

# RECENT INCARCERATION AND RISK OF HEPATITIS C AND HIV TRANSMISSION AMONGST PEOPLE WHO INJECT DRUGS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Background:**

Modelling suggests that incarceration could be a significant driver of hepatitis C virus (HCV) and HIV transmission amongst people who inject drugs (PWID), primarily due to elevated HCV and HIV acquisition risks following release. We conducted a systematic review and meta-analysis to assess the degree to which incarceration history elevates HCV or HIV acquisition risk amongst community PWID.

**Methods:**

MEDLINE, EMBASE and PSYCHINFO databases were searched for studies published since 2000 assessing HCV or HIV incidence amongst community-recruited samples of PWID. There was no language restriction. Studies were included if they reported the association between recent (last 3-12 months) or ever incarceration and HCV or HIV incidence. Authors of incidence studies not reporting these outcomes were contacted for additional data. Data were extracted and pooled using random-effects meta-analyses.

**Results:**

24 published and 13 unpublished studies were included, originating from Australasia, Western and Eastern Europe, North and Latin America and East and Southeast Asia. Recent incarceration was associated with a 51% increase in the risk of HCV infection (rate ratio (RR):1.51, 95% confidence interval (95%CI):1.20-1.91;  $P<0.001$ ,  $n=16$ ) and a 67% increase in the risk of HIV infection (RR:1.67, 95%CI:1.24-2.25;  $P<0.001$ ,  $n=11$ ). Ever incarceration was associated with a 34% increase in the risk of HCV infection (RR:1.34, 95%CI:1.04-1.72;  $P=0.021$ ,  $n=17$ ) but was not associated with incident HIV infection (RR:0.99, 95%CI:0.63-1.55;  $P=0.963$ ,  $n=8$ ).

**Conclusion:**

Recent incarceration is associated with increased risk of both HCV and HIV acquisition amongst community PWID. With high prevalence of incarceration (28-95% ever incarcerated) in many settings, incarceration is likely to be a significant driver for HCV and HIV epidemics amongst PWID. Research is needed to determine the precise mechanism through which incarceration elevates HCV and HIV transmission risk amongst PWID, and so whether prison-based harm reduction or structural interventions soon after release could reduce this elevated risk.

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