



# Connecticut Epidemiologist

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## Free Influenza Testing

Isolation and identification of circulating influenza virus strains are an important part of the Connecticut Department of Public Health's (DPH) influenza surveillance system. The DPH encourages physicians to submit throat swabs from patients with a typical influenza syndrome (abrupt onset of fever, myalgia, and cough) to the DPH Laboratory for virus isolation. Specimens should be collected no later than 3 days after onset of symptoms and sent immediately to the DPH Laboratory, on wet ice or cold packs if possible.

Throat swab collection kits (VRCs) may be obtained at no cost by calling the DPH Laboratory at 860- 509-8501. Health care providers can submit specimens for influenza testing at no charge from October 1, 2005 through March 31, 2006. Please check "181 V Influenza surveillance" on the microbiology test requisition form and provide all other necessary information. If you have any questions on specimen collection, handling, or transport, please contact the DPH Virus Laboratory at 860-509-8553.

## Influenza in Connecticut 2004-2005: Surveillance Identifies a Biphasic Influenza Season

Nationally, the 2003-2004 influenza season was notable for the early, intense and widespread circulation of an influenza A drift variant, outbreaks associated with high pediatric morbidity and mortality, and vaccine shortages (1). Connecticut also experienced an early and intense phase of influenza cases, however, the season did not appear to be accompanied by excess mortality (2).

At the onset of the 2004-2005 season, a national influenza vaccine shortage resulted in the federal Centers for Disease Control and Prevention (CDC) altering recommendations for vaccine use to focus on high-risk populations only. The Connecticut Department of Public Health (DPH) actively promoted these recommendations. Multiple surveillance systems were used to closely monitor

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influenza morbidity and mortality to provide accurate and timely public health advisories for Connecticut health providers and residents.

## Methods for Conducting Influenza Surveillance in Connecticut

Data from three surveillance systems were closely monitored between October 2004 and May 2005.

### Connecticut Influenza Surveillance System:

The DPH has tracked laboratory-confirmed influenza cases in Connecticut for over 10 years. Positive influenza findings are laboratory reportable. To promote submission of additional clinical specimens for confirmation and typing, free virology testing is available at the DPH Laboratory during the influenza season. Summaries of laboratory influenza testing data are examined daily to determine which strains are circulating, understand the overall disease prevalence, and ascertain demographic trends in attack rates (2).

In 2005, influenza-associated deaths in children <18 years of age were added to the list of physician reportable diseases (3). This was done to determine the magnitude, epidemiology, trends, and risk factors for deaths thought to be due to influenza in children <18 years old.

### Hospital Admission Surveillance System:

Influenza epidemics have long been associated with increased hospital admissions (4). The DPH Hospital Admission Surveillance System (HASS) was created within days after September 11, 2001 to monitor for possible bioterrorism events. It has

also provided information on the impact of influenza on respiratory morbidity and associated hospitalizations. Reports on acute, unscheduled admissions in various diagnosis/syndromic categories are received from all 32 acute care hospitals (2,5). Data from one category, "total statewide pneumonia admissions", were tracked throughout the 2004-2005 influenza season.

### 122 Cities Mortality Reporting System:

This CDC reporting system was also utilized by the DPH to assess the impact of influenza on mortality. It provided weekly reports from nine U.S. regions on deaths from all causes by age category. Four Connecticut cities (Bridgeport, Hartford, New Haven and Waterbury) supply death certificate data to the CDC as part of the New England reporting area (2). Weekly pneumonia and influenza deaths in these cities were examined and compared with the influenza and hospital admission surveillance.

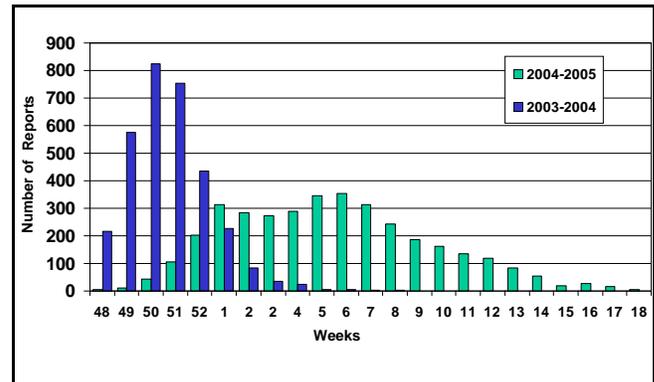
### Results of 2004-2005 Influenza Surveillance in Connecticut

As in the previous influenza season, information from these surveillance systems showed remarkable correlation that proved useful in understanding the course of influenza and influenza-like illness in Connecticut.

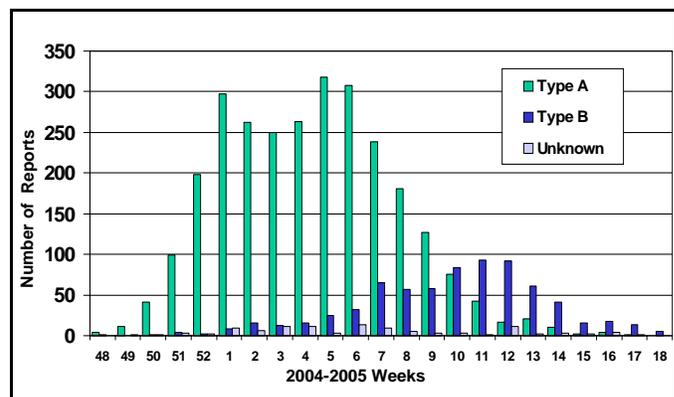
### Connecticut Influenza Surveillance System:

The DPH received the first reports of laboratory-confirmed influenza tests (LCT) during the week ending October 30, 2004. The 2003-2004 season peaked at 825 reports during the week ending December 20, 2003. In contrast, the 2004-2005 season revealed a gradual rise in LCT that peaked at only 353 reports during the sixth week of 2005. The 2004-2005 season was more persistent, with cases received through the week ending May 7, 2005 (week 18, Figure 1). During this most recent season, LCT reports were also evaluated by influenza type. While Type A influenza cases peaked during week 5, a separate second peak of Type B influenza is evident during the weeks ending March 19 and 26, 2005 (weeks 11 and 12, Figure 2). Type B influenza cases represented the vast majority of LCT results received during the spring and contributed to the prolonged 2004-2005 influenza season. A total of 3,614 LCT reports were received during the 2004-2005 season, representing an 8.7% increase over the previous influenza season.

**Figure 1. Comparing Two Influenza Seasons in Connecticut: Laboratory Confirmed Tests**



**Figure 2. The 2004-05 Influenza Season in Connecticut: Laboratory Confirmed Tests**

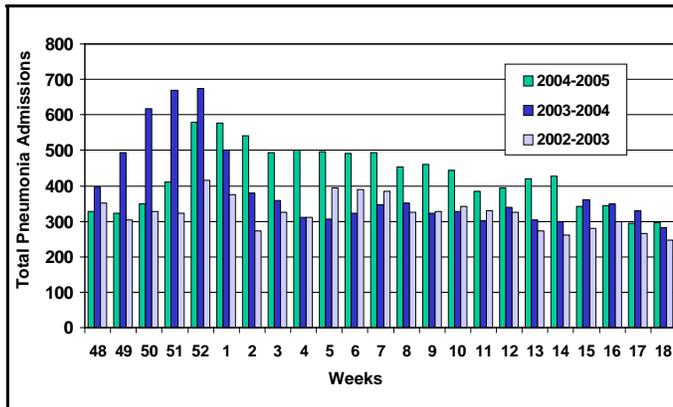


### Hospital Admission Surveillance System (HASS):

A review of the HASS weekly statewide pneumonia hospital admissions data revealed an increase in admissions starting the week ending December 18, 2004 (week 50). The 2003-2004 season peaked at 675 statewide pneumonia admissions. The 2004-2005 season peak was limited to 580 statewide pneumonia admissions during the week ending January 1, 2005 (2005 week 52). While 2003-2004 reports of statewide pneumonia admissions generally returned to background levels by the week ending January 24, 2004 (2004 week 3), 2004-2005 statewide admissions remained elevated through the week ending April 24, 2005 (2005 week 16, Figure 3). These two seasons of pneumonia admissions were also compared with HASS data from the 2002-2003 season. This comparison revealed that the persistently elevated pneumonia admissions observed in the 2004-2005 influenza season were not present in the previous two

seasons (Figure 3). Interestingly, both the 2003-2004 early pneumonia admissions peak and the 2004-2005 persistent pneumonia admissions plateau illustrated in Figure 3, closely parallel changes in LCT reports for each season (Figure 1).

**Figure 3. Connecticut Hospital Pneumonia Admissions: A Three Season Comparison**



**CDC 122 Cities Mortality Reporting System:** The percentage of pneumonia and influenza (PnI) deaths among total deaths reported by the four participating Connecticut cities were monitored throughout the 2004-2005 influenza season. The percent of PnI mortality among all causes of death were compared for all 122 US, 14 New England and four Connecticut participating cities. A relative increase in the percentage of PnI deaths in the four reporting Connecticut cities was observed during 2005 weeks 6 through 12. Nationally, a decrease in the overall percentage of PnI deaths was observed during the same time period.

A weekly report summarizing the results of influenza surveillance was prepared and distributed to local health departments, hospitals and other providers. This information was also incorporated into news reports that were distributed to Connecticut press and electronic media. These reports provided timely information on Connecticut influenza cases along with vaccination recommendations to health providers, local health officials and members of the public. Continued use of surveillance-based updates in subsequent influenza seasons will expand collaborative efforts to enhance influenza pandemic preparedness planning associated with concerns of avian flu in Asia (5,6,7,8).

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**Editorial Note:** A less severe, but more persistent level of influenza activity was observed in the U.S. during 2004-2005 compared to the previous season. During late March through May, type B influenza viruses were more frequently isolated than type A (6). The data generated from these surveillance systems revealed that Connecticut also experienced a very persistent season. The late season preponderance of type B influenza viruses was even more striking in Connecticut, with a separate peak of activity seen during mid- to late March.

These influenza surveillance systems were limited in their individual capacity to track influenza morbidity and mortality. Despite these limitations, monitoring of all surveillance systems can provide useful information to assess the impact of influenza on Connecticut residents. The reports generated from these surveillance data proved valuable in monitoring the 2004-2005 influenza season, assessing the impact of influenza on Connecticut residents, and determining the need to alter vaccination recommendations.

Increased concern about development of an influenza pandemic has resulted from the continued isolation of avian influenza A (H5N1) strains from human infections in Southeast Asia (6,7,8,9). The DPH will conduct enhanced influenza surveillance during 2005-2006 which will include tracking cases of influenza-like illness reported by Connecticut sentinel providers and additional strain characterization of clinical isolates.

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**In This Issue...**

**Free Flu Testing, Influenza in CT 2004-2005, Flu Information for Health Care Professionals**

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**For Public Health Emergencies  
after 4:30 P.M. and on weekends  
call the  
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emergency number  
(860) 509-8000**

***Influenza Information for  
Health Care Professionals***

**The CDC has extensive influenza  
information available to Health Care  
Professionals on their website:**

<http://www.cdc.gov/flu/professionals/>

**Flu clinics can be found on the American  
Lung Association's site:**

<http://www.flushotsearch.org/>

**To learn about "Hand Hygiene in the  
Healthcare Setting", go to:**

<http://www.cdc.gov/handhygiene/>

**Facts About Influenza for Adults can be  
found at the Connecticut DPH:**

<http://www.dph.state.ct.us/BCH/flu/pubflu.html>

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