

Integrating Early Event Detection into Local Disease Surveillance and Response

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OBJECTIVE

This poster describes the practical integration of Early Event Detection (EED) into the daily operation of a medium sized public health department to improve surveillance for, and response to, outbreaks of communicable disease.

BACKGROUND

Given the limited resources available to public health authorities, practical EED systems must carefully balance the benefits of early detection with the costs of system implementation and maintenance. An approach to achieving this is to reduce costs through minimizing personnel time through simplification, automation and use of existing resources, while maximizing the sensitivity and specificity through analysis in context of complimentary surveillance data sources.

METHODS

Tacoma-Pierce County Health Department (TPCHD) has developed an EED that is closely integrated with its traditional disease surveillance activities. The Syndromic Surveillance and Early Aberration Detection System (SSEADS) uses the CDC Early Aberration Reporting System (EARS) [1]. and Emergency Department Chief Complaint Syndrome Code (NY code) developed by the New York City Department of Health and Mental Hygiene [2]. The SSEADS front end was designed for simple and rapid checking by someone with limited training. Automated daily emergency department reports are received from Pierce County hospitals representing approximately 80% of hospital emergency department records in the county and automatically processed into a Postgres database. A daily e-mail summary of aberrations is automatically generated and sent to surveillance staff. More detailed information is accessed via linking to the TPCHD intranet containing the planning and timecard system. Individual patient data are available to assist investigation.

RESULTS

The simplicity of the SSEADS system allows data to be quickly reviewed in context with other data sources such as environmental health water quality reports, foodborne illness reports and observations from community-based nurses. SSEADS reports are reviewed each morning by surveillance staff and aberrations are presented at a brief daily surveillance meeting including representatives from Environ-

mental Health, Emergency Preparedness, Food and Community Safety, and Communicable Disease Control. Meeting attendees are tasked with collecting and sharing information potentially indicative of an outbreak and the findings of the meeting drive the extent of the aberration investigation. The surveillance system is part of the overall TPCHD emergency plan. An algorithm within the plan prescribes the flow of surveillance data within TPCHD and thresholds for health events requiring full or partial plan activation.

CONCLUSIONS

The usefulness of EED systems alone for communicable disease outbreak detection is still unclear [3]. As a result, close integration of easy to use EED systems with other types of surveillance data is important to ensure maximal use of resources.

REFERENCES

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