International Journal of Population Data Science

Journal Website: www.ijpds.org

Advancing the measurement of health inequalities in Canada with linked health and social data

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Introduction

Linking health and socio-demographic data is providing new opportunities for measuring health inequalities in Canada. Measuring inequalities across relevant population sub-groups is a key step for understanding progress towards achieving health equity and informing interventions to reduce inequities.

Objectives and Approach

This study uses two linked national datasets (excluding Quebec): 1) Statistics Canada's linkage of the 2006 long-form Census to hospital data from the Canadian Institute for Health Information's 2006-2008 Discharge Abstract Database (DAD); 2) hospital data linked to area-level income using Statistics Canada's Postal Code Conversion File tool. Study objectives are to compare hospitalization rates between the linked census cohort and the general population and to inform the measurement of inequalities by income and education. Analysis was based on three hospitalization indicators: chronic obstructive pulmonary disease (COPD) among

Conclusion/Implications

Updating and expanding existing linkages to include recent data has the potential to expand and integrate health inequalities measurement into routine health system performance reporting. Challenges include measuring inequalities for smaller populations (e.g., health regions) and gaps in Census coverage (e.g., newborns/newcomers, urban indigenous populations, people experiencing homelessness, institutionalized population).

Results

The linked cohort weighted to the population represented 67% of DAD cases for asthma, 77% for COPD and 80% for heart attack. The lower coverage for asthma was because babies born after Census day were not linked. For all three indicators, rates were lower in the linked cohort than the DAD, likely because the linked cohort and DAD capture somewhat different populations (e.g., institutionalized population is in DAD but not Census).

Large income and education-related inequalities were observed for all three indicators. Further analyses revealed inequalities of similar magnitude using before and after-tax income data, and larger inequalities by individual-level income compared to area-level (for COPD only). Inequalities were similar using individual and household education, with a clear gradient using multiple education categories.