results were maintained. Among the HIV disease biomarkers including viral load blips over the study period, only a lower nadir was associated with decreasing Creatine (Spearman Rho r = -.49, p < 0.03).

Conclusions Chronic HIV infection is associated with subclinical cellular energy abnormalities (Creatine) linked to past levels of immunosuppression and acceleration of neuronal integrity (N-Acetyl Aspartate). This preliminary study further reinforces the need for longer-term follow-up in chronic HIV-infected ageing persons to determine the prognostic value of these findings.

Disclosures This project was supported in part by NHMRC project grant ID568746, NHMRC Career Development Fellowship APP1045400 and Abbvie research grant supporting the acquisition of the follow-up MRI (CIA Cysique).

BJB has received research funding, consultancy fees, and lecture and travel sponsorships from Gilead Sciences, ViiV Healthcare, and MSD.

LAC has received research support from MSD, Abbvie, Gilead Sciences, and ViiVhealthcare. LAC has received honoraria from Abbvie and ViiVHealthcare.

O22 - Ending hepatitis C in populations

O22.1 AUSTRALIAN HIV/HEPATITIS C CO-INFECTED PATIENTS FALL BEHIND HIV MONO-INFECTED PATIENTS IN MOVE TOWARDS EARLY HIV TREATMENT INITIATION

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10.1136/sextrans-2015-052270.197

Introduction One in eight people living with HIV (PLHIV) in Australia are estimated to be co-infected with Hepatitis C (HCV). In the light of clinical guideline changes with regard to antiretroviral therapy (ART) initiation, we examine the impact of co-infection status on uptake of treatment, and highlight population-specific differences relative to HIV mono-infected patients.

Methods Ipsos Healthcare's HIV Therapy Monitor is a patient chart audit study, which monitors trends in the treatment of PLHIV in Australia. Demographic and treatment data are collected bi-annually from a panel of 25+ HIV-treating clinicians. The data in this report is based on a sample of 4331 patient records collected between 2008- 2014, of which 412 were co-infected with HCV.

Results While the proportion of HIV mono-infected patients receiving ART has steadily increased from 67% in 2008 to 84% in 2014 (p < 0.0001), the opposite trend is observed in the HIV/HCV co-infected population. The rate of treatment in the co-infected cohort has dropped from 84% in 2010/2011 to 66% in 2014 (p = 0.003), with co-infected patients experiencing an average delay of 42 months between HIV diagnosis and initiation of ART, compared with 25 months for mono-infected patients (p = 0.013). Patient's lack of support network was most frequently cited by clinicians as the reason for delaying treatment for co-infected patients, followed by patient choice and expected non-compliance.

Conclusion Increasing evidence is now available to support early initiation of ART, both in terms of clinical benefits as well as in preventing disease transmission. However, despite encouraging results among HIV mono-infected patients, outcomes for the HIV/HCV co-infected population reveal a growing disparity between these groups in Australia. The increasing delay to treatment supports the need to consider this patient group a priority population, and indicates that further action is required to address the complications involved in treating these patients.

Disclosure of interest statement There are no conflicts of interest to declare.

O22.2 DETECTION OF HEPATITIS C VIRUS (HCV) IN SEMEN FROM HIV-INFECTED MEN WHO HAVE SEX WITH MEN (MSM) DURING ACUTE HCV INFECTION

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10.1136/sextrans-2015-052270.198

Introduction The mechanism(s) and bodily fluid(s) involved in the recently identified epidemic of sexually transmitted HCV in HIV-infected MSM are unclear. HCV is present only intermittently and at low levels in semen from men with chronic HCV-infection, however little is known of the dynamics of seminal HCV during acute HCV-infection.

Methods HIV-infected MSM with acute and chronic HCV-infection were prospectively enrolled into an IRB-approved study. Three paired semen and blood specimens were collected at 2-week intervals. HCV viral load (VL) was quantified using an automated RT-PCR assay platform (Abbott).

Results Paired semen and blood specimens were obtained from 33 HIV-infected MSM (21 with acute-HCV and 12 with chronic-HCV). Sixteen (27%) of 59 semen specimens had detectable HCV VL, with 11 (33%) men having at least one positive specimen. Semen specimens with detectable HCV had a significantly higher median blood HCV VL (P = 0.002). There were no differences between men with acute or chronic HCV in either the proportion of semen specimens positive for HCV (8/38 [21%] and 8/21 [38%], respectively; P = 0.159), or in the median seminal HCV VL (1.32 log IU/ml and 1.77 log IU/ml, respectively; P = 0.163).

Conclusion This study, although identifying no differences in the magnitude or proportion of seminal HCV during acute HCV-infection, provides valuable insights into the dynamics of seminal HCV during this period. It is unknown whether the levels of seminal HCV identified in this study are sufficient for the sexual transmission of HCV in HIV-infected MSM. However, it is plausible that HCV in semen deposited in the rectum after the friction of receptive anal intercourse, could enter the blood stream and infect the liver. Future research should focus on establishing the infectivity of seminal HCV, and the analysis of seminal HCV levels during the `ramp-up' period of early acute HCV-infection, where blood HCV levels are highest.

Disclosure of interest statement There are no competing or financial interests to disclose.

O23 - HIV epidemiology and prevention

O23.1 DECREASES IN HIV PREVALENCE IN PATIENTS ATTENDING AN INNER-CITY EMERGENCY DEPARTMENT OVER A DECADE CORRELATE WITH TRENDS IN HCV BUT NOT HSV-2

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10.1136/sextrans-2015-052270.199

Background The Johns Hopkins Hospital Emergency Department ((JHHED) has served as an observational window on the HIV-epidemic. We previously reported that HIV prevalence decreased among patients attending JHHED from 11.4% in 2003 to 5.6% in 2013 and incidence decreased from 0.99% in 2003 to 0.16%. This study sought to examine the potential contribution of changes in sexual and parenteral risk behaviour during this period by examining trends in HSV-2 and HCV infection in this population.
Methods Identity unlinked-serosurveys were conducted in the adult JHHED in 2003, 2007, and 2013. Excess sera collected from 10,274 patients were tested for HSV-2 and HCV antibodies by the Focus HerpeSelect and Genedia HCV 3.0 ELISA.
Results HSV-2 seroprevalence was 55.3% in 2003, 54.4% in 2007, and 50.0% in 2013 (p-trend = 0.296) and there were no significant changes when stratified by age group. HSV-2 seroprevalence among HIV positives also remained stable at 79.8% in 2003, 79.6% in 2007, and 78.3% in 2013 (p-trend = 0.660). In contrast, HCV seroprevalence declined steadily from 22.0% in 2003 to 13.8% in 2013. This was also consistent with a decrease in HCV seroprevalence among HIV positives: 59.6% in 2003, 53.6% in 2007, and 48.1% in 2013 (p-trend = 0.011). Black men had the highest change in HIV prevalence from 20.0% in 2003 to 9.9% in 2013, which correlated with changes in HCV seroprevalence in black men from 36.7% in 2003 to 22.1% in 2013. HSV-2 seroprevalence in black men remained stable between 2003 (53.3%) and 2013 (50.6%).
Conclusions The decline of HIV prevalence and incidence in the JHHED population is not likely attributable to changes in sexual behaviour since HSV-2 age-based prevalence remained unchanged over 10 year period. Rather the declines in HIV may be due to reductions in parental transmission with the observed parallel declines in HCV prevalence.
Disclosure of interest statement The authors have no conflicts of interest to declare.

O23.2 ACHIEVING THE GOALS OF THE US NATIONAL HIV/AIDS STRATEGY: DECLINING HIV DIAGNOSES, IMPROVING CLINICAL OUTCOMES, AND DIMINISHING RACIAL/ETHNIC DISPARITIES IN KING COUNTY, WA., USA

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10.1136/sextrans-2015-052270.200

Background US national data suggest that new HIV diagnoses are now declining. However, that decline has been uneven, and has not clearly included men who have sex with men (MSM), the group most affected by HIV in the US.
Methods We used data from the US Census, American Community Survey, and the King County, WA HIV/AIDS Reporting System (NHSS) 2004–2013 to assess trends in the rates of new HIV diagnoses, AIDS diagnoses and age- and reporting lag-adjusted HIV-associated mortality rates among King County residents. Trends in viral suppression, defined as the proportion of individuals with a last reported plasma viral load (VL) result of <200 copies, and CD4 counts were evaluated between 2006 and 2013, the period during which all VL and CD4 results were reportable in WA State. We assessed trends using Chi-square testing.
Results Between 2004 and 2013, the rate of new HIV diagnoses decreased from 18.4 to 13.2 per 100,000 residents (decline of 28%); AIDS diagnosis rates declined 42% from 12.3 to 7.2 per 100,000; and death rates decreased from 27 to 15 per 1,000 persons living with HIV/AIDS (PLWHA) (decline of 44%; $p < 0.001$ for all three trends). The rate of new HIV diagnoses declined 19% among MSM ($p = 0.01$), with the largest absolute decline occurring in Black MSM (44%). Among 8,679 individuals with laboratory results reported to NHSS 2006 through 2013, viral suppression increased from 45% to 86% ($p < 0.001$).
Conclusions The rates of new HIV diagnosis, AIDS diagnoses and mortality in PLWHA in King County, WA have significantly declined over the last decade. These changes have occurred concurrent with a dramatic increase in HIV viral suppression, and have affected diverse populations, including MSM and African American MSM.

O23.3 HIV AND INJECTING DRUG USE AMONG OUT OF SCHOOL YOUTHS: EXPERIENCE FROM NIGERIA

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10.1136/sextrans-2015-052270.201

Introduction Out of school youths are often prone to high risk behaviours as a result of limited public health interventions including prevention outreach and education efforts. Little is known about injecting drug use among them. Information on drug use is needed to design harm reduction strategies to reduce out of school youths' exposure to HIV through injection. This study assessed factors associated with their injecting drug use.
Methods Secondary analysis of data collected among out of school youths in November 2013 in North Central Nigeria. The data collected socio-demographic, sexual, behavioural and biological information among 1600 participants aged 15–24 years. Multiple logistic regression models were used to assess factors that influence their injecting drug use.
Results Their average age was 20.6 ± 2.7 years, participants from urban areas were 769 (48.1%) and rural area was 831 (51.9%). Male participants were 1023 (63.9%) and age category 20–24 years was 67.6%. Mean age at sexual debut was 16.2 ± 2.8 years; mean age at first alcohol use was 16.2 ± 3.8 years; mean age at first cigarette smoking was 15.1 ± 5.8 years; current smokers was 17.5%; alcohol intake was 53.1%; cocaine intake was 3.9%; heroine intake was 3.3%; sex in the past 12 months was 79.1% and sex in the last 3 months was 30.2%. HIV prevalence was 5.2%; and proportion injecting drug was 5.5% with rural 5.3% and urban 5.8%. Factors associated with