

ABSTRACT

Utilities of Maryland's syndromic surveillance system: indentifying threats, case investigation and situational awareness

S Aslam, I Ajit, S Adams, and Z Faigen

Office of Preparedness and Response, Maryland Department of Health and Mental Hygiene, Baltimore, MD, USA
 E-mail: saslam@dhmh.state.md.us

Objective

The purpose of this paper is to describe how Maryland's syndromic surveillance system, electronic surveillance system for the early notification of community-based epidemics (ESSENCE), has many utilities including identifying threats, case investigation and situational awareness.

Introduction

Maryland's electronic surveillance system for the early notification of community-based epidemics (ESSENCE) data includes emergency department visits from all acute care hospitals, over-the-counter medication sales and poison control data that cover all jurisdictions in Maryland.

Maryland Department of Health and Mental Hygiene (DHMH) uses ESSENCE daily for the early detection of public health emergencies. DHMH also utilizes ESSENCE for other purposes including situational awareness during high security events, assistance with outbreak investigation and for the H1N1 pandemic.

Methods

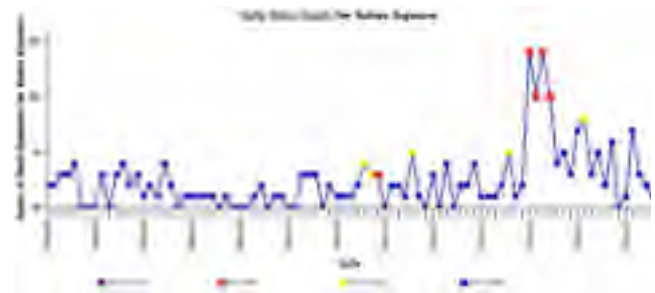
ESSENCE data are reviewed closely on a daily basis looking for clusters indicating a public health threat. However, during the 2008 nationwide *Salmonella* outbreak, a query was developed to search for patients with chief complaints related to *Salmonella* or tomatoes from April to June 2008.

During the initial H1N1 outbreak, DHMH used ESSENCE as a tool to enhance case finding efforts. In addition, throughout the H1N1 response, ESSENCE was also used to monitor levels of ILI across the state. Daily reports were provided to the Governor's office and state executives to enhance situational awareness and inform decision-making.

In 2009, ESSENCE was used for situational awareness during the Presidential inauguration. The following list of queries was used during the inaugural period: symptoms for

hypothermia, injury, dehydration, influenza like illness, meningitis and Center of Disease Control and prevention category A diseases (anthrax, botulism, plague, small pox, tularemia and viral hemorrhagic fever).

Most recently in 2010, ESSENCE was queried to identify the number of patients that reported to Maryland hospitals for prophylaxis after being exposed to a rabid calf.



Results

On numerous occasions during the daily review, ESSENCE has identified clusters of meningitis. A statistically significant increase in ILI activity was observed during the H1N1 pandemic in spring and fall of 2009. Monitoring of the over-the-counter medication sales allows for the early prediction of an increase in ILI activity. During the 2009 Presidential inauguration, ESSENCE identified a statistically significant increase in the number of hypothermia cases. During the 2008 *Salmonella* outbreak, ESSENCE identified a case. This case was detected in ESSENCE 1 week earlier than its report date to the state health department and about 3 weeks earlier than when it was identified as part of the outbreak. Lastly, ESSENCE was utilized to monitor the number of cases that reported to Maryland hospitals for prophylaxis after being exposed to a rabid calf.

Conclusion

ESSENCE is a vital tool for DHMH that provides a timely and ongoing situational awareness for policy decision makers. ESSENCE is a useful tool during public health events such as outbreaks and pandemic.

Acknowledgements

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