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.

O07.4 INCIDENT HIV ASSOCIATED WITH RECTAL GONORRHOEA (GC) AND CHLAMYDIA (CT) INDEPENDENT OF SEXUAL BEHAVIOUR IN MEN WHO HAVE SEX WITH MEN (MSM)

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Introduction Although STIs are associated with HIV-acquisition, because they share a causal pathway – sex – how much this risk is independent of sexual behaviour remains unknown.

Methods We conducted a case-control study of MSM STD clinic patients in Seattle, WA, 2001–2014 to evaluate the role of concurrent and prior rectal STIs in HIV-acquisition. Cases were new HIV diagnoses who tested HIV-negative ≤12 months prior. Controls tested HIV-negative and were matched to cases on year. All included men tested for rectal STI and tested negative for syphilis. We used routinely collected condom-use data to create four sexual behaviour categories: no receptive anal intercourse (RAI) in ≤12 months, consistent condom-use for all RAI, condomless RAI only with HIV-negative partners (CRAIneg), and CRAI with HIV-positive/unknown-status partners (CRAIpos/unk). We used logistic regression to estimate odds ratios (OR) of the association between rectal GC/CT and HIV diagnosis.

Results Among 176 cases and 704 controls, concurrent rectal GC (OR3.5 95% CI 2.3–5.5) and rectal CT (OR3.2 95% CI 2.1–5.1) were associated with HIV diagnosis in univariate analysis. Controlling for age, race, number of sex partners, methamphetamine use year and other rectal STI, both rectal GC (aOR2.4 95% CI 1.4–4.0) and CT (aOR2.6 95% CI 1.5–4.4) continued to be associated with HIV diagnosis. Adding sexual behaviours to the model did not change the association between rectal infection and HIV diagnosis (GC aOR2.3, 95% CI 1.4–3.9; CT aOR 2.6 95% CI 1.5–4.3). CRAIneg (aOR3.5 95% CI 1.2–10.4) and CRAIpos/ukn (aOR4.2 95% CI 1.4–12.5) were independently associated with new HIV diagnosis. Rectal infection in ≤12 months was strongly associated with new HIV diagnosis (aOR3.4 95% CI 1.5–7.4).

Conclusions Concurrent and prior rectal GC/CT are associated with HIV-acquisition independent of sexual behaviour, suggesting a causal role for rectal STI in HIV-acquisition, and supporting STI control as an HIV-prevention strategy.

Disclosure of interest statement This work was funded by the US National Institutes of Health. No pharmaceutical grants were received in the development of this study.

O07.5 SEXUAL RISK BEHAVIOUR AND SEXUALLY TRANSMITTED DISEASES AMONG MEN WHO HAVE SEX WITH MEN PARTICIPATING IN A PRE-EXPOSURE PROPHYLAXIS DEMONSTRATION PROJECT

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Background Pre-exposure prophylaxis (PrEP) is a highly efficacious HIV prevention tool. Whether changes in sexual risk behaviours and frequency of sexually transmitted diseases (STDs) occur among individuals using PrEP is unclear. We evaluated sexual behaviours and STDs among men who have sex with men (MSM) in the open-label US PrEP Demonstration (Demo) Project.

Methods The Demo Project enrolled 557 MSM at STD clinics in San Francisco and Miami, and a community health centre in Washington, DC. Participants were tested for STDs and reported their sexual risk behaviours in the prior 3-months at baseline and weeks 12, 24, 36 and 48. Prevalence of STDs and STD incidence were assessed, and changes in reported risk behaviours and STD incidence were assessed using chi-square tests.

Results The median number of anal sex partners in the prior 3-months decreased from 5 at baseline to 4 at week 48 ($p = 0.0003$). While the median number of condomless receptive anal sex episodes was unchanged, the median number of receptive anal sex episodes with condoms declined from 6.5 to 2.0 ($p < 0.0001$). One quarter (25.7%) had an STD at baseline and 42.2% were diagnosed with ≥1 STD during the study. Extra-genital STDs were prevalent: 9.8–15.3% positivity for rectal gonorrhoea (GC) or chlamydia (CT) and 5.2–12.9% positivity for pharyngeal GC or CT at follow-up visits. Overall STD incidence was high, but did not increase over time ($p = 0.96$); incidence/100 person-years was 47.8 (95% CI: 41.6–54.7), 42.9 (95% CI 37.0–49.4) and 12.6 (95% CI 9.5–16.3) for CT, GC and syphilis, respectively. There were two HIV seroconversions (incidence 0.43; 95% CI 0.05–1.54), both had undetectable drug levels at the time of seroconversion.

Conclusion HIV incidence was extremely low, despite a high incidence of STDs in a PrEP demonstration project. Quarterly STD screening, including testing at extra-genital sites, is recommended for MSM taking PrEP.

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