ENHANCING LINKAGE TO HEPATITIS C CARE UPON RELEASE FROM CANADIAN PROVINCIAL PRISONS: THE POPULATION-LEVEL IMPACT ON HEPATITIS C TRANSMISSION AMONG PEOPLE WHO INJECT DRUGS IN MONTRÉAL

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Background: The Canadian burden of chronic hepatitis C (HCV) is highly concentrated among people who inject drugs (PWID), a population experiencing high rates of incarceration in provincial prisons. In such settings, HCV care and post-release linkage to care are hindered by high turnover rates, frequent re-incarceration, and lack of standardized care pathways. Recent incarceration also increases HCV acquisition through elevated injecting risks. It remains unknown, however, if and how enhanced prison-based linkage to care interventions could contribute to HCV micro-elimination. We aimed to assess the population-level impact of such strategies on HCV transmission among PWID in Montréal.

Methods: We developed a dynamic compartmental model of HCV transmission among PWID in Montréal, stratified by sex, incarceration, and injecting status. The model was calibrated to reproduce epidemic trends (2003-2014) using a Bayesian framework. We evaluated the 5-year impact of enhancing linkage to care (90% tested and 75% of those tested treated post-release) with or without reducing the elevated injecting risk post-release by 50%. We estimated the relative reduction in incidence and the prevented fraction of new infections, as compared to a status quo scenario that maintains 2018 rates of testing, treatment, and coverage of harm reduction services.

Results: After five years, linkage to care post-release combined with risk reduction could reduce HCV incidence by 31% (95%CrI: 20-39%) and prevent 12% (95%CrI: 7-16%) of new chronic infections, as compared the status quo. Without post-release risk reduction, the incidence decrease would have been of 19% (95%CrI: 12-24%) and the prevented fraction of 7% (95%CrI: 4-9%). Both scenarios would treat the equivalent of 2% of all PWID annually, suggesting a high per capita population-level impact.

Conclusion: For PWID in provincial prisons, prioritizing linkage to care and integrating post-release risk reduction strategies could change the course of the epidemic and contribute to HCV micro-elimination in Montréal.

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