Influenza Surveillance in Connecticut: Understanding the 2005-06 Season While Preparing for Pandemic Influenza

Alan J. Siniscalchi, Maria T. Andrews, and Amanda Morrison

State of Connecticut, Department of Public Health

OBJECTIVE

This paper examines the continued usefulness, through the 2005-06 influenza season, of a hospital admissions-based syndromic surveillance system as a supplement to laboratory and clinical influenza surveillance in preparation for pandemic influenza.

BACKGROUND

In response to increasing reports of avian influenza being identified throughout the eastern hemisphere, the World Health Organization (WHO) and the U.S. Department of Health and Human Services (DHHS) have published pandemic influenza preparedness plans that include recommendations for enhanced surveillance [1,2]. In order to more closely track influenza, the Connecticut Department of Public Health (DPH) has been expanding its arsenal of surveillance systems. The DPH developed its first syndromic surveillance system in September 2001 to monitor for possible bioterrorism events and emerging infections [3]. 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 and syndromic categories. Information from one HASS category, pneumonia admissions, has been tracked throughout the last five years as an indicator of influenza activity. The information has been utilized to supplement data received from laboratory-confirmed influenza testing, influenza-like-illness (ILI) reporting, and pneumonia influenza mortality (PIM) to characterize the past three influenza seasons [4].

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. Daily HASS pneumonia admission data, along with weekly ILI & PIM data, were compared with actual LCT results to determine the effectiveness of these indirect flu activity measures to identify the peak flu activity week.

RESULTS

A review of LCT reports received during the current influenza season revealed a gradual rise in influenza isolates through the week ending January 28, 2006 (2006 week 4), peak flu activity during the week ending March 4, 2006 (2006 week 9) with persistent activity through the week ending April 22, 2006 (2006 week 16). HASS, ILI and PIM data correlated exactly with the peak LCT reports observed during the week ending March 4, 2006 (2006 week 9). Figure 1 displays total weekly statewide pneumonia admissions compared to LCT reports by 2006 week.

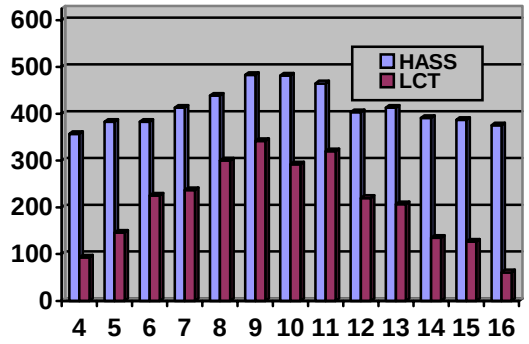

Figure 1 – Total HASS statewide pneumonia admissions as an indicator of influenza activity

CONCLUSIONS

The 2005-2006 influenza season can be characterized by a delayed increase and extended persistence of both laboratory confirmed tests and statewide pneumonia admissions as compared to previous seasons. Connecticut's unique hospital admissions-based syndromic surveillance system, in conjunction with other indirect measures of influenza activity, proved to be a valuable tool in tracking and characterizing the impact of influenza on Connecticut populations during the current season while enhancing our preparedness for pandemic influenza.

REFERENCES

[1] World Health Organization. WHO global influenza preparedness plan. 2005. WHO/CDS/CSR/GIP/2005.5

[2] US Department of Health & Human Services. Pandemic Influenza Plan. Supplement 1. Pandemic Influenza Surveillance. November 2005.

[3] Hadler JL, Siniscalchi A, Dembek Z, Hospital Admissions Syndromic Surveillance: Experience monitoring serious rash illness and influenza. MMWR. 2005;54(Supplement):169-173.

[4] Siniscalchi AJ, Brennan T., Influenza in Connecticut 2004-2005: Surveillance Identifies a Biphasic Influenza Season. Connecticut Epidemiologist. November 2005;25(4)17-20.

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