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Identifying homelessness using health administrative data in Ontario, Canada: how coding policies impact case validity

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Conducting longitudinal research about the health of people experiencing homelessness poses unique challenges. In Canada, we previously demonstrated that identification through health administrative databases permits population-level studies, despite relatively low sensitivity. Since then, coding of homelessness became mandatory in hospitals nationally. As a result, case validity since 2018 is unknown.

We re-validated case definitions for identifying homelessness in health administrative databases between 2018 and 2022 against the longitudinally collected housing history of a representative sample of people experiencing homelessness ($n=640$) and randomly selected, housed people ($n=128,000$) in Toronto, Canada. We calculated sensitivity, specificity, positive and negative predictive values, and positive likelihood ratios for 42 unique case definitions. We compared the resulting true positives against false positives and false negatives to identify potential causes of misclassification.

The optimal case (best sensitivity/scalability beyond Ontario) definition included any indicator during a hospital-based encounter within 180 days of a period of homelessness (sensitivity=52.9%; specificity=99.5%). Among periods of homelessness with ≥ 1 hospital-based encounter, the optimal case definition had good sensitivity (75.1%) with minimal reduction in specificity (98.5%). Review of false positives suggests homeless status is sometimes improperly carried forward in healthcare encounters occurring after transitioning out of homelessness.

Case definitions to identify homelessness using health administrative data exhibit moderate sensitivity and excellent specificity, with two-fold increases in sensitivity since the implementation of mandatory coding in Canada. Mandatory collection of social determinants of health information within administrative data present invaluable opportunities for advancing research on the health and healthcare needs of people experiencing homelessness.

