



Influenza Final Surveillance Summary for 2015-2016 Influenza Season

The following summary describes influenza activity in Connecticut from August 30, 2015 through August 27, 2016 including the 2015-2016 influenza season which traditionally is considered the 8 month period from October through May. Overall, 2015-2016 influenza activity was generally lower than that observed during the 2014-2015 season. The 2015-2016 influenza season was characterized with a single activity wave that peaked in March 2016. Please also see previous Connecticut annual influenza season summaries, which are located on our Influenza Statistics webpage: <http://www.ct.gov/dph/cwp/view.asp?a=3136&q=410788&dphPNavCtr=#48059>

In Connecticut, the Department of Public Health (DPH) utilizes multiple surveillance systems to monitor for circulating influenza flu viruses and track various indicators of influenza-associated illness. Data from these various surveillance systems were reviewed and updated each week. A summary of the surveillance findings of these various systems during this 2015-2016 monitoring period are described below:

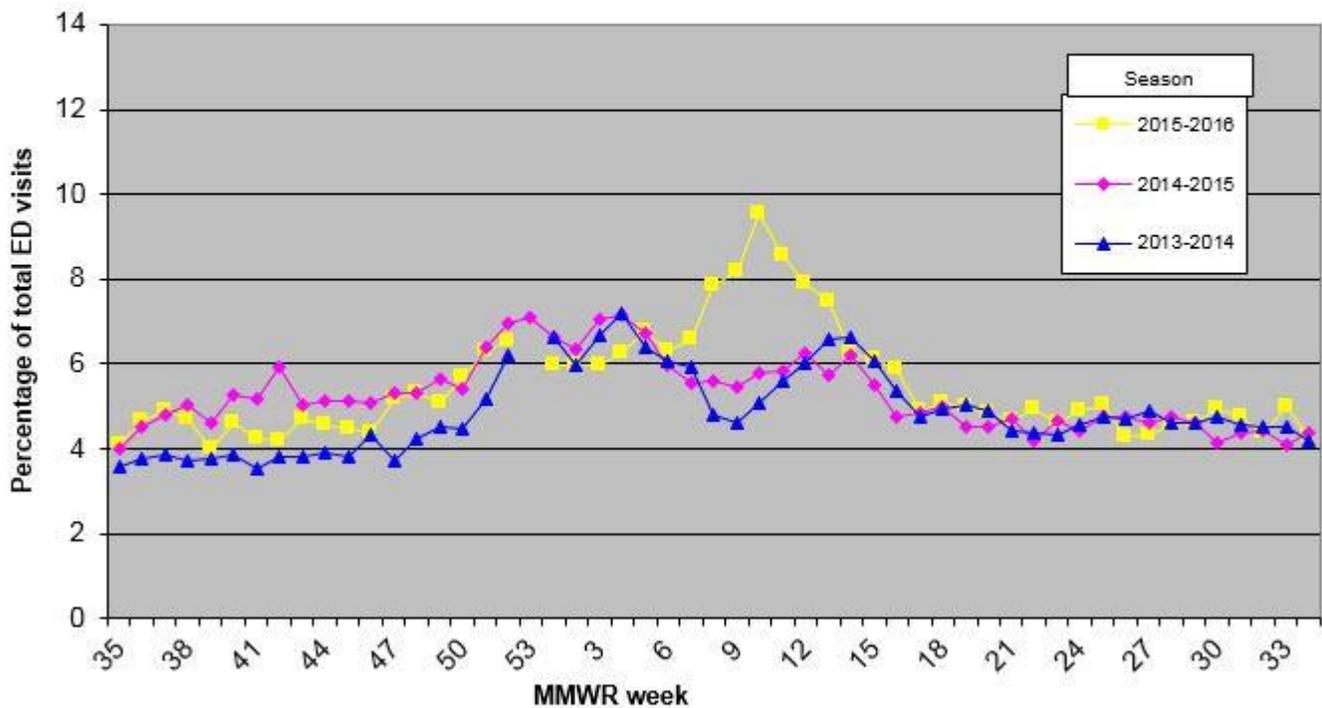
- The DPH examines the percentage of total emergency department (ED) visits attributed to the “fever/flu” syndrome category each week to identify periods when these visits exceed a level of 5% statewide; generally considered the minimum threshold when there are elevated influenza-associated ED visits. During the 2015-2016 influenza season, the percentage of “fever/flu” ED visits exceeded 5% from late November 2015 through late April 2016. A peak level of 9.6% was observed during the week ending March 12, 2016, MMWR week 10 (Figure 1).
- The DPH examines the percentage of outpatient visits to a network of 28 non-hospital based providers with influenza-like illness (ILI) each week to determine when these visits exceed a level of 1% statewide; generally considered the baseline when there are increased influenza-associated visits in the outpatient setting. During the 2015-2016 influenza season, the percentage of outpatient ILI visits remained above 1% statewide from October 2015 through May 2016. The seasonal peak level of 4.2% was observed during the week ending February 13, 2016, MMWR week 6. Peak ILI activity remained above 3.5% through the week ending March 12, 2016, MMWR week 10 (Figure 2).
- The DPH also examines the percentage of unscheduled hospital admissions due to pneumonia each week to determine when these admissions exceed a level of 4% of all unscheduled hospital admissions statewide; generally considered the baseline when there may be increased pneumonia hospitalizations due to influenza and other severe respiratory infections. The percentage of weekly hospital pneumonia admissions remained above 4% of all unscheduled admissions statewide, from December 2015 through March 2016 with a seasonal peak of 4.7% during the week ending March 12, 2016, MMWR week 10 (Figure 3).
- Influenza associated hospitalizations have been reportable in Connecticut since October 2009. During the 2015-2016 influenza season, a total of 1,538 persons hospitalized with influenza-associated illness were reported, including 1,196 (78%) Type A and 342 (22%) Type B influenza. Of the 326 Type A isolates that were subtyped, 306 (94%) were Type A (2009 H1N1), with only 20 (6%) being Type A (H3N2) influenza (Figure 4).
- Influenza associated deaths of individuals 18 years of age or younger have been reportable in Connecticut since January 2005 and influenza associated deaths of all ages since October 2009. A total of 37 influenza associated deaths were reported, including 4 in patients with Type A (2009 H1N1), 1 in a patient with Type A (H3N2), 24

in patients with Type A subtype unspecified, and 8 in patients with Type B influenza. Of these, 24 (65%) were among patients greater than 65 years of age, 10 (27%) were 50-64 years of age, and 3 (8%) were 25-49 years of age (Figure 5).

- The DPH also tracks reports of laboratory-confirmed influenza. Positive results were reported from residents of all 8 Connecticut counties and included: 1,875 from Fairfield County, 1,702 from New Haven County, 1,682 from Hartford County, 319 Tolland County, 264 New London County, 193 Litchfield County, 182 Windham County, and 145 from Middlesex County. Of the 6,362 positive influenza reports, 4,393 (69%) were Type A, 1,969 (31%) were Type B. Of the 1,378 Type A isolates that were subtyped, 1,313 (95%) were Type A (2009 H1N1), with only 65 (5%) identified as Type A (H3N2) influenza (Figure 6 & 7).
- The 2015-2016 influenza season was characterized by a single activity wave with a delayed peak as compared with recent influenza seasons. This activity wave was predominantly comprised of influenza A (2009 H1N1) virus, and peaked during the week ending March 12, 2016, MMWR week 10. An increasing percentage of influenza B infections were reported in Connecticut, starting in March 2016. These became the predominant flu type reported in late April and May, 2016.
- Although the percentage of outpatients with influenza-like illness (ILI) and the percentage of hospitalized patients with pneumonia were lower than those observed during the previous 2014-2015 flu season (Figures 2 & 3), the peak weekly percent total emergency department (ED) visits attributed to the “fever/flu” syndrome category seen during the 2015-2016 season exceed peak weekly ED visits seen during the previous two seasons (Figure 1). The lower number of flu-associated hospitalizations and deaths and lower overall flu activity observed during the 2015-2016 influenza season may be associated with the low number of Type A (H3N2) influenza viruses in circulation, as these viruses are generally associated with more severe illness. All injectable flu vaccines were also a good match with circulating influenza strains during the 2015-2016 influenza season.

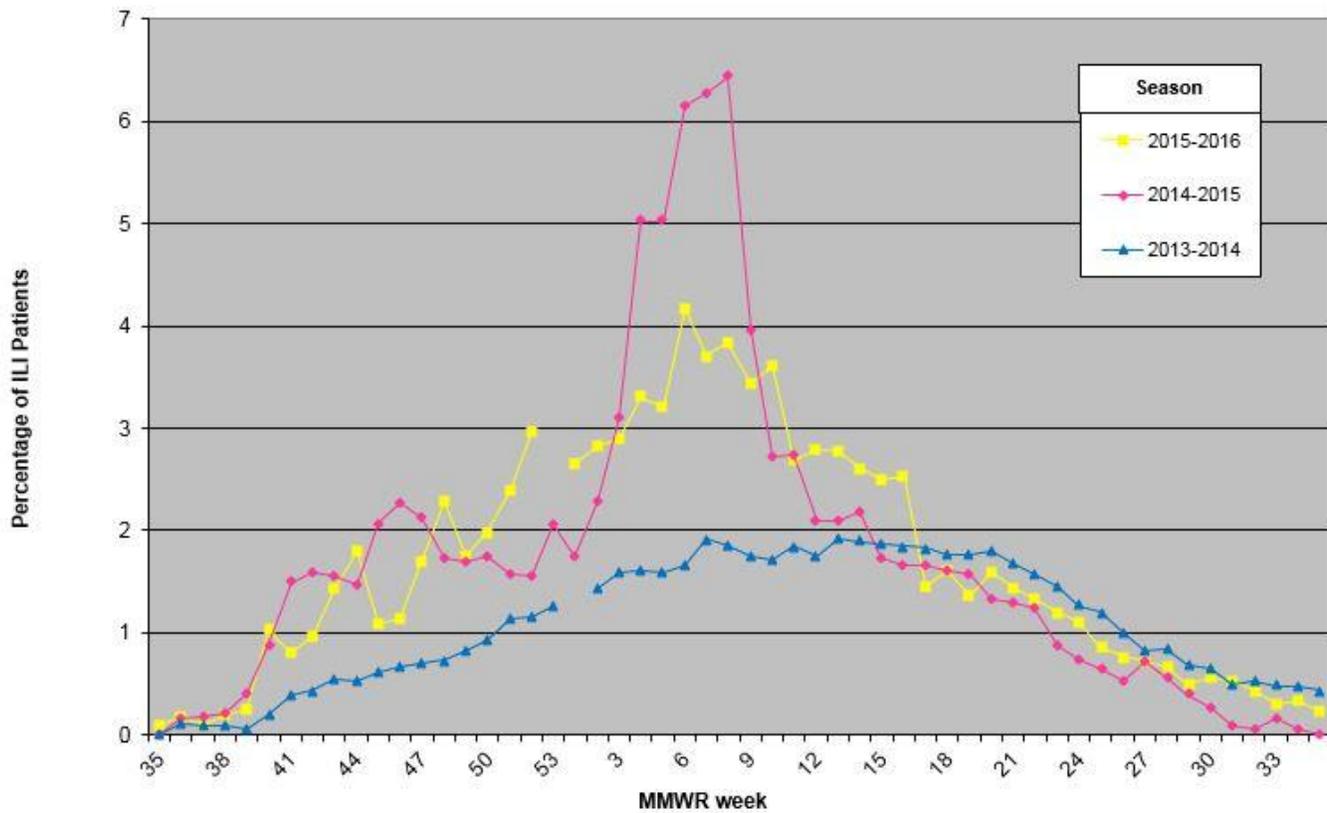
The Hospital Emergency Department Syndromic Surveillance (HEDSS) System receives daily electronic reports on ED visits from more than half of Connecticut's acute care hospitals. Data include a listing of total patient visits with information on their chief complaint, including fever/flu.

Figure 1. Connecticut Hospital Emergency Department Syndromic Surveillance (HEDSS) System: Percentage of total ED visits for "fever/flu" syndrome category 2013-14, 2014-15, 2015-16



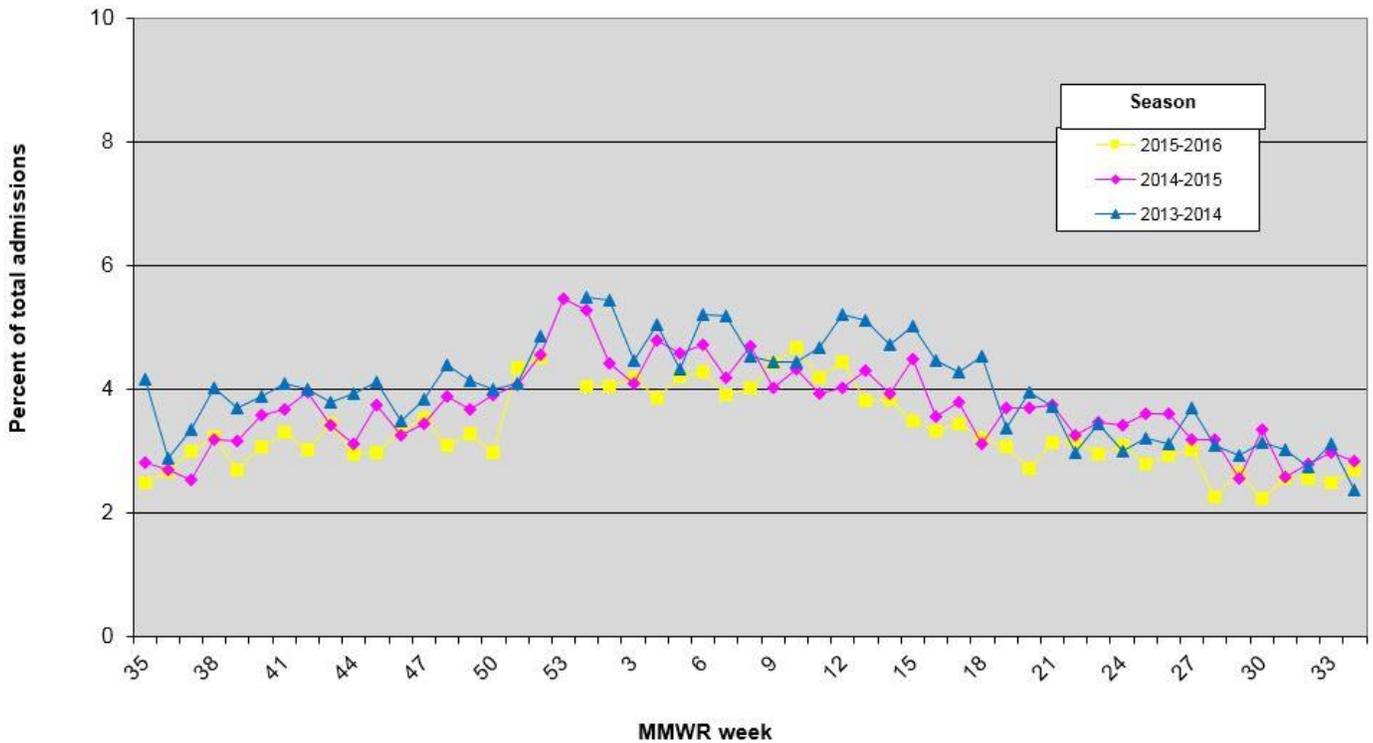
Sentinel Provider Surveillance System: Reporting of influenza-like illness (ILI) is conducted through a statewide network of volunteer outpatient providers known as ILINet. The proportion of patients exhibiting ILI is reported to the DPH on a weekly basis. ILI is defined as a cough or sore throat in the absence of a known cause, and the presence of a fever > 100° F.

Figure 2. Outpatient Influenza-Like Illness Surveillance Network (ILINet), Percentage of Patients with Influenza-Like Illness (ILI); 2013-14, 2014-15, 2015-16



The **Hospital Admissions Syndromic Surveillance (HASS) System**, receives daily electronic reports from all 32 acute care hospitals in Connecticut. Information on unscheduled admissions, including those for pneumonia that may be associated with influenza infections, is submitted.

Figure 3: Connecticut Hospital Admissions Syndromic Surveillance (HASS) System, Percentage of total statewide admissions for pneumonia; 2013-14, 2014-15, 2015-16



Influenza-associated Hospitalizations: In Connecticut, influenza-associated hospitalizations and deaths are reportable. Data collected describe the more serious illnesses associated with influenza infections.

Figure 4. Hospitalized Patients (n = 1538) with Positive Lab Tests by Subtype & Week

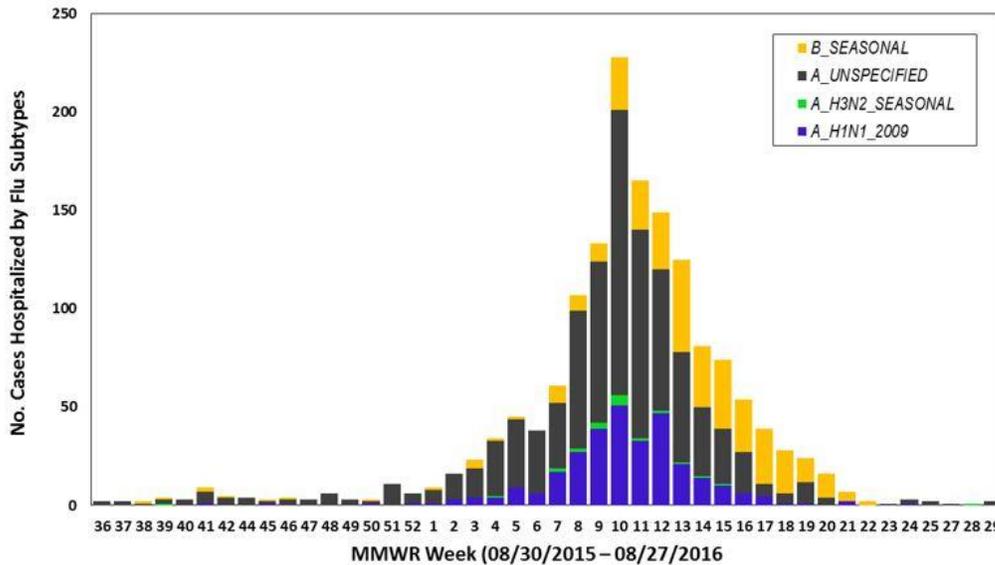
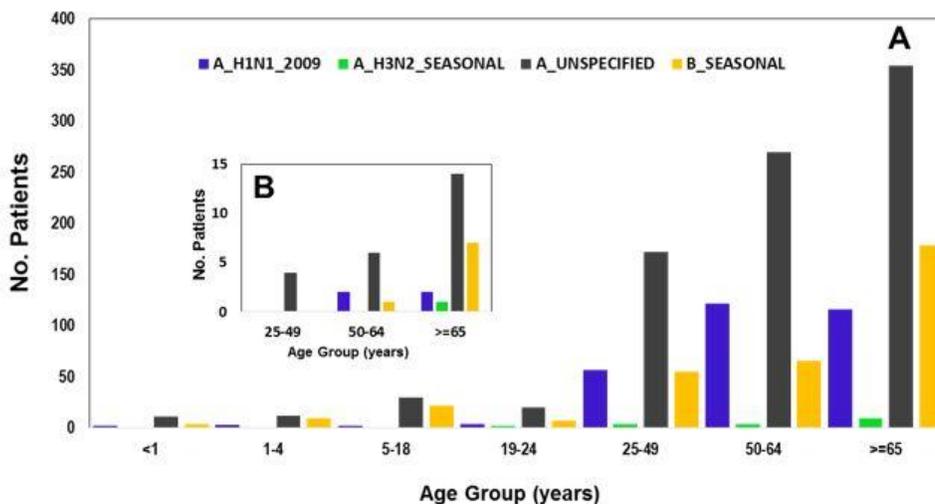


Figure 5. Hospitalized Patients (A, n=1538) and Flu-Associated Deaths (B, n=37) with Positive Laboratory Tests by Influenza Subtype and Age Group, Connecticut



Laboratory Surveillance: Positive influenza tests are laboratory reportable findings in Connecticut. The DPH tracks these results to determine what types, subtypes, and strains are circulating.

Figure 6. Positive Laboratory Tests (n = 6362) by Influenza Subtype and Week, Connecticut

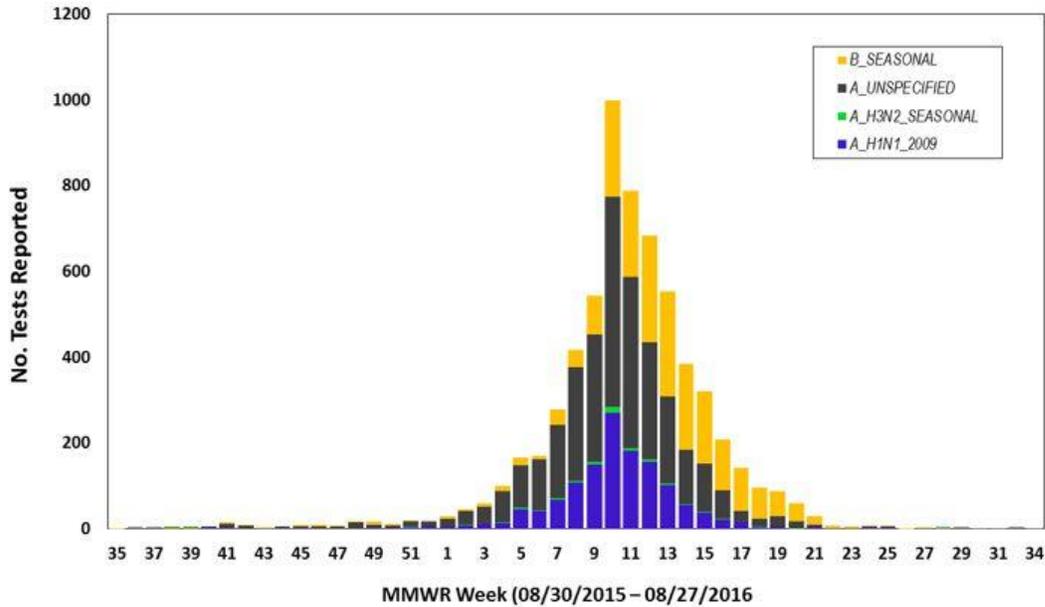


Figure 7. Proportion of Cumulative Positive Laboratory Tests (n = 6362) by Influenza Subtype, Connecticut

