

# Enhancing Syndromic Surveillance through Cross-border Data Sharing

Brian E. Fowler<sup>1</sup>, MPH, Michael E. Wade<sup>2</sup>, MPH, MS, Robert J. Campbell<sup>1</sup>, PhD, Stephen J. DeFrancesco<sup>3</sup>, Shaun J. Grannis<sup>4</sup>, MD, PhD, David A. Trepanier<sup>2</sup>, MSEE  
*Ohio Department of Health<sup>1</sup>, Indiana State Department of Health<sup>2</sup>,  
Health Monitoring Systems, Inc.<sup>3</sup>, Regenstrief Institute, Inc.<sup>4</sup>*

## OBJECTIVE

The Ohio Department of Health (ODH) and the Indiana State Department of Health (ISDH) enhanced their individual syndromic surveillance efforts through cross-border sharing of emergency department (ED) chief complaint data.

## BACKGROUND

In the fall of 2006, the ODH and the ISDH proactively began general discussions regarding surveillance issues of mutual interest. Both states, having operational syndromic surveillance systems, thought value could be added to one another's program by sharing data across their common border. Ohio receives emergency department chief complaint data from 130 of its hospitals; Indiana from 76 hospitals. The ODH uses the EpiCenter System managed by Health Monitoring Systems (HMS), while the ISDH Public Health Emergency Service System (PHESS) uses Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE). Each state desired to view the new shared data through its own system. A formal memorandum of understanding was developed and signed by both states to support syndromic data sharing. Data began flowing between the two states in April, 2008.

## METHODS

Both states agreed upon a data sharing strategy that enhanced geographic coverage. To detect syndromic events and enhance situational awareness on either side of the states' common border, it was agreed that all chief complaint data from hospitals within a two-county vertical band on each side of the border would be shared. Furthermore, both states agreed to reciprocally send ED data pertaining to patients whose home residence was in the partner state, even if a patient sought care outside of the two-county vertical band.

## RESULTS

Individual-level chief complaint data are shared every 3 hours using an automated sFTP process. Each record includes facility name, encrypted patient ID, patient date of birth, patient gender, patient home zip code, admitted date and time, visit number, and free-

text chief complaint. Approximately 4,500 records are transmitted on a daily basis. Local and state-level epidemiologists began monitoring the shared data for health events soon after the project went live. The data transmission is continuously monitored for signs of interruption.

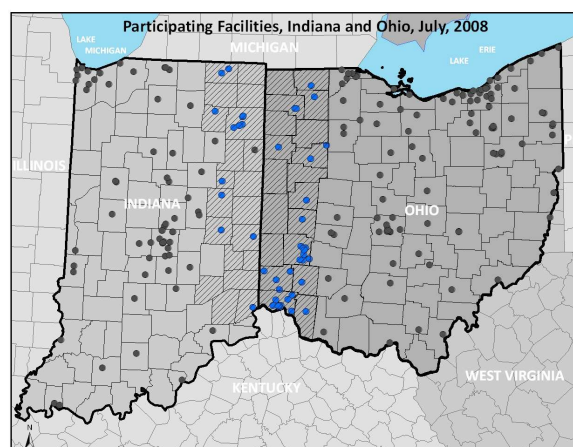


Figure 1—Map displaying Ohio and Indiana syndromic surveillance facilities (blue and black dots), shared region (diagonal stripe shading), and shared facilities (blue dots).

## CONCLUSIONS

Exchanging cross-border surveillance data in a real-world setting supports our previous belief that such data sharing offers significant value. Although both states had pre-existing operational syndromic surveillance systems, they were able to readily incorporate these data into distinctly separate applications because both states built their surveillance systems on a standards-based foundation. This eliminated the need to learn another analysis tool, allowing epidemiologists to seamlessly monitor health events in the expanded cross-border regions. Additionally, the success of this project provides a template for data sharing that may be helpful to other states. Finally, while this project focuses on sharing syndromic data, it provides a foundation for the electronic sharing of other data, such as acute and chronic reportable diseases across state boundaries.

Further Information:  
Brian Fowler, [brian.fowler@odh.ohio.gov](mailto:brian.fowler@odh.ohio.gov)