

# MODELLING THE ROLE OF INCARCERATION ON HCV TRANSMISSION AMONGST PEOPLE WHO INJECT DRUGS IN KENTUCKY AND IMPACTS OF REDUCING INCARCERATION

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## **Background:**

People who inject drugs (PWID) experience high incarceration rates, contributing to prison overcrowding, and current or recent incarceration is frequently associated with increased hepatitis C virus (HCV) transmission. We assess the contribution of incarceration to HCV transmission amongst PWID in Kentucky, USA, and the impact of scaling-up opiate substitution therapy (OST) and reducing incarceration.

## **Methods:**

We developed a dynamic model of incarceration and HCV transmission amongst PWID, which was fit using a Bayesian framework to data from Kentucky, including an empirically estimated 2.1-fold elevated HCV acquisition risk amongst currently incarcerated and recently released (<6 months) PWID compared to other PWID. We projected the contribution of incarceration to HCV transmission among PWID over the next 15 years and assessed the impacts of decriminalisation and scaling-up OST on HCV transmission.

**Results:** Over the next 15 years, incarceration could contribute 32.4% (95%CrI:4.9-58.6%) of all new HCV infections amongst PWID in Kentucky. If incarceration rates amongst PWID were halved, decriminalisation could avert 11.2% (95%CrI:2.6-19.3%) of all new HCV infections over the next 15 years. Scaling-up community OST recruitment to give 50% coverage (baseline coverage 5.7%) could avert 17.4% (95%CrI:12.7-23.1%) of new HCV infections over the next 15 years. If OST reduces incarceration rates by 30%, a 32.8% (95%CrI:14.3-56.9%) greater relative impact could be achieved, with 23.2% (95%CrI:18.5-28.1%) of new HCV infections being averted. Depending on whether OST has no effect on incarceration rates or a 30% reduction in incarceration rates, introducing OST into prisons alongside the community scale-up, could avert 34.3% (95%CrI:25.5-43.7%) or 37.4% (95%CrI:28.4-46.9%) of new HCV infections over the next 15 years, respectively.

## **Conclusion:**

Incarceration is likely to be an important contributor to HCV transmission amongst PWID in Kentucky. This is the first study to consider the effects of OST on reducing incarceration which can provide important additional prevention benefits.

**Disclosure of Interest:** No conflicts to report related to this work.