

## **HCV PRIMARY PREVENTION IN PEOPLE WHO INJECT DRUGS (PWID): OBSERVED AND MODELLED IMPACT**

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**Background:** New HCV direct-acting antivirals (DAAs) will dramatically improve cure rates but in many countries are expensive. We consider epidemiological and model evidence on the impact of primary prevention on HCV transmission and consider who should be prioritized for HCV treatment.

**Methods:** A) Pooled surveillance data and systematic reviews of the effect of opioid substitution treatment (OST) and needle and syringe programmes (NSP) on HCV transmission. B) Dynamic HCV transmission and disease progression cost-effectiveness models.

**Results:** There is good empirical evidence emerging that OST and high coverage NSP can reduce HCV transmission by 50% or more. Model evidence suggests OST and NSP avert HCV infections but in the UK and many other settings the additional coverage required to achieve substantial further reductions in HCV prevalence are unsustainable and unlikely to be achieved. In contrast modelling suggests that scaling up HCV treatment can reduce chronic HCV prevalence among PWID – especially in settings where chronic HCV prevalence among PWID is <20% or <40% - with each PWID treated averting an additional 1-2 HCV infections. The prevention benefit also makes treating PWID highly cost-effective and in many settings PWID could be prioritized for treatment at earlier disease stages. Current treatment rates in many settings in Europe, however, are insufficient to lead to observable changes in HCV prevalence among PWID over the next 5-10 years.

**Conclusions:** There is an important distinction in the quality of the evidence surrounding HCV prevention. The effect of OST and NSP is based on empirical, albeit observational, studies. HCV treatment as prevention is likely to be effective and cost-effective in high income countries but lacks empirical data – primarily because current treatment rates are too low. Our model estimates need to be tested in well planned studies of the impact of scaling up HCV treatment in well characterized PWID populations.