPV vaccination and cervical screening history. A cervical sample is tested for hrHPV using the Cepheid GeneXpert and analysed for cytology by NHS Cytology Screening London. Women positive for hrHPV and/or abnormal cytology are referred to colposcopy.

Results: 38 women have been recruited with 28 (74%) having a cervical sample taken. The remaining 10/38 declined or deferred speculum examination but completed the questionnaire. The median age was 27 (range 19–34) with 13 (34%) below NHS screening age. Of those aged ≥ 25, 7/25 (28%) had never had a smear before, and of those who did, 6/17 (35%) were known to be abnormal. 23/38 reported prior HPV vaccination (Table 1). 7/28 (25%) tested positive for hrHPV (2 HPV-16, 0 HPV-18/-45, 7 other hrHPV) and 2 tested negative for HPV but had abnormal cytology. Of these 9 women, 4 were under screening age. On referral to colposcopy 5/9 attended, none had CIN2+ and 5/5 had CIN1 or other HPV related changes.

TABLE 1 Participant demographics and sexual behaviours ($n = 38$)

	n (%)
Median age (range)	27 (19–34)
Black ethnicity	28 (74)
Ex/current smoking history	16 (42)
Median CD4 count at recruitment, cells/μl (range)	703 (248–1600)
VL <200 copies/ml at last follow up	35 (92)
HPV vaccination history	23 (60)
Previous genital warts	3 (8)
Previous STI	15 (39)
Condom use	25 (66)
Previous smear	17 (45)

Conclusion: In this cohort of young WLPaHIV the prevalence of hrHPV was 25% as measured by Cepheid GeneXpert and of those hrHPV positive 43% were under 25 years.

P045 | Lipid disorders in HIV patients and impact on raised HDL cholesterol level

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Background: HDL Cholesterol (HDL-C) is known to be cardio-protective. However, large population-based research showed that all-cause mortality including CVD related deaths is high in men and women with very high levels of HDL-C.

We aimed to find out the lipid profile and prevalence of raised HDL-C in treatment experienced HIV patients and to determine any underlying risk factors.

Method: This is a cross sectional case control study involving patients attending for three months. Cases ($n = 120$) were patients with HDL-C 1.8 moll/L or above. Information was collected about baseline demography, current viral load (VL), CD-4 count, fasting lipid profile, history of smoking, alcohol consumption, treatment regimen, duration of treatment, use of lipid lowering agents.

Results: Total number of patients were 513 with 50.7% females, mean age 45.8 (+/-10.3), 58.9% of Black Ethnic origin. Prevalence of raised total cholesterol (above 5.0 mmol/L) were 42.4%, followed by LDL-C (above 3.0 mmol/l) 36.8%, high HDL-C levels 22.4%, raised TG (above 1.9 mmol/L) 21.4%, Patients with abnormally raised HDL-C level (2.3 mmol/L or above) were 4%. Mean VL log 1.6 (+/-2.3) copies/ml, CD-4 count 585 (+/-238) cells/ml, duration of treatment was 10.1 (+/-5.24) years.

Majority of patients with raised HDL-C were females (73.6%), black ethnic origin (87.6%), non-smokers (86.8%). 57.9% were non-alcohol consumers and 54.5% were age less than 50 years.

On bivariate analysis being female (OR = 3.5, CI 2.04–6.04), age over 50 years (OR = 1.9, CI 0.77–2.56), on HAART over 5 years (OR = 2.5, CI 1.29–5.00), NNRTI use (OR = 2.3 CI: 1.1–3.2), non-alcohol consumer (OR = 1.6, CI 0.95–2.74) associated with high HDL-C level and no association with smoking status and statin use. On multivariate analysis female sex (OR = 1.7, CI 0.08–0.34, $P = 0.001$), alcohol consumption (OR = 1.2, CI: 0.14–0.58, $P = 0.01$) and being on HAART over 5 years (OR = 2.5, CI: 1.18–5.57, $P = 0.001$) were associated with high HDL-C levels.

Conclusion: Raised HDL-C in individuals living with HIV are not uncommon. In our study being female, non-alcohol consumption and being on HAART for more than 5 years were predictors for high HDL-C level. Whether high HDL level will prevent CVD risk and may have impact in management of HIV needs further work.

P046 | Prognostic relevance of lymphocyte-CRP ratio and CRP-albumin ratio as markers of inflammation in hospitalised adults with HIV

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Background: Amid the COVID Pandemic, lymphocyte-to-C-reactive protein (LCR) and C-reactive protein-to-albumin (CAR) ratios have generated interest as novel biomarkers of inflammation. Despite advances in our understanding of HIV infection, there remains a need for accessible biomarkers of systemic inflammation, which may be predictive of morbidity and mortality for people with HIV (PWH). We sought to evaluate the frequency of abnormal LCR or CAR on hospital admission, and their association with clinical outcomes, in hospitalised PWH at a large HIV tertiary centre.

Method: This retrospective audit included PWH (≥18 years) admitted to the Royal Free Hospital, London between 2015–2017. An existing database, preceding the COVID pandemic, was used to extract baseline demographics, antiretroviral therapy (ART) status, diagnosis on discharge from hospital (categorised as: infectious, malignant, cardiovascular, inflammatory, or other) and clinical outcomes including intensive care unit (ICU) admission and mortality at three months post-discharge. Abnormal LCR was defined as reduced: <101, abnormal CAR as elevated: >0.033; with a sensitivity analysis using a different CAR cut-off: >0.19. Outcomes (ICU admission and mortality) were compared using two-tailed Fisher's exact tests.

Results: 259 patients were included. Most were male ($n = 188$; 73%), with a median age of 47 years (interquartile-range: 41–54). Most patients ($n = 152$; 59%) had a reduced LCR and ($n = 233$; 90%) had an elevated CAR on admission to hospital. Eight patients died; all had elevated CAR and seven had reduced LCR. Of those admitted to ICU ($n = 5$; 2%), four had both elevated CAR and reduced LCR. The proportion of PWH with reduced/normal LCR and elevated/normal CAR were similarly distributed, irrespective of viral suppression or immune reconstitution (Figure 1). There was no significant association between reduced LCR or elevated CAR and ICU admission ($P = 0.65$ vs. $P = 0.41$) or mortality ($P = 0.15$ vs. $P = 1.0$), by contrast with studies in the general population.

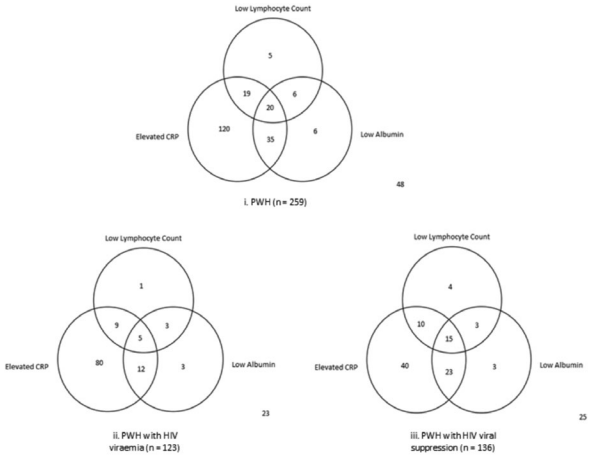

Figure 1. The relationship between elevated CRP, reduced albumin, and reduced lymphocyte count observed in:
i. PLHIV (n = 259) ii. PWH with viraemia (n = 123) iii. PWH with viral suppression (n = 136)
PWH: people with HIV; low lymphocyte count: <800 cells/μL; low serum albumin: <35 g/L; elevated CRP (C-reactive protein): ≥5 mg/L; HIV viraemia: ≥40 copies/mL; HIV viral suppression: <40 copies/mL

Conclusion: On admission to hospital most PWH, regardless of virological control, had reduced LCR or elevated CAR and neither appeared to associate with specific diagnoses or clinical outcomes. Future work will need to evaluate use of these novel biomarkers in this patient population and establish cut-off values for hospitalised PWH that associate with adverse clinical outcomes.

P047 | Assessing health-related quality of life in people with HIV and cognitive issues

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Background: We selected and examined a comprehensive set of domains that capture health-related quality of life (HRQoL) in people living with HIV and cognitive issues. This allows clinicians to target care to address the factors driving HRQoL, address individual needs, follow changes over time, and quantify interventions.
Method: HIV patients with subjective cognitive concerns (based on European AIDS Clinical Society guidelines) were identified from two clinics in London and Brighton (UK) and invited to complete a brief cognitive assessment (MoCA-Blind) and an in-person or online series of validated questionnaires measuring nine domains identified from a prior qualitative study as comprising HRQoL in PLWH with cognitive impairments. These included: physical function (Lawson and Brody Instrumental Activities of Daily Living), cognition (MoCA-Blind), social connectedness (Social Connectedness Scale), physical and mental health and wellbeing (SF-12), HIV stigma (Stigma Scale for Chronic Illness), self-esteem (Rosenburg's Self-Esteem Scale), acceptance of health (Acceptance of Illness Scale) and control over health outcomes (Illness Perception Scale).
Results: 103 PLWH with cognitive concerns (Male = 93, 90.3%) showed that the questionnaires selected had good internal consistencies and exploratory factor analysis confirmed that domain total scores load onto one main factor, representing HRQoL. Most domains were significantly correlated (r's 0.28 to -0.74, $p < 0.05$) in expected directions. We explored cut-off scores which revealed a significant proportion of patients scored outside the desired range on single domains (between 33 and 79.6%), and many patients on multiple domains (40.8% on 4 or more domains). Multiple regression revealed presence of objective cognitive impairment (based on MoCA-Blind cut-off score ≤ 18) significantly predicted HRQoL score ($R^2 = 0.14$, $F(1, 91) = 15.15$, $P < 0.001$), and adding the remaining HRQoL domains explained 56% of the variance in HRQoL score (R^2 of 0.56, $\Delta R^2 = 0.41$ $F(8.83) = 11.76$, $p < 0.001$).
Conclusion: HRQoL for the majority of PLWH with cognitive issues could be improved and we have succeeded in identifying important domains driving these experiences. The domains were strongly associated with one another, therefore insights into any could inform interventions to improve HRQoL. This provides targets for intervention development and clinical consultation to maintain or improve HRQoL in PLWH with cognitive issues and impairment.

P048 | Inflammatory conditions necessitating immunosuppression in a cohort of young adults with perinatally acquired HIV: a case series

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Background: Despite antiretroviral therapy, the incidence of inflammatory conditions in adults with HIV appears higher than the general population requiring immunosuppressive therapy that may impact HIV treatment due to drug-drug interactions (DDIs). Young adults growing up with perinatally acquired HIV (YAPaHIV) may be at risk of inflammatory disease. We describe a case series of YAPaHIV with inflammatory symptoms necessitating immunosuppression.

Method: Retrospective case-note review of YAPaHIV aged 18+ attending a London clinic. Inclusion criteria; symptomatic inflammatory disease requiring immunosuppressive therapy (excluding inhaled steroids) from 2015 to December 2021.

Results: Of 203 YAPaHIV, 10 (5%) presented with an inflammatory condition requiring immunosuppressive therapy, occular, oral or parenteral, for; eye 8/10 (80%), joint 1/10 (10%) and lung disease 1/10 (10%) (Table 1).

Eye disorders were corneal 1/10 (keratoconus), periorbital and/or anterior chamber 7/10 (Periorbital inflammation, Stevens-Johnson's syndrome, keratoconjunctivitis, keratitis, iritis, uveitis, limbitis, episceritis, scleritis). All required ocular steroids; 1 oral prednisolone and methotrexate, 2 topical tacrolimus. 3 switched from a boosted protease inhibitor (PI) to an unboosted PI regimen due to risk of DDIs, 1 following iatrogenic Cushing's Syndrome.

TABLE 1 Differences between YAPaHIV with an inflammatory disorder vs. rest of the clinic

Demographics	Inflammatory disorder ($n = 10$)	AYAPaHIV registered to clinic ($n = 193$)
Median age (range) in years	29 (22–36)	25 (18–37)
Black ethnicity (%)	8 (80)	159 (82)
Male gender (%)	5 (50)	83 (43)
VL <200 copies/ml at symptom onset	5 (50)	
Median CD4 count at symptom onset (cells/μl) (range)	301 (10–535)	
Previous CDC-C diagnosis (%)	4 (40)	
Boosted protease use (bPI) at symptom onset (%)	5 (50)	
Current bPI	3 (30)	86 (45)
VL < 200 copies/ml at last follow up (%)	9 (90)	168 (87)
CD4 at last follow up	493 (467–1182)	628 (26–1600)

1 seronegative monoarthritis required oral prednisolone and hydroxychloquine and 1 progressive pulmonary fibrosis pulsed methylprednisolone.

Conclusion: 5% of YAPaHIV presented with chronic inflammatory conditions, predominately eye disease, 40% of whom had previous CDC-C. Common management included steroid use, which poses a risk of significant DDIs highlighting the need for close communication between specialities to provide safe and optimal management.

P049 | Impact of antiretroviral (ARV) and sleep hygiene intervention on sleep disturbance in people living with HIV (PLWH)

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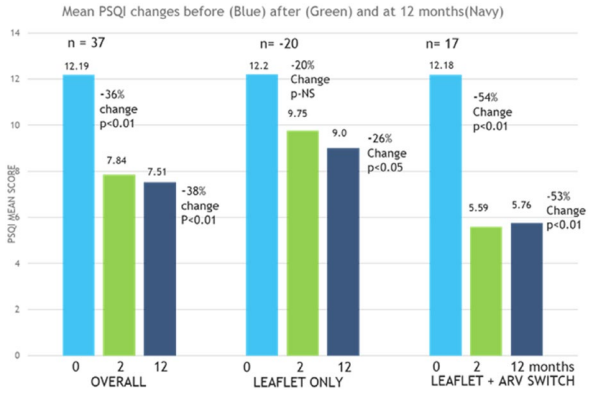
Background: The prevalence of sleep disturbance is reported to be significantly higher amongst PLWH compared to the general population. Risk factors include both psychosocial factors ie depression,anxiety, recreational drug misuse, and also ARV associated, notably Efavirenz due to neuropsychiatric effect, and some Integrase strand inhibitors (INSTI).Given lack of studies addressing interventions on sleep disturbance, we conducted a study to evaluate impact of both sleep hygiene information leaflets plus consideration of ARV switch using the validated risk assessment tool the Pittsburgh Sleep Quality Index(PSQI).

Method: A non-randomised pre-post interventional study. Of 150 consecutive patients using sleep screener questions 40 (26%) were initially identified as having a sleep problem.Of these 37 (92.5%) scored ≥6 on PSQI,indicating significant sleep disturbance. This group were all offered standard sleep hygiene information leaflets. Additionally patients were considered for ARV switch if current regimen causing/exacerbating sleep quality and changed to an alternative ARV 17/37(46%).The PSQI was repeated 1–2 months post intervention(s) and evaluated for a.total study cohort($n = 37$),b. leaflet only ($n = 20$) and c.ARV switch ($n = 17$).Following this,the study cohort was reassessed(PSQI) a year later to determine longer term impact

Results: Baseline Characteristics:Mean PSQI score = 12, mean age 40, Female 24%, BAME 30%.Mental health problems 60%. ARV (3rd agent): INSTI 67.5%, NNRTI 30%, PI 2.5%.V/L-<200 copies 92%, mean CD4 971mm^3. Distribution of ARV interventions,15/17 switched to BIC/TAF/FTC,and 2 to ABC/3TC/RAL.Prior ARV 3rd agent ($n = 17$), DTG 59%, RAL 23%, EFV 18%. Initial



post intervention PSQI improvements were: Overall 36% ($P < 0.01$),Leaflet only 20% (NS) and ARV switch 54%($P < 0.01$).With 38%($P < 0.01$),26% ($P < 0.05$) and 53%($P < 0.01$) respectively at 12 month follow up.(Fig)

Conclusion: This small study suggests the benefits of both sleep hygiene information and consideration of appropriate ARV switch on sleep disturbance.It also shows longer term impact after a year following implementation. Apart from Efavirenz, the mechanism for sleep disturbance is largely unknown with other ARV drugs,and further studies are required.Routine enquiry of sleep quality should be considered for HIV clinics.

P050 | Metabolic health of young adults with perinatally acquired HIV: an unknown need?

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Background: Metabolic and cardiovascular determinants are of increasing importance as people living with HIV age. Young adults with perinatally acquired HIV (YAPAH) often have early and long exposure to antiretroviral therapy (ART) and HIV related immune activation. Metabolic effects of ART are well described but little is known about the long term implications in this unique cohort and how we might reduce HIV and ART related metabolic morbidity and mortality . Aim: To describe the metabolic determinants in a cohort of YAPAH.

Method: Retrospective case notes review of all YAPAH attending an inner-city HIV clinic. Statistical analysis was carried out using excel and R studio.

Results: 53 patients were identified. 66% (35/53) were female. Mean age was 25. Median BMI 28 (18.5 – 52). 68% (36/53) of the cohort live in areas of high deprivation (1–3). 68% (36/53) of patients' ART contained TAF, with 53% (28/53) taking a boosted protease inhibitor and 45% (24/53) a second generation integrase inhibitor. 36% (19/53) had previous d-drug exposure. 2/53 (4%) were receiving long-acting injectable ART.

11% (6/53) had a systolic blood pressure (BP) >130 on 2 separate occasions. All patients had normal random blood glucose however, 57% (30/53) had a raised total cholesterol.

68% (36/53) were overweight or obese. Over 2 years there was a 4% (3kg) weight increase on average in the cohort (range -17% - 35%). There was no correlation between higher score for deprivation and higher BMI using fishers T test. Multivariate regression modelling showed no correlation between BMI and TAF and/or second generation integrase inhibitors.

Conclusion: Deprivation and obesity in this unique cohort are markedly high, with weight gain particularly over the last 2 years which may have been influenced further by the COVID-19 pandemic. In this small cohort we did not find a link between weight and ART choice. High cholesterol and BP may lead to increased cardiovascular risk as this cohort ages, however traditional metabolic stratification such as Qrisk3 are not validated under 25 years old. Reducing progression to metabolic syndrome is vital for long term health outcomes in YAPAH and highlights the need for screening and interventions.

P051 | Spotlight on British South Asians living with HIV

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Background: Approximately 4000 South Asian (SA) people are living with HIV (PLWH) in the UK. SA populations have shown a slower decline in new HIV diagnoses and there remains a paucity of outcome data for this cohort. HIV and associated therapies can increase the risk and complications associated with cardiovascular disease and diabetes, which disproportionately affect South Asians. We review characteristics and metabolic changes in SA PLWH attending North West London services over a 5 year period.

Method: Retrospective case note review of a random sample of SA PLWH attending services from 2015–2020. Patients identified from electronic patient records using ethnicity codes: Indian, Pakistani, Bangladeshi, Asian – Other (Nepalese and Sri Lankan).

Results: 107 PLWH were reviewed. Median age 43 (IQR 38–49), 80% male, 76% born outside the UK. Virological suppression high (89% HIV viral load <50c/ml, 4% HIV viral load >200c/ml). Lower nadir CD4 counts were seen in women vs men (210 vs 334 cells/mm^3) and in those acquiring HIV through heterosexual sex vs men who have sex with men (278 vs 413 cells/mm^3). Median years since HIV diagnosis was 9 (range 1–27 years).

There were high levels of diagnosed co-morbidities (48%), of which the most common conditions were type 2 diabetes (17%), hyperlipidaemia (15%) and hypertension (12%). Mean HbA1c was 38mmol/mol in those without diagnosed diabetes and 60mmol/mol in diabetics, indicating probable high levels of undiagnosed diabetes, and poor control in the diagnosed. Mean total cholesterol was 4.7mmol/L and total cholesterol:HDL ratio was 4.02.

47% were overweight (BMI 25–30m^2/kg) and 12% obese (BMI >30m^2/kg). Historical weight data was available for 71/107. Over median follow-up of 3.64 years, PLWH gained an average of 3.1kg and those with a BMI >25m^2/kg increased by 17%.

Conclusion: Culturally sensitive campaigns targeting SA communities, specifically women and those identifying as heterosexual, are required to end HIV transmission by 2030. This ageing population is highly co-morbid and our data highlights the need for cardiovascular risk assessment and lifestyle interventions to improve quality of life. SA PLWH must also be included in future research investigating weight changes associated with antiretroviral drugs.

P052 | Smoking prevalence in people living with HIV in Cheshire and Merseyside is high, and supporting quitting could eradicate lifelong harms for over one quarter of the cohort

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Background: Smokers living with HIV will lose more life-years to smoking than to HIV, yet they have high rates of smoking, are more likely to smoke heavily, and may find it more difficult to quit. Smokers who quit before the age of 36 years have a similar number of healthy life years to those who have never smoked. The aim of this evaluation was to assess the smoking status of people receiving HIV care in our Trust, which provides care to the majority of those living with HIV in Cheshire and Merseyside, across a variety of locations.

Method: A review of the electronic patient records was conducted for all people receiving HIV outpatient care in the previous 12 months in our Trust in spring 2021. Data were collected on smoking status, gender, age and clinic location. Smoking prevalence in our population was compared with the general population in that geographical area.

Results: In our cohort of 1996 people living with HIV, 26.4% were current smokers (in comparison with 13.4% of the general population), 6.7% ex-smokers, and 64.6% had never smoked. People living with HIV were approximately twice as likely to smoke as those in the general population. Of those living with HIV, 31.1% (n = 451/1451, 40 missing data) of males and 13.9% (n = 76/545, 5 missing data) of females were current smokers ($P < 0.001$). Mean age of smokers was 43.0 years and of ex- and never-smokers was 47.5 years ($P < 0.001$). 27.1% (n = 143/527) of current smokers were ≤35 years of age.

Conclusion: Smoking prevalence was very high in our cohort of people receiving HIV care, and smoking status was well documented. Smokers living with HIV represent a key population who can benefit from smoking cessation - nearly a third of our cohort was ≤35 years of age, a group for whom cessation could eradicate existing smoking harm. People living with HIV may have increased barriers to accessing health services, and may be harder to support with smoking cessation due to heavier smoking. Furthermore, smoking has been associated with reduced antiretroviral therapy adherence. HIV services should therefore consider offering in-clinic smoking cessation services to target our key population group.

P053 | Impact on inflammatory and atherogenesis biomarkers with the two-drug regimen dolutegravir plus lamivudine in treatment-experienced people with HIV-1: a systematic literature review

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Background: Even with sustained antiretroviral therapy (ART)-mediated virologic suppression, HIV is associated with some persistent inflammation, contributing to an increased risk of non–AIDS-related comorbidities. The 2-drug regimen dolutegravir (DTG) plus lamivudine (3TC) has demonstrated rapid viral load decline and durable, non-inferior efficacy compared with 3- and 4-drug regimens (3/4DRs) in ART-naïve and ART-experienced people with HIV-1 (PWH). This systematic review summarized randomized controlled trials (RCT) and real-world evidence evaluating inflammatory and atherogenesis biomarkers with DTG + 3TC in ART-experienced PWH.

Method: Ovid MEDLINE®, Embase®, PubMed, and Cochrane library databases were searched for studies

published from January 1, 2013, to July 14, 2021. Additional searches identified relevant data presented at the 2021 International AIDS Society Conference on HIV Science and IDWeek™ 2021. Eligible studies included real-world evidence and RCTs evaluating switch to DTG + 3TC in ART-experienced PWH aged ≥18 years that included data on CD4+/CD8+ ratio or inflammatory and atherogenesis biomarkers C-reactive protein, soluble CD14, interleukin-6 (IL-6), soluble CD163, D-dimer, fatty acid binding protein-2, or soluble vascular cell adhesion molecule-1.

Results: Overall, 4 publications representing 2 RCTs (DTG/3TC: SALSA, $n = 246$; TANGO, $n = 369$) and 6 publications of real-world evidence (DTG + 3TC: N = 1000) were included. Across both RCTs, no consistent pattern of change in biomarkers was observed between DTG/3TC and 3/4DR comparators throughout the studies, except for reductions in soluble CD14 (favored DTG/3TC in SALSA at Week 48 and TANGO at Weeks 48 and 144) and IL-6 (favored TAF-based regimens in TANGO at Weeks 48 and 144; Table 1). In the one real-world study evaluating changes in inflammatory biomarkers (N = 67), median soluble CD14 levels significantly decreased at Week 48 post-switch to DTG + 3TC (P<0.001). Levels of other biomarkers (including IL-6) remained stable. In all 6 real-world studies, CD4+/CD8+ ratio increased post-switch to DTG + 3TC (follow-up, 12–60 months).

Figure. Reported inflammatory and atherogenesis outcomes in PWH receiving dolutegravir/lamivudine vs comparator in randomized controlled trials

Trial/ Week	Regimen	N[b]	Visit to baseline ratio[a] D-dimer	CRP	IL-6	sCD14	sCD163
SALSA/ Week 24	DolutegravirLamivudine	246		0.980	1.024	1.028	1.003
	CAR	247		1.013	1.061	1.142	0.978
SALSA/ Week 48	DolutegravirLamivudine	246		0.904	1.001	0.936	1.045
	CAR	247		1.038	1.038	1.004	1.030
						P=0.002	
TANGO/ Week 48	DolutegravirLamivudine	369	0.958	1.012	0.950	0.953	0.978
	Tenofovir alafenamide–based regimen	371	0.956	1.083	0.929	0.985	0.904
				P=0.006		P=0.048	
TANGO/ Week 96	DolutegravirLamivudine	369	0.956	0.989	1.112	1.041	0.922
	Tenofovir alafenamide–based regimen	371	0.935	0.945	1.040	1.090	0.908
TANGO/ Week 144	DolutegravirLamivudine	369	0.951	0.940	1.066	0.975	0.885
	Tenofovir alafenamide–based regimen	371	0.925	0.855	0.962	0.907	0.833
				P=0.039		P=0.044	

P values are for treatment comparison. *P* values were not reported for SALSA 24-week data. †Other *P* values that are not shown were not significant.
CAR, current 3- or 4- drug antiretroviral therapy regimen; CRP, C-reactive protein; IL-6, interleukin-6; MMRM, mixed-model repeated measures; sCD14, soluble CD14; sCD163, soluble CD163.
[a]Ratio is the estimated adjusted ratio in each group calculated using MMRM applied to change from baseline in $\log_e$-transformed data adjusting for treatment, visit, baseline third agent class, CD4+ cell count (continuous), age (continuous), sex, race, body mass index (continuous), smoking status, hepatitis C virus co-infection status, $\log_e$-transformed baseline biomarker value (continuous), treatment-by-visit interaction, and baseline value-by-visit interaction, with visit as the repeated factor. [b]Participant numbers for individual inflammatory biomarkers vary.

Conclusion: Evidence from 2 large RCTs and 1 real-world study showed no consistent impact on inflammatory and atherogenesis biomarkers and increases in CD4+/CD8+ ratio post-switch to DTG + 3TC vs 3/4DR comparators. These data suggest there is no evidence of an impact on inflammation after switching from a 3/4DR to DTG/3TC.

P054 | Patient-reported outcomes after switching to a two-drug regimen of fixed-dose combination dolutegravir/lamivudine: 48-week results from the SALSA study

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Background: In SALSA (NCT04021290), switching to the 2-drug regimen (2DR) dolutegravir/lamivudine had non-inferior efficacy compared with continuing 3-/4-drug (3/4DR) current antiretroviral regimen (CAR) in treatment-experienced adults. Patient-reported health outcomes through Week 48 are presented.

Method: SALSA is a randomized, open-label study of virologically suppressed adults on stable 3/4DR for ≥3 months who switched to dolutegravir/lamivudine or continued CAR for 52 weeks. Secondary endpoints included change from baseline in patient-reported treatment satisfaction and symptom bother, assessed by HIV Treatment Satisfaction Questionnaire (HIVTSQ) and symptom distress module (SDM), respectively, at Weeks 4, 24, and 48.

Results: Overall, 493 participants were randomized to switch to dolutegravir/lamivudine (N = 246) or continue CAR (N = 247). Baseline HIVTSQ total scores (median [range]: dolutegravir/lamivudine, 58.0 [24–60]; CAR, 58.0 [34–60]) and lifestyle/ease (dolutegravir/lamivudine, 29.0 [8–30]; CAR, 29.0 [15–30]) and general satisfaction/clinical sub-scores (dolutegravir/lamivudine, 29.5 [12–30]; CAR, 29.0 [17–30]) were similar. Mean increases in HIVTSQ total score and lifestyle/ease and general satisfaction/clinical sub-scores through Week 48 were higher in the dolutegravir/lamivudine vs CAR group (Figure).

Treatment satisfaction was high in both groups: >95% of participants reported that they would recommend their present treatment to others (dolutegravir/lamivudine, 99%; CAR, 97%) and would be satisfied continuing their present treatment (dolutegravir/lamivudine, >99%; CAR, 96%). At baseline, SDM scores were comparable between groups (median [range]: dolutegravir/lamivudine, 6.0 [0–59]; CAR, 4.0 [0–47]). The dolutegravir/lamivudine group had small improvements in SDM score compared with CAR at Weeks 4 and 24 and a similar SDM score at Week 48 (Figure).

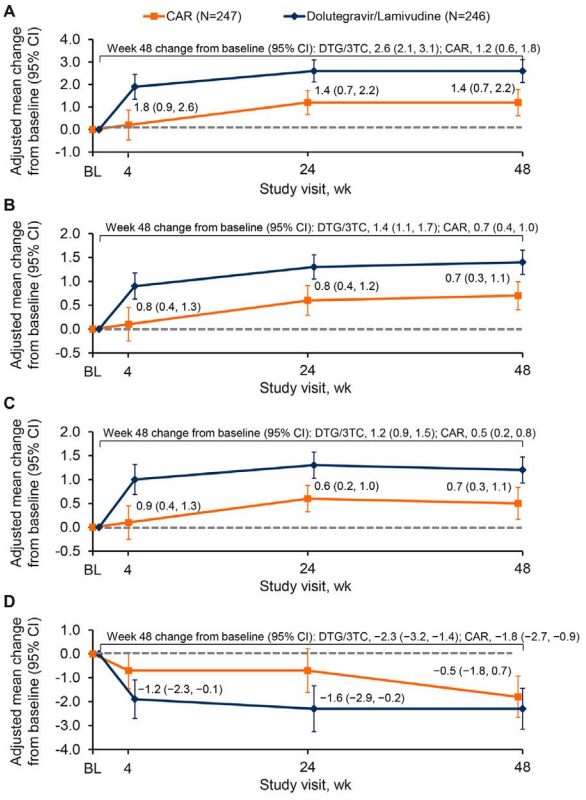

Figure. Adjusted mean change from baseline (95% CI) in **(A)** HIVTSQ total score, **(B)** HIVTSQ lifestyle/ease sub-score, **(C)** HIVTSQ general satisfaction/ clinical sub-score, and **(D)** SDM bother score for each study visit.

Adjusted treatment difference (95% CI) is displayed in the middle for each post-baseline study visit. Dashed line represents no change from baseline. Adjusted mean is the estimated mean change from baseline at each visit in each group calculated from mixed-model repeated measures adjusting for treatment, visit, baseline third agent class, age (continuous), sex, race, baseline value (continuous), treatment by visit interaction, and baseline value by visit interaction, with visit as the repeated factor.
BL, baseline; CAR, current antiretroviral regimen; HIVTSQ, HIV Treatment Satisfaction Questionnaire; SDM, symptom distress module.

Conclusion: Participants switching to dolutegravir/lamivudine reported greater early improvements in treatment satisfaction and less symptom distress compared with those continuing CAR, observed as soon as 4 weeks after switch and persisting through Week 48. Participants in the dolutegravir/lamivudine and CAR groups had been using antiretroviral therapy for an estimated median of 5.3 and 5.9 years, respectively, at SALSA baseline, indicating that dolutegravir/lamivudine switch is associated with improved treatment satisfaction in participants with substantial antiretroviral therapy experience. These findings further support greater patient satisfaction with use of the 2DR dolutegravir/lamivudine vs 3/4DRs.

P055 | Weight change in youth on tenofovir alafenamide (TAF)

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Background: In 2015, Tenofovir alafenamide (TAF) was commissioned for adults and adolescents living with HIV (ALHIV) from 12 years/35kg. Whilst adult indications include osteoporosis, TAF is preferred to tenofovir disoproxil fumarate (TDF) in adolescents <25 years prior to peak bone mass accrual. Weight gain associated with TAF is reported in adults, with little comparable data for youth. We investigated weight change in youth prescribed TAF based regimens within a single centre.

Method: Retrospective cohort analysis of electronic patient records, of ALHIV initiating a TAF-based regimen as first or subsequent antiretroviral therapy (ART) between January 2016-January 2020. Weight and Body Mass Index (BMI) were recorded at baseline and 12 months on TAF-ART.

Results: 85 ALHIV; 45 (53%) female, median age 24 years (IQR 21–27), 7 (8%) tanner stage <5, 61 (72%) Black African ethnicity, 84 (99%) perinatally acquired, median BMI 22.4kg/m2 (IQR 18.9–25.5), 22 (28%) overweight/obese, were prescribed emtricitabine/TAF (F/TAF) with; boosted protease inhibitor (PI) 40 (47%), integrase inhibitor (INSTI) 32 (37%), non-nucleoside reverse transcriptase inhibitor 9 (11%) and PI/INSTI 4 (5%). 2 (2%) ART naïve, 54 (63%) switched with osteopenia. 18 (21%) commenced TAF during the pandemic. At 12 months median weight change +4 kg (IQR 1–6.8, range -7 to 24), by third agent: INSTI +3.4kg, PI +4.8kg and NNRTI +2.5kg. 17 (20%) lost weight. BMI increased to 23.4kg/m2 (IQR 20.7–27.1) with 9 (12%) youth moving from overweight to obese, 1 (1%) obese to severely obese 3 (4%) healthy to overweight. Six (7%) on dolutegravir/F/TAF (5) and darunavir/c/F/TAF (1) switched due to weight gain to bictegravir/F/TAF (5) and dolutegravir/F/TDF (1); 3/6 lost weight, median change +0.2kg (range -3.5 to +1.2) after a median of 3 months.

Conclusion: TAF regimens were well tolerated, but even in this small ALHIV cohort were associated with significant increases in weight and BMI; median weight gain 4 kg; with no difference observed by third agent. However, 12% became obese, with weight gain prompting ART switch in 7%; the impact of which requires

further elucidation over time in larger cohorts. The behavioural impact of the SARS-CoV-2 pandemic may also be implicated.

P056 | Associations between inflammatory profiles and cardiovascular disease risk among people living with HIV

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Background: People with HIV (PWH) have an increased risk for cardiovascular morbidity and mortality. Underlying mechanisms are complex and multifactorial, with inflammatory phenotypes likely playing a role. We investigated associations between inflammatory profiles and CVD risk in the Pharmacokinetic and clinical Observations in PeoPle over fiftY (POPPY) Study.
Method: Thirty-one biomarkers, related to inflammatory processes, were assessed in a subset of 343 PWH participating in the POPPY Study and used to identify three distinct biomarker profiles (cluster 1: low-level inflammation; cluster 2: increased T- and B-cell activation/proliferation; cluster 3: widespread systemic inflammation). Ten-year CVD risk predictions were calculated using the Framingham Risk Score (FRS) and the Data Collection on Adverse effects of anti-HIV Drugs (D:A:D) 10-year score. Quantile regression was applied to compare the distributions of CVD risk scores in those with different inflammatory profiles after adjustment for body mass index (BMI), ethnicity, and family history of CVD.
Results: The analyses included 252 PWH (median [interquartile range; IQR] age 54 [50–59] years; 87% male; 90% white; 35% overweight). In total, 116, 22 and 114 PWH were in clusters 1 (91% white; 36% overweight; 70% with family history of CVD), 2 (86% white; 41% overweight; 77% with family history of CVD) and 3 (89% white; 33% overweight; 68% with family history of CVD), respectively. Overall the median [IQR] FRS and D:A:D scores were 11.6% [6.7–18.3] and 8.8% [4.7–14.2]. Both scores were higher among those in clusters 2 (FRS:13.7% [8.1–24.9]; D:A:D:13.6% [7.2–18.6]) and 3 (FRS:13.5% [8.0–19.9]; D:A:D:9.7% [5.4–16.1]) compared to those in cluster 1 (FRS:10.3% [5.7–15.6]; D:A:D:7.2% [4.1–12.0]). Unadjusted quantile regression demonstrated statistically significant differences between the distributions of scores in the three cluster groups, with these differences remaining significant after adjustment (Figure 1). In particular, median FRS scores were 4.7% and 3.0% higher, respectively, for those in clusters 2 and 3 compared to those in cluster 1, whereas median D:A:D scores were 5.4% and 2.1% higher, respectively.

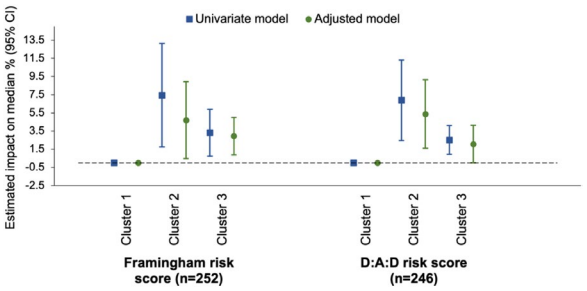

Figure 1. Median quantile regression model illustrating the median FRS and D:A:D CVD risk scores in different inflammatory profiles among people living with HIV.

Conclusion: Strong associations between inflammatory clusters and CVD risk suggests that immunological markers may play an important role in the development of CVDs, and therefore could inform diagnosis and management of CVD in PWH.

P057 | The assessment of hepatic fibrosis and steatosis using transient elastography in youth with perinatal HIV

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Background: For adults living with HIV, liver-related disease comprises a large proportion of non-AIDS related morbidity and mortality. However, much less is known about the long-term outcomes for youth living with perinatally acquired HIV (YPaHIV). Transient elastography (TE) provides non-invasive assessment of hepatic fibrosis and steatosis. We assessed the prevalence of fibrosis and steatosis in YPaHIV undergoing TE for clinical indications.
Method: Cross-sectional analysis of YPaHIV undergoing TE (Fibroscan™) between 19/10/2017–07/12/2021 for: raised alanine aminotransferase (>36 u/L); dyslipidaemia; Body Mass Index (BMI) ≥25/91st centile; hepatitis (HBV/HCV) co-infection, known chronic liver disease or excess alcohol. Fibrosis (E) and Controlled Attenuated

Table 1 Characteristics of YPaHIV by CAP score < and >243db/m

	Scanned cohort (%)	CAP<243dB/m	CAP>243dB/m	*P* value
N	73(100)	43 (58.9%)	30 (41.1%)	NA
Median age (range)	23 (12–34)	23 (15–34)	22.5(12–32)	0.609
Male	38 (52.1%)	22 (51.2%)	16 (53.3%)	0.855
Black African/Caribbean	55 (75.3%)	32 (74.4%)	23 (76.7%)	0.826
Overweight	54 (74.0%)	29 (67.4%)	25 (83.3%)	0.128
Obese	30 (41.1%)	11 (25.6%)	19 (63.3%)	0.001
HBV co-infection	9 (12.3%)	7 (16.3%)	2 (6.7%)	0.219
Median CAP(dB/m) (IQR)	228 (194–271)	202 (170–222)	282 (254–307)	NA
Median ALT(U/L) (IQR)	34 (19–56)	29 (19–54.5)	40 (23.3–57)	0.255
Raised ALT	35 (48.0%)	19 (44.2%)	16 (53.3%)	0.441
HIV VL <50 c/ml	58 (79.5%)	33 (76.7%)	25 (83.3%)	0.695

p: Pearson's Chi-Square or Mann–Whitney test.

Parameter (CAP) scores were recorded, with demographics and routinely collected laboratory parameters.AST-to-Platelet Ratio Index (APRI) and Fibrosis-4 (Fib-4) index were calculated. Data was anonymised with analysis in IBM SPSS Statistics software (SPSS).

Results: Of 73 YPaHIV, median age 23, 52% male, 75% black African/Caribbean, nine (12.3%) had liver stiffness (E ≥7kPa); three stage F3. 30 (41.1%) had moderate steatosis (CAP >243dB/m), of whom 10 (13.7%) had severe steatosis (CAP > 305dB/m) [Table 1]. Where data available ($n = 47$); no significant associations between APRI, FIB-4 and E scores were observed ($P = 0.38$, $P = 0.67$ respectively).

Conclusion: A high proportion of YPaHIV had moderate/severe hepatic steatosis on CAP, associated with obesity. Elevated fibrosis scores in YPaHIV were not predicted by fibrosis indices established in adults and require further elucidation in larger cohorts.

P058 | SARS-CoV-2 vaccination acceptance in people with HIV

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Background: The high prevalence of comorbidities and social inequity experienced by people with HIV (PWH) coupled with regular contact with heath care services, is likely to influence vaccine uptake as well the risk of SARS-CoV2 infection and severity. We looked at participants in the SCAPE-HIV study to determine factors associated with SARS-CoV2 vaccine uptake.

Method: The SCAPE-HIV study (SARS-CoV2 Antibody PrevalencE in a London HIV cohort) is an ongoing cross-sectional study within a London HIV clinic outpatient adult cohort. Interim analysis on $n = 515$ patients recruited between July-September 2020 is presented. Participants completed questionnaires about their sociodemographic and clinical factors, and SARS-CoV2 vaccination status.

Results: 493/515 (89.6%) reported being offered a SARS-CoV2 vaccine. Median age offered vaccination was 53y, 18.1% self-identified as female, 72.4% white, 17.3% black. 57% had a university degree, 62.5% were in employment (24.6% as keyworkers), but 95/483 (19.7%) reported they did not always have enough money to cover basic needs. All were on antiretroviral therapy (ART), median CD4 627 (IQR 471, 802; range 20–1969); median nadir CD4 237 (IQR 111, 372; range 2–1048); 96.4% had an undetectable HIV viral load (<50 copies/ml). 472/493 (95.7%) who were offered accepted vaccination.

Acceptance of SARS-CoV-2 vaccination among PWH was not associated with age, education, employment status, numbers living in household or any HIV related factors. PWH more likely to refuse SARS-CoV2 vaccination include those who did not identify as white or black ethnicity (OR 3.12 (95%CI 1.05–9.25)), those did not always have enough money to cover basic needs (OR 2.65 (95%CI 1.07–6.60)), and those who do not get influenza vaccinations (OR 4.32 (1.77–10.51)). A past history of COVID19 was also associated with vaccine refusal (OR 3.46 (1.43–8.38)).

Conclusion: SARS-CoV2 vaccine acceptance in this cohort of PWH was extremely high. Although participation in the study may be more likely in those accepting

vaccination, the study recruited a substantial proportion of people with social disadvantage. These findings suggest a history of declining influenza vaccination may be a marker of SARS-CoV2 vaccine hesitancy. Better understanding of the psychosocial factors influencing vaccination uptake can support future messaging and acceptability.

P059 | Hyper-eosinophilic syndrome with neurological and gastrointestinal involvement in a patient living with HIV

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Background: Hyper-eosinophilic syndrome (HES) is defined as persistent, idiopathic eosinophilia (>1.5x109/L) causing associated organ damage. It is rare, with a prevalence of 0.04/100,000 patient years in the UK. Case studies involving patients living with HIV have reported cutaneous manifestations, however multi-organ involvement typically affecting the lungs, heart and gastrointestinal tract is also known to occur.
Method: We present the case of a 53-year-old man with multiple co-morbidities who was admitted with fever, abdominal pain, raised inflammatory markers and eosinophilia (14.74x109/L zenith). During admission he developed right hand weakness which progressed rapidly to widespread weakness and confusion.
MRI head showed multiple multi-territory infarcts, initially thought to be septic emboli. CT TAP showed diffuse wall thickening of the entire Gastrointestinal tract and thickening of the left ventricle. Serial echocardiograms did not show any evidence of infective endocarditis.
IgE was mildly elevated with normal mast cell tryptase. Schistosomiasis, Strongyloidiasis and Microsporidia testing was negative. Auto-immune testing and MR Angiogram ruled out vasculitis. All microbiological cultures were negative. Bone marrow cytogenetics did not detect the FIP1L1/PDGFRA gene fusion which can occur in HES. Myeloid next generation testing excluded a myeloproliferative disorder.
Following the MRI head result our patient was started on aspirin and antibiotics for possible infective endocarditis (prior to TTE). Empirical treatment was given for parasitaemia given delays in obtaining these results. These interventions resulted in no clinical improvement.
Due to clinical deterioration, following discussion with Haematology colleagues Methylprednisolone was started.
Results: The introduction of methylprednisolone resulted in a drastic reduction in eosinophilia (14.74 to 0.26 x109/L) and rapid clinical improvement. Steroids were weaned slowly over several weeks. CT showed resolution of bowel wall oedema within one month. In 32 days, our patient went from bed-bound to mobilising independently. He was discharged to his own home within two months.
Conclusion: Hyper-eosinophilic syndrome is a rare but clinically significant condition associated with significant morbidity. It is a diagnosis of exclusion made once other, more common, causes of eosinophilia have been explored. While there are no guidelines for management, steroids are often effective and other immunemodulatory agents have been used. Treatment can prove a challenge given interactions with anti-retroviral medications.

P060 | Re-evaluation of annual cytology using HPV self-sampling to upgrade prevention (REACH UP): a feasibility study in women living with HIV in the UK

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Background: UK guidelines for cervical cancer screening are based on the assumption that most women living with HIV (WLWH) are also high-risk (HR) human papillomavirus (HPV) positive. We aimed to study the prevalence of HR-HPV in WLWH in the UK and to assess feasibility and acceptability of HR-HPV self-sampling in this group.
Method: WLWH attending 6 HIV Services in London/South England, with no history of cervical cancer, were enrolled. Participants self-collected a vaginal swab for HR-HPV detection at baseline and after one year (1Y), completed an entry survey about sexual/gynaecological history, attitudes towards annual screening and

perception of HR-HPV self-sampling at baseline, and an exit questionnaire on acceptability of self-sampling and study procedures at 1Y. Information on cervical smears was obtained from NHS records (baseline and Y1).

Results: Sixty-seven women (86.5% black ethnicity), median (range) age 47 (24–60) years, median CD4+ 683 (interquartile range [IQR] 527–910) cells/mm3, 95.4% undetectable HIV viral load, were enrolled. All performed the vaginal swab at baseline. Eighteen (27%) had no cervical smear results; none of these attended HIV services where this was routinely offered. No cervical samples were positive for HR-HPV. Three-quarters (75.8%) reported adherence to annual screening, with only one (1.5%) attending irregularly. On visual analogue scales (0–100), median (IQR) acceptability and necessity of smear tests as indication of cancer risk awareness, were 100 (75–100) and 100 (85–100), respectively. Fifty (75%) women did a vaginal swab at 1Y, when the COVID-19 pandemic necessitated implementation of remote consultations. Swabs were done in HIV clinics or sent to women who posted them directly to the lab. Data on smear tests and the exit survey are being analysed and they will provide information on the effect of the COVID-19 pandemic on the compliance to annual smear tests recommended in this population.

Conclusion: The prevalence of HR-HPV in WLWH in the UK may be low. Self-sampling seems to be acceptable suggesting, if validated, its potential role in supporting less frequent smear testing and improving screening uptake in WLWH. This procedure resulted feasible even when consultations were conducted remotely. In this setting, self-sampling could ensure women are not lost from surveillance.

BHIVA Research Awards winner 2018 *and Don Jeffries Research Award* 2018

P061 | Physical inactivity and associated health factors among patients attending an urban UK HIV and sexual health clinic: a secondary analysis of a clinic-based cross-sectional survey

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Background: Among people living with HIV (PLWH), physical inactivity has been associated with negative consequences such as metabolic syndrome and depression. Data on levels of physical inactivity among the British HIV-positive population are limited. We aimed to assess the prevalence of physical inactivity and associated health factors among patients attending our HIV and sexual health clinic.

Method: We conducted a secondary analysis of a cross-sectional study conducted between May 2017 and January 2018 among HIV-positive ($n = 217$) and HIV-negative ($n = 62$) patients attending a central London HIV and sexual health clinic. The survey used the following standardised validated instruments: General Practitioners Physical Activity Questionnaire (GPPAQ), The Alcohol Use Disorders Identification Test (AUDIT), The Drug Use Disorders Identification Test (DUDIT), The Patient Health Questionnaire-9 (PHQ-9) demographic characteristics and health factors. We analysed the prevalence of physical inactivity (GPPAQ score ≤3.9) and evaluated the effects of socio-demographic and health factors on physical inactivity using logistic regression to calculate OR, 95% CI, and p-values. Multivariate analyses accounted for all variables associated with physical inactivity in univariate analyses ($< = 0.10$).

Results: Of the 279 patients who completed the GPPAQ, a majority were male (91.8%), from white ethnic backgrounds (74.6%), with a mean age of 49 years, and employed (85.3%). Nine patients were sick or disabled and consequently excluded from the analysis. Two hundred and two (74.8%) patients reported being physically inactive. The proportion of reported inactivity was comparable between HIV-positive and HIV-negative patients with 76.1% and 70.5%, respectively. In univariate analyses, participants who reported risky alcohol consumption were less likely to report physical inactivity (OR 0.38, CI 0.19–0.76). Problematic drug use had a borderline association with physical inactivity (OR 0.54, CI 0.29–1.04). In multivariate analysis, only not eating regularly due to perceived lack of time remained associated with physical inactivity (adjusted OR 0.41, CI 0.19–0.90, $P = 0.027$).

Conclusion: Among our single clinic-based sample, three quarters of the total cohort reported physical inactivity, which was not associated with HIV-status. After adjusting for other variables, skipping meals remained associated with physical inactivity. Screening for physical inactivity should be routine and interventions to promote both physical activity and heath eating habits should be implemented.

P062 | SARS-CoV-2 antibody seroprevalence in a large HIV clinic cohort

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Background: London had the largest incident of COVID-19 during the epidemic in the UK. Patients of our HIV clinic were able to opt-in for the SARS-CoV-2 antibody test during the epidemic. A retrospective review was conducted to know the proportion of people tested positive for antibodies in our cohort.
Method: Data was collected on people who underwent SARS-CoV-2 antibody test in our clinic from May 2020 to mid-Jan 2021. Data on demographics, comorbidities, antiretrovirals, CD4 count, HIV viral load, and symptoms of COVID-19 were collected and analysed for people tested positive for antibodies.
Results: A total of 2567 people underwent SARS-CoV-2 antibody test. Among which 271 (10.6%) were positive - Male: 162 (59.8%), Female: 109 (40.2%), MSM: 97 (35.7%), median age was 50 years (Range: 20 to 76 years), 270 (99.6%) were on ART and 267 (98.5%) had an undetectable HIV viral load (less than 200 copies/ml), Median CD4 count was 554 cells/ul (Range: 70 to 1338 cells/ul).The prevalence of SARS-CoV-2 antibodies among tested cohort was similar to London seroprevalence during August, September, October, and November of the year 2020.
Conclusion: Our study cohort had a similar seroprevalence for SARS-CoV-2 antibody as the general population.

P063 | Management of active tuberculosis in people living with HIV in a tertiary centre

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Background: The management of tuberculosis (TB) in people living with HIV (PLWHIV) can be challenging. Prompt diagnosis and early information on drug resistance is critical. We assessed our performance in the diagnosis and treatment of TB in PLWHIV.
Method: We performed a retrospective review of clinical notes and microbiology data for PLWHIV treated for tuberculosis between 1st January 2018 and 31st December 2021. We assessed our performance against NICE and BHIVA guidelines.
Results: Among 373 patients treated for TB, HIV testing was performed in 368 (98.7%). Eight were newly diagnosed, and seven previously known HIV positive. Table 1 summarises the baseline demographic and clinical characteristics. Eleven had CD4 counts <200 when TB was diagnosed. Eight required hospital admission. Fourteen (93%, target 100%) had sputum sent for TB investigations. Thirteen (87%, target 85%) patients had culture-confirmation. Sputum smear was positive in six, with molecular testing performed on two of these primary samples, and on 6 other culture positive samples. Median time to culture positivity was 18 days (range 6–78). Median time from presentation to treatment initiation was 13 days (range 1–50 days). Two patients had drug resistance (one MDR, one isoniazid monoresistance). Twelve (80%) completed TB treatment. One patient had severe drug-induced liver injury requiring liver transplantation. Two patients died during treatment. Five of eight people with newly diagnosed HIV achieved viral load <200 copies/ml by week 12.

Table 1

	N = 15
Age[1]	37 (23–63)
Female[2]	8 (53.3%)
Deprivation decile[1]	1 (1–5)
Born outside of the UK[2]	14 (93.3%)
CD4 count[1]	78 (4–379)
Pulmonary TB[2]	7 (46.7%)
Extrapulmonary TB[2]	9 (60%)

[1]median (range), [2]number (%).

Conclusion: In this highly immunosuppressed cohort, there was a high rate of TB culture confirmation. Molecular testing was infrequently performed on smear positive primary samples and not on smear negative samples. Two patients had drug resistance (one rifampicin, one isoniazid) which were identified only after samples were culture positive. Increased use of molecular testing on primary samples, as recommended in BHIVA guidance, would aid earlier initiation of optimal treatment. Treatment outcomes were comparable to national data.

P064 | COVID infection and vaccination in a semi-rural HIV cohort

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Background: As part of a separate study to investigate unexpected rises in viral loads of stable patients since the

advent of COVID we assessed COVID infection and vaccination status in our HIV cohort.

Method: From June to November 2021 all HIV patients attending our service were offered a COVID PCR swab and COVID antibody test (looking at previous infection only) when attending for routine HIV viral load testing. Verbal consent was taken and a patient information leaflet was given. Information on demographics, COVID infection, COVID vaccination, concomitant medication, anti-retroviral therapy, adherence and HIV VL were collected and analysed. Patients with COVID positive PCR tests were advised to self-isolate according to the current national guidelines.

Results: A total of 135 patients were tested. 95(70%) agreed to have both COVID PCR and antibody testing, 40(30%) agreed to antibody testing only (most did not like having the swab taken). 2 patients tested positive for COVID, neither had symptoms when tested. One had received their 1st Pfizer vaccine 2 months prior and had an HIV VL <40 copies/m and the other was unvaccinated and had an HIV VL of 3340 copies/ml but admitted to missing medication prior to testing. 22/135 (16.3%) patients had declined vaccination (10 were of Black African background, 4 were Eastern European, 6 were White British, 1 from the Caribbean and 1 White Other). 1 had a CD4 count <50, 1 patient was not on treatment and 1 had a persistently detectable viral load.Of those vaccinated (Total 113) 55(49%) had Astra Zeneca Vaccine, 44(39%) had Pfizer and 14(12%) did not know what they had received.

Overall 31/135 (23%) patients had COVID antibodies indicating previous infection, 8 (26%) of these were unvaccinated. 2 (25%) of the unvaccinated and 7 (26%) of the vaccinated recalled symptoms or a positive COVID test.

COVID infection and vaccination status

COVID status total patients ($n = 135$)	**Vaccinated ($n = 113$)**	**Unvaccinated ($n = 22$)**	
PCR positive ($n = 2$)	1 (partial)	1	
PCR negative ($n = 92$)	77 (84%) (35 declined)	15 (16%) (6 declined)	P = 0.313*
COVID antibody positive ($n = 35$)	27 (74%)	8 (26%)	
COVID antibody negative ($n = 99$) 1 sample insufficient	85(86%)	14 (14%)	P = 0.352**

* Fishers exact test

** Chi-squared test

Conclusion: In our cohort there was a high rate of patients who declined vaccination. This is a concern in a group who are considered high risk for COVID infection and have been shown to have poorer outcomes[1]. Of most concern were those unvaccinated patients who had a low CD4 or persistently raised viral load.

References:

1. A.Geretti et al. Clinical Infectious Diseases, Volume 73, Issue 7, 1 October 2021

P065 | Unexpected HIV viral load rises in a COVID-19 pandemic

Sophie Herbert[1]; Kerry Woodgate[1]; Modester Chiota[1]; Sharon Cullen[2]; Anita Kenyon[2]

[1]*Northamptonshire Healthcare NHS Foundation Trust, Kettering, UK;* [2]*Kettering General Hospital, UK*

Background: In October 2019 we moved to in-house HIV viral load(VL) testing with Gene-expert. We noticed an increase in the number of detectable HIV VLs in previously persistently undetectable patients but not seen when using the previously Roche Taqman platform sendaway test. Given the co-incident COVID pandemic we hypothesised there may be a cross-reactivity with COVID virus or antibodies and determined to assess this.

Method: All HIV VL samples were sent away for parallel testing (RocheTaqman) and re-run in-house(Gene-expert) from September-December 2020. Patient reasons for a high HIV VL, quality assurance tests and manufacturer input was sought. From June -December 2021 samples taken from the patient were run in parallel as part of a study and COVID PCR and antibody testing was undertaken with verbal consent. Information on demographics,COVID infection, COVID vaccination, concomitant medication, anti-retroviral therapy and adherence were collected.

Results: Between September 2020 and March 2021 there were 40 discrepant HIV VL, 27 in patients who had never had a viral load >50 copies/ml since suppressing on initial treatment.1 patient missed medication, 10 had previously high HIV VLs and 2 were new transfers with no previous HIV VL data available. In 12 patients the difference in HIV VL between the two tests was less than 1 log and these were discounted, however considerable anxiety was noted from patients. From June-December 2021 5/135 patients had discrepant viral load samples (6 missing) but 4/5 were within a factor of 10(1log) and were considered non-significant. None of these patients had COVID.

2 patients tested positive for COVID on PCR but did not have an unexpected rise in HIV VL.

Conclusion: We describe a period where an apparent increase in HIV VL coincided with the COVID-19 pandemic leading to substantial clinical concern and anxiety for patients and staff. The numbers of COVID positive patients was too low to account for an affect on the assay. Reasons for poor assay performance remain speculative but may include; displacement of routine HIV samples by COVID testing leading to changes in routine HIV VL standard operating practices and/or pressurised and inexperienced laboratory staff and staff shortages due to the pandemic pressures.

P066 | Missed opportunities for diagnosing HIV in primary care

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Background: Since November 2018, University Hospital Lewisham's (UHL) Emergency Department (ED) has carried out routine opt-out HIV testing as part of the Elton John AIDS Foundation SIB (Social Impact Bond). HIV prevalence in Lewisham is 'extremely high' (8.6 per 1000) thus the British HIV Association (BHIVA) recommends routine HIV testing in primary and secondary care. If routine HIV testing was carried out in primary care on an opt-out basis, it could lead to earlier diagnosis, reductions in ED attendances and cost savings. An audit of patients newly diagnosed with HIV in the ED reviewed missed opportunities for HIV testing in primary care in the two years prior to diagnosis.

Method: Patients who tested HIV positive in the ED were identified through the UHL HIV clinic. If a patient was registered with a Lewisham GP (General practitioner) practice, their care history was reviewed through EMIS (primary care record system).

Results: From November 2018 to November 2020, 24 patients were diagnosed with HIV through UHL's ED, of whom 18 were registered with a Lewisham GP. Seventeen of these had visited their GP in the two years preceding diagnosis, a total of 33 GP attendances with HIV indicator diseases or seroconversion illnesses. Opt-out HIV testing was not undertaken in any visit, representing 33 missed opportunities to offer an HIV test. One hundred blood tests were ordered, but an HIV test was only offered three times (declined by two patients).

Conclusion: The audit demonstrates how opportunities for routine opt-out HIV testing in primary care, which could diagnose patients earlier leading to reduced morbidity, mortality, onward transmission and costs, are being missed. Following the audit, HIV testing increased by more than 10% in 14 out of 35 Lewisham GP practices through offering teaching and financial incentives through the SIB.

P067 | Offering mass HIV blood testing to primary care patients via (MJog) text message: what we learnt and did it work?

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Background: The population that our centres serve has one of the highest prevalence of HIV in Europe (8.6 per 1000)[1]. Primary Care should offer HIV blood tests to all registered patients opportunistically[2]. The COVID lockdown changed the way primary care delivered care; reducing face-to-face consultations. Communication with patients also changed to include more digital approaches; including mass population text messages (MJog).

To increase the profile of HIV testing via a digital Primary Care communication route in order to increase awareness.

[1] BHIVA; *Adult HIV testing Guidelines;* 2020; [Accessed on 10/1/22] https://www.bhiva.org/file/5f68c0dd7aefb/HIV-testing-guidelines-2020.pdf
[2] NICE Guidance 'HIV testing: increasing uptake among people who may have undiagnosed HIV' 2016 [Accessed on 10/1/22] www.nice.org.uk/guidance/ng60

Method: During HIV testing week 2021, three Primary Care Centres sent to all their registered patients (aged 18–75) who had not had an HIV test within the last year. The MJog invited them to reply '*YES*' if they wished to request an HIV blood test form. Data and outcomes were collected 8 weeks later.

Results: See Table 1.

Conclusion: Analysing those who were invited and those tested shows there are barriers to having an HIV test in Primary Care. Unfortunately we did not have any new HIV diagnoses from this method of offering an HIV blood test. The numbers tested do not reflect the importance of the impact of an HIV public health message being sent

Table 1

Primary Care Centres	Size of Patient Cohort	Age range of text sent (years)	MJOG texts sent	YES replies	Total tests done after 8 weeks	Positive Tests	Negative Tests	% YES replies who had HIV blood test	Gender Breakdown YES		Average Age of those who replied (years)	Average Age of those who had the test done (years)
									M	F		
1	18,000	18–75	11,974	351	78	1	77	22.00%	154 (44%)	197 (56%)	42.7	46.64
2	9,000	18–60	6,071	172	49	1	48	28.65%	72 (42%)	98 (58)	39.5	43.12
3	16,119	18–60	8,559	134	32	0	32	23.88%			38.2	40.9
Totals	43,119	-	26,604	657	159	2 (Both already known)	157	24.84%			40.9	44.4

universally. MJog may be an effective method to improving HIV testing in Primary Care.

P068 | Introducing routine HIV testing to a gastroenterology ward: a junior doctor-led project

Kevin Kuriakose; Katherine Donald; Alisha Dyson; Niall Heyes; Katherine White; Anna Garner
Manchester University NHS Foundation Trust, UK

Background: With a HIV prevalence rate of 5.89 in 1,000 (aged 15–59) in 2021, Manchester is one of 19 local authorities in England with extremely high HIV seroprevalence. BHIVA and NICE HIV testing guidelines recommend routine screening for people accessing healthcare in these areas. Despite this, at the time of our project, few hospitals in Greater Manchester were offering routine HIV screening for patients and therefore we embarked on a junior doctor-led HIV testing project on a gastroenterology ward.
Method: The primary aim of this quality improvement project (QIP) was to demonstrate an increase in the number of HIV tests performed. An initial retrospective review was performed from May to September 2020 to estimate a baseline of the percentage of patients tested for HIV at any one time on the ward. The intervention stage of the QIP was comprised of three plan-do-study-act (PDSA) cycles over a 24-week period. Data was collected on a weekly basis to determine the percentage of patients on the ward who were tested for HIV as well as the percentage who had a HIV test requested on the electronic pathology system.

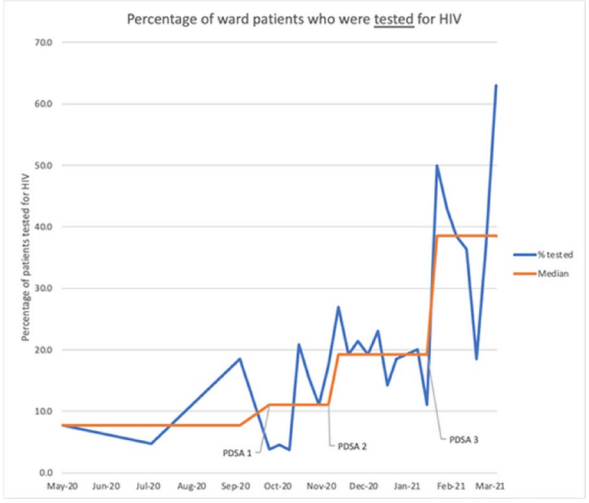

Figure 1

Results: PDSA cycles one, two and three resulted in a shift in the median percentage of patients tested for HIV from a baseline of 7.7% up to 11.1%, 19.2%, and 38.5% for each respective cycle (see figure 1). The percentage of patients who had a HIV test requested also increased from a baseline of 14.3% up to 15.4%, 24.5% and 46.2% for each PDSA cycle. At its peak, 63% of patients were tested for HIV. In the intervention period of 24 weeks one patient was diagnosed with HIV on the basis of this QIP for whom there was otherwise no clinical suspicion of HIV.

Conclusion: This quality improvement project demonstrates that simple interventions such as education of staff and prioritisation of testing at ward board rounds can significantly increase the offer and uptake of HIV testing. In addition, it highlights the importance of junior doctor-led testing initiatives to increase adherence to BHIVA HIV testing guidance.

P069 | A re-audit of late diagnosed HIV positive individuals in 2016 and 2019 in Greater Manchester

Emily Boardman[1]; Andrew Tomkins[1]; Luke Cannon[2]; Louise Carnes[1]; Anna Garner[1]; Benjamin Goorney[3]; Dominic Haigh[4]; Emily Rooney[4]; Chris Ward[1]; Chitra Babu[1]

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Background: New late HIV diagnosis (CD4<350cells/mm3) are higher in North-West England than the UK average. Our aims: to gain intelligence into demographics of late diagnosed individuals across Greater Manchester, review opportunities for earlier diagnosis and determine if key recommendations from the 2016 audit were followed. Recommendations were look-back exercises for late diagnoses and improved communication with primary/secondary care.

Method: Individuals were identified from locally kept or HIV and AIDS Reporting System data. Retrospective case note reviews were performed using clinical notes, General Practice summary of care records and clinical letters. Data was collected for 2019 and compared to 2016 results

Results: In 2019, seven Greater Manchester Sexual Health services returned data compared to nine in 2016.

	2016		2019	
Number of patients	104		65	
Gender:	77.9%		76.9%	
Male	22.1%		23.1%	
Female				
Orientation:	**Male**	**Female**	**Male**	**Female**
Homosexual	53.1%	0.0%	56.0%	0.0%
Heterosexual	38.3%	95.7%	38.0%	100.0%
Bisexual	1.2%	0.0%	2.0%	0.0%
Undisclosed	7.4%	4.3%	4.0%	0.0%
Ethnicity:	51.9%		50.8%	
White British	22.1%		21.5%	
Black/Black	4.8%		3.1%	
British-African	2.9%		0.0%	
Black/Black	1.0%		4.6%	
British-Caribbean	3.8%		7.7%	
Asian/Asian	6.7%		7.7%	
British-Indian	6.7%		4.6%	
Asian/Asian				
British-Pakistani				
Other Asian				
Background				
Other White				
Background				
Other				
Born outside UK	40.4%		27.7%	
Median CD4	216		172	
Presentation:	36.5%		12.3%	
Asymptomatic	28.8%		20.0%	
Clinical indicator	26.0%		33.8%	
condition				
AIDS-defining illness				
Could diagnosis have	58.7%		52.3%	
been made earlier?	20.2%		43.1%	
No	8.7%		1.5%	
Probably	12.5%		3.1%	
Possibly				
Unknown				

In 2019, 76.9% were male, of these 56.0% were men who have sex with men (MSM). Among women, 60.0% were of Black African origin.

In 2019, look-back exercises were performed in 56.9% and a letter sent to primary care in 67.6% - 18.9% who underwent a look-back exercise had missed opportunities and no communication with primary/secondary care.

Conclusion: There are continued missed opportunities for earlier diagnosis. To improve earlier diagnosis, we recommend:

- Targeted interventions for groups at higher risk of late presentation e.g.MSM and Black and Minority Ethnic Groups

- Education in primary/secondary care regarding indicator conditions
- Formal review processes for all late diagnoses
- Communication with primary/secondary care regarding missed opportunities
- Broader HIV testing, especially in high prevalence areas

P070 | Improving testing for HIV in patients with community acquired pneumonia in Bradford Teaching Hospitals

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Bradford Teaching Hospitals, UK

Background: HIV is now a treatable medical condition but despite this there are still some people unaware of their diagnosis. Late diagnosis is the most important factor associated with HIV related morbidity and mortality in the UK. The prevalence of late diagnosis in Bradford is 45.1%. The 2020 BHIVA HIV testing guidelines state that all patients diagnosed with an indicator condition (any condition with an undiagnosed HIV seroprevalence rate of >1 per 1000), such as community-acquired pneumonia (CAP), should be tested for HIV, to prevent late diagnoses. Following a significant late diagnosis in our trust we decided to target a common indicator condition, and following this, intervene to improve our screening process.
Method: A retrospective review of admissions to Bradford Royal Infirmary (BRI) in April-June 2019 with CAP was performed. Notes were reviewed in order to identify whether these patients were offered HIV testing during their admission. Cases were also investigated as to whether there was confirmation of HIV status, a diagnosis of CAP in the preceding year and any subsequent change in HIV status since the admission. Following analysis of this, posters were put up in the Medical Admissions Unit (MAU) and results discussed with the Acute Internal Medicine Consultants, in order to increase awareness of this screening protocol. We then re-audited a similar patient group 3 months later, using the same parameters.
Results: In our initial audit, 59 cases were identified , 23 of whom had a recurrent CAP. 37.2% (22) were admitted to the Medical Admissions Unit, 47.4% (28) were sent home from the Emergency Department and 15.2% (9) were admitted to Elderly admissions unit. Only 1.8% of patients with CAP had an offer of a HIV test during their admission. There was evidence of previous HIV testing in 14.5% of patients. There was no evidence of any subsequent HIV diagnosis in the group.
After our interventions, we looked at a further 161 patients admitted to the MAU with CAP. 14.4% (15) of these patients had a HIV status in their electronic patient record. Of the remaining 146 patients, 21.2% had HIV screening offered or done during their admission, showing an improvement of 19% ($11.95 < CI < 26.85$) from the initial audit.
Conclusion: The results show a modest, but significant improvement in our screening at Bradford. The interventions that we have undertaken have increased awareness of CAP as common indicator condition for HIV and we have since identified new HIV infections which may have been missed without our interventions. We plan to continue to improve our testing rates and general HIV awareness throughout the trust in the coming year.

P071 | The use of routine diagnostic sequencing data to determine the molecular epidemiology and transmission dynamics of HIV-1 in Newcastle upon Tyne

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Background: The HIV-1 genome accumulates mutations rapidly, thus viruses with similar sequences are likely linked by transmission events or short transmission chains. Analysis of genetic distances between viral sequences collected within the same geographical region can, therefore, be used to assess the structure and transmission dynamics of local HIV epidemics. This study aimed to describe the molecular epidemiology of HIV-1 in Newcastle-upon-Tyne, identify potential transmission clusters in the area, and recognise patient characteristics associated with these clusters.
Method: 755 sequences collected from 554 patients for routine antiretroviral therapy resistance testing in Newcastle from 2012–2020 were analysed. Sequences were subtyped, using the *REGA HIV-1 subtyping tool V3*, to assess clade frequency. A maximum-likelihood phylogenetic tree of the sequences was constructed using *MEGAX (v10.2.6)*. Transmission clusters were identified from this phylogeny, as groups of closely related sequences using *Cluster Picker (v1.2.3)*. Patients falling within clusters were then compared with those not within clusters.
Results: Clade B was predominant (58.4%), followed by clade C (16.9%). 20 transmission clusters were identified from the phylogeny. The clusters were associated with Clade-B viruses ($P = 0.0001$), men who have sex with men (MSM) ($P = 0.001$) and age <25 at first UK positive test ($P = 0.0009$). By plotting patients whose sequences were

added to the transmission clusters each year, their growth could be retrospectively monitored.

Conclusion: 20 putative transmission clusters were identified by phylogenetic analysis, which represented groups of patients linked by transmission events in Newcastle. Young males, infected with HIV in the UK from sex between men were found to be most likely to be implicated in these transmission events. The addition of further sequences to the analysis over time could allow near-real-time transmission cluster monitoring and lead to targeted public health interventions.

P072 | Improving blood-borne pathogen (BBP) testing on an adult inpatient mental health ward

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Central and North West London NHS Foundation Trust, UK

Background: Clinical evidence consistently highlights that the psychiatric patient population is at a greater risk of acquiring Human immunodeficiency virus (HIV) and other BBP in comparison to the general population. Although The National Institute for Health and Clinical Excellence (NICE) and The Royal College of Emergency Medicine (RCEM) published guidelines recommending Emergency Department HIV screening in 2016, there are currently no equivalent national guidelines for neither emergency nor chronic mental health services.

By failing to identify people living with HIV this inequity in screening provision potentially risks misdiagnosis of the neuropsychiatric sequelae of advanced HIV and overlooking opportunities to intervene medically.

The study objectives were to trial a BBP screening programme in a psychiatric inpatient setting to investigate whether BPP testing could be increased by using a standardised pathway.

Method: For a 10 week period in 2021 all inpatients on a general acute psychiatric ward were offered an HIV test supported by written and verbal information. A decision specific tool was developed to assess capacity to consent prior to screening. If a patient lacked capacity, a best interest decision was made.

Patient feedback was recorded. BBP status was audited pre and post introduction of the protocol.

Results: Pre-Screening all BBP testing rates were 11%. Post screening testing rates increased to; HIV = 84%, Syphilis = 74%, Hepatitis B = 74% and Hepatitis C = 79%. 100% of patients were offered screening and 100% of those tested were negative. Overall 49 were tested for HIV and 33 for Syphilis, Hepatitis B and Hepatitis C.

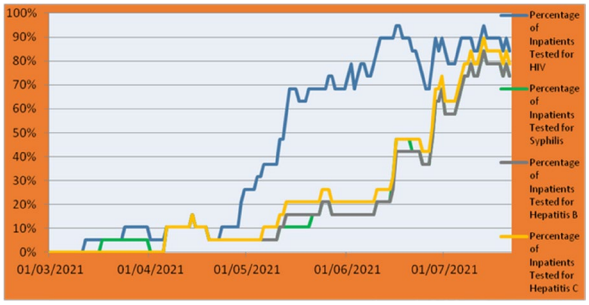


Figure 1 Percentage of Inpatients Tested for BBP from 01/03/21–21/07/21

Conclusion: Although no BBP cases were identified, inpatient screening was practical and acceptable to adult mental health inpatients and has since led to development of an op-out screening programme. Subsequently screening has expanded to include Syphilis, Hepatitis B and C.

P073 | Measuring progress towards ending HIV transmission in England in the COVID-19 pandemic era

Alison Brown[1]; Veronique Martin[1]; Neil Mackay[1]; Hamish Mohammed[1]; Ammi Shah[1]; James Lester[1]; Cuong Chau[1]; Ann K Sullivan[1,2]; Nicky Connor[1]; Valerie Delpech[1]
[1]*UK Health Security Agency, London, UK;* [2]*Chelsea and Westminster Hospital, London, UK*

Background: An ambition has been set to end HIV transmission in England by 2030. There was a fall in new HIV diagnoses first made in England between 2019 and 2020. The COVID-19 pandemic in 2020 affected social mixing and sexual behaviour as well as access to HIV testing. We compare reports of new HIV diagnoses against trends in HIV testing to better understand HIV transmission in 2019–2020.

Method: Reports of people newly diagnosed with HIV in England collected through the HIV and AIDS Reporting System (HARS) were aligned to number having an HIV test in specialised sexual health services (SHS) using GUMCAD. HIV diagnoses made among people previously diagnosed abroad were excluded (24%). New diagnoses were ascertained through multiple sources, and data quality checks were undertaken to mitigate against underreporting.

Results: Between 2019 and 2020, new HIV diagnoses first made in England fell by 33% from 2,950 to 1,990. However, the number of people having an HIV test at a SHS fell by 30% from 1,320,510 to 927,760. The proportion of people accessing HIV testing through internet SHS rose by 70%

from 254,260 to 432,220. Overall testing was sustained at 86% of previous year.

After adjustment for missing exposure, among gay/bisexual men, diagnoses fell by 41% from 1,500 in 2019 to 890 in 2020, and the number testing for HIV decreased by 7% from 157,710 in 2019 to 146,900 in 2020. This compares with the 132,770 men tested in 2018. Testing coverage (the proportion of eligible attendees who were tested) reduced from 87% to 77%.

Among heterosexual adults, HIV diagnoses fell by 23% from 1,320 In 2019 to 1,010 in 2020, and the number tested fell by 33%, from 1,142,950 to 760,260 respectively The number of tests fell by 41% and 29% among men and women respectively (testing coverage reduced from 77% to 57%, and 56% to 38% among men and women respectively) while the number of new HIV diagnoses was equally split between men and women for both years.

Conclusion: The high and sustained number of gay/bisexual men having an HIV test in 2020 combined with continuing provision of PrEP indicates the fall in HIV diagnoses reflects reduced HIV transmission. Among heterosexual adults, the reduced number testing for HIV is likely the main contributor to fewer HIV diagnoses. Missed testing opportunities in 2020 may mean late diagnoses rise in future years. The provision of online HIV tests needs assessment to ensure they are accessible across all populations.

P074 | Characterising late presentation amongst people living with HIV in England who were previously diagnosed abroad

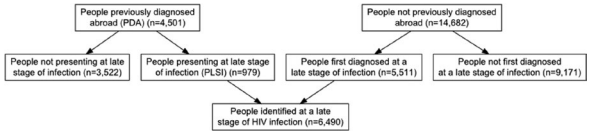
James Lester; Alison Brown; Veronique Martin; Ammi Shah; Cuong Chau; Ann Sullivan; Nicky Connor; Valerie Delpech

UK Health Security Agency, London, UK

Background: People living with HIV who enter care at a late stage of infection are at greater risk of ill-health and death, as well as onward transmission. This includes individuals first diagnosed at a late stage, and those previously diagnosed abroad (PDA), but presenting at late stage of infection (PLSI). With 24% of new diagnoses in England in 2020 amongst individuals PDA, those PLSI merits further characterisation.

Method: Data were taken from the HIV and AIDS Reporting System. Individuals in England with a CD4 count <350 cells within 91 days of an HIV diagnosis (and no evidence of recent infection) were categorised as diagnosed late if first diagnosed in the UK, or PLSI if PDA. Descriptive statistics, the Kruskal-Wallis test, and logistic regression were used to identify indicators and outcomes of PLSI.

Results: In total 6,490 people were identified at a late stage of HIV infection in the last 5 years (2015–2020). Of these, 979 were PLSI (15%). The rate of PLSI amongst those PDA (22%) was lower than that of late diagnosis amongst those not PDA (38%).



Year of UK arrival was reported for 79% (3,574) of individuals PDA. Of those identified as positive within a year of arrival, 18% (443/2,436) were PLSI, compared with 38% (33/88) of those identified 3–4 years after arrival. Amongst those PDA, PLSI was particularly associated with probable exposure through injection drug use (37/99) (OR 3.64, 95% CI 2.34, 5.61) and blood products (30/71) (OR 5.01, 95% CI 3.00, 8.30). The 880 PLSI 2015–2019 (2020 excluded due to incomplete mortality data for 2021) were 6.8 times more like to die within 1 year of identification than the remaining 3,112 PDA not PLSI.

Of people PDA, those PLSI were less likely to have received antiretroviral therapy before UK arrival than those who did not (7% vs 18%) and displayed significantly higher viral load at identification (Kruskal-Wallis, $p < 0.05$).

Conclusion: People PLSI present a public health challenge distinct from those diagnosed late. Further efforts are needed to improve accessibility of HIV services to people PDA, to improve health outcomes and prevent onward HIV transmission.

P075 | A whole systems approach to improving HIV testing in UK general practice

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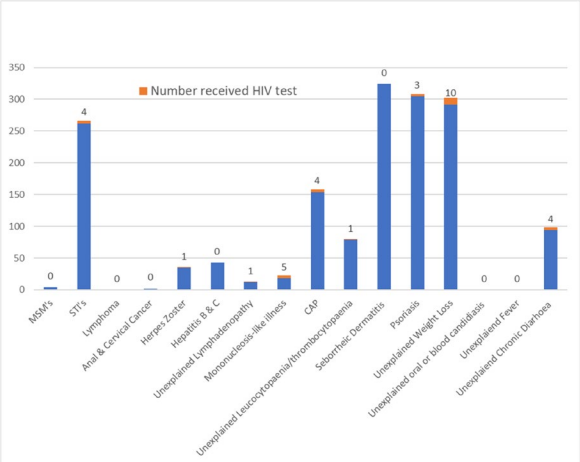
[1]*Bracondale Medical Centre, Stockport, UK;* [2]*University of Manchester, UK;* [3]*Manchester University NHS Foundation Trust, UK*

Background: There remains a deficit between recommendations in guidelines and the actual frequency of HIV testing in general practice. The aim of this Quality Improvement Project was therefore to increase the rate of general practice-based HIV testing.

Method: A model for improvement methodology was employed. Preliminary work included a 12-month retrospective study of the incidence of codes relating to HIV indicator conditions in three practices in Stockport (Jan 2021- Jan 2022). Process mapping, driver diagrams and surveys underpinned by a behavioural approach guided the development and selection of interventions. Interventions included practice-wide education and training about HIV testing, a quick-access infographic, and

computerised alerts. Each alert is aligned to a HIV indicator condition and triggers as soon as relevant codes are typed. Alerts encourage offering a HIV test. Once a HIV test is conducted, the alert automatically disappears.

Results: Graph 1 shows the mean number of patients presenting with codes relating to HIV indicator conditions over a period of 12 months from three Stockport Practices. Less than 3% of patients presenting with an indicator condition were offered a HIV test. The educational session received positive feedback with participants indicating they would alter their practice. Successfully piloted in one practice, computerised alerts were feasible and acceptable to primary care clinicians and will be expanded to four additional practices. Evaluation will include review of practice and laboratory records, as well as efficacy and acceptability of each intervention in improving rates of HIV testing.



Graph 1: Mean number of patients presenting with codes relating to HIV indicator conditions over 12 months (Jan 2021-2022) from three General Practices in Stockport

Conclusion: Early HIV diagnosis is key to preventing unnecessary morbidity and mortality. Computerised alerts combined with education and training may improve rates of HIV testing in primary care.

P076 | HIV testing in indicator conditions: knowledge and confidence in primary care

Andrew Kong[1]; Paul McClintock[1]; Sarah Duncan[2]
[1]*Burn Brae Medical Practice, Hexham, UK;* [2]*Newcastle upon Tyne Hospitals NHS Foundation Trust, UK*

Background: The North East of England has a low prevalence of HIV infection, however late diagnoses remain common. Guidelines recommend that patients diagnosed with an indicator condition should all be offered an HIV test, which often necessitates testing in primary care or other non-sexual health settings. Our surgery is a rural practice based in the North East, where the diagnosed HIV prevalence aligns with the regional average of 0.06%, yet 50% of patients had a CD4 count of < 350 cells at diagnosis. This study sought to assess the frequency and indications for HIV tests performed, and to describe clinician knowledge and use of current BHIVA testing guidelines.

Method: We performed a retrospective review of all electronic patient records managed at the surgery ($n = 9934$) to identify HIV tests requested between 01/03/2020 and 01/03/2021. We investigated clinician ($n = 11$) knowledge and beliefs around HIV testing using a semi-structured mixed-methods questionnaire.

Results: 31 out of 9934 patients were coded to have an HIV test during the study period. Antenatal ($n = 17$) and sexual health screening ($n = 3$) were the most common indications. Diagnosis of indicator conditions prompted 7 tests (see table 1) with 4 performed for other reasons. Over half of all clinicians within the practice had offered none or one HIV test in the past 12 months. Over 90% were not aware that Herpes Zoster, peripheral neuropathy, or chronic fatigue should prompt an HIV test, which is borne out in testing patterns (table 1). Barriers to testing included lack of confidence and difficulty discussing sexual risks, perception of stigma, and lack of knowledge of testing processes.

Table 1 HIV testing in patients diagnosed with an indicator condition (01/03/2020–01/03/2021)

Reason for HIV Testing	Number of HIV Tests Done	Total Number of Patients Coded with the Indicator Condition	% Patients Tested
Unexplained lymphadenopathy	3	19	16%
Chronic fatigue	1	5	20%
HSV	1	(Data Unavailable)	(Data Unavailable)
Oral Candida	1	(Data Unavailable)	(Data Unavailable)
Leucopaenia	1	(Data Unavailable)	(Data Unavailable)
Herpes Zoster	0	54	0%
Community-acquired pneumonia	0	8	0%
Peripheral neuropathy	0	134	0%

Conclusion: Whilst the prevalence of diagnosed HIV infection in our Practice mirrors regional expectations, our study highlights that the frequency of HIV testing in our surgery could be improved, at least in part through

increasing clinician knowledge regarding the breadth of indicator conditions which should prompt a test. We plan further work to enhance clinician understanding of current testing recommendations and specific educational interventions to normalise testing and increase clinician confidence.

P077 | Service evaluation of the current standard of care for elite controllers, viral controllers and long-term non-progressors in an age of antiretroviral therapy (ART) for all

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Background: A unique subset of people living with HIV (PLWH) (0.4%) can maintain a normal CD4 count and thus stay immunocompetent despite the lack of antiretroviral therapy (ART); these people are the Long Term Non-Progressors (LTNPs). A further, overlapping group of PLWH can suppress their viral load (VL) without ART, these groups are the viral controllers (VCs) or elite controllers (ECs).

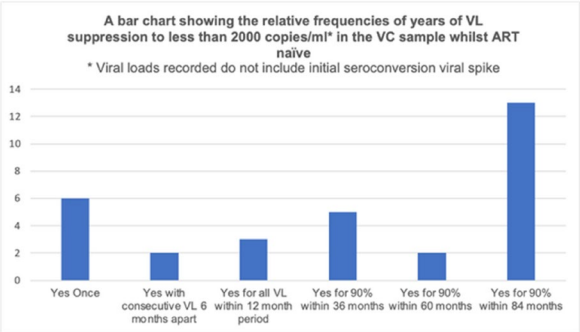
Previously, LTNPs were not recommended treatment unless their CD4 count dropped, as ART was seen to have little value until the HIV disease had progressed to this point. In 2015, the 'Strategic Timing of Antiretroviral Treatment' (START) trial led to guidelines recommending ART for all PLWH, regardless of CD4 count.

This study aims to identify LTNPs and ECs and evaluate treatment offer against national standards.

Method: A retrospective observational study was conducted in a large inner city HIV clinic in the North of England. It used a combination of clinician remembered cases and identification through a manual trawl of electronic records and coding. VCs were defined as those maintaining VL<2000 copies/ml, LTNPs as those HIV-1 seropositive for ≥7 years, and a CD4 nadir 500/mm3 and ECs as those who have >90% of measurements with VL<200 copies/ml over ≥7 years, all in the absence of ART. A frequency analysis was conducted to assess demographics and treatment offered to this group.

Results: Of 2300 HIV-1 infected individuals, the study found 31 (1.4%) VCs, 11 (0.5%) LTNPs and 11 ECs (0.5%). 14 VCs started treatment by time of audit and all VCs not on ART received 'ART for all' discussion.

LTNPs who were white, male, and younger may be more likely to commence ART than non-white, female, and older LTNPs.



Conclusion: A group of LTNPs exists within the HIV clinic and all LTNPs not on ART in 2021 were offered treatment in line with national guidance.

P078 | Regimens and outcomes for people with HIV and known hepatitis B core antibody positivity

Alif Aziz[1]; Sanjay Bhagani[2]; Alan Hunter[2]; Tabitha Mahungu[2]; Tristan Barber[2,3]
[1]*University College London Medical School, UK;* [2]*Ian Charleson Day Centre, Royal Free London NHS Foundation Trust, UK;* [3]*Institute for Global Health, UCL, London, UK*

Background: In people with HIV who have markers indicative of previous hepatitis B infection reactivation is a concern, particularly in those without significant surface antibody response (sAb). These individuals are recommended to continue on TXF+XTC based triple regimens. With newer HIV regimens containing fewer agents becoming more widely used, we assessed management and outcomes of our anti-HBc+ cohort.

Method: From our HIV clinic cohort for those anti-HBc+ and sAg- from 2015 onwards we requested demographic and HIV related data (diagnosis date, recent CD4, HIV VL), hepatitis markers and current antiretroviral regimen (ART). For those without HBV sAb>10 and not receiving TXF+XTC a notes review was undertaken. We collected data on most recent HBsAg and HBV DNA sampling, noting indicators of HBV reactivation. Time since sampling was censored to 1-Dec-2021.

Results: 530 individuals identified (17%; total HIV cohort 3133). 367 male, 163 female. Mean age 54y (IQR:48–61). 328/530 (61.9%) on TXF+XTC, 156 (29.4%) receiving one agent active against HBV (TXF or XTC), 46/530 (8.7%) receiving ART that did not contain either. Median time to last follow-up blood tests 8 months (range up to 21 months).

Table 1

	2 HBV agent as part of ART (A)	1 HBV agent as part of ART (B)	0 HBV agents as part of ART (C)
Group 1: HBV sAb positive (>10mIU)	235	133	43
HBsAg+	0 (0%)	0 (0%)	0 (0%)
HBV DNA+	2/235 (1%)	0 (0%)	0 (0%)
Group 2: HBV sAb negative	93	23*	3#
Number (%) HBsAg+	49 (53%)	0 (0%)	1/33 (33.3%)&
HBV DNA+	20/93 (22%)	0 (0%)	0 (0%)

*Group B2 #Group C2
&receiving entecavir

Conclusion: We did not find evidence of HBV reactivation as assessed by HBsAg status or presence of HBV DNA in our cohort of patients with HIV who were anti-HBc+ with a single or no active anti-HBV therapy as part of ART. People with chronic hep B/detectable DNA were being appropriately managed on TXF+XTC. HBV DNA testing was performed on 24 (5%) patients. Further data and regular HBV DNA testing are required to establish safety in anti-HBc+ patients that are not receiving two active agents for HBV.

P079 | Networking for HIV/AIDS prevention: impact of social media promotion on widening access and uptake of HIV testing

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Background: We present an evaluation of the impact of a volunteer-produced social media strategy to promote HIV and STI testing as part of Wales HIV Testing Week 2021. This was delivered by a collaboration of clinicians, local authorities, universities, and community organisations to prevent late diagnoses – Fast Track Cardiff & Vale.
Method: Data was collected from mainstream social media networks to assess engagement and organic reach at different stages of the campaign, including views, click-throughs, and shares. The number of HIV postal testing kits ordered on the national online platform was compared to previous Public Health Wales (PHW) data.
Results: Testing Week ran in November 2020, May 2021, and November 2021 (see Figure 1). Orders increased in the Cardiff and Vale University Health Board (CVUHB) area from 1,875 in November 2020 to 2,911 in November 2021 (+55.2%). Online reach also increased significantly over the 2021 campaign period (e.g. Instagram reach +360%, Twitter engagement + 277%; website views +188%).
The most 'liked' Twitter post was a video from a local Welsh rugby player, which accumulated 18,432 views, and 296 user interactions. Average Twitter impressions were 12,400 per day over the week and 41 retweets per day. Local celebrities had more impact: e.g. a Facebook post of a Welsh artist reached 8,400 people, compared to international celebrities who reached an average of c.450. Messages had engagement from government bodies, community groups, and across all demographics. Location data showed a significant impact in Welsh areas – suggesting high local take-up.

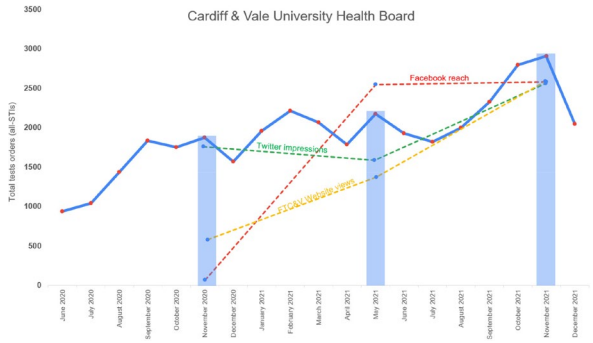

Figure 1 The graph shows the increase of all-STI test orders (blue line) in CVUHB. The dotted lines represent increased social media engagement (green: Twitter impressions; amber: FTC&V website views; red: Facebook reach) based on data collected during HIV Testing Week campaigns

Conclusion: The volunteer-delivered testing promotion had a significant impact on social media which translated into increased testing using online services, particularly where the public sector struggles to engage. Further research is needed to evaluate impact to ensure those with the greatest need benefit, and to reduce digital exclusion. The challenge of using volunteers is to maintain long-term momentum or empower the sector to continue health promotion work.

P080 | Real-world patient experience of long-acting injectable antiretroviral therapy (LAI-ART): the voice of young adults with perinatally acquired HIV (YAPAH)

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Background: Treatment fatigue and psychological barriers negatively affect adherence to ART in YAPAH. There is limited real-world data using unlicensed LAI-ART with previous or possible HIV resistance in YAPAH. This study explores the attitudes of YAPAH towards LAI-ART and evaluates real-world use ahead of UK and EU licensing.
Method: We conducted a mixed-methods study 1) a retrospective electronic notes review of all YAPAH who had received LAI-ART compassionate access in an urban HIV center, and 2) semi-structured interviews with these YAPAH exploring attitudes towards using oral ART Vs LAI-ART. Data collection included demographics, ART and virological data.
Results: 5 YAPAH were granted compassionate access to LAI-ART: 100% black African, 80% female, median age 27(25–35), 80% previous AIDS. 1 failed LAI-ART with emergence of presumed archived resistance. YAPAH described psychological barriers to oral ART: "taking medications reminded me of my condition every day", "they made me feel I was not normal","I felt tortured". All YAPAH described benefits of LAI-ART including being able to "forget about HIV completely and know I'm healthy". Despite 80% reporting at least 1 adverse reaction, all YAPAH felt the benefits outweighed the risks.

Table 1 ART and virological outcomes

Characteristics	*n* = 5
Median Nadir CD4 count	9 (0–258)
Median time on cART, years	22 (18–24)
Mean number of ART switches	11 (8–15)
Prior ART resistance (major mutations)	
NRTI	
M184V	3
T215Y	2
T210LW	1
M41L	1
A62V	1
NNRTI	
K103NS	3
Y181YC	2
V108I	1
Nil	1
Time on LA ART	
3 months	2
1 year	2
3 years	1
% of historical VL that were undetectable (VL<50copies/ml) pre-LA ART	
0–20%	4
21–50%	1
51–80%	0
81–100%	0
% of VL that were undetectable (VL<50copies/ml) whilst on LA ART	
0–20%	2*
21–50%	0
51–80%	0
80–100%	3

*1 failed, 1 recently started LAI-ART

Conclusion: YAPAH described preference for LAI-ART with improved health and psychological wellbeing. Rates of viral suppression were much improved on LAI-ART. LAI-ART is an important alternative to oral ART in YAPAH with adherence issues and past ART failure. Future work is needed to support clinicians making complex decisions regarding LAI-ART usage as it becomes commercially available.

P081 | Screening positive for depression is associated with poor self-reported adherence to antiretroviral therapy among people living with HIV attending a sexual health and HIV clinic in the UK

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Background: The prevalence of depression is high among people living with HIV (PLWH) and depression might negatively affect their adherence to antiretroviral therapy (ART), worsening clinical outcomes.
Method: We conducted a sub-analysis of a cross-sectional clinic-based questionnaire study of alcohol consumption and associated health behaviour among PLWH. Poor adherence to ART was defined as a scoring of ≤9 in the Centre for Adherence Support Evaluation (CASE) Index.

Participants screened positive for depression if they scored ≥5 in the Patient Health Questionnaire-9 (PHQ-9). Crude and adjusted Prevalence ratios (PR) and 95% CI were calculated to examine the association between self-reported ART adherence and screening positive for depression. Factors potentially associated with screening positive for depression (sociodemographic, drug use and sexual history) were examined.

Results: Among the 221 participants that completed the CASE and the PHQ-9 sections of the survey 106 (48%) had poor self-reported adherence to ART and 69 (31%) screened positive for depression. Poor self-reported adherence to ART was 72% higher (adjusted PR 1.72, 95% CI 1.35–2.18) among participants who screened positive for depression compared to participants who screened negative for depression. PLWH who were unemployed (adjusted PR 2.89, 95% CI 1.84–4.52) and who reported problematic drug use (adjusted PR 1.71, 95% CI 1.13–2.60) were more likely to screen positive for depression. Screening positive for depression was negatively associated with increasing age (adjusted PR 0.97, 95% CI 0.95–0.99).

Conclusion: Among PLWH attending a sexual health and HIV clinic in the UK screening positive for depression was associated with poor self-reported adherence to ART. PLWH who were younger, unemployed, and reported problematic drug use were more likely to report depressive symptoms. The detection and treatment of depression as a part of HIV-care may support adherence to ART.

P082 | Life really changed: challenging people's perceptions of what it's like to live with HIV

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Background: According to Positive Voices (2017), "1 in 8 (13%) people revealed that they had never told anyone about their HIV status apart from healthcare staff. Women with HIV were most likely to report internalised stigma, with 1 in 5 (21%) worried about being treated differently because of their HIV". In 2021, Terrence Higgins Trust (THT) surveyed 534 people about messaging for its key focus areas including stigma. This feedback provided a starting point for the campaign.

The objectives of the campaign were to:

- Raise awareness of what it's like to live with HIV in the UK in 2021, and challenge outdated views within the communities most affected by HIV in the UK.
- Ensure more people who are living with HIV (PLWHIV) and experiencing stigma and other challenges know where they can get support from THT.

Method:

- Convened panel of people living with and affected by HIV to provide feedback at every stage of campaign development. THT staff consulted at every stage.
- Received 1187 responses across all audiences to survey testing campaign concepts.
- Recruited 13 PLWHIV to share their stories and be models for the campaign.

In July 2021, ran:

- out of home advertising in Brighton, London, Cardiff and Manchester.
- social media advertising campaign including film and static adverts targeted at most at risk populations.
- press advertising in publications with a readership of 673,925.
- public relations campaign that shared the models' stories exploring the challenges of living with HIV alongside the core message that diagnosis shouldn't stand in the way of PLWHIV achieving anything they want.

Results:

- 32,658 page views on THT's website and 383,799 films viewed with 70% completions.
- 29 pieces featuring PLWHIV in the media across local/national press, TV and radio.

Conclusion: The campaign was well received by people living with and affected by HIV, and generated interest from the general public reflected in the high amount of coverage in the press and engagement with social media. It demonstrated the importance of amplifying the voices of PLWHIV and was even mentioned in the Houses of Parliament in a debate on cuts to foreign aid.

P083 | Developing a model of dating for young adult women living with HIV

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Background: The Sophia Forum and Terrence Higgins Trust published a report in 2018 titled 'Women and HIV Invisible No Longer', designed to identify the research priorities of women living with HIV. Over half of the

women surveyed shared that HIV had impacted their experiences of intimacy. For example, some women feared sharing information about their HIV status with partners, resulting in them avoiding relationships. The report recommends that services design interventions to support women to form satisfying intimate relationships. This research sought to understand the decision-making processes involved in dating for women living with HIV, their approaches towards finding partners, the perceived impact of dating on wellbeing, and the influence of U = U and dating-apps on intimacy. The purpose of developing a model of dating was to provide an accessible inclusive framework to understand women's experiences, and summarise strategies women described to promote intimacy.
Method: Ten women living with HIV between 18 and 50 years old took part in semi-structured interviews. Data was analysed using grounded theory, to construct a model of the social and psychological processes involved in dating.
Results: Barriers to dating included concerns around sharing information about one's HIV status with partners, fear of rejection or abuse, and self-stigmatisation. Women discussed wishing to protect themselves from rejection, hostility and repetition of previous emotional abuse. Women also offered hope for overcoming these barriers, narrated through a journey from self-stigmatisation to normalisation and acceptance of HIV, as well as an appetite for life and investment in their identity. Sharing information about their HIV status with friends helped to support dating, as did normalising and informed messages about HIV in the media and women's communities.
Conclusion: Dating involved vulnerability, self-reflection, trust, attachment, understanding, acceptance and sometimes emotional pain. It was described as rewarding and fulfilling, and also provoked fear. Interventions for dating should address past experiences of intimacy that compromise feelings of trust and safety when forming future relationships. Additionally, interventions should support women to reconnect with valued aspects of their identities, promote conversations around HIV with trusted friends and advocate for normalising messages about HIV across cultures and the media.

P084 | Wellbeing of Black African women over 50 living with HIV

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Background: Research with women aged 50 and over living with HIV has considered the impact of HIV on several areas of physical, psychological, and social wellbeing. Specific areas include how ageing with HIV impacts the menopause, access to specialist healthcare, and relationships. Due to socioeconomic and health disparities experienced by Black African people, negative outcomes of living with HIV are exacerbated. However, existing research and theoretical frameworks relevant to ageing with HIV do not specifically concern experiences of Black African women. A qualitative approach was therefore taken to address the research question: *How do Black African women over* 50 *living with HIV view their current and future wellbeing?*
Method: Eight women aged 50 or over living with HIV, self-identifying as Black African, were recruited from a HIV clinic. Participants had been living with HIV for at least 5 years and had an undetectable viral load at the time of interview. Participants completed a semi-structured interview, answering questions about their current and future wellbeing. Transcripts were analysed using Interpretative Phenomenological Analysis (IPA), to draw together and interpret themes from interviews.
Results: Initial transcript coding suggests themes relating to the following areas:

- Participants perceived HIV to negatively impact psychological wellbeing by preventing them from meeting longer-term life hopes and goals.
- Participants described experiencing culturally influenced HIV-related fear and stigma within their communities, which influenced their decisions regarding HIV status disclosure.
- The impact of HIV on physical and psychological wellbeing changed over time for some participants, as had their ways of coping.
- Some participants were fearful of thinking of living with HIV into the future, whereas others viewed HIV just as any other chronic condition to be managed in older age.

Member checks will be completed by sending a draft table of themes to participants for their review (Jan-Feb 2022).
Conclusion: It is likely these themes will be developed and expanded upon as analysis continues. Results may

assist in developing theoretical models related to HIV stigma and adjusting to living with a chronic illness. Findings may also provide recommendations for adapting physical and psychological/psychosocial interventions to issues more relevant to Black African women ageing with HIV.

P085 | Medicine-related burden in people living with HIV

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Background: Medicine burden, the negative experiences of taking medicines on a day-to-day basis, can be affected by the number of medicines taken, regimen complexity, dosing instructions, and adverse drug reactions. People living with HIV (PLWH) are living longer and managing other co-morbidities alongside HIV. To achieve optimal treatment outcomes, high levels of adherence to antiretroviral therapy (ART) is required. Studies in the general population have shown that higher medicine burden is linked to an increased number of medicines and lower medicine adherence. Therefore, we aimed to explore and identify differences in medicine-related burden experienced by younger (18–49 years) and older (50+ years) PLWH in the UK.
Method: Secondary analysis of data from a cross-sectional survey among PLWH (over 18 years), using antiretroviral medicines, and living in the UK was conducted using SPSS (Version 27). Responses for those participants 18<50 (younger) and 50 plus (older) were compared. Data was collected between October 2018 and January 2020. The survey included the Living with Medicines Questionnaire (LMQ), a validated measure of medicine burden. Ethics approval was obtained (REC reference 18/NE/0321).
Results: A total of 141 participants completed the survey in full, the majority were male (74.2%, 98); mean age of 48.0 years; 49.6% (70/141) were 50 years or older. Participants were taking a median of 3 prescription medicines including antiretrovirals (range, 1–20). Older PLWH were taking significantly more medicines ($P < 0.001$), with 41.7% (25/60) taking five or more each day. Overall, PLWH reported low medicine burden with only 16.1% (10/62) and 20.0% (14/70) of older and younger PLWH being highly burdened, respectively. Fewer older PLWH thought that the side effects from their medicines were bothersome ($P < 0.05$) or that their medicines interfered with their day-to-day life ($P < 0.05$). More younger PLWH felt uncomfortable disclosing their HIV status to close friends ($P < 0.05$).
Conclusion: Most PLWH reported low medicine burden. Older PLWH were more accepting of the impact of taking medicines on their day-to-day lives even though they had a higher pill burden. However, a minority of PLWH across both age categories experienced high medicine burden. These individuals need to be identified and prioritised for medicine support.

P086 | Stigma related to HIV pre-exposure prophylaxis use among men who have sex with men in Wales: a mixed methods study

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Background: The study of HIV pre-exposure prophylaxis (PrEP)-related stigma is limited by the lack of valid and reliable quantitative measures. The aims of this work are to describe an adaptation of a HIV stigma scale for use in PrEP users and to describe the experience of PrEP users with regards to different forms and levels of stigma associated with PrEP use.
Method: We conducted a mixed methods study, comprising an ecological momentary assessment (EMA) study across individuals accessing HIV PrEP through sexual health clinics in Wales and a qualitative semi-structured interview study of a subset of individuals recruited into the EMA study. We adapted items related to "personalized stigma" and "disclosure concerns" from the HIV stigma scale. We conducted confirmatory factor analysis, estimated internal consistency by calculating Cronbach's alpha, and related subscale scores to sociodemographics, health belief items, and sexual behaviour using univariate tests. We analysed our interview data using a deductive framework approach, mapping data onto the intersection of enacted, anticipated, and internalised stigma forms and their various levels of operation.
Results: We included 60 participants in the study from four sexual health clinics in Wales. All recruited participants were cisgender male, the majority identified as white British ethnicity (53/60, 88.3%), identified as a gay man (56/60, 93.3%), and had sex exclusively with other men. A two-factor solution explained 93% of the total variance,

and items loaded onto the subscales as originally described in the HIV stigma scale. Cronbach's alpha values were 0.85 (personalised stigma) and 0.90 (concerns around sharing information about PrEP use with others). We found an association between lower levels of PrEP use approval from people important to participants (injunctive norms) and higher scores on the concerns around sharing information about PrEP use with others sub-scale ($P = 0.001$). Findings from interviews will be presented at the conference.

Conclusion: Our findings provide evidence to support the validity of a PrEP-related stigma measure. Our qualitative data contribute important insights into stigmatising issues experienced by and persisting within PrEP users, with findings having important implications for both stigma measurement in this setting and public health messaging around PrEP use.

P087 | Patient-reported outcome measures at 12 months in a real-world cohort of people living with HIV receiving bictegravir/emtricitabine/tenofovir alafenamide (B/F/TAF) in Europe, Canada, and Israel

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Background: BICSTaR is an ongoing, multinational, observational cohort study evaluating B/F/TAF in ART therapy-naïve (TN) and ART-experienced (TE) people living with HIV (PLWH). The BICSTaR population has a high baseline prevalence of comorbidities (particularly neuropsychiatric). Patient reported outcomes (PROs) were prospectively collected

Method: 180 TN/955 TE participants were considered for the 12 month (12M) analysis (cut-off Feb 2021, including people enrolled from Jun 2018 to Sept 2020, i.e. partially during the COVID-19 pandemic). PRO measures: adherence (visual analogue scale [VAS]); physical/mental health (Short Form-36 [SF-36] questionnaire: aggregated Physical/Mental Component Summary [PCS/MCS] scores); HIV-Symptom Index (HIV-SI; symptoms dichotomised into bothersome/not bothersome); HIV Treatment Satisfaction Questionnaire (HIVTSQ; TE only); physician visits. VAS/SF-36/HIV-SI: analysis population restricted to participants with questionnaires completed at both baseline/12M. SF-36/HIV-SI/HIVTSQ were described for participants with/without prior/ongoing neuropsychiatric comorbidities (TE only as TN subgroup was small).

Results: Adherence to treatment was high at baseline (TE) and was maintained at 12M after switch to B/F/TAF. Statistically significant improvements in PCS/MCS scores were observed in TN participants at 12M ($P<0.05$); scores remained stable in TE participants. The median [Q1, Q3] number of bothersome symptoms in TN participants declined from 6 [2, 9] at baseline to 2 [0, 6] at 12M ($P<0.001$; T1); TE, no change in absolute count. Statistically significant reductions in the frequency of several bothersome symptoms were reported in TN participants ($P<0.05$) (TE: no statistically significant changes). Treatment satisfaction was high at baseline (TE), with improvements observed at 12M following switch to B/F/TAF ($P<0.001$). In TE participants with baseline prior/ongoing neuropsychiatric comorbidities (275/955 [29%]), similar PRO trends were seen.

Conclusion: In this real-world cohort of PLWH with a high prevalence of comorbidities (and in the setting of a global pandemic), patient-reported adherence, physical/mental health, bothersome symptoms, and treatment satisfaction were maintained/showed improvements during 12M of B/F/TAF treatment.

P088 | Ageing with HIV and comorbidities: exploring the social constructs of ageing and NCDs in the context of HIV in Zambia

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Background: Improvements in life expectancy among people living with HIV (PLWHIV) pose new challenges for managing age-related co-morbidities and non-communicable diseases (NCDs). The Zambian Ministry of Health (MOH) is addressing this challenge through integrating NCD management in HIV care. We explored lay persons perspectives on ageing and multi-morbidities at a primary care clinic in Lusaka, Zambia.

Method: This exploratory qualitative study was embedded in a prospective NCD cohort enrolling HIV-positive and negative adults older than 30 years at primary care clinics in Lusaka, Zambia. We conducted 36 semi-structured interviews among purposefully selected individuals receiving NCD screening within the cohort to include 12 newly diagnosed HIV-positive, 12 treatment experienced HIV-positive, and 12 HIV-negative adults. We conducted thematic analysis using deductive and inductive coding to gain insight on perceptions on ageing in the context of HIV among adults in Zambia.

Results: 45% of participants were >50 years old and 60% were woman. Overall, our analysis showed persistent themes of stigma and misconceptions towards ageing and multimorbidity. HIV negative participants demonstrated poor understanding and misconceptions about NCDs. PLWHIV ≥50 years old discussed intersectional stigma of being aged, living with HIV, and NCDs, which hampered care seeking. They also mentioned loneliness arising from isolation and lack of familial support. Whilst the aged were considered respected in society, all participants reported stigmatization and limited inclusion of the aged due to bodily infirmity, unemployment, and poverty. Aged persons (≥50 years) faced difficulties in navigating the health care systems and in paying for tests, medication and life-style changes (including diet) required to manage multi-morbidities.

Conclusion: HIV programs must go beyond HIV and comorbidities to address ageing among PLHIV. Community engagement is necessary to address informational needs, ageism and intersectional stigma against ageing PLWHIV. *BHIVA/Gilead Exchange Fellowships Award winner* 2020 *(H Daultrey)*

P089 | 'The stigma being with HIV and double stigma being black': experiences and needs of racially minoritised people living with HIV

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[1]*Positively UK, London, UK;* [2]*UCL, London, UK*

Background: Racially minoritised groups (RMG) in the UK are disproportionately impacted by HIV. There is a paucity of data on the needs of RMG with HIV. Positively UK, the UK's leading HIV peer support charity, developed a survey led by racially minoritised people with HIV, in order to explore the experiences and needs of RMG in relation to HIV, and amplify their voices.

Method: An online survey conducted in July 2021, comprising questions on the impact of COVID-19 and lockdown on healthcare access, mental health, and social wellbeing; as well as socio-economic challenges, addressing disparities including racism and stigma, involvement in decision-making. The survey was publicised to people with HIV through our service user database, via social media, and through other organisations such as the UKCAB. This analysis is restricted to respondents from RMGs.

Results: Among 53 RMG respondents, most were aged ≥45 ($n = 43$, 79%); 42 (79%) were cis-female. Nearly three-quarters were Black African ($n = 37$); 5 (7%) were Black Caribbean. Over half reported reduced access to HIV clinical services during the 2021 lockdown. One-in five ($n = 11$) respondents stated that their antiretroviral adherence had worsened; reasons included competing priorities and mental health issues.Vast majority(N = 39) stated that racism, stigma and discrimination impacted their communities. For many, the intersecting experiences of HIV and being from a RMG amplified experiences of stigma. Peer support was important, with 66% ($n = 35$) reporting this to be helpful. Almost half (N = 22) of respondents stated that they were rarely/never involved in HIV service and policy development.

Conclusion: This small survey highlights the wide-ranging impacts of COVID-19 and of social and health inequalities among RMGs living with HIV. Peer research is a powerful took in exploring and addressing these disparities. There is an urgent need to improve diverse community engagement; promote RMG leadership; invest in intersectionality-informed stigma-reduction interventions for RMGs; and develop tailored RMG-led campaigns to challenge stereotypes and increase community empowerment.

P090 | Understanding the perceived therapeutic need and value associated with novel long-acting antiretroviral regimens among people living with HIV in 12 European countries

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Background: Three defining criteria of innovative treatments are therapeutic need, added therapeutic value, and evidence. We examined subjective therapeutic need for long-acting regimens (LAR) among people living with HIV (PLHIV).

Method: Using the 25-country 2019 Positive Perspectives survey (N = 2389), treatment preferences among European

participants (n = 969) vs non-Europeans (n = 1420; P<0.05) were quantified.

Results: Overall, 33.8% of European participants were aged 50+ years and 17.3% were diagnosed with HIV between 2017 and 2019. Although 72.0% (698/969) of European participants reported satisfaction with their HIV medication, 35.1% (340/969) felt it needed improvement. Challenges with daily oral dosing included difficulty swallowing (25.4%), perception of limitations on life (24.8%), reminder of HIV status (56.0%), or unwanted disclosure (33.4%). Preference for LAR was similar between European (54.4% [527/969]) vs non-European participants (54.9% [779/1420]; P = 0.820), even though non-European participants reported significantly higher suboptimal adherence (29.5% vs 16.1%; P<0.001), stress from daily dosing (35.6% vs 29.8%; P = 0.003), and difficulty swallowing (38.3% vs 25.4%; P<0.001). Of the 5 European countries where PLHIV most commonly reported that their medication needed improvement, 4 of them (UK, Spain, Portugal, and France) also reported the highest LAR preference (Figure 1A). Of participants diagnosed 1+ years (n = 935), those preferring LAR were more likely than those preferring daily dosing to list the following as priorities for their medication (non-ranked): no food requirements (50.4% vs 38.1%), fewer medicines (60.0% vs 40.5%), preventing transmission (62.9% vs 56.5%), reduced long-term impacts (67.4% vs 56.7%), and reduced side effects (73.3% vs 62.1%; Figure 1B). Among all European participants, those believing HIV advances would improve their well-being reported greater optimism vs those not believing (74.5% vs 56.5%), lower suboptimal adherence (14.1% vs 23.2%), and higher self-rated overall health (62.2% vs 40.7%).

Conclusion: Therapeutic needs of PLHIV include reducing treatment-related psychosocial/emotional issues. Long-acting regimens may address some of these challenges.

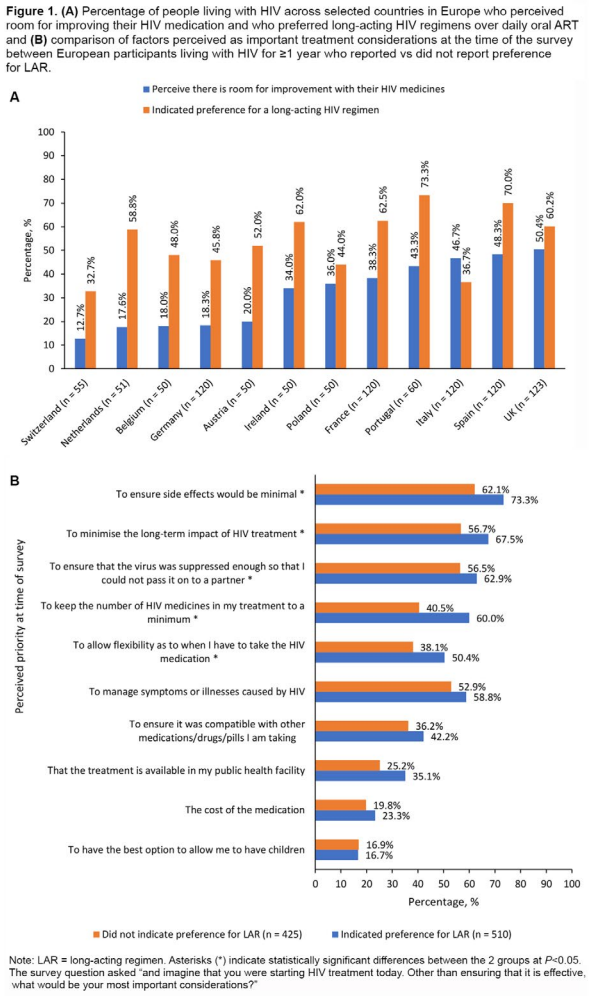

Figure 1. (A) Percentage of people living with HIV across selected countries in Europe who perceived room for improving their HIV medication and who preferred long-acting HIV regimens over daily oral ART and **(B)** comparison of factors perceived as important treatment considerations at the time of the survey between European participants living with HIV for ≥1 year who reported vs did not report preference for LAR.

Note: LAR = long-acting regimen. Asterisks (*) indicate statistically significant differences between the 2 groups at P<0.05. The survey question asked "and imagine that you were starting HIV treatment today. Other than ensuring that it is effective, what would be your most important considerations?"

P091 | 'You are kind of left out there in a field on your own, and you have to figure it out yourself': responding to the needs of women ageing with HIV

Juddy Otti[1]; Rebecca Mbewe[2]; Sophie Strachan[1]; Sarah Fraser[2]; Silvia Petretti[2]; Jacqui Stevenson[3]; Shema Tariq[4]
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Background: In 2019, approximately 10,000 women living with HIV aged over 50 attended for HIV care in the UK. The GROWS project is a multi-sector collaboration between three HIV charities (Sophia Forum, Positively UK, and NAM) and University College London's Institute for Global Health, aiming to (1) develop a tailored, sustainable, holistic programme of support for women ageing with HIV, and (2) provide policy and practice recommendations.

Method: In Phase 1 of GROWS, we have analysed qualitative data from two existing studies: The PRIME (Positive Transitions Through the Menopause) Study (n = 20) and "I was not meant to be here, and I'm still here" (n = 14 interviews/3 workshops). This secondary analysis was supplemented with interviews with 5 five key stakeholders, three focus group discussions with women aged ≥40 living with HIV in London (total n = 24) and a WhatsApp group consultation. Data were analysed thematically, and a codebook developed through consensus by the team.

Results: We identified five key themes arising from women's experiences of ageing with HIV: (i) the multidimensional experiences of ageing; (ii) the intersecting experiences of ageing, HIV and stigma; (iii) uncertainties around physical and social impacts of ageing with HIV;

(iv) the need for gender-specific information for healthcare providers and women; and (v) the importance of professional and personal support.

Conclusion: The GROWS project has prioritised research to inform policy, design and advocacy, involving women living with HIV throughout the process, Our work has enabled us to create a body of information resources, including seven videos hosted by NAM, to raise awareness of issues regarding ageing in women living with HIV among key stakeholders. Findings from our qualitative analysis have resulted in the writing of a policy report and informed the development of a peer-mentor training programme (Phase 2) for women ageing with HIV, due to be rolled out in London in 2022. We hope that this innovative peer support programme specifically for women ageing with HIV, the first of its kind globally, will be an important and sustainable resource, empowering women to maintain their health and wellbeing as they get older.

P092 | Characteristics and outcomes of domestic abuse (DA) in people living with HIV (PLWH)

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Background: DA is defined as behavioural patterns in relationships used to gain/maintain power and control over an intimate partner including physical, sexual, emotional, economic or psychological (threats of or) actions. DA is known to significantly impact morbidity and mortality. While the link between DA and PLWH has been recognised, literature is sparse on characteristics linked to management and outcomes of DA. We aimed to describe the characteristics of DA and outcomes of DA identified in PLWH at a London HIV Service.

Method: Patients screened for DA from March 2019–2021, and reporting DA were identified using electronic patients records. Patient demographics, characteristics and outcomes were collated and analysed. A quality improvement project to improve uptake, promote earlier identification and improve management was implemented in March 2020.

Results: 44 patients were identified. 61% (27/44) were male, the majority homosexual (78%), and White British or non-British (56%), with a median age of 41 years (range 24–65). Of the female patients ($n = 17$), all identified as heterosexual, 53% were of Black African/Caribbean ethnicity, with a median age of 38 years (range 16–56). Overall, types of abuse reported included emotional ($n = 12$), physical ($n = 7$), sexual ($n = 3$) and financial ($n = 1$). Seven patients reported more than two types of abuse, and four reported more than three types of abuse. One patient reported past childhood abuse. 39% (17/44) were currently experiencing DA, of whom 76% (13/17) were linked into DA services, two were already linked into services, one declined and one is being actively followed-up. 70% (19/27) who experienced past DA accepted referral to DA services following screening, with the remainder either already linked, not required or not stated.

Conclusion: In our cohort of HIV report DA, emotional abuse was the common type of abuse with many reporting multiple forms of abuse. The majority of DA survivors in PLWH were homosexual White British or non-British males. 73% accepted referral to DA services, regardless of whether the abuse was current or past. Our data highlights males as DA survivors, a model for pathways for DA management and the importance of screening given the high demand for support even in those disclosing past DA.

P093 | A review of the management of people living with HIV in long-term residential/nursing care in a greater London cohort

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Background: In the UK, we now live in an era of successful and accessible HIV treatment. Patients with poorly controlled HIV, advanced or stable disease can develop cognitive impairment. Depending on severity some patients may require long-term residential and/or nursing care. The aim of this review is to examine the management of patients admitted to care homes for long-term care to determine whether their care meets the standards set by the British HIV Association.

Method: All patients living in care homes in 2021 were selected from the EPR (electronic patient record) system. A total of 9 patients were identified and the following data was collected, reason for care home admission, duration at home, length of diagnosis, demographics, anti-retroviral treatment, adherence, blood monitoring, annual check list completion, viral load, vaccinations.

Results: Of the 9 patients reviewed 5 (55%) were male and 4 (45%) were female. Just over 50% of the patients were of black African origin, followed by white British, white Irish and India. The age range was < 40 1 patient (11%), 5 patients, 51–60 (55%), 61–70 1 patient (11%) and 2 22% patients 71–80 . 7 patients (78%) had been living in care homes for more than 10 years. Their diagnosis ranged from HIV dementia 7 (78%), PML 1

(11%) and severe learning difficulty 1(11%). In terms of anti-retroviral treatment the majority of patients 8 (88%) had a backbone of Kivexa (Abacavir/Lamuvidine). Dolutegravir was used as a third agent in 6(66%) of the cases, efavirenz in 2 cases (22%) and boosted atazanavir in 1 case (11%). Viral load monitoring was done at least once per year in 8 (88%) patients, with one patient bloods done after 2 yrs. The cardiovascular risk score, fragility fracture risk was not done in 6 (66%) and not recorded in 3 (34%) cases. All patients regularly received the necessary vaccinations over the years and all but 1 patient had the COVID-19 vaccination. Adherence was 100% due to directly observed treatment. Of the 4 female patients (45%), 3 (75%) were within the age range for annual cervical smears and mammograms.

Conclusion: Overall the management of patients in the care home setting was satisfactory and met some aspects of BHIVA monitoring standard of care. Anti-retroviral treatment was changed in a timely manner to allow less frequent monitoring and drug-drug interactions. There is need to improve assessment of cardiovascular and fragility risks as these tend to get overlooked. This is imperative when patients remain on certain anti-retroviral treatment backbone such as Abacavir as evident in this review.

P094 | Improving U=U discussions with people living with HIV: an audit of practice in an infectious diseases clinic

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Background: The 'Undetectable = Untransmittab le' (U = U) consensus, based on evidence from the PARTNER 1 and 2 studies, states that patients with HIV who have an undetectable viral load do not transmit the virus to their sexual partners. The statement aims to promote early HIV testing, improve adherence to treatment and reduce the stigma around HIV. Since 2018, the British HIV Association advocate that health care professionals should discuss U = U with patients at appropriate points during care. In January 2020 an audit of 50 patent's clinic letters showed 70% of patients had no documented conversation about U = U.

Method: In January 2022, after interventions to raise awareness of the need to discuss U = U with all patients, we undertook a retrospective audit of clinic letters of 50 patients since 01/01/2019. This included clinic appointments with Consultants, Registrars and Specialist Nurses. Documentation was required to be unambiguous meaning that only the terms "U = U" or discussions about "Zero/No Risk" were counted. We recorded relevant demographic data such as age, gender, years since diagnosis, and sexuality.

Results: We found a 60% increase in patients having at least one documented discussion about U = U. Twenty-four (48%) patients had a U = U discussion documented since 01/01/2019, increasing from fifteen (30%) patients in the previous audit. Eleven (22%) patients had only one documented discussion regarding U = U since 2019, with an average of 6 clinic letters per patient.

Out of 312 clinic letters audited, 70 (22%) mentioned a U = U discussion. We identified a significantly higher proportion of nurse-led consultations documenting U = U discussions (23/54, 42.6%) compared with doctors (46/262, 17.6%), Chi-square p-value <0.05. We found no difference in the likelihood of U = U discussion based on patient sexuality, sex, age, or relationship status.

Conclusion: By analysing the primary and secondary drivers we were able to formulate change actions to further improve the frequency and quality of U = U discussions. Whilst some improvements have been made, discussions around U = U can be increased to integrate these conversations into patient care over time.

P095 | The prevalence and impact of severe hot flushes among women aged 45–60 living with HIV in England

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Background: With successful antiretroviral therapy (ART), women with HIV are increasingly surviving into midlife, and thus experiencing menopause. Previous studies report a high prevalence of menopausal symptoms, particularly hot flushes. Using data from Positive TRansItions through the Menopause (PRIME) study, we explore the impact of hot flushes on health, well-being and engagement in HIV care.

Method: Participants who completed the Hot Flash Related Daily Interference Scale (HFRDIS) were included. Hot flush interference was categorised as mild (0–30),

moderate (31–60) or severe (61–100). Outcomes assessed using logistic regression were: (i) psychological distress (Patient Health Questionnaire-4 score>6); (ii) self-reported insomnia; (iii) sub-optimal ART adherence (<100% adherence in last 7 days); and (iv) missed HIV clinic appointments (within the last 12 months). Models were adjusted for age, ethnicity, employment, marital and educational status, enough money for basic needs, smoking/alcohol consumption, number of medical conditions, years since HIV diagnosis, last available CD4+ T-cell count and HIV viral load.

Results: Overall, 89.7% (779/868) of PRIME participants were included (median age: 49 [interquartile range (IQR): 47–52], 71.8% Black African, 97.9% on ART; 88.3% with undetectable HIV viral load). The median HFRDS score was 14 [IQR: 0–43]; 65.5%, 19.4% and 15.1% of women experienced mild, moderate, and severe hot flush interference, respectively. Approximately one quarter (175/704; 24.9%) of women reported psychological distress, 22.7% (174/768) insomnia, 10.1% (75/745) suboptimal ART adherence and 21.1% (162/767) a missed HIV clinic appointment. In adjusted models, increasing hot flush interference severity was associated with psychological distress (adjusted odds ratio (aOR) moderate interference: 2.09 [95% confidence interval: 1.16–3.75]; severe interference: 5.31 [2.73–10.33]) and insomnia (moderate: 3.94 [2.24–6.92]; severe: 5.32 [2.92–9.67]). There was no association between severity of hot flush interference and either suboptimal ART adherence (moderate: 1.58 [0.78–3.18]; severe: 0.63 [0.25–1.57]) or missed HIV clinic appointments (moderate: 1.21 [0.62–2.05]; severe: 1.38 [0.72–2.64]).

Conclusion: Almost one in three mid-life women living with well-controlled HIV experienced moderate or severe daily interference of hot flushes which were associated with increased psychological distress and insomnia, but not ART adherence or engagement in HIV-care. Elicitation of menopausal symptoms, and appropriate management, is important to optimise health and well-being in this population.

P096 | Interest in, and feasibility of, a genital herpes simplex virus type-2 infection vaccine study in a cohort of people living with HIV

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Background: Recurrent herpes simplex virus (HSV) infection continues to be a problem for people with HIV. As a site invited to participate in study looking at a therapeutic vaccine for genital HSV2 we were asked to conduct phone calls in a subset of our cohort with genital HSV2 to determine potential feasibility and patient acceptability.

Method: People with HIV attending our service were identified from our database who met the criteria of testing positive for HSV-2 at least 2 years ago. 75 people were identified (total clinic cohort 3133) and contacted by telephone or text message if they did not answer to the initial call. 13/75 (17.3%) responded and were successfully contacted. Data was collected for each including time since HIV diagnosis, time since HSV2 diagnosis, current CD4 count, frequency of HSV recurrences, whether the patient was taking suppressive therapy (and would be prepared to interrupt it to participate) and, after a short explanation, whether they would be interested in the study.

Results: Only one person met all the criteria necessary to participate in the study. Majority had fewer than two recurrences of HSV2 per year (12/13); with over half having had no recurrences in the last two years (7/13). Four patients take episodic aciclovir for outbreaks, and two take continuous suppressive therapy to prevent recurrences (6/13). These people said they would consider discontinuing suppressive therapy but would want to consult their regular clinician first, and had concerns about recurrence symptoms. Overall, just over half of patients were interested in taking part in the study (7/13). Expressed concerns included: possible side effects; time commitment; travel requirements; and experimental nature of the treatment.

Conclusion: Despite being a significant problem for some people, and moderate interest, only a minority of people with HSV2 met the outbreak recurrence criteria for this study. Future studies may need less stringent criteria regarding HSV recurrences to ensure good numbers for screening.

P097 | Implementing a menopausal service for women living with HIV (WLWH)

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Background: The 2017 BHIVA/BASHH/FSRH guidelines for sexual and reproductive health recommend all women between the ages of 45–56 receive a proactive assessment of menopausal symptoms and are provided with information on the menopause and Hormone Replacement Therapy (HRT)

Method: To identify this cohort a question on menopause symptoms was added to our annual review proforma. Suitable patients were referred to our newly established menopausal clinic .During their consultation ,as per NICE

guidance, women received an explanation about the menopause, symptoms assessment and a discussion on lifestyle changes and interventions that could help , benefits and risks of treatments and long-term health implications of menopause. Following this patients were sent a quantitative patient questionnaire inviting feedback.

Results: The response rate was 14/30 (46%) of a cohort comprising 58% Black African, 26% white and 16 % did not say. 66% were aged between 45–54,with 16% below 45 and 18% were above 55.Patient satisfaction with the service was high with 54% very satisfied and 36% satisfied .36% of women had menopausal symptoms for over 2 years . Following their menopause consultation 24 women (76%) made a decision to start HRT with majority of patients reporting symptom improvement. One patient stopped HRT because it was too expensive. 6 patients decided not to take HRT, reasons given include side-effects, breast cancer risk, did not want to switch HRT and one patient did not believe in it. Patients were also asked if they would be interested in joining a peer support group, 41% expressed interest with 57% favouring an on-line group.

Conclusion: Utilizing annual review proforma to routinely enquire about the menopause was successful in identifying women .We were pleased that overall satisfaction with the new service was high. Following their consultation 76% made the decision to commence HRT. One stopped due to expense and this is expected to change in 2022 when HRT prescriptions will be exempt from prescription charges. Setting up a peer support group with preference for virtual presence is the next step.

P098 | Preferences for the management of sexually transmitted infections in the South African health system: a discrete choice experiment

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Background: The syndromic management of sexually transmitted infections (STIs) has low sensitivity and specificity for the detection of cervical infection, especially in women. Despite this, it is the standard of care in low-resource settings because it is cheap and allows same-day treatment. We used a discrete choice experiment to investigate service users' preferences for the diagnosis and treatment of STIs in South Africa.

Method: Between 1 March 2021 and 20 April 2021, a cross-sectional online questionnaire hosted on REDCap was administered through access links sent to WhatsApp phone numbers of individuals on HIV pre-exposure prophylaxis and attendees of two primary healthcare clinics and two mobile facilities in the Eastern Cape and Gauteng provinces. Participants either self-completed the questionnaire or received support from a research assistant. Questionnaire enquired about preferences for sample collection, results notification, treatment, and partner notification. We used a CLOGIT model to estimate the average response with results displayed as odds ratios.

Results: We enrolled 496 individuals, the majority of whom were female (69%); median age 25 years (IQR 22–29). There was a strong preference for self-sampling compared to healthcare professional sampling (HCP) [OR 1.49 (95%-CI: 1.32–1.68)] with no significant difference between no sampling, in which treatment is based on syndromes, and HCP sampling. There was a strong dislike for a 4-hour wait for results compared to a 2-hour wait [(OR: 0.82 (95%-CI: 0.73–0.92)] with no significant difference between a 2-hour wait and receiving results in 1–7 days by either SMS or secure online portal. Individuals disliked a clinic follow-up for STI treatment than same-day treatment [OR 0.91 (95%-CI 0.81–1.01] but this was not statistically significant. There was no difference in preference between same-day clinic treatment and treatment at a local pharmacy. Partner notification by the index patient [(OR 0.93 (95%-CI 0.87–0.99)] or provider-initiated [(OR 0.83 (95%-CI 0.77–0.89)] were less favoured than expedited partner treatment.

Conclusion: Our results suggest that STI care service users prefer STI testing prior to treatment with self-sampling being the preferred mode of sample collection. Models of care which support aetiology-based STI treatment need to be introduced in the South African healthcare system to meet service users' needs.

P099 | Vaccine administration and monitoring in a regional HIV centre: a service evaluation

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Background: People living with HIV (PLWH) are at an increased risk of infection, and are more likely to experience severe morbidity and mortality, following exposure

to vaccine-preventable infections compared with the general population. They should receive regular monitoring of serological responses to vaccination. As with many clinical services, vaccine administration to PLWH was disrupted by the COVID-19 pandemic. The administration of hepatitis A, B, and pneumococcal vaccinations to PLWH at our hospital was audited against the 2015 BHIVA guidelines.

Method: Electronic hospital and GP records were reviewed to determine vaccine administration, type, and dosage; immunity data was obtained from serological tests to assess need for, and response to, vaccination. Communication between HIV physicians and GPs was reviewed to determine whether GPs had received advice regarding vaccinations in PLWH.

Results: There were 544 PLWH attending our clinic as of May 2020; 14 patients were excluded due to inaccessible notes. Of the 530 remaining patients:

- 401 had a recorded risk factor for hepatitis A infection; of these, 275 (69%) had written or serological evidence of vaccination.
- 267 (50%) had written/verbal evidence of receiving at least one dose of the hepatitis B vaccine. Of the remaining 263, 106 (40%) had serological evidence showing their need for vaccination or had insufficient serology performed.
- 289 (55%) had written/verbal evidence of pneumococcal vaccination. Of these, 169 patients had vaccine type documented, which showed that 14 (8%) had received the pneumococcal conjugate vaccine (PCV-13), despite this being the BHIVA recommendation, whilst 136 (80%) received the pneumococcal polysaccharide vaccine (PPV-23). 26 of the 241 patients without evidence of vaccination had this mentioned in communication to their GP.

Conclusion: This audit has highlighted three main areas for improvement:

- Improved administration and documentation of hepatitis A, B, and pneumococcal vaccinations. A rapid catch-up programme is underway in the clinic and advice regarding PCV-13 has been given to primary care providers.
- The necessity to streamline clinical care in this centre. A standardised proforma has been devised and is now used clinic wide.
- The need to improve communication with GPs. A standardised GP letter template is now in use.

P100 | Improving the quality of care for people living with HIV (PLWH) in primary care

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Background: BHIVA recommends cost effective care be delivered in collaboration with primary care services. More specifically, they have stated that:

"HIV services should communicate regularly with GP's and provide clear plans/ instructions of actions they would like to be taken by primary care."

The aim of this project was to see if this standard was being met, with a view to achieving the following objectives:

- To reduce harms associated with medications i.e., side effects & drug interactions
- To prevent the onset or worsening of chronic diseases in PLWH and
- To reduce duplication of provider input across sectors

Method: The aim and objectives of this project was achieved by assessing the following Key Performance Indicators (KPI's):

- Proportion of patients with their anti-retrovirals stated clearly and correctly on EMIS (electronic patient recording system)
- Proportion of patients with up-to-date correspondence from HIV services

To add context to the KPI's and objectives- the number of patients that had required other medications in the previous 12 months and/ or had other co-morbidities were quantified at baseline.

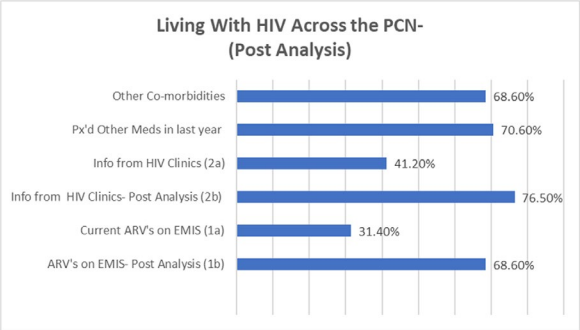
KPI data collected at baseline was compared and contrasted with KPI data collected 1 month after initial data collection.

Data was collected through running searches for all practices in the network, and contacting specialist HIV clinics to fill in the gaps identified through the searches.

Results: Post Analysis Results Compared to Baseline Scope.

Primary Care Network (PCN), N = 51.

Note: (a) represents baseline results and (b) represents post analysis results.



Graph: Comparison Chart Highlighting Baseline Scope & Post- Analysis Details.

KPI's improved across most practices during the project, but improvements were limited by the lack of response from specialist clinics.

Conclusion: Achievements of KPI targets, hence quality of care and safe prescribing in primary care for PLWH is dependent on specialist clinics providing current information for patients under their care. Our project indicates this is not being done consistently.

P101 | HIV care during COVID-19: learning from patients' experiences

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Background: Covid-19 resulted in rapid changes to HIV care. These adaptations offer potential benefits to patients but their impact and acceptability must be better understood. We surveyed people living with HIV (PLWH) attending a diverse metropolitan service to understand (1) how care was accessed during the pandemic, (2) how information about these changes was communicated, (3) barriers to remote consultations and (4) views on future service provision.

Method: Paper and online surveys were given to patients attending the service from August-October 2021. Demographics were collected, quantitative results analysed, and open-response comments summarised.

Results: 80 surveys were completed. 57% of respondents were male, 29% were White British or White Other, while 56% were Black British, Caribbean or African. 47% were men who have sex with men (MSM).

70/79 (89%) of patients were 'Very satisfied' with their HIV care during the pandemic. 61/78 (78%) felt the service mitigated interruptions to their care and 40/58 (67%) said a direct call from staff supported them to navigate new systems.

Overall 23/61 (38%) reported at least one barrier to accessing remote consultations: 6/61 (13%) had difficulty with the technology, 14/61 (23%) lacked somewhere private to talk, and 16/61 (26%) were reluctant to discuss topics on the phone that they would have talked about in person. Asked about the acceptability of video consultation 34/54 (63%) said they were concerned about it. 34/64 (53%) of patients wanted to return to face-to-face consultations, 30% wanted a mix of virtual and in-person care, and 12% said they wanted to continue remotely.

Conclusion: Survey respondents largely matched clinic cohort demographics however the study was limited by the small sample size. Overall service performance during the pandemic was well regarded but barriers to remote consultations were significant. These results differ from a similar study at another large London service and highlight the need to examine barriers for different populations. As a service in an area with high rates of deprivation, further research could clarify barriers to remote consultation such as smartphone or data access, or access to privacy, to ensure health inequalities are not replicated in service redesign.

P102 | Reduced monitoring in a stable patient pathway: patients' perspective and co-design

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Background: Reduced monitoring (RM) during COVID enabled evaluation of new models of care. We sought patients' perspectives and co-designed a stable patient pathway (SPP) where routine monitoring is extended from 6 monthly to annually.

Method: We conducted an online survey and focus group in June 2021 with patients meeting the 'stable patient' clinical criteria (Table 1). We collected quantitative and qualitative data, and undertook thematic analysis to inform a co-designed SPP with RM.

Table 1 Clinical criteria stable patient pathway

Unlikely to need ART switch in the next year
Viral load: Undetectable for 1 year
Stable co-morbidity
No concern regarding adherence to ART
No concern regarding vulnerability
Stable mental health
High patient activation measure (PAM)

Results: Online survey: 180/765 responses were received. 62% prefer SPP with RM: 'I've been stable for years; I don't need bloods every 6 months'; 'convenient'; 'I'll come in if I feel unwell'; 'it frees appointments for other people'. 26% had concerns about RM: 'I worry that something in my blood tests will change and only noted after 1 year'; 'what if my treatment stops working?'.
Focus Group: 4 patients took part and all supported the SPP with RM. For 1; coming to clinic is stressful due to stigma; reduced visits appealing. 2 cited busy working lives and prefer less travel to hospital. All patients prefer less appointments; but stressed need for easy access when support required; and ability to move back to traditional pathway if condition changes.
Conclusion: The findings demonstrate that SPP with reduced monitoring is acceptable to patients meeting the clinical criteria. SPP provision should include ease of access and appointment availability for those who need support between less frequent appointments. 26% of respondents had concerns, stressing the need for shared decision making, and availability of choice, including the option to move back to traditional pathways from SPP. Less frequent visits to hospital benefits patients, with resources shifted to meet the needs of more complex patients, moving us closer to achieving the fourth 90.

P103 | Have HIV inpatient and outpatient care become disconnected?

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Background: Following the passing of the Health and Social Care Act in 2012, in some centres, HIV outpatient care was commissioned to community sexual health clinics and separated from the original acute care trust. A survey was undertaken across iCaSH (integrated Contraception and Sexual Health) clinics under Cambridgeshire Community Services to the impact of this on inpatient provision of HIV medication and communication between the hospital and HIV outpatient teams.
Method: A prospective survey of HIV clinic attendees was undertaken between March-August 2021 to identify any hospital admissions and to ascertain whether there was disruption to medication and what verbal, or written communication was received.
Results: The survey identified: 42 hospital admissions across 7 clinics in the Anglia region. In 40 of 42 patients (95%) the hospital team was aware of the patient's HIV status. 4 (9.5 %) patients were admitted with pneumonia and 3 (7%) were admitted for mental health, which were the top 2 causes for admission. These were not HIV-related. 1(2.3 %) patient's admission was directly related to HIV (seizure due to toxoplasmosis).2 patients (4.8%) had issues getting HIV medication when admitted. The HIV clinic was informed about less than half 20 (48%) of admissions, and the hospital pharmacist informed the clinic of the admission for 50% (10) of these patients. Only 4 (10 %) clinics received a discharge summary from the hospital admission.
Conclusion: This survey confirmed our concern that commissioning has impacted HIV care. There is a small but significant risk of disruption to antiretroviral medication, although hospital pharmacists are the most proactive in contacting clinics to ameliorate this. Small numbers of admissions of HIV patients are possibly reducing awareness within hospitals of agreed pathways of care for HIV patients. Admissions are not HIV- related the majority of the time which affects whether the HIV clinician is informed. It has highlighted the need for improved communication and increased awareness of agreed protocols. In response, the Associate Medical Director has contacted the acute trusts to request that a copy of the discharge summary be sent to the HIV outpatient clinic.

P104 | 'Zero HIV': a primary care population-based project to increase HIV diagnosis and improve engagement of patients living with HIV

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Background: The rate of prevalence of HIV in Lewisham is 8 per 1,000 population and 45.1% of new HIV diagnoses are diagnosed late. Since June 2019 the Elton John AIDS Foundation used a Social Impact Bond approach to commission One Health Lewisham, the GP federation in Lewisham, to carry out the 'Zero HIV' project initially for 12 months. The aim of the project was for primary care to deliver two specific outcomes: identifying new cases of HIV and re-engaging people with HIV who were lost to follow-up (LTFU).
Method: New HIV diagnoses in primary care were encouraged by:

- Increasing routine HIV testing, with clinicians prompted via a computer alert.
- Financial incentives for GP practices to increase HIV testing.
- Providing patient information leaflets/posters for waiting rooms.
- Offering HIV up-date courses and consultant teaching for staff.

Re-engagement of patients living with HIV (PLWH) was increased through:

- Offering financial incentives to practices to carry out audits of their PLWH and re-engage those patients who were LTFU.
- Collaboration between the GP Federation and the Public Health England HIV team responsible for managing the HIV and AIDS Reporting System (HARS). This enabled primary care teams to identify patients who may have been LTFU.

Results: During the course of the project's initial 12 months, HIV testing in primary care increased by 70% (from 3732 to 6369 tests). Through this, 9 new cases of HIV were identified, compared to 3 new patients in the year prior to the project. Seven PLWH were also re-engaged back into HIV care.
Conclusion: These measures are scalable and sustainable, leading to new HIV diagnoses, improving the care of PLWH, reducing complications and admissions, as well as increasing healthcare savings.

P105 | A quality improvement project to increase the uptake of human papilloma virus vaccine for women living with HIV aged <40

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Background: Women living with Human Immunodeficiency Virus (HIV) are at higher risk of malignancy due to the Human Papilloma Virus (HPV). The HPV9 vaccine is a safe and effective method to reduce the risk of multiple cancers, including cervical cancer. The BHIVA guidelines (2015) suggested that women under 40, living with HIV, should be offered a full course of the vaccine regardless of CD4 count, ART use or viral load.
Method: Objectives

- Quantify current uptake of the HPV Vaccine amongst the eligible patient population and to document their HPV vaccination status in a new clinic visit proforma box.
- Offer the HPV vaccine to all eligible women seen in clinic.
- Educate and promote the above to all clinical staff within the department.

Methods: Baseline data on HPV Vaccination status of eligible women was collected for the month of January 2021. Subsequently, education was provided to all relevant healthcare professionals in the department including doctors, nurses and pharmacists. A new HPV Vaccine section was added to the main electronic clinic proforma used for documenting consultations. Data was re-collected after six months in July 2021. Following this, another educational session was held for clinical staff and a clinical poster (Figure 1) was posted around the department. Data was re-collected in September 2021.
Results: In January 2021, 0% of eligible women were offered the HPV vaccine on attendance. Following our first intervention this increased to 20.1%. The percentage of unvaccinated women in January 2021 was 77.4%, this fell to 60.9% following intervention 1 and to 53.4% following intervention 2.
Most of the women who remain unvaccinated had still never been offered the vaccine.
This demonstrates the excellent impact this project has made in a short time.
Conclusion: Through our interventions we have significantly increased the uptake of HPV vaccination amongst our cohort of patients and expect a further increase going forward. We expect this to, in turn, eradicate HPV related cancers in our patient population. We hope our project will raise awareness of this BHIVA guideline and be a model for other centres to follow.

P106 | Achieving high levels of engagement among UK primary and secondary healthcare professionals using a World AIDS Day digital media, augmented reality, and email education campaign

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Background: Ensuring all healthcare professionals (HCPs) are aware of key issues affecting people living with HIV may help address stigma, improve patient engagement and offering/uptake of HIV testing.
Method: We launched a UK wide HIV educational campaign using digital media advertisements and email targeting primary and non-HIV specialist secondary care HCPs.

We developed a fact sheet on 'HIV in the UK' focusing on stigma and undetectable equals untransmittable (linking to THT's Can't Pass It On training programme), HIV testing and multisystem approaches to long-term care. HCPs were contacted through data4NHS emails (citing local prevalence data) and rotating digital media advertisements across websites including Pulse, BMJ, patient.info and nursingtimes.net. All campaigns linked to the fact sheet. HIV HCPs were informed of the campaign via HIV professional groups membership lists, and at BHIVA autumn conference via an interactive coffee cup.

Results: The campaign generated 7,780 interactions with non-HIV HCPs.

On World AIDS Day (1/12/2021), 25,502 emails were sent (resent 7 days later) to target groups, with open rate of 20.8% (5,302) and click through to the fact sheet of 2.8% (151/5,302). Open rates were consistent across primary (20.7%, 3,629/17,531), and 8 secondary care specialities (range 17.3–26.2%), and consistently at or above data-4NHS average (11.9% for GPs).

The 2-week digital media campaign had 1,082,048 opportunities to view (impressions), with 2,478 (0.22%) click throughs to the fact sheet; the industry benchmark average is 0.05–0.1%. From the media campaign, 55% (1,372/2,478) of click throughs were from Pulse, 20% (505) Patient.info, 12% (308) BMJ.com, and 8% (198) Nursingtimes.net. A further 886 clicks to external websites within the fact sheet were generated: 389 to THT Can't Pass It On training programme, 442 to BHIVA HIV testing guidelines, 148 to HIV-lens.org.

Anecdotally, the interactive augmented reality coffee cup provided a novel way of engaging and providing information to delegates at a conference.

Conclusion: Engaging all who provide care for people living with HIV is key to 'getting to zero'. This strategically timed HIV awareness campaign targeted to a large non-HIV healthcare community achieved high engagement. Future work could include qualitative analysis of the campaign's benefits and measuring impact on HIV testing rates.

P107 | Patient and clinician experience of video and telephone appointments (VATA) versus face-to-face appointments (FTFA) in a large urban HIV service

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Background: VATA have previously been underutilised, however now accelerated during the pandemic. Among people living with HIV, there is mixed evidence for VATA success. Less is known about clinicians' VATA experience and attitudes.

Method: We reviewed outpatient satisfaction surveys, clinic attendance data, conducted qualitative interviews with clinicians and patients and thematic analysis to understand the value of VATA in this large HIV service.

Results: Patient survey:

Between 1/21–11/21, 279/379 FTFA, 72/379 Telephone, 31/379 Video, 15/379 Telephone and video responses were collected. 93% rated the appointments very good/good, regardless FTFA or VATA; Pros of VATA: convenience, time-efficiency and quality care; Cons: wait times, difficulties with technology and gaining rapport.

Qualitative interviews:

19 patients participated:14 FTFA, 13 male. All rated appointments as very good/good, citing being treated kindly and good communication, regardless of appointment type. 12/19 preferred FTFA, citing communication ease and 'personal touch'. 3/19 preferred VATA, citing convenience, travel time and childcare issues. 18/19 felt VATA would be a suitable option for them in the future.

18 clinicians participated, 15/18 preferred FTFA: better communication, ease of rapport and 'getting everything done'. Telephone appointments were least preferred (10/18); technological difficulties were cited as a barrier to video. Clinicians felt VATA was not appropriate for new HIV diagnoses, ART switches, those with language barrier and medically complex/vulnerable patients.

Clinic attendance data:

Between 04/21–10/21, 27% of all appointments were VATA. DNA rate lower for VATA (13.5%) vs FTFA (20%). 6% of VATA patients attend clinic for a FTFA within 2 weeks of their VATA, indicating that the VATA did not fully meet their needs. Snapshot of 30 of these patients: 14/30 were medically unwell, 5/30 needed drug switch, 8/30 further investigation/intervention.

Conclusion: VATA are an acceptable alternative to FTFA offering advantages to patients, although clearly defined groups should be seen FTF. DNA rates are lower for VATA, however wait times are longer, perhaps because patients are not visibly waiting. Short notice provision must be made to see patients for whom VATA has not fully met their needs. Clinicians prefer FTFA - job satisfaction is an important consideration as we move towards new models of care.

P108 | The experiences of individuals living with HIV in Ireland attending for outpatient physiotherapy

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Background: People living with HIV (PLWH) are living longer and are becoming increasingly susceptible to multi-morbidity. Physiotherapy is an important component in the care of PLWH that can increase functional capacity, reduce disability and improve quality of life. Few PLWH access physiotherapy due to a lack of specialised services, relapses in medical conditions and financial barriers. The department of genito-urinary and infectious diseases (GUIDe) in St. James's Hospital, Dublin provides care to approximately 3,000 PLWH, 1000 of which are over the age of 50 years. Since August 2017, a limited physiotherapy service of 1 unfunded protected hour per week has been provided to PLWH attending GUIDe. The aim of this study was to gather feedback from PLWH attending for out-patient physiotherapy on their experiences of physiotherapy.
Method: A feedback survey focusing on service user expectations and experiences of physiotherapy was completed by PLWH who attended for physiotherapy between January 2020 and July 2021. Participants were over the age of 18 and able to provide informed consent. The raw survey responses were analysed using inductive content analysis.
Results: 21 patients attended for physiotherapy during the study period of which 11 agreed to complete the survey. The participants reported a positive experience of physiotherapy especially in terms of improving movement, confidence, physical activity levels and the sense of control over their own health. Survey responses were sorted into 5 categories (expectations of physiotherapy, experience of physiotherapy, the value of having a physiotherapist linked to GUIDe, barriers to participation in physiotherapy and opinions on receiving physiotherapy through telehealth). Participants highlighted the importance of a physiotherapist with specialist knowledge of HIV and the key role of physiotherapy in ageing with HIV. Barriers to participation in physiotherapy included relapses in co-morbidities, lack of time and lack of availability of physiotherapy appointments. Participants acknowledged the advantages of telemedicine but felt it would not be as good as face: face visits.
Conclusion: This study highlights the important role for physiotherapy in the care of PLWH and several potential barriers to participation in physiotherapy. Going forward we aim to acquire funding for a full time physiotherapy position for PLWH.

P109 | A simulation modelling evaluating the impact of mobile health interventions on HIV/AIDS service delivery

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Background: The benefits of mobile health (mHealth) technologies have been reported by people living with HIV (PLWH) in self-managing and monitoring their disease, which have advanced patient experience and improve health outcomes. Studies suggest that mHealth adoption will reduce face to face clinic visits, while continuously monitoring results of blood tests and patients' health status via mobile app. Stable HIV patients are suggested to benefit mostly from mHealth interventions.
This study evaluates the impact of mHealth intervention on operational and cost performance metrics relevant to the delivery of HIV services. The study is conducted in collaboration with Faith Alive Foundation (FAF), Jos Nigeria using BSmart Chart mobile app.
Method: Using a web-based interactive planning platform for the management of HIV services (SmartHIV Manager), we ran scenarios based on different adoption strategies. SmartHIV Manager mimics an HIV service in a virtual environment capturing individual patient's movement from initial diagnosis to monitoring and antiretroviral therapy, including all the resources consumed by patients, such as doctors and nurses time, diagnostics, and counselling sessions.
Results: Four possible reductions in the number of clinic visits and 4 groups of PLWH who can be offered an android mobile device free of charge were tested (16 scenarios). Based on the worst possible scenario, FAF hospital is expected to see 14% reduction in the number of visits, 9 fewer doctors to operate their service, with a 3% savings in total cost, after accounting for mHealth intervention expenses and mobile phone acquisition. The service is currently operating at 161% of available doctor's capacity (i.e., available doctors against required number), thus releasing pressure for staff to provide high-quality care.

Conclusion: The impact of implementing mHealth intervention for a single centre in Nigeria is investigated. For the worst-case scenario, the results suggest significant efficiency gains, where any reduction in the number of unnecessary visits can only be welcomed by patients and services. Improved health outcomes and economic benefits for patients (transportation costs and user fees), and release of capacity, where services are already struggling to cope with existing and new demand.

P110 | Success of peer mentoring in supporting patients to improve virological control: a collaborative project supported by the Fast Track Cities (FTC) initiative

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Background: Incomplete adherence to antiretroviral therapy (ART) and difficulty engaging in care is a common cause of HIV related mortality and morbidity. We designed and implemented a dedicated peer mentor scheme, providing individualised support for people living with HIV (PLWHIV) with a viral load (VL) of >200 copies/ml and frequent non–attendance. The project was funded by the FTC initiative in partnership with two large HIV centres and a third sector charity. The target was for 60% of patients who engaged with the peer mentor to achieve a VL <200 copies/ml within 12 months.
Method: The FTC mentor was embedded in both clinics, with a NHS contract and email address. Prior to project initiation, promotional material, first contact script and a robust referral pathway was agreed. Consent was gained prior to referral. The mentor had a series of discussions with clients, covering motivation, beliefs and barriers to adherence.
Results: 1 new referral per week was made with the peer mentor conducting 2 weekly sessions, including signposting to an average of 2 further services.
By month 14 a total of 50 patients were referred. 26/50 (52%) patients were engaged. Median age was 42, 58% (15/26) black ethnicity, 54% (14/26) male, and 50% (13/26) heterosexual. The cohort had high rates of drug and alcohol dependence. The median CD4 count at referral was 161/uL (range 15–706/uL). 73% (19/26) achieved an undetectable VL. 60% had achieved virological suppression within 5 months of referral.

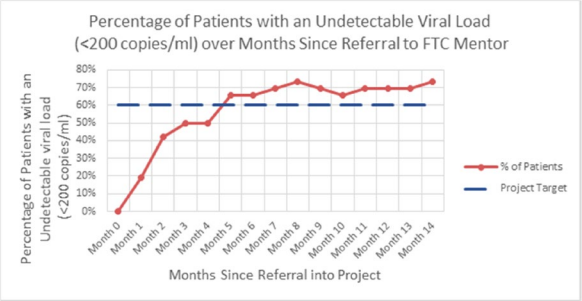

Figure 1 Percentage of patients with an undetectable viral load (<200 copies/ml) over months since referral to FTC mentor

Feedback included: "The mentor was introduced to me when I was feeling really low and I dismissed his help thinking that I wasn't worth the bother. The fact that he saw beyond and persisted calling to see how I was doing was a breakthrough".
Conclusion: This project demonstrates how collaboration between the third sector and the NHS can improve patient outcomes. Embedding the peer mentor within the clinical team has provided a valuable asset to engage patients and enable PLWH to achieve an undetectable VL. This approach has resulted in high rates of viral suppression in patients who struggle with engagement and adherence and so far has exceeded project targets.

P111 | From engagement to co-production: London's Improvement Collaborative as a model for partnership between clinical and community-based services

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Background: London's ambition is to be the first global city to get to zero undiagnosed HIV (currently 95%), 100% of people diagnosed receiving treatment (currently 98%), and 100% of people on treatment being virally suppressed by 2030 (currently 97%). To achieve this ambition, the Fast Track Cities Initiative London (FTCI London) has supported the creation of the Improvement Collaborative (IC), a network of projects focussed on: increasing HIV testing and diagnosis, supporting engagement with HIV treatment and care, and improving quality of life for people living with HIV (PLWHIV).
Method: The 12 Improvement Collaborative (IC) projects operate through an innovative, community-led, co-produced framework of partnerships between clinical services in 9 hospital trusts and 21 voluntary sector organisations (VSOs), offering support services to meet

the complex needs of multiple key and disproportionately affected populations, and extending mainstream service provision in the health system. The IC project leads are funded for three years and supported by ongoing training and evaluation using a Quality Improvement (QI) methodology. Clinical/community partnerships are led by VSOs, projects are coached individually and as a network, and share learning and adapt together over time.

Results: All projects have increased their capacity and capability in using QI methodologies to experiment and iterate their approaches. This proved especially useful in overcoming the challenges presented by Covid. In the past year more than 2,500 HIV tests have been carried out with 10 positive reactive results and 3 people navigated into ongoing care. Post diagnosis patient retention and peer support projects have found ways to become integrated into clinical pathways and seen a four-fold increase in referrals, more than 500 care plans have been created and more PLWHIV have been supported to reach U = U status. Over 75% of people have reported decreased loneliness and better quality of life. More than £750k in welfare benefits has been identified through bespoke advice and guidance.

Conclusion: Transformation partnerships across sectors should prioritise community co-production and leadership, supported by QI training and matched with appropriate funding. This strengthens the relationships between clinical services and VSOs and meets the needs of people living with HIV more completely.

P112 | Intervention to support retention in care in individuals at risk of disengagement during the COVID-19 pandemic

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Background: Disengagement from HIV care may lead to adverse health and economic outcomes both individually and at a public health level. The COVID-19 pandemic changed how healthcare was delivered in the UK. Our urban HIV clinic serves a diverse population with high rates of social deprivation. Our aim: to create a reproducible, robust system for the early detection of patients who were at risk/currently disengaged, to support reengagement.

Method: A case note review was conducted using Electronic Patient Record (EPR) which identified those at risk/disengaged and associated risk factors. Patients were contacted to identify status of engagement and offer support. A systematic 'Did Not Attend' recall pathway was implemented, and database created, enhancing multidisciplinary awareness of individuals at risk. Individual alerts were placed on EPR to ensure rapid access to care. Third sector organisations, drug and alcohol and clinical psychology services were approached, and robust referral pathways were developed to ensure prompt support was offered.

Results: Eleven patients were identified to be lost to follow up (LFTU) (last accessed care > 8 months). Of these, 6 had re-engaged with HIV care elsewhere and 5 were untraceable.

Nineteen individuals were identified as being at risk of disengagement. Risk factors for disengagement included: Mental health illness (11; 58%), Recreational drug use/alcohol misuse (9; 47%), Previous prolonged disengagement (5; 26 %), Financial concerns (4; 21%), Personal Crisis (3; 16%) and Stigma (2; 11%),

Interventions to support engagement included: enhanced/flexible access to care (10; 53%), referral to drug and alcohol support services (9; 47%) and referral to third sector HIV support organisations (7; 37%), All nineteen individuals identified to be at risk of disengagement remained linked in with HIV care to date, with one individual recommencing antiretroviral medication after a prolonged treatment break.

Conclusion:

- Utilisation of EPR functions to ensure a robust recall system and identifying risk factors of disengagement facilitates rapid support.
- An awareness of available support services locally is paramount to retaining patients at risk of disengagement.
- Enhanced access through telemedicine allowed patients to remain engaged with care providers.
- Our intervention findings may benefit other HIV services in supporting engagement in their cohorts

P113 | Challenging Glasgow's HIV outbreak through support, prevention and care: an evaluation of Waverley Care's HIV Street Support Project

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Background: The aim of this mixed methods research was to evaluate Waverley Care's HIV Street Support Project by gathering the views and experiences of people accessing the service, as well as partners working with the service.

Since 2015, Glasgow has seen the largest HIV outbreak in the UK within the last 30 years. Prior to this time, there was a low prevalence rate among people who inject

drugs, meaning much of the focus in HIV prevention and care centred on other population groups at risk of HIV. First funded by the National Lottery Community Fund, Waverley Care's HIV Street Support Project was set up in response to the HIV outbreak and to address this gap in care. The service provides street-based outreach and support to people who inject drugs, are homeless or in temporary accommodation, and are living with or at risk of HIV.
Method: The evaluation was carried out by a team of peer researchers and staff from Waverley Care's Research and Engagement Project. The evaluation used a mixed-method approach, combining peer-led interviews with people accessing the service with an online partner survey. In total, 13 people accessing the service participated in the interviews, while seven partners participated in the online survey.
Results: The evaluation findings are as follows:

- People accessing the service value the holistic support offered. However, they are often unaware that it is an HIV-specific service.
- People accessing the service would recommend the HIV Street Support Project as a support service to their peers.
- Most people accessing the service were aware of the ongoing HIV outbreak, and demonstrated varying levels of HIV awareness. Contrastingly, most participants were not aware of PrEP.
- Partners who expressed positive views about the service highlighted their confidence in the quality of support available. Partners who expressed concerns about the service highlighted a lack of awareness of the service's role and remit.

Conclusion: The evaluation concluded with the following recommendations:

- Prioritise the provision of HIV-specific support and information, in combination with developing stronger partner referral links to address wider psycho-social and practical support needs.
- Employ peer support workers as part of the HIV Street Support Project provision. Delivery of services by people with lived experience has the potential to be more impactful and reassuring for people accessing the service.
- Communicate the HIV Street Support Project's role and remit more effectively to both people accessing the service and partners organisations.
- HIV diagnoses linked to the outbreak have been identified in other areas of Glasgow and Lanarkshire. Consideration should be given to widening the project's reach to relevant locations.

P114 | General population understanding and self-reported attitudes towards people living with HIV

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Background: HIV stigma and discrimination can be incredibly damaging to people living with HIV (PLHIV). To help understand the nature and extent of common misunderstandings regarding HIV within a general population sample, and to measure self-reported attitudes and likely behaviours towards PLHIV, a sequential quantitative and qualitative approach was adopted as part of an 'Extended Project Qualification' Sixth Form Project.
Method: A cross sectional online survey was conducted between March and April 2021. A convenience snowball sample approach was used, with initial dissemination of a survey link via pupils and teachers.
Follow up semi-structured qualitative interviews were conducted among a convenience sample of nine respondents. Interviews were audio recorded and transcribed.
Results: 166 survey responses were received from people aged 15–83 years: 68% were female; 22% were aged 16–17, 73% were aged 18–64.
Multiple misunderstandings were highlighted by the survey regarding potential sources of HIV transmission including kissing (33%), shared toilets (13.3%), shared cups/mugs (18.1%) and coughing/sneezing (19.3%).
The survey further highlighted multiple stigmatising and discriminatory views including the perception of certain jobs being inappropriate for PLHIV, including surgeon (30.1%), dentist (24.1%), paramedic (20.5%) and chef (15.1%). 18.1% reported unwilling to dine in a restaurant if they knew a chef was HIV+. Many respondents thought HIV status should be shared in certain situations, including applying to move into shared accommodation (17.5%), playing contact sports (27.1%) and booking a dentist appointment (47.6%). 37.3% reported some likelihood of them avoiding contact with someone if they knew they were HIV+.
62% of respondents thought it was 'false' that people taking effective HIV medications as prescribed can present zero risk of transmission. 3% had heard of the U = U campaign.
In the qualitative interviews, participants described themselves as understanding and accepting of PLHIV, yet in all but one case, there was an almost immediate articulation of stigmatising, judgemental and discriminatory behaviours and attitudes as hypothetical interaction scenarios such as work and socialising were discussed.

Conclusion: Fundamental knowledge gaps relating to HIV and transmission persist among this general population sample. Qualitative findings indicated poor self-awareness of prejudice and discrimination.

P115 | Improving access to hepatitis C treatment for people living with HIV

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Background: People living with HIV are disproportionately affected with Hepatitis C and there continues to be poor uptake of treatment and high fall out rates in this group.
Method: Retrospective case note review was undertaken to identify gaps in our current HIV service. A new protocol was introduced in Sept 2019, in collaboration with Hepatology services to incorporate hepatitis C treatment into routine HIV care.
Results: 22 patients were identified between Sept 2019 – Sept 2021. The majority were men ($n = 17$, 77.3%). The median age was 39 years (range 30 – 50) with a median CD4 count 658 cells/mm3 (range 65 – 1108). The majority were genotype 1a ($n = 16$, 72.7%). All 15 patients with acute infections were identified as MSM and 7 of those (46.7%) disclosed intravenous drug use. 6 (40%) were re-infections.
There were improvements in managing acute infection following protocol implementation, with a reduction in number of appointment attendance (8.8 to 3); missed appointments (2.1 to 1); length from diagnosis to treatment (110 to 56 days) and length from referral to treatment (79 to 21 days).
Out of the 7 patients with chronic infection, only 2 (28.6%) have completed treatment. 1 patient left the country, 1 patient transferred to another service and 3 patients are currently being followed up for re-engagement in care.
Conclusion: Although overall numbers were small Hepatitis C treatment incorporated into routine HIV care has shown to be a safe and efficient way of service delivery.

P116 | Development of a multi-professional approach for holistic frailty assessments in the HIV population to improve patient care

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[2]*Mancheter Local Care Organisation, UK*

Background: Background: Antiretroviral therapy (ART) enables many people with HIV to live into older age. However some may be more likely to develop certain age-related illnesses earlier leading to an increased number of co-morbidities and polypharmacy impacting life quality.
Method: Method: A pilot project including multi-disciplinary professionals from the HIV, hospital frailty and Manchester Local Care Organisation (MLCO) teams was developed. Rockwood clinical frailty score (CFS) 4 or more resulted in an appointment to complete a comprehensive geriatric assessment (CGA). The CGA was discussed at Frailty MDT meeting and action plan formulated.
Results: Results: 47 patients were assessed between October 2020 – Dec 2021. Out of these, 30 patients had a CFS score 4 and were eligible for CGA in the frailty clinic. The majority were men ($n = 26$, 86.6%). The median age was 66 years (range 52 – 84). The median CFS was 5 (range 4–7). 28 (93.3%) patients had an undetectable viral load. The median numbers of comorbidities and number of non-HIV medication were 3 (range 2–6) and 11 (range 5–9) respectively. The most common self-reported issues were mobility ($n = 26$, 86.7%), pain ($n = 23$,76.7%), low mood ($n = 14$, 46.7%), memory ($n = 13$, 43.3%), sleep ($n = 17$, 56.7%), memory problems ($n = 3$, 43.3%) and falls ($n = 12$, 40%).
Following MDT recommendations 8 (26.7%) referrals were completed for social care,1 (3.0%) for safeguarding and 9 (30.0%) for active case management community teams. 16 (53.3%) deprescribing recommendations were made and 24 (80.0%) new medicine recommendations were made. ART simplification was discussed with 17 (56.7%) patients.12 (40.0%) switched ART to reduce pill burden. All were virologically suppressed post frailty appointment follow up.
Conclusion: Conclusion: Many older patients living with HIV report a high number of co-morbidities, polypharmacy and factors affecting quality of life. A collaborative approach with frailty experts in primary and secondary care facilitates the formulation of action plans to address patients physical, psychological and social needs.

P117 | Patient and staff perspective on screening for domestic abuse (DA) in people living with HIV (PLWH) during a COVID pandemic

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Background: The importance of screening for DA in PLWH was highlighted due to the increased risks during the COVID pandemic. Many PLWH are in risk groups more susceptible to DA and the presence of DA impacts on clinical outcome and onwards HIV transmission. The move to virtual consultations during the pandemic increases complexity of screening. We sought the opinions of DA screening in PLWH from patients and staff at a London HIV Service.
Method: All clinical staff were asked to routinely ask PLWH about DA. Disclosures were managed by health advisors. Patient and staff feedback was undertaken to understand barriers and acceptability to screening. Patients were randomly selected, asked by a clinician to partake in informal in-depth interviews (IIDI) undertaken by a health advisor. All staff were asked to complete an online survey.
Results: 14 patients completed IIDIs. 92% responded positively about screening (13/14). All felt comfortable being asked, citing staff rapport as important, and feeling comfortable to open up given familiarity with the service. 92% felt it was important to be asked about DA, due to personal links to DA and highlighting it raised awareness of who turn to if in a DA situation. 59% ($n = 10$) felt DA should be screened every time citing circumstances changing, knowing who to turn to and comparison to other routine questions. Two suggested twice a year, two did not give clear answers with question fatigue mentioned. Recommendations included discussing confidentiality and advising about support if someone said "no." 26 staff members completed the survey. 81% (21/26) had positive responses from patients when screening. 73% (19/26) agreed screening should be asked at every opportunity by every staff member. The main reasons for reduced DA screening prior to QI were low confidence to ask/manage DA, consultation priorities, assumed disclosure. Improved screening were attributed to reminders with feedback, training and media coverage.
Conclusion: Both patients and staff were overwhelmingly positive about DA screening in PLWH. Barriers to screening have largely been attributed to a lack of resources for managing DA. The perspectives of patients and staff support improvement efforts to promote early identification and support for patients experiencing DA.

P118 | The ePrEP Clinic: developing a clinical consultation for online PrEP provision

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Background: Digital healthcare could provide solutions for upscaling HIV PrEP provision in safe and efficient ways which meets the needs of PrEP-users. We developed and cognitively tested an online consultation for use within an online ePrEP clinic for ongoing PrEP provision to existing PrEP-users.
Method: Using BHIVA/BASHH PrEP Guidance (2018) we identified key components for safe PrEP monitoring. We used the eClinical Care Pathway Framework to define the aims of the online consultation and draft clinical questions which were reviewed by an expert panel. We conducted 3 rounds of cognitive interviews with 3–4 PrEP-users per round to gain feedback about comprehension, readability and structure of the consultation. The expert panel analysed responses and relevant amendments were made between each round until consistent results were gained.
Results: The expert panel agreed that people initiating PrEP for the first time should have an initial in-person/telephone consultation and only those without additional clinical needs would be suitable for follow-up through the ePrEP clinic. Therefore, the consultation did not assess pregnancy risk, contraceptive needs, or alcohol/drug use. This left 6 key areas for inclusion in the online consultation: symptoms of seroconversion, adherence, identifying need for post-exposure prophylaxis, new medications/supplements, new medical conditions, and identifying side effects/allergies to medications.
Cognitive testing refined the consultation in 3 key ways: 1) using preferred terms consistently e.g. "event-based PrEP" instead of "on-demand dosing"; 2) restructuring it into a succinct and intuitive sequence of 8 questions e.g. combining questions regarding side effects to PrEP and allergies to medications: "have you had any side effects or reaction to any medication including PrEP?"; and 3) giving clear, comprehensible information on what to expect once the consultation was complete.
Many participants preferred the online consultation to in-person/telephone consultations as they felt the information was standardised and allowed them to complete the assessment at their own pace.
Conclusion: Rigorous development of the online consultation led to important changes in structure and wording,

in line with users' needs. Findings could be helpful for others developing online PrEP pathways. The consultation will now be validated through head-to-head comparison with prescribing decisions made during in-person/telephone consultations.

P119 | Quality improvement project: a review of patients with historic didanosine (ddI) exposure to ensure assessment for liver toxicity

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Background: Didanosine (ddI) exposure is known to cause liver injury ranging from mild and transient elevation of liver enzymes to hepatotoxicity including: acute idiosyncratic liver injury, lactic acidosis with steatosis and hepatic dysfunction (LASH), and non-cirrhotic portal hypertension. People living with HIV (PLWH) often now have well controlled HIV and as such may be seen less frequently. It is important to maintain standards of care and identify cohorts of patients who require additional screening.

Aim: Review patients with historic ddI exposure and ensure assessment for liver toxicity (100% of patients with platelet count <150 should have ultrasound liver/FibroScan).

Method: A quality improvement project. All patients with ddI exposure were included. Patients not seen in the clinic since 2018 were excluded from the review. Results were collected from electronic patient records.

Results: 294 (~8%) out of our cohort of ~3800 patients had ddI exposure. Demographics and co-morbidities are listed in Table 1:

Table 1

	Number		Percentage
Median Age	57 years	Range 23-85	
Ethnicity			
	White	139/294	47%
	Black	121/294	41%
	Other/Unknown	34/294	12%
Median years since HIV diagnosis	25 years	Range 9-38 years	
Median exposure to ddI	3 years	Max 18 years	
Co-Morbidities			
	Hyperlipidaemia	117/294	40%
	Type II Diabetes	40/294	14%
	Peripheral neuropathy	39/294	13%
Viral Hepatitis			
	Hep B negative	272/294	93%
	Hep B Chronic	19/294	6%
	Hep B Cleared	3/294	1%
	Hep C negative	272/294	93%
	Hep C Cleared	22/294	7%

53% (157/294) had an ultrasound liver, 66% (103/157) were normal. 25% (40/157) showed changes in keeping with hepatic steatosis, 5% (8/157) cirrhosis and 1 patient (0.6%) had findings suggestive of portal hypertension.

27% (78/294) had a FibroScan, average liver stiffness score was 5.1 KPa, and median CAPS 222 dB/m.

46 patients had a platelet count <150, 43% (20/46) did not have ultrasound/Fibroscan assessment. All patients within this group were hepatitis B/C negative.

Conclusion: Although the majority of PLWH now have well controlled HIV, clinicians should be mindful of historical drug exposure. We have identified 20 patients with thrombocytopenia who require assessment with liver ultrasound. The cohort of patient with ddI exposure have high rates of hyperlipidaemia, diabetes, peripheral neuropathy and have been living with HIV for many years.

Although ddI is no longer prescribed, patients may continue to live with toxicity from these early drugs. It is important trainees have an understanding of these drugs to guide holistic patient care as PLWH age.

Limitations of the project included using electronic patient records review (information not accurately documented; results available from 2003 onwards; transfer of care without information).

We will invite all identified patients for liver ultrasound assessment and update of departmental guidance.

P120 | Identifying factors associated with low COVID-19 vaccination uptake in a diverse London HIV cohort

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Background: People living with HIV (PLWH) co-infected with COVID-19 are at a higher risk of poor outcomes. PLWH were identified as a clinical risk group eligible for priority vaccination.

Vaccine hesitancy varies by demographic group with coverage lower amongst Black and Asian people, less-advantaged socioeconomic groups, deprived areas, as well as people identifying as Muslim.

Our clinic serves a very diverse population in a deprived area with a large immigrant population and high level of comorbidities associated with poor outcomes. We had unfortunately lost patients to COVID-19 and therefore sought to explore factors affecting vaccine uptake.

Method: We reviewed vaccine uptake amongst active clinic patients. Data was recorded at the time of consultation through the patient HIV record and retrospective investigation of the patient's NHS Summary Care Record (SCR) and London Care Record through our Trust system. Uptake was compared to available national Government data.

Analysis was performed on the cohort and subset analysis on those fully vaccinated (three doses) and unvaccinated. We collected data on age, gender, ethnicity, sexual orientation and country of birth.

Results: 951 patients were identified on the SCR. 165/951 (17%) were unvaccinated, of which 90/165 (55%) were female. 256/418 (61%) unvaccinated patients were under 50y. 131/669 (20%) unvaccinated were Black ethnicity. Vaccine uptake was lowest in mixed Black Caribbean/White subgroup at 4/19 (21%). 27/223 (12%) White patients remained unvaccinated. 22/206 (11%) homosexuals were unvaccinated, 12/35 (34%) bisexuals unvaccinated - compared to 130/708 (18%) heterosexuals.

Conclusion: Vaccine uptake amongst our patients was lower than national data. Uptake was further reduced in patients who were younger, of Black ethnicity, bisexual and females. Whilst there are many confounding factors, one might have expected PLWH to have increased vaccine uptake, having been prioritised for vaccination and having decreased immune function, particularly in a cohort such as ours where many are diagnosed late with opportunistic infections.

Clinicians should proactively engage in dialogue with PLWH, particularly from lower uptake groups, to address misconceptions, encourage and inform to improve patient outcomes.

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