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Enhancing population-level research among people who inject drugs: a validation and retrospective cohort study using health administrative data in Ontario, Canada

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Objective

Health administrative data can support population-level research among people who inject drugs (PWID), however these data sources remain underutilized due to the difficulty in identifying drug use in routinely collected data. We validated case-ascertainment algorithms to identify PWID and tested their application in a hepatitis C (HCV) cohort in Ontario, Canada.

Approach

We conducted a validation study using reference standard cohorts of PWID recruited via community-based studies and population controls linked to health administrative data in Ontario, Canada (1992–2020). Tested case-ascertainment algorithms included combinations of hospitalizations/emergency department (ED) visits for drug use/poisoning, physician visits for drug use, opioid agonist treatment (OAT), or injecting-related infections. Sensitivity and specificity were estimated for lifetime history and recent injecting (past 1–5 years). We applied a high-performing algorithm among all Ontarians with laboratory-confirmed HCV between 1999–2018, to identify a sub-cohort of PWID with HCV.

Results

An algorithm including ≥ 1 hospitalization/ED visit or ≥ 1 physician visit for drug use or ≥ 1 OAT record had high accuracy for identifying IDU history (91.6% sensitivity, 94.2% specificity) and recent IDU (using 3 years lookback: 80.4% sensitivity, 99% specificity). When applied to a provincial cohort of 112,947 Ontarians diagnosed with HCV, this algorithm estimated 46% (N=52,248) had a history of IDU, of whom 52% (N=27,246) had an indication of recent IDU (within the past 3 years).

Conclusion

The methods developed in this study can enhance the capacity of population-level health research among people who inject drugs and support applied public health interventions towards hepatitis C elimination.

