

Syndromic Surveillance Confirmation of Extended Influenza Season

Alan J. Siniscalchi, Matthew L. Carter, and James L. Hadler

State of Connecticut, Department of Public Health

OBJECTIVE

This paper examines the continued usefulness through the 2004-05 influenza season of a hospital admissions-based syndromic surveillance system as a supplement to laboratory surveillance to monitor severe influenza.

BACKGROUND

The 2003-2004 influenza season was notable for the early, intense and widespread circulation of a Type A drift variant and a resulting rush on vaccine followed by an abrupt decrease in activity by mid-January [1]. By contrast, the 2004-2005 influenza season began with a national vaccine shortage preceding any influenza activity with the resulting need for close monitoring of influenza activity.

The Connecticut Department of Public Health (DPH) developed its first syndromic surveillance system in September 2001 to monitor for possible bioterrorism events and emerging infections [2]. This system, known as the Hospital Admissions Surveillance System (HASS), receives daily reports from all 32 Connecticut acute care hospitals on their total unscheduled admissions in various diagnostic/syndromic categories. Information from one category, pneumonia admissions, has been tracked throughout the last four years as an indicator of influenza activity. The information has been utilized to supplement data from laboratory-confirmed influenza testing [3]. The contrasts between the 2003-04 and 2004-05 influenza seasons provided an opportunity to further examine the specificity of changes in pneumonia admissions as an index of severe influenza activity.

METHODS

Influenza is a laboratory reportable disease in Connecticut. Hospital microbiology departments and other approved clinical laboratories report each laboratory-confirmed test (LCT) to the DPH along with patient information and the identity of the influenza strain. Daily hospital, county and state pneumonia admissions were received from the HASS in 2004-05 and compared with 2003-04 laboratory data and HASS data from previous seasons.

RESULTS

In 2003-04 both laboratory-confirmed test (LCT) results and excess hospital pneumonia admissions revealed a rapid rise in activity that peaked in the week ending December 20, 2003 (2003 week 50) and

dropping below 100 weekly reports by mid-January (2004 week 3). In contrast, the current season revealed a gradual rise in these indices of influenza activity, initially peaking during January with sustained activity through March 7, 2005 (2005 week 7) and persistent activity through the week ending April 2, 2005 (2005 week 13). Statewide HASS pneumonia admission data reflect the both the short, rapidly rising, 2003-2004 season and the extended 2004-2005 season as measured by LCT reports. Figure 1 displays total weekly statewide pneumonia admission data, which remains above 400 cases through the week ending April 9, 2005 (2005 week 14).

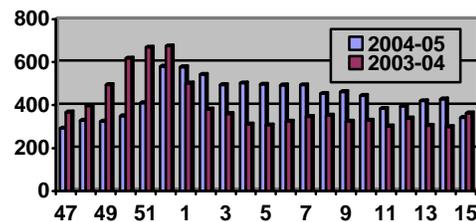


Figure 1 – Total statewide pneumonia admissions as an indicator of influenza activity.

CONCLUSIONS

The 2004-2005 influenza season can be characterized by a delayed increase and extended persistence of both laboratory confirmed tests and statewide pneumonia admissions compared to 2003-04. Connecticut's unique hospital admissions-based syndromic surveillance system proved to be a valuable tool in tracking and characterizing the impact of influenza on Connecticut morbidity during the past two influenza seasons.

REFERENCES

- [1] Siniscalchi AJ, Petrahai S, Dembek Z, DeLoreto A, Archambault G, Influenza in Connecticut: Understanding the 2003-2004 Season. Connecticut Epidemiologist. October 2004;24(4)13-16.
- [2] Dembek JF, Carley K, Siniscalchi A, Hadler J, Hospital Admissions Syndromic Surveillance – Connecticut, September 2001-November 2003. MMWR. Sept. 24, 2004;53(Supplement):50-52.
- [3] Hadler JL, Siniscalchi A, Dembek Z, Hospital Admissions Syndromic Surveillance: Experience monitoring serious rash illness and influenza. MMWR. 2005;54(Supplement, accepted for publication).

Further Information: Alan Siniscalchi,
alan.siniscalchi@po.state.ct.us