GLOBAL, REGIONAL, AND COUNTRY-LEVEL ESTIMATES OF NEW HCV INFECTIONS ATTRIBUTED TO INJECTION DRUG USE

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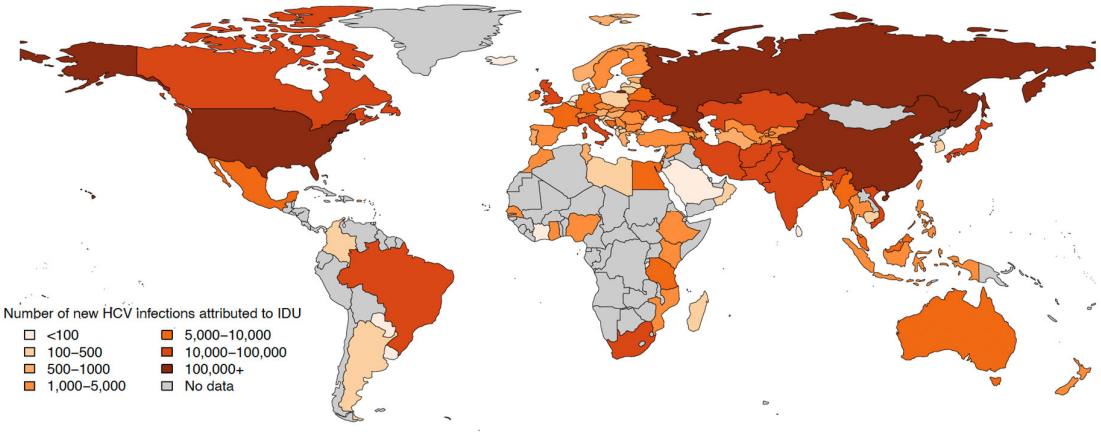
Background:
Data are limited on the number of new annual HCV infections attributed to injection drug use. We estimated, at country/regional/global levels, HCV incidence in people who inject drugs (PWID) and the number of new annual HCV infections attributed to injection drug use using multiple methods and data.

Methods:
First, we estimated HCV incidence using force-of-infection modelling based on HCV Ab prevalence stratified by injecting duration from 79 studies. Second, we used previously published estimates of HCV incidence in PWID from our global (i) systematic review (Artenie et al Lancet Gastroenterol Hepatol 2023) and (ii) dynamic mathematical model of HCV epidemics (Trickey et al Lancet Gastroenterol Hepatol 2019). Third, we predicted HCV incidence from HCV Ab prevalence for 14 additional studies using a Poisson regression model comparing HCV Ab prevalence to HCV incidence in the same population. Country-specific HCV incidence was estimated using random-effects meta-analysis if multiple estimates were available. Number of new annual HCV infections attributed to injection drug use was estimated by multiplying country-specific HCV incidence with number of RNA- PWID, accounting for uncertainty in each estimate.

Results:
We produced 195 HCV incidence estimates from 105 countries, representing 88% of the global PWID population (years: 1995-2020; median: 2015). The US (n=19), UK (n=14) and China (n=13) had the highest number of estimates. HCV incidence ranged as 0.2—65.9/100 person-years and the pooled estimate was 12.2/100 person-years. We estimated 1,168,098 (95%CI: 653,035–1,924,130) new HCV infections are due to injection drug use annually, with variation regionally and by country (Figure). The largest number of new infections were in the US (343,591; 95%CI: 180,777-600,265; 29%), China (257,853; 95%CI: 139,053–426,337; 22%) and Russia (121,166; 95%CI: 74,375-191,617; 10%).

Conclusion:
Injection drug use contributes substantially to incident HCV infections globally. Findings emphasize the importance of scaling-up prevention and treatment strategies for PWID.

Disclosure of Interest Statement:
Authors have nothing to disclose.


Number of new HCV infections attributed to IDU
<100
100–500
500–1000
1,000–5,000
5,000–10,000
10,000–100,000
100,000+
No data