

Influenza Surveillance, Connecticut, 2016-17 Season

This report summarizes Connecticut's 2016-17 annual influenza surveillance activity from August 28, 2016 - August 26, 2017.

Surveillance Methods

Surveillance systems included laboratory, hospital, and provider-based reporting (1,2). Laboratories were required to report positive influenza test results. The DPH also requested submission of specimens from all hospitalized patients suspected to have influenza to the State Public Health Laboratory for subtyping. Hospitals reported influenza-associated hospitalizations and participated in two syndromic surveillance systems. The Hospital Emergency Department Syndromic Surveillance (HEDSS) System provided daily reports on the proportion of ED patient visits that were attributed to a "fever/flu" syndrome, and the Hospital Admissions Syndromic Surveillance (HASS) System provided daily reports of unscheduled pneumonia admissions. The Influenza-like Illness Network (ILINet) is comprised of volunteer outpatient health care providers that report the weekly proportion of patients exhibiting ILI (a cough or sore throat in the absence of a known cause and the presence of a fever >100°F, 37.8°C). Since 2009, health care providers are required to report influenza-associated hospitalizations and deaths among patients of any age (3). Data from these systems were compared with data collected during the previous two seasons.

Surveillance Results

From August 28, 2016 – August 26, 2017, the DPH received a total of 8,536 reports of positive influenza tests. Of these, 6,935 (81%) were type A viruses, 1,601 (19%) were type B viruses. Of the 1,216 (18%) type A isolates that were subtyped, 1,188 (98%) were type A (H3N2), and 28 (2%) were type A (2009 H1N1) influenza. Most of the influenza B viruses were identified during the latter part of the season (Figure 1, page 22).

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Positive results were reported from residents of all 8 Connecticut counties and included: 2,775 (33%) from Fairfield County, 2,131 (25%) from Hartford County, 2,053 (24%) from New Haven County, 424 (5%) from New London County, 384 (4%) in Windham County, 339 (4%) from Tolland County, 242 (3%) in Middlesex County, and 188 (2%) from Litchfield County.

The percentage of outpatient ILI visits remained above 1% statewide from October 2016 through mid-May 2017. The seasonal peak level of 5.5% was observed during the week ending February 11, 2017, MMWR week 6. This peak level was higher and earlier than those observed during the 2013-14 and 2015-16 seasons; however, it was lower than the 6.4% peak observed during the 2014-15 season.

The percentage of "fever/flu" ED visits as measured by HEDSS generally exceeded 5% from late December 2016 through late April 2017. A peak level of 10.3% was observed during the week ending February 5, 2017, MMWR week 5. This unusually high level exceeded those observed during both the 2014-15 and 2015-16 season peaks (Figure 2, page 22). Moreover, peak week "fever/flu" ED visits in excess of 10% were only previously measured during the 2009 H1N1 Flu Pandemic (>15%) and the 2012-13 flu season (>12%).

The percentage of weekly hospital pneumonia admissions as measured by HASS remained above 4% of all unscheduled admissions statewide, from December 2016 through February 2017. Seasonal peaks of 5.3% during the week ending January 7, 2017, MMWR week 1, and 4.9% during the week ending February 18, 2017, MMWR week 7, were

seen. These results were similar to those seen during the previous two seasons.

A total of 2,565 persons hospitalized with influenza-associated illness were reported, and included 2,049 (80%) type A and 516 (20%) type B

viruses. Of the 392 type A isolates that were subtyped, 383 (98%) were type A (H3N2), and 9 (2%) type A (2009 H1N1) virus. A total of 65 deaths were reported, including 7 (11%) patients with type A (H3N2), 1 (<2%) with type A (2009

Figure 1. Positive Laboratory Tests (n=8,536) by Influenza Subtype and Week, Connecticut, August 2016-August 2017

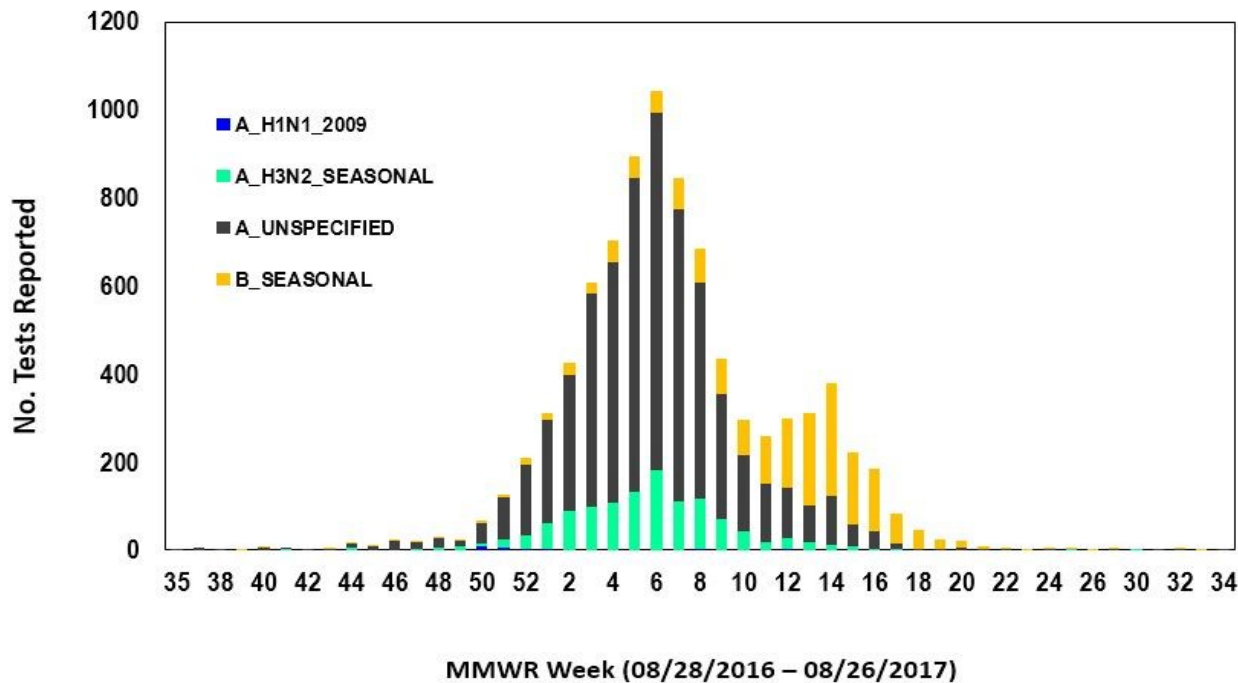
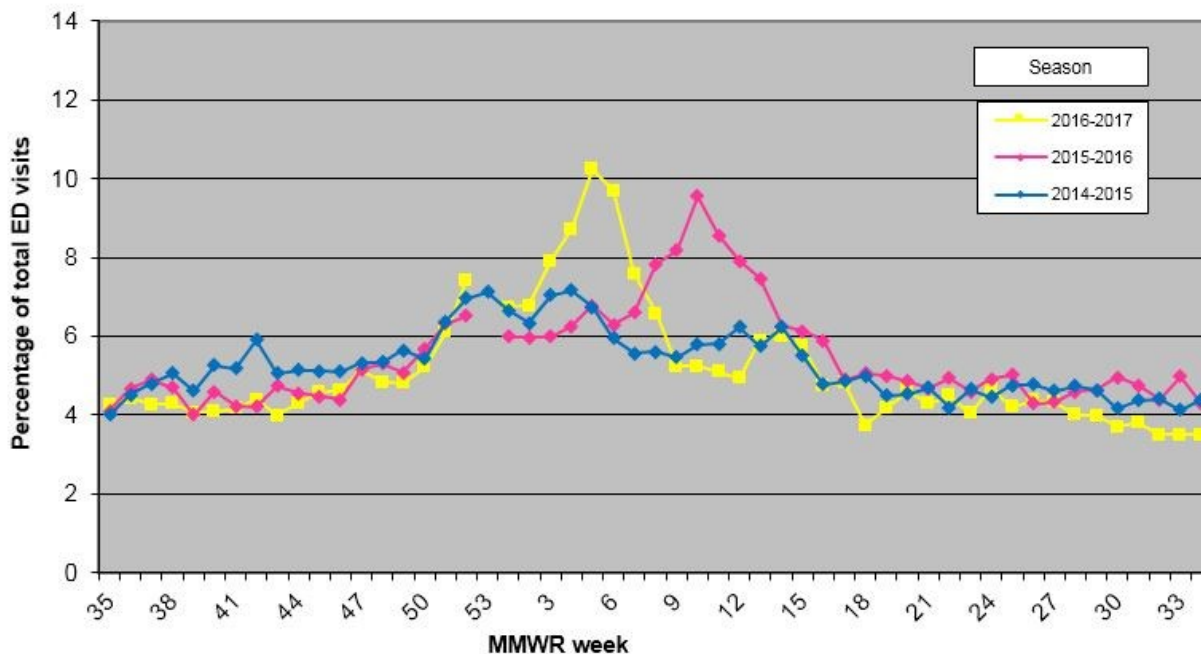


Figure 2. Connecticut Hospital Emergency Department Syndromic Surveillance (HEDSS) System: Percentage of Total ED Visits for the “Fever/Flu Syndrome” Category by Week, Connecticut, 2016-17 Influenza Season Compared to Past Seasons



H1N1), 48 (74%) with type A subtype unspecified, and 9 (14%) with type B influenza. Ages varied among case-patients and included 54 (83%) aged > 65 years, 7 (11%) aged 50-64 years, 2 (3%) aged 25-49 year, 1 (<2%) aged 18-24 years, and 1 (<2%) aged 1-4 years of age. Overall, 0.76% of patients with positive influenza tests and 2.5% of hospitalized patients with confirmed influenza infection, died.

Surveillance showed two waves of influenza in Connecticut. The first distinct wave was predominantly due to circulation of influenza A (H3N2) viruses, which peaked during the week ending February 11, 2017. Influenza B viruses were the predominant strain during a second wave, which peaked during the week ending April 8, 2017 (Figure 1, page 22).

Reported by

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Editorial

Use of multiple surveillance systems provide the DPH with valuable information on the impact of seasonal influenza on Connecticut populations. While laboratory data identifies current circulating viruses, and reporting of laboratory-confirmed influenza associated hospitalizations and deaths provides direct measures of severe adverse health outcomes, syndromic surveillance systems provide early indications of a range of health outcomes. Use of the automated HEDSS System, in particular, provides data useful for both rapid analysis of short-term changes as well as seasonal comparisons, and identified the 2016-17 season as having the third highest level of flu activity during the past decade.

To further improve the efficiency of influenza surveillance, the DPH is implementing electronic laboratory reporting, increasing HEDSS automation, and improving local health department access to jurisdiction-specific data through the web-based Connecticut Electronic Diseases Surveillance System. Expanding HEDSS to include the case-patient's disposition will improve tracking of influenza-associated hospitalizations and deaths. Moreover, expanded use of automated systems will

ensure the continued flow of surveillance data during influenza pandemics when hospitals may experience increased patient admissions and understaffing due to employee illness.

References

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3. Connecticut Department of Public Health, Changes to the List of Reportable Diseases. Connecticut Epidemiologist. October 2009; 29(6)21. Available at: http://www.ct.gov/dph/lib/dph/infectious_diseases/ctepinews/vol29no6.pdf.

Influenza Surveillance, 2017-2018 Season: Summary of Instructions for Hospitals

Influenza-associated deaths and influenza-associated hospitalizations are reportable to the Connecticut Department of Public Health (DPH). This information is shared by DPH with the relevant local health departments using the Connecticut Electronic Disease Surveillance System (CTEDSS).

Influenza-associated Deaths

- All possible influenza-associated deaths must be reported within 12 hours, even if influenza was not the primary cause of death.
- Respiratory specimens should be saved for post-mortem PCR testing.
- For after hours or holiday reporting, report on the next normal business day.

Influenza-associated Hospitalizations

- Must be reported within 12 hours on the day of recognition or strong suspicion of possible influenza infection (i.e. patients with compatible illness regardless of the results of the initial rapid antigen and/or direct fluorescent antibody test).
- Respiratory specimens from all influenza-associated hospitalizations should be submitted to the DPH State Public Health Laboratory (SPHL) for polymerase chain reaction (PCR) testing. Please see the submission criteria and detailed packing and shipping instructions at:

http://www.ct.gov/dph/lib/dph/infectious_diseases/flu/pdf/flu_lab_instructions.pdf

- For after hours or holiday reporting, report on the next normal business day.
- The Emerging Infections Program (EIP) at the Yale School of Public Health conducts enhanced surveillance activities for residents of Middlesex and New Haven Counties on behalf of the DPH. The goals of enhanced surveillance are to determine age-specific rates of influenza-associated hospitalizations, rates and risk factors for serious complications, effect of surveillance methods, and level of adherence to vaccination recommendations.
- Staff of the DPH or Yale EIP may request supplemental information on patients. If you have questions, please contact Alan Siniscalchi (DPH: 860-509-7994) or Kim Yousey-Hindes (Yale: 203-764-5942).

Influenza Testing Procedures During the 2017-2018 Flu Season

To monitor circulating influenza viruses throughout the flu season, rapidly identify novel influenza strains, and determine the effectiveness of this season’s vaccines, the Connecticut Department of Public Health (DPH) will provide influenza testing at the Katherine A. Kelley Public Health Laboratory. Health care providers are encouraged to submit respiratory specimens obtained from patients who present with influenza-like illness (ILI) (fever >37.8°C [100°F] AND cough or sore throat), regardless of rapid flu testing status. Influenza testing is provided at no cost for patients in one of the following categories:

1. All hospitalized patients with ILI,
2. All patients with ILI and recent close exposure to swine, sick poultry at farms and agricultural settings, or migratory birds (note exposure to swine, poultry, wild ducks and other migratory birds);

3. All patients with pneumonia and/or Acute Respiratory Distress Syndrome that developed within 17 days of travel to Southeast Asia or within 14 days of travel in or near the Arabian Peninsula. Health care providers should contact the DPH Epidemiology and Emerging Infections Program (EEIP) at 860-509-7994 (or 860-509-8000 evenings/weekends/holidays) regarding possible avian flu or Middle East Respiratory Syndrome Coronavirus testing (provide travel history);
4. Selected non-hospitalized patients with:
 - ILI including patients of ILI network providers;
 - patients associated with outbreaks in long-term care facilities or schools;
 - cases of severe respiratory illness with or without fever in children

Health care providers may call the Virology Laboratory at 860-920-6662 for questions on preparing specimens for testing. Clinical specimens submitted to the Katherine A. Kelley Public Health Laboratory for influenza or respiratory virus testing must be accompanied by a completed Clinical Test Requisition Form OL-9B, available at: http://www.ct.gov/dph/lib/dph/laboratory/labhome/forms/clinical_test_requisition_ol9b_fill.pdf

Please also see the submission criteria and detailed packing and shipping instructions at: http://www.ct.gov/dph/lib/dph/infectious_diseases/flu/pdf/flu_lab_instructions.pdf

Influenza polymerase chain reaction (PCR) specimen collection kits may be requested by calling Scientific Support Services at 860-920-6674 or by submitting an email request to: dph.outfitroom@ct.gov.

All other questions regarding influenza and respiratory viral panel testing for enterovirus and other respiratory viruses may be directed to the EEIP at 860-509-7994.

<p>Raul Pino, MD, MPH Commissioner of Public Health</p> <p>Matthew L. Cartter, MD, MPH State Epidemiologist</p> <p>Lynn Sosa, MD Deputy State Epidemiologist</p>	<p>Epidemiology and Emerging Infections 860-509-7995 Healthcare Associated Infections 860-509-7995 HIV & Viral Hepatitis 860-509-7900 Immunizations 860-509-7929 Sexually Transmitted Diseases (STD) 860-509-7920 Tuberculosis Control 860-509-7722</p>	<p>Connecticut Epidemiologist</p> <p>Editor: Matthew L. Cartter, MD, MPH</p> <p>Assistant Editor & Producer: Starr-Hope Ertel</p>
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