Objectives
Since 2000, an epidemic of HCV emerged among HIV-infected men who have sex with men (MSM). An increase in HCV incidence was observed earlier in the Amsterdam Cohort Studies (ACS), between 2000 and 2003. Data collected during bi-annual surveys at the Amsterdam STI clinic, suggested that the HCV epidemic among HIV-infected MSM in Amsterdam has levelled off in recent years. We updated our previous ACS analysis to examine recent changes.

Discussion
Among HIV-infected MSM, HCV incidence rates increased significantly between 2000 and 2005. Thereafter, incidence seems to have stabilized at around 12/1,000 PYs. No incident HCV infections were found among HIV-uninfected MSM, despite more than 10,000 years of follow-up. Our findings are in line with findings from the Amsterdam STI clinic, and may be explained by an increase in HCV testing and treatment uptake, risk reduction, or a saturation-effect among MSM at highest risk for HCV infection.

Background
- Since 2000, the incidence of HCV infection among HIV-positive MSM in high-income countries has increased substantially; among HIV-negative MSM, the prevalence of HCV remained low.¹
- Previous analysis of ACS data showed that the HCV incidence among HIV-positive MSM increased from 0.78 per 1,000 person-years (PYs) before 2000, to 8.74 per 1,000 PYs in 2000-2003.²
- Data from the Amsterdam STI clinic showed a non-significant decline in prevalence of HCV among HIV-positive MSM after 2008.³

Methods
Participants
- HIV-negative and HIV-positive MSM with ≥2 study visits in the ACS between October 1984 and January 2012 were included.
- To update HCV status, linkage with clinical and laboratory databases took place from the Dutch HIV Monitoring Foundation, AMC, and Medical Center Jan van Goyen.
- HIV-positive MSM were the tested for HCV antibodies at the last visit before 2012 if no negative HCV test result was available after 2008.
- HIV-negative MSM were tested for HCV antibodies at their first 6-monthly ACS visit after STI screening was introduced in October 2008.

Statistics
- Risk factors for prevalent HCV were studied using univariate logistic regression models.
- Incidence rates were calculated per year, trends over time were analyzed using Poisson regression.
- Risk factors for incident HCV were studied using Poisson regression; variables subject to change were treated as time-updated covariates.

Laboratory methods
- HCV antibody tests were performed by AxSYM HCV 3.0 (Abbott); confirmation by immunoblot (Ortho-Clinical Diagnostics) and by HCV-RNA (TMA; Siemens).

Results
General characteristics
- 2,457 MSM were enrolled in the ACS between 1984 and 2012; 2,104 MSM had ≥2 study visits; the total follow-up was 17,310 PYs. At study entry, 539 were HIV-infected and 222 seroconverted during follow-up.

Prevalent HCV infection
- 24/2,104 (1.1%) were HCV-positive at the first study visit. This was associated with history (Hx) of injecting drug use (OR: 84.6; P<.001), HIV-coinfection (OR: 3.12; P=.006); the effect of older age was borderline significant (OR per 10y increment: 1.52; P=.066).
- Hx of blood transfusion, Hx of syphilis, number of sex partners ever, or in the 5 years preceding study entry, were not significantly associated with prevalent HCV.

Incident HCV infection
- 29 incident HCV infections were documented among 2,080 MSM who were HCV-negative at study entry; all incident cases were HIV-infected (Figure 1A).
- Incident HCV was associated with younger age (RR for age 50 vs. age 35: 0.31, 95% CI: 0.11-0.89; P=.041; Figure 1B).
- CD4 count, nadir CD4 count before infection, HIV viral load, and use of cART, were not significantly associated with incident HCV infection.

- A significant increase in HCV incidence was observed after 2000:
  \[ \text{IR}_{2005} \text{ vs } \text{IR}_{2000} \rightarrow \text{IRR: 3.41, 95% CI: 1.58-7.34; } P=0.002 \]
- After 2005, HCV incidence stabilized at around 12,000 PYs:
  \[ \text{IR}_{2010} \text{ vs } \text{IR}_{2005} \rightarrow \text{IRR: 0.94, 95% CI: 0.38-2.36; } P=0.906 \]

References