

# Adopting a common influenza-like illness syndrome across multiple health jurisdictions

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## Objective

Assess the feasibility and utility of adopting a common influenza-like illness (ILI) syndrome across participating jurisdictions in the ISDS Distribute project.

## Introduction

Syndromic surveillance systems were designed for early outbreak and bioterrorism event detection. As practical experience shaped development and implementation, these systems became more broadly used for general surveillance and situational awareness, notably ILI monitoring. Beginning in 2006, ISDS engaged partners from state and local health departments to build Distribute, a distributed surveillance network for sharing de-identified aggregate emergency department (ED) syndromic surveillance data through existing state and local public health systems (1). To provide more meaningful cross-jurisdictional comparisons and to allow valid aggregation of syndromic data at the national level, a pilot study was conducted to assess implementation of a common ILI syndrome definition across Distribute.

## Methods

Six jurisdictions provided 4 years of baseline ED data using a common ILI definition comprising 3 subsyndrome components defined by a formal code-set (Fig. 1). Distribute sites were invited to participate in the assessment based on geography, jurisdiction size and ED coverage. Invited sites were asked to provide historical data consisting of total and ILI-related daily visit counts by age group (<2, 2–4, 5–17, 18–44, 45–64 and 65+ years). The common ILI syndrome and subsyndrome case definitions for the pilot were defined from coded or free text

ED patient electronic chief complaint data as 'fever and cough', 'fever and sore throat', and 'flu'. Evaluation included comparison of syndrome time-series, subsyndrome and age-specific distribution of visits and signal-to-noise measures.

## Results

We found less variation between jurisdictions in weekly ratios using the common ILI definition (mean 2%; range 1.5–3.1%) than locally preferred syndromes (mean 4.9%; range 1.8–8.4%), and influenza epidemic signal-to-noise ratios were comparable for most jurisdictions during the study period. The findings suggest that the common syndrome improves comparability without an overall cost in terms of epidemic signal discrimination.

## Conclusions

The results of this common ILI assessment suggest that disparate local systems can adopt a harmonized syndrome definition allowing for meaningful comparisons and national aggregation while maintaining the ability to use local systems and definitions. The common ILI syndrome provided more directly comparable time-series, both during baseline periods and epidemics. Use of the common syndrome did not have an overall or systematic cost in terms of epidemic signal discrimination. Where the signal-to-noise ratio was not improved, differences were usually minimal. Also, the use of the common syndrome did not restrict the use of the locally defined syndromes for local detection. This collaborative pilot was useful in synthesizing local experience in the creation of a nationally harmonized ILI syndrome definition.

## Keywords

Influenza; surveillance; epidemiology; syndrome standard; emergency department

## References

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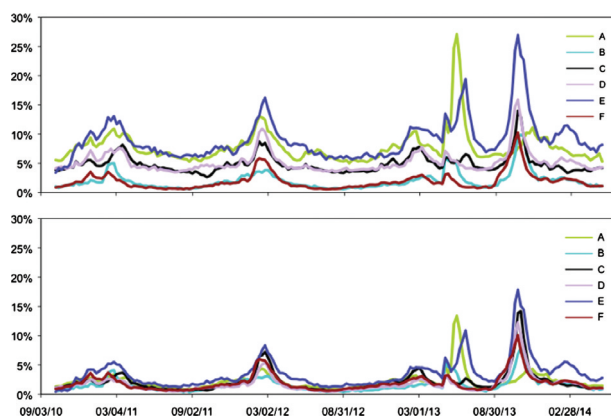


Fig. 1. Time-series of percent of total ED visits: locally preferred ILI (top) and common ILI (bottom) syndromes for six Distribute jurisdictions.