Abstract

This project is an attempt to link records to analyze potential mortality risks for young adults in Ontario during the 1918 influenza pandemic. The project involves records linkage to analyze potential mortality and the suitability of these records for historical demographic analyses of past epidemic disease. The project is involves records linkage to analyze potential mortality and the suitability of these records for historical demographic analyses of past epidemic disease.

Methods

• Interested in young adult mortality:
  • Died between ages 23 and 35.
  • Born between 1883 and 1895.
  • Died in Ontario between September and December, 1918:
  • Second (worst) wave of the 1918 pandemic.
  • Birth records linkage: Must be born in Ontario.
  • Excludes Immigrants.
  • Age in whole years on death records insufficient to determine potential exposure.

Linkage Success

• Linked to at least one other record:
  • Linked 62.7%.
  • To Birth Records:
    • Linked 89.4%.
    • To the 1910 Census:
      • Linked 82.5%.
      • Unlinked 17.5%.
      • Unlinked 37.3%.

Unlinked Individuals

• Using logistic regression, unlinked individuals tended to:
  • Aboriginal.
  • From Northern Ontario.
  • More likely to have missing information:
    • Father’s Name.
    • Mother’s Name.
  • Had possibly itinerant occupations.
  • Older.
  • Died in an institution.
  • Epidemic Underreporting.
  • No difference by:
    • Sex.

Research Question

All-cause Mortality, Toronto, September to December, 1918.

• 1918 influenza pandemic: 
  • Unexpected increase in young adult mortality.
  • Ontario death records show a peak in mortality at age 28:
    • December 1918.

Sample

• 23,183 death records for all ages, from September to December, 1918, in Ontario were provided by the IIDDA.
• 3,286 death records were linked to at least one other record, giving a linkage success rate of 91.9%. This poster analyzes the linkage rates of the death records to birth records from 1883-1895 and the 1901 and 1911 Canadian censuses and uses logistic regression to investigate the important factors that precluded linkage. It evaluates declared age at all three time periods to discuss the suitability of these records for historical demographic analyses of past epidemic disease.

Reconstructed Age at Death

• All linked records compared to form a Reconstructed Date of Birth and Reconstructed Age at the Census
• Accuracy of declared age on the death records:
  • Evidence of age heaping.
  • If inaccurate, most often declared to be 1 year younger.

Key Findings and Conclusions

• Highly successful linkage rate.
• Date of birth best taken from the birth records, but they are incomplete. Second best is the 1901 census.
• In whole years is not useful in either the 1901 or the 1911 census.
• Some results might have been artifacts of linkage process.

REFERENCES


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