

# **Emergency Department Visits for Influenza-Like Illness and Over the Counter Sales of Flu Remedies in the National Capitol Region, 2003-2007**

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## **OBJECTIVE**

This study examines the ability of syndromic surveillance data to detect seasonal influenza. Emergency department (ED) visits for influenza-like illness (ILI) and over-the-counter (OTC) flu medication sales are evaluated to determine whether these data sources are useful in the detection of the influenza season. Data sources that can detect seasonal influenza may also be used to help detect the start of pandemic influenza.

## **BACKGROUND**

The Maryland Department of Health and Mental Hygiene conducts enhanced surveillance using the Electronic Surveillance System for Early Notification of Community-Based Epidemics (ESSENCE). The current version of ESSENCE for the National Capital Region (NCR) consists of information from multiple data sources for syndromic surveillance in Maryland, Washington DC, and Virginia. Chief complaint data from ED visits and OTC medications are categorized into syndromes and alerts are generated when observed counts are outside the expected range. ESSENCE alerts users to unusual counts of a particular syndrome based on both temporal and spatial distribution for enhanced surveillance of disease activity. While several studies have examined the usefulness of ED data to detect the start of the influenza season<sup>1</sup>, a lack of information exists on the usability of OTC sales to detect influenza. OTC data may provide an earlier alert to illness than other sources, if people self-treat with OTC medications.<sup>2</sup>

## **METHODS**

In ESSENCE, ED data for the chief complaint subsyndrome of "ILI" and OTC sales data for the OTC ESSENCE category of "Flu" were examined to describe influenza trends in the NCR. Syndromic surveillance data from July 2003 through July 2007 was reviewed. Repeated alerts for ILI in the ED data and Flu in the OTC data were identified and compared to reports of the first lab confirmed cases of influenza in Maryland for each influenza season.

## **RESULTS**

The first lab confirmed case of influenza in Maryland for the 2003-04 season was November 18, 2003. In the ED data, ILI alerts were generated on Nov 21-25. In the OTC flu data, repeated alerts were generated

earlier than the ED data, on Oct 1-4. The overall trend of influenza for ED and OTC data was very similar, with both sources peaking in the week of Dec 20 and decreasing thereafter. For the 2004-05 season, the first lab confirmed influenza case was Oct 28, 2004. The first set of repeated alerts in the ED data for ILI did not occur until Oct 31- Nov 3. Flu OTC data generated repeated alerts much earlier, from Oct 4-7 and Oct 18-20. The OTC data peaked during the week of Feb 19, while the ED data peaked a week later, but the overall trends were similar. The first lab confirmed influenza case for the 2005-06 season was Nov 3, 2005. The ED data generated repeated alerts for ILI on Oct 15-19. The OTC data showed flu alerts later than the ED data, with repeated alerts on Oct 24-29. The trends between the two data sources for this season were different, with the ED data showing a peak at the week of Mar 11, 2006 while the OTC data did not show a single peak. For the 2006-07 season, the first lab confirmed influenza case was Oct 31, 2006. Repeated alerts in the OTC data occurred on Oct 14-18 and in the ED data on Nov 4-7. Trends in both data sources were similar.

## **CONCLUSIONS**

For the 2003-2007 influenza seasons, OTC Flu data tended to show an earlier indication of flu in the community compared to ED and lab reports. In the 2005-06 season, OTC data did not show an earlier advantage in detecting flu. While OTC data indicates usefulness in early detection, it presents several challenges, including lack of ability to follow up and the possibility that medications were purchased for reasons other than illness, such as a sales. Both ED visits for ILI and OTC sales data for Flu could be used to identify seasonal trends in influenza. These data sources used together may be a useful tool in detecting the start of influenza, both seasonal and possibly pandemic influenza. This system can also provide situational awareness about the severity and duration of illness.

## **REFERENCES**

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