

ABSTRACT

Evaluating the use of syndromic surveillance for the detection of influenza-like illness in Salt Lake County, Utah

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Objective

The objective of this study is to compare the performance of syndromic surveillance with the United States Outpatient Influenza-like Illness Surveillance Network (ILINet), for the detection of influenza-like illness (ILI) during the fall 2009 wave of H1N1 influenza in Salt Lake County.

Introduction

Salt Lake Valley Health Department uses syndromic surveillance to monitor ILI activity as part of a comprehensive influenza surveillance program that includes pathogen-specific surveillance, sentinel surveillance, school absenteeism and pneumonia, and influenza mortality. During the 2009 spring and fall waves of novel H1N1 influenza, sentinel surveillance became increasingly burdensome for both community clinics and Salt Lake Valley Health Department, and an accurate, more efficient method for ILI surveillance was needed. One study found that syndromic surveillance performed, as well as a sentinel provider system in detecting an influenza outbreak¹ and syndromic surveillance is currently used to monitor regional ILI in the United States.²

Methods

Data were collected from 30 August 2009 to 26 December 2009. Weekly reported hospitalized H1N1 cases were summed from daily lab and provider reports. Daily sentinel provider ILI, defined as fever $\geq 100.4^{\circ}\text{F}$, cough and/or sore throat, and total patient visits were summed from 12 sentinel sites, and used to calculate weekly percentages of sentinel provider ILI. Daily text-based chief complaint data from 15 syndromic sites (emergency departments and urgent care centers) were obtained from EpiCenter³ (funds provided by Utah Department of Health), mapped to an ILI disease category, defined as 'fever' and 'cough' or 'sore throat,' and summarized using the Early Aberration Reporting System (EARS).⁴ Daily ILI and total patient visits were used to

calculate weekly percentages of EARS/syndromic ILI. Spearman correlation analysis was performed to determine the relationships between EARS/syndromic ILI, sentinel provider ILI, and reported hospitalized H1N1 case counts for all ages and each ILI age group.

Results

Overall, weekly percentage of EARS/syndromic ILI strongly correlated with both weekly percentage of sentinel provider ILI ($r=0.93$, $P<0.0001$), and weekly reported hospitalized H1N1 case counts ($r=0.97$, $P<0.0001$) (Figure 1). Strong correlations of EARS/syndromic ILI, with sentinel provider ILI and H1N1 case counts were also evident in the 0–4, 5–24, 25–49, and 50–64 age groups.

Conclusions

These results suggest that syndromic surveillance is an accurate method for ILI surveillance. Salt Lake Valley Health

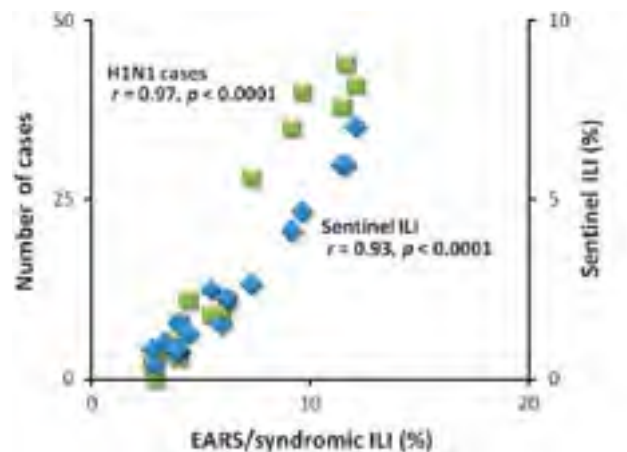


Figure 1 Correlation of EARS/syndromic % ILI with reported hospitalized H1N1 influenza cases (green), and sentinel % ILI (blue).

Department plans to collect ILI data from both syndromic and sentinel surveillance systems in future influenza seasons and establish an epidemic threshold percentage for syndromic ILI, with the eventual goal of replacing sentinel ILI surveillance with syndromic ILI surveillance.

Acknowledgements

This paper was presented as a poster at the 2010 International Society for Disease Surveillance Conference, held in Park City, UT, USA, on 1–2 December 2010.

References

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