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Investigating variation in reported location of death: A comparison of administrative data sources

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Background

Location of death is an important outcome in health research. Accordingly, the collection and assembly of these data is complex. In Canadian administrative healthcare data, the gold standard for mortality has been Vital Statistics (VS), which is based on death certificates.

Methods

All mortality records in the province of Alberta, Canada (population 4.6M) were extracted from VS between 2016 and 2021. These were deterministically linked on unique patient identifiers to databases including hospitalizations, emergency department (ED) visits, long-term care (LTC) and designated supportive living records. The primary outcome was location of death reported in administrative sources.

Results

There were 162,835 mortality records identified in VS. Of deaths labeled as hospital, en route, or nursing in VS (113,554), 85.3% were linked to administrative data on inpatient, ED, LTC, and/or designated supporting living deaths. Of the 52.2% VS records reporting hospital deaths, 80.4% linked to a record of death to the inpatient database. Few records were linked and reported as occurring in the ED if not already classified through inpatient records (<0.5%). Of the 15.0% of VS deaths in nursing homes, 64.5% were linked to a record of death in LTC data, and a further 5.3% linked to a death record in designated supportive living records.

Conclusion

There is considerable variation in the reported location of death across data sources in Alberta, with VS reporting lower than expected, confirmed numbers. These discrepancies require further validation in determining the 'gold standard' for location of death in subsequent research and quality improvement endeavors.

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