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Use of syndromic surveillance in decision making during the H1N1 pandemic in Ontario, Canada

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Objective

To describe if and how syndromic surveillance data influenced public health decisions made during the 2009 H1N1 pandemic within the context of other existing public health surveillance systems.

Introduction

For public health surveillance to achieve its desired purpose of reducing morbidity and mortality, surveillance data must be linked to public health response. While there is evidence of the growing popularity of syndromic surveillance (1, 2), the impact or value added with its application to public health responses is not well described (3).

Methods

Ontario's 36 public health units, the provincial ministry of health and federal public health agency completed a web survey in 2010 to identify surveillance systems used routinely and during the pandemic and to describe the perceived utility of systems for monitoring pandemic activity and informing decision making. Follow-up semi-structured interviews were conducted with key informants to elucidate drivers for specific public health actions taken during the pandemic and, specifically, to understand the role syndromic data played in influencing decisions among those who had access.

Results

The web survey identified 20/38 (53%) organizations which use at least one syndromic surveillance system; key informant interviews identified another 2 organizations, for a total of 22/38 (58%) syndromic surveillance 'users'. Mirroring routine surveillance, traditional surveillance systems, specifically laboratory and reportable disease data (iPHIS) and school absenteeism data were the most frequently used sources during the pandemic (Fig. 1). Laboratory data were considered the most useful data source for monitoring the epidemiology (71% of organizations perceived it as 'essential') and informing decision making (76%), while emergency department screening data were considered the most useful syndromic surveillance source (52% and 70%). Syndromic data were found to support two specific public health actions taken during the pandemic: influenza assessment centers and communications, including recommendations to the public. Informants felt that syndromic data provided confidence to decide whether and when to open/close influenza assessment centers and when/what to communicate to the public. Non-syndromic users utilized stakeholder consultations and traditional surveillance data to support these decisions. Syndromic surveillance did not appear to have a role in supporting decisions around immunization clinics, school closures or recommendations to health care professionals; rather vaccine availability and ministerial guidance acted as drivers for these decisions.

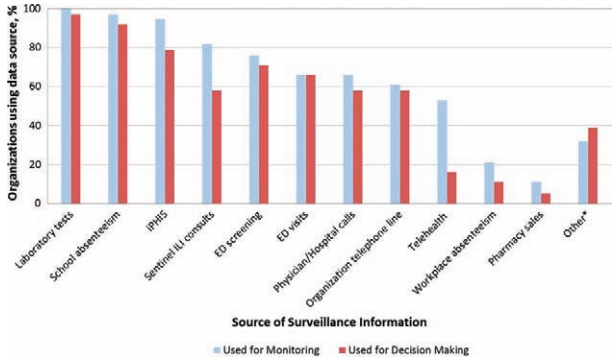

Fig. 1. Data sources used by organizations to monitor the epidemiology of the 2009 H1N1 pandemic and inform decision making, Ontario. *Other includes EMS/paramedic activities, hospital admission, intensive care unit and ventilator use data, immunization visits, flu assessment centre visits and provincial surveillance bulletins and teleconferences.

Conclusions

While traditional surveillance systems were considered most essential for monitoring the pandemic locally and informing decisions, syndromic surveillance was found to support several public health actions taken during the pandemic. Understanding how syndromic surveillance systems are valued, utilized and linked to public health action is necessary to inform investments to build surveillance capacity.

Keywords

Public health surveillance; syndromic surveillance; pandemic influenza; evaluation

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