

Automated mortality surveillance in South-Eastern Ontario for Pandemic Influenza Preparedness: rationale and methodology

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Background: In Canada, national and provincial pandemic preparedness plans call for mortality surveillance capability during an influenza pandemic to enable evidence-based decision making. We describe the rationale and methodology for implementation of an automated electronic mortality surveillance system in an urban centre in South-Eastern Ontario, with particular attention to the Personal Health Information Protection Act and relevant privacy legislation.

Methods: A data sharing agreement with the City of Kingston was formed to facilitate the weekly collection and use of mortality data for disease outbreak surveillance. Deaths were attributed to pneumonia and influenza using keyword classification. Data collection and age-stratified analysis were automated to enable continuous monitoring capability.

Results: From 1997-2008, there were 18995 deaths reported to the City of Kingston; 1950 deaths (10.3%) were attributed to pneumonia and influenza. The elderly aged 75 years and older account for 79.1% of these deaths. Since 2006, the median interval between death and registration with the City was 5 days.

Conclusion: A national or provincial mortality surveillance network based on the Kingston model could assist with characterization of geographical disease spread and severity. Population-specific monitoring may assist in identifying high-risk groups. The quality of death data depends on the diligence of attending physicians in completing medical death certificates, the inclusion of age information by other municipalities, and data timeliness. Evaluation of the usefulness of this system as a module in a comprehensive real-time public health electronic system for novel swine-origin influenza A (H1N1) surveillance is ongoing.

Keywords: pandemic, influenza preparedness, real-time surveillance, mortality surveillance