

Event Detection in a Vulnerable Population

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OBJECTIVE

This paper describes a cluster of *Streptococcus pneumoniae* infections identified through emergency department (ED) syndromic surveillance (SS).

BACKGROUND

The City of Atlanta, volunteer organizations, and the faith community operate several homeless shelters throughout the city. Services available at these shelters vary, ranging from day services, such as meals, mail collection, and medical clinics, to overnight shelter accommodations. In addition to the medical clinics available at these facilities, the Atlanta homeless population also utilizes emergency departments in Fulton County for their health care needs.

METHODS

The Georgia Division of Public Health (GDPH) monitors hospital ED chief complaint data daily using its State Electronic Notifiable Disease Surveillance System (SendSS). Data are transmitted to GDPH 7 days/week from 2 hospital EDs in Fulton County. Statistically significant data anomalies are detected using the Early Aberration Reporting System (EARS) [1]. The data and the results of these analyses are available to the participating facilities and district and state public health personnel.

RESULTS

On Monday, March 12, 2007, C1, C2, and C3 CuSum flags were generated for the bloody respiratory syndrome for ED visits on Sunday, March 11. Further inspection of these alerts revealed 8 ED visits for this syndrome statewide. Six of these were from the same ED in Fulton County, 2 of which were from residents of the same Atlanta zip code (Figures 1 and 2). This was the highest number of ED visits for bloody respiratory illnesses recorded at a single facility on a single day in the history of the GA SS Program.

Because of the unusually large number of ED visits for this syndrome at this facility and the corresponding zip-code clustering, the Fulton County Department of Health and Wellness (FCDHW) contacted the Infection Control Professional (ICP) at Hospital A. The ICP reported that the two patients from the same zip code also had the same address, a day shelter for the homeless.

Further investigation by the ICP revealed that four other patients with this address had been diagnosed

with invasive *S. pneumoniae* infections during the past 3 weeks. Test results from the two patients identified through syndromic surveillance were also positive for *S. pneumoniae*. As a result, an outbreak investigation jointly conducted by FCDHW, GDPH, and the Centers for Disease Control and Prevention was initiated.

Figure 1. Graph of Bloody Respiratory Syndrome

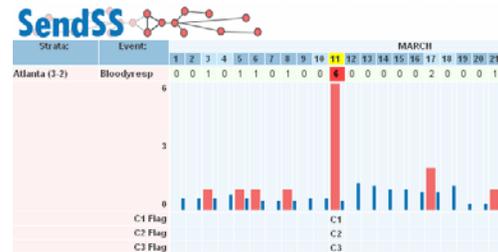
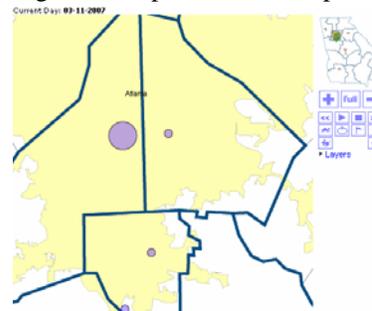


Figure 2. Map of Affected Zip Code



CONCLUSIONS

The alert generated by GA's ED-based syndromic surveillance system played a critical role in bringing this outbreak to the attention of public health officials. The ensuing investigation fostered an expanded relationship between public health and homeless service providers (shelters, food kitchens, and clinical services) and enhanced relationships with other community and federal partners. The collaboration between the FCDHW and the service providers for the homeless permitted an immediate evaluation of the health status of many registered homeless clients and enabled planning for future health promotion efforts at the local level. It has also increased notifiable disease reporting from homeless service providers.

REFERENCES

[1] Hutwagner L, Thompson W, Seeman GM, Treadwell T, The bioterrorism preparedness response early aberration reporting system (EARS), J Urban Health. 2003 Jun;80(2 Suppl 1):i89-96.

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