

Using School Sentinel Sites for the Early Detection of Influenza

Dr. Ximena Somoza, MPH, Anamika Pandya, MPH, CHES, Christy M. Vogt
Clay County Public Health Center, Liberty, Missouri

OBJECTIVE

This paper describes the application of syndromic surveillance data from area school districts to detect influenza epidemics in a county setting.

BACKGROUND

As public health surveillance is becoming more and more prevalent, new sources of data collection are more evident. One such data source is school absenteeism [1]. By monitoring the symptoms of illness recorded when students are absent, health departments ideally can pinpoint potential outbreaks prior to their existence, all at little to no cost. The symptoms reported may not amount to disease, but their increase in incidence may indicate the preliminary spread of illness. This surveillance tool is also used to develop community intervention containment practices.

METHODS

Data was collected from two Clay County school districts. When a child was called in sick to school, his or her symptoms were recorded. At the end of every week, all symptoms reported were sent to the district health coordinator to be aggregated into one spreadsheet. This spreadsheet was used to analyze the data. Rates among the various symptoms were calculated using enrollment rates provided from the schools. Graphs were constructed to view the change in number of cases as well as symptom rates over the course of the school year. Of the entire school-aged population in Clay County, 68.7% are monitored through these two school districts.

In a separate report, lab-confirmed influenza cases from county hospitals and medical offices for December 2007 through May 2008 were analyzed. This analysis documented the number of influenza cases over this time period. Symptoms reported to the schools related to influenza include respiratory illness (classified as any symptoms related to the lungs and nose, such as cough or congestion) and fever. These two reports were integrated to determine if there was any increase in symptoms prior to a surge of reported influenza cases.

RESULTS

Both school districts exhibited an increase in reported respiratory and fever symptoms before an increase in influenza cases occurred. School district one presented an escalation of both fever and respiratory reports four weeks prior to the increase of confirmed influenza cases. School district two demonstrated a

rise in fever cases six weeks before the influenza case increase. Reported respiratory symptoms from this district rose two weeks prior to the rise in influenza cases. Gaps in graphed data correspond to school closures during winter break.

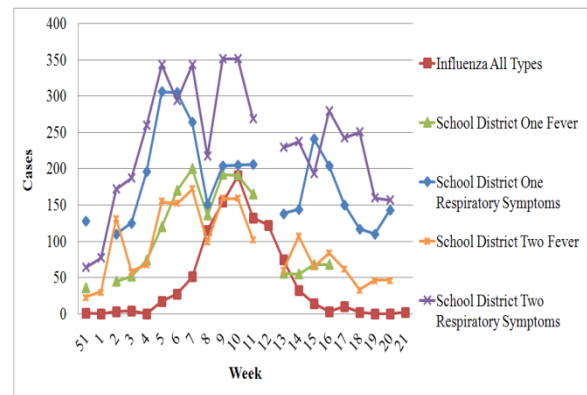


Figure 1 – Reported Fever and Respiratory Symptoms with Confirmed Influenza Cases

CONCLUSIONS

While this was the initial year the syndromic reports have been used for sentinel surveillance, it appears they can work effectively. The health center intends to continue this form of surveillance in the future to help detect and contain influenza, as well as other illnesses. The data acquired from this school year will serve as the baseline for future analyses.

Additionally, this data has been effective in identifying problem areas for students, such as hygiene, hand-washing behaviors, social distancing, and coughing and sneezing etiquette.

REFERENCES

[1] Buehler JW, Hopkins RS, Overhage JM, Sosin DM, Tong V, Framework for evaluating public health surveillance systems for early detection of outbreaks. *MMWR*. May 2004;53(RR05): 1-11.

Further Information:

Ximena Somoza, xsomoza@clayhealth.com