

THE CONTRIBUTION OF INJECTING DRUG USE TO HEPATITIS C VIRUS TRANSMISSION GLOBALLY, REGIONALLY, AND AT COUNTRY LEVEL: A MODELLING STUDY

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Background:

Injecting drug use (IDU) is an important risk factor for Hepatitis C virus (HCV) transmission. HCV prevalence amongst people who inject drugs (PWID) is generally high but the prevalence of PWID in most countries is <1% of adults. Modelling was undertaken to estimate the degree to which IDU contributes towards HCV transmission at country, regional and global levels.

Methods:

A dynamic, deterministic HCV transmission model was used to simulate the country-level HCV epidemic amongst PWID and the general population. The model for each country was calibrated using country-specific data from UN datasets and recent systematic reviews on HCV prevalence amongst PWID and the general population, and the proportion of adults that are PWID. We estimated the dynamic population attributable fraction (PAF) due to IDU: the proportion of new HCV infections within each country that would be prevented if HCV transmission due to IDU were removed for the 20-year period 2017-2037.

Results:

The model was successfully calibrated to 82/83 of the included countries comprising 84% of the global population. Although the model predicts 0.2% of individuals will be PWID in 2037, 7% of prevalent HCV in 2037 is among PWID. Globally, if the risks due to IDU were removed, then an estimated 32% (IQR: 24%-39%) of all incident HCV infections (the PAF) would be prevented during 2017-2037, varying by region. IDU contributes most to HCV transmission in high-income settings, where 66% of new HCV infections could be prevented from removing the risk due to IDU, whereas in lower and middle-income countries it is 27%.

Conclusion:

IDU contributes significantly to the global burden of HCV, but this varies widely across countries. Scaling up HCV prevention interventions for PWID, including needle and syringe programmes, opioid substitution therapy, and HCV treatment will be essential to meet WHO elimination targets in many settings.

Disclosure of Interest Statement:

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