

INCIDENCE OF HIV AND HEPATITIS C VIRUS AMONG PEOPLE WHO INJECT DRUGS, AND ASSOCIATIONS WITH AGE AND SEX OR GENDER: A GLOBAL SYSTEMATIC REVIEW AND META-ANALYSIS

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Background:

The incidence of HIV and hepatitis C virus (HCV) infection among people who inject drugs (PWID) is key for measuring progress towards elimination. We conducted a systematic review of HIV and primary HCV incidence among PWID and associations with age and sex or gender.

Methods:

We updated an existing database of HIV and HCV incidence studies among PWID by searching MEDLINE, Embase, and PsycINFO, capturing studies published between 01/01/2000-12/12/2022, with no restrictions to language or study design. We contacted authors to request unpublished or updated data. We included studies that estimated incidence by longitudinally re-testing people at-risk of infection or by using assays for recent infection. We pooled estimates using random-effects meta-analysis and assessed risk-of-bias with a modified Newcastle-Ottawa scale.

Findings:

Our updated search identified 9493 publications, of which 211 were full-text reviewed alongside 377 publications from our previous searches. Including 28 unpublished records, 125 records met inclusion criteria. For HIV, 30 and 34 estimates considered high-income and low- or middle-income countries, respectively. For HCV, this breakdown was 52 and 14 estimates, respectively. Estimates were measured over 1987-2021 (HIV) and 1992-2021 (HCV), and two-thirds were from single cities rather than being multi-city/nationwide. The median risk-of-bias score was 6 (range: 3–9), indicating moderate risk. The pooled HIV incidence was 1.7 per 100 person-years (95%CI: 1.3-2.3, $I^2=98.4%$) and pooled HCV incidence was 12.1 per 100 person-years (95%CI: 10.0-14.6, $I^2=97.2%$; Figure). Young PWID (generally defined: ≤ 25 years-old) had a 1.5 times greater risk of HIV (95%CI: 1.2-1.8) and HCV (95%CI: 1.3-1.8) acquisition than older PWID. Women had a 1.4 times greater risk of HIV acquisition (95%CI: 1.1-1.6) and a 1.2 times greater risk of HCV acquisition (95%CI: 1.1-1.3) than men.

Conclusion:

Although sparse, available HIV and HCV incidence estimates offer insights into global levels of HIV and HCV transmission among PWID.

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