

GEOGRAPHIC CLUSTERING OF SOCIAL INJECTION ACTIVITY AND RISK OF HEPATITIS C VIRUS ACQUISITION AMONG PEOPLE WHO INJECT DRUGS IN MONTREAL

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Background:

High HCV incidence rates persist among PWID in Montreal, Canada, despite longstanding presence of harm reduction in the city. Harm may be concentrated in specific neighbourhoods; targeting of these areas may improve cost-effectiveness of HCV elimination efforts, including treatment-as-prevention approaches. We estimated the association between residence in areas with high clustering of social injection activity and HCV infection among PWID in Montreal.

Methods:

Data were drawn from HEPCO, a prospective cohort study involving three-monthly HCV testing and interviews with active PWID (2010-2017). At each visit, participants reporting past-month injection with other PWID reported the location (postcode) of their latest social injection episode. We first used these postcodes to identify areas exhibiting heightened clustering of social injection activity ("hotspots"). HCV-negative cohort participants were then categorized as residing (or not) in a hotspot, based on where they had slept most often in the past month. Incident HCV was defined as an antibody+/RNA+ test. Associations were estimated using inverse-probability-weighted marginal structural models to adjust for time-dependent confounding and non-differential dropout by age, gender, housing/income stability, OAT, incarceration and prescription opioid injection. Weights were estimated using pooled logistic regression; hazard ratios were obtained from a weighted Cox model. Follow-up was censored at three years.

Results:

Participants were mostly white (89.8%), male (79.8%) with a median age of 40. Hotspots covered an area of 5.78 km² and were located in the downtown/Ville-Marie area. At baseline, participants residing in hotspots were older and generally more vulnerable than those residing in outer areas. 99 infections were observed over 956.0 person-years (rate: 10.4/100py [95%CI: 8.5-1.3]). Weighted models estimated a two-fold risk of infection in hotspots vs. areas outside (95%CI: 1.20-3.44).

Conclusion:

Risk of HCV was elevated in social injection hotspots, supporting prioritization of HCV elimination efforts to select geographic areas. Prevention may further require modifying structural determinants of harm among PWID.

Disclosure of Interest Statement:

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