2017-2018 Influenza Season, Update for Week 15*

(Week ending Saturday, 04/14/2018)

Key Points

- ✓ National influenza activity continues to decrease from its peak nine weeks ago, but remains elevated within several regions of the continental United States including the Northeast. The U.S. Centers for Disease Control and Prevention (CDC) recently reported an additional weekly decrease (from 2.4 to 2.1%) in the percentage of people seeing their health care provider with influenza-like-illness (ILI), which continues to decline from the high percentage (7.7 %) observed during the peak weeks of the current 2017-2018 flu season.
- ✓ Influenza activity in Connecticut, which had decreased from its peak in early February, had increased during the previous several weeks, in part, due to increased circulation of influenza B viruses. This small second wave of influenza activity, which can be observed in most surveillance system graphs, now appears to be decreasing. This second wave of activity is especially apparent in the increased percentage of patients with influenza-like illness presenting to hospital emergency departments and outpatient providers, along with the increased number of laboratory confirmed flu cases and flu-associated hospitalizations. We have again received reports of several new flu-associated deaths during the past week in Connecticut.
- ✓ Classification of Connecticut geographic activity continues at **widespread****.
- ✓ Although influenza A (H3N2) viruses have been predominate within the US and Connecticut for most of the 2017-2018 season, numbers of influenza B viruses are now circulating in greater numbers than influenza A viruses.
- ✓ As elevated flu activity will likely continue into May in Connecticut, there is still time to obtain your flu vaccine and take other important steps to prevent influenza-related illness and hospitalization: http://www.portal.ct.gov/DPH/Infectious-Diseases/Immunization/Seasonal-Influenza

The Department of Public Health (DPH) uses multiple surveillance systems to monitor circulating flu viruses throughout the year. All data are considered preliminary and updated with available information each week starting in October and ending in May.

- Statewide emergency department visits attributed to the "fever/flu syndrome" had decreased from week 6 to week 12, increased for two weeks to 7.1% during week 14 and decreased to 6.4% during week 15; remaining above the level of 5% statewide; generally considered the minimum threshold when there are elevated influenza-associated ED visits (Figure 1).

- The percentage of outpatient visits with influenza-like illness (ILI), which had decreased from weeks 6 through 12, increased to 4.3% during week 13 then decreased to 3.2% during weeks 14 & 15, remaining above the level of 1% statewide; generally considered the baseline when there are increased influenza-associated visits in the outpatient setting (Figure 2).

- The percentage of unscheduled hospital admissions due to pneumonia, which had decreased from weeks 9 through 13, had increased to 3.4% during week 14 then decreased to 3.1% during week 15, remaining below the level of 4% statewide; generally considered the baseline when there may be increased pneumonia hospitalizations due to influenza (Figure 3).

- A total of 3,135 hospitalized patients with laboratory-confirmed influenza admitted between August 27 and April 14, 2018 have been reported to date. Of these 3,135 reports, 1,696 were Type A (subtype unspecified), 548 were Type A (H3N2), 38 were Type A (2009 H1N1), 847 were influenza B virus, and 6 of unknown type. A total of 141 influenza-associated deaths (98 associated with flu A, 42 with flu B, 1 of unknown type) have been reported to date. Three new flu-associated deaths have been reported during this week. Of the 141 deaths reported to date, 118 were among patients greater than 65 years of age, 13 were 50-64 years of age, 6 were 25-49 years of age, 1 was between 19-24 years of age, and 3 were ≤18 years of age. The current season total of 141 deaths is above the range of influenza-associated deaths (1-65) reported during the previous five seasons (Figures 4 & 5).

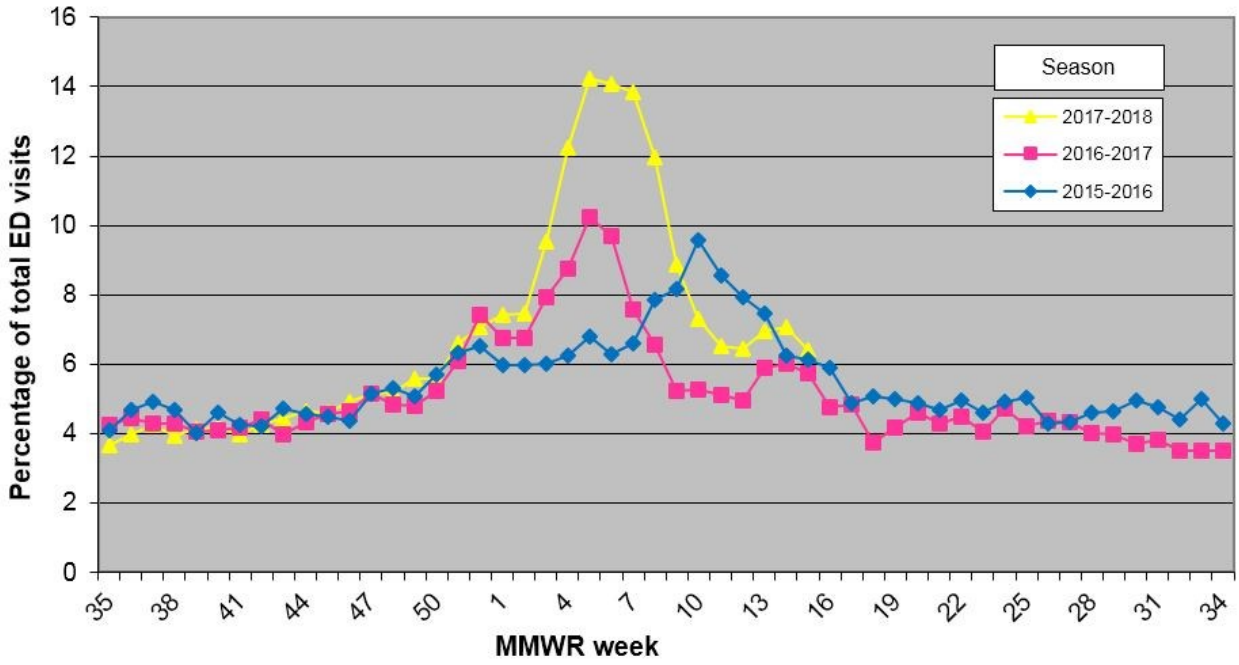
- A total of 10,624 influenza positive laboratory tests have been reported during the current season (August 27 – April 14, 2018): Fairfield (3,417), New Haven (2,957), Hartford (1,894 reports), Middlesex (626), New London (601), Litchfield (436), Windham (401), Tolland (225) and currently unknown county (67). Of the 10,624 positive influenza reports: 5,543 were Type A (subtype unspecified), 1,256 were Type A (H3N2), 185 were Type A (2009 H1N1), 3,626 were influenza B viruses, and 14 of unknown type. Please note that the percentage of influenza B infections is continuing to increase (Figures 6 & 7).

- Three additional figures are again included in this week's update. Since 2003, the Connecticut Emerging Infections Program at the Yale School of Public Health conducts active surveillance for laboratory-confirmed, influenza-associated hospitalizations as part of the national FluSurv-NET system. EIP staff work with the Connecticut Department of Public Health (CTDPH), the Centers for Disease Control and Prevention (CDC), and local hospitals to conduct surveillance for hospitalized cases of influenza among residents of southern Connecticut. Together with other FluSurv-NET sites, these data provide near real time estimates of influenza severity in the US: https://publichealth.yale.edu/eip/projects/flu.aspx. Figure 8 displays total New Haven and Middlesex County resident hospitalizations by MMWR week* (current counts for week 16 are also displayed) and age category. Please note that the vast majority of hospitalizations are among residents greater than 65 years of age. Figure 9 displays total New Haven and Middlesex County resident hospitalizations by MMWR week* (current counts for week 16 are also displayed) and flu type. Please note that the vast majority of hospitalizations among New Haven and Middlesex County residents are associated with influenza A infections although influenza B infections are increasing. Figure 10 compares these current 2017-2018 influenza season New Haven and Middlesex County resident hospitalizations with those of the previous two influenza seasons (2016-17 and 2015-16). Please also note that hospitalizations for weeks 3-7 were the highest numbers reported within the last three flu seasons.

** Week numbers refer to the Morbidity and Mortality Weekly Report calendar used by the federal Centers for Disease Control and Prevention (CDC) for national disease surveillance.*
*** Definitions for the estimated levels of geographic spread of influenza activity available at:*
http://www.cdc.gov/flu/weekly/overview.htm

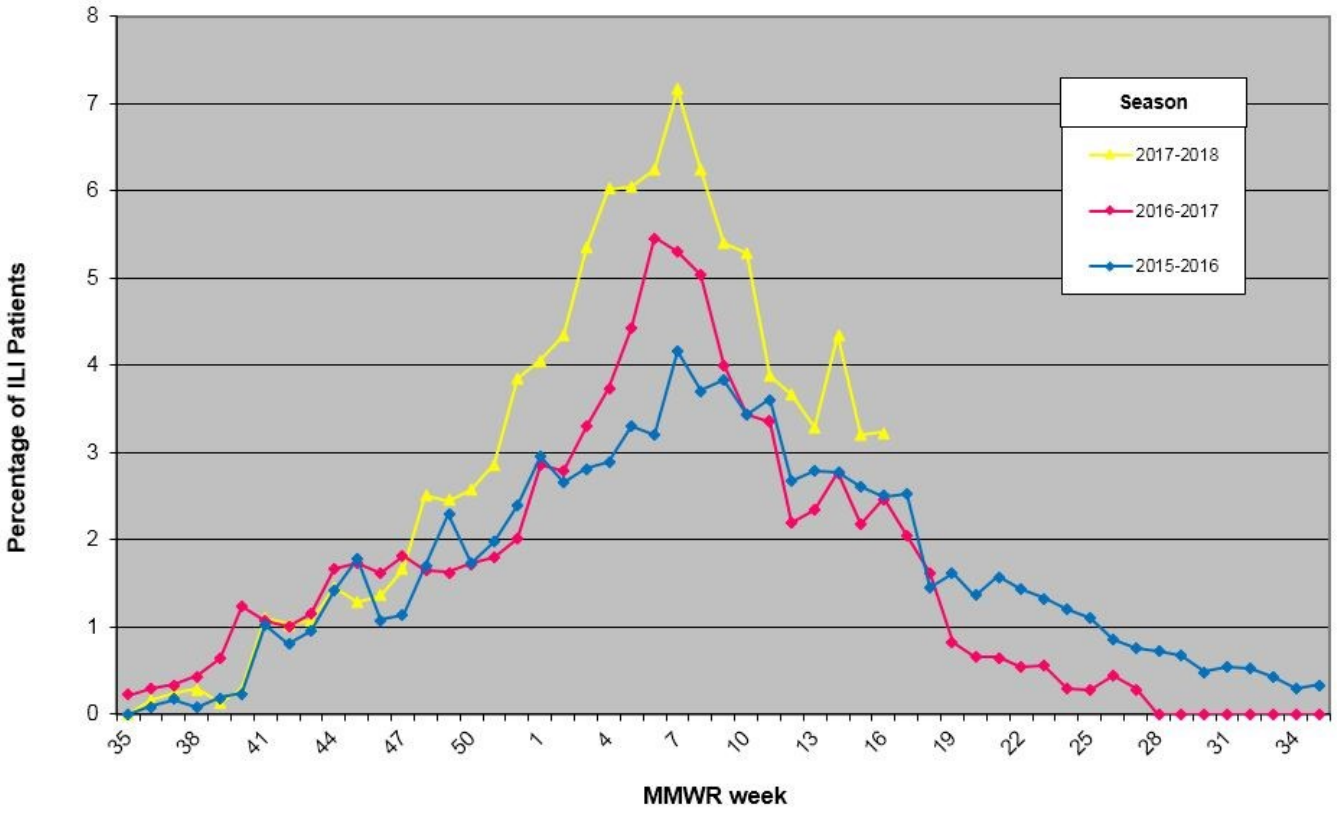
The **Hospital Emergency Department Syndromic Surveillance (HEDSS) System** receives daily electronic reports on ED visits from all 33 hospital-affiliated emergency departments in Connecticut. Data include a listing of total patient visits with information on their chief complaint, including fever/flu.

Figure 1. Connecticut Hospital Emergency Department Syndromic Surveillance (HEDSS) System: Percentage of total ED visits for "fever/flu" syndrome category, 2017-2018 influenza season compared to past seasons, MMWR Week 15 (week ending 04/14/18)



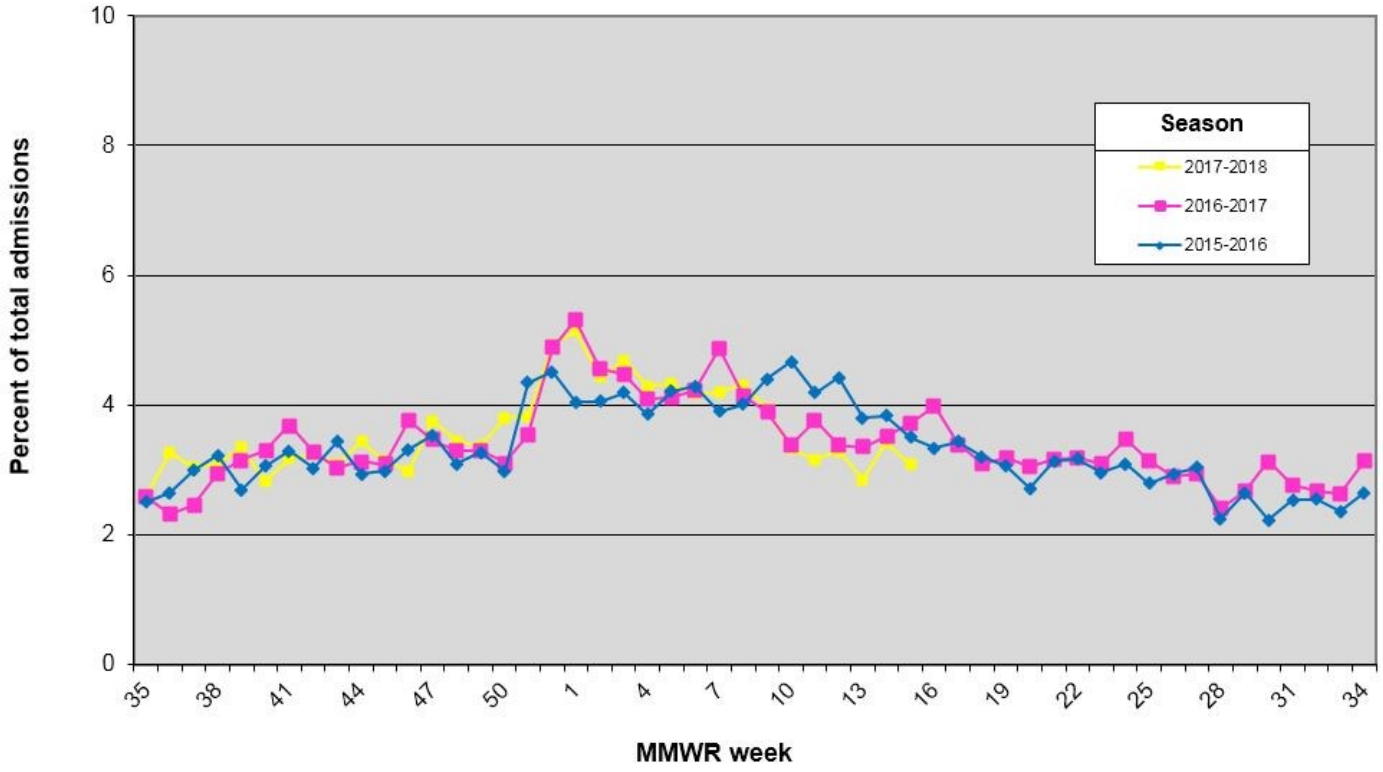
Sentinel Provider Surveillance System: Reporting of influenza-like illness (ILI) is conducted through a statewide network of volunteer outpatient providers known as ILINet. The proportion of patients exhibiting ILI is reported to the DPH on a weekly basis. ILI is defined as a cough or sore throat in 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); 2015-16, 2016-17, 2017-18



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; 2015-16, 2016-17, 2017-18



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 = 3135) with Positive Lab Tests by Subtype & Week, Connecticut, through 4/14/2018

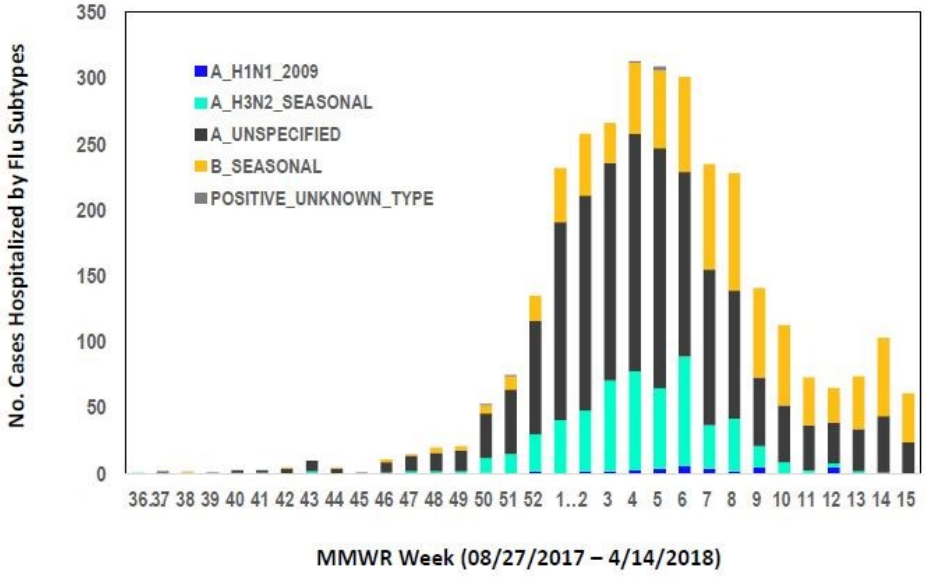
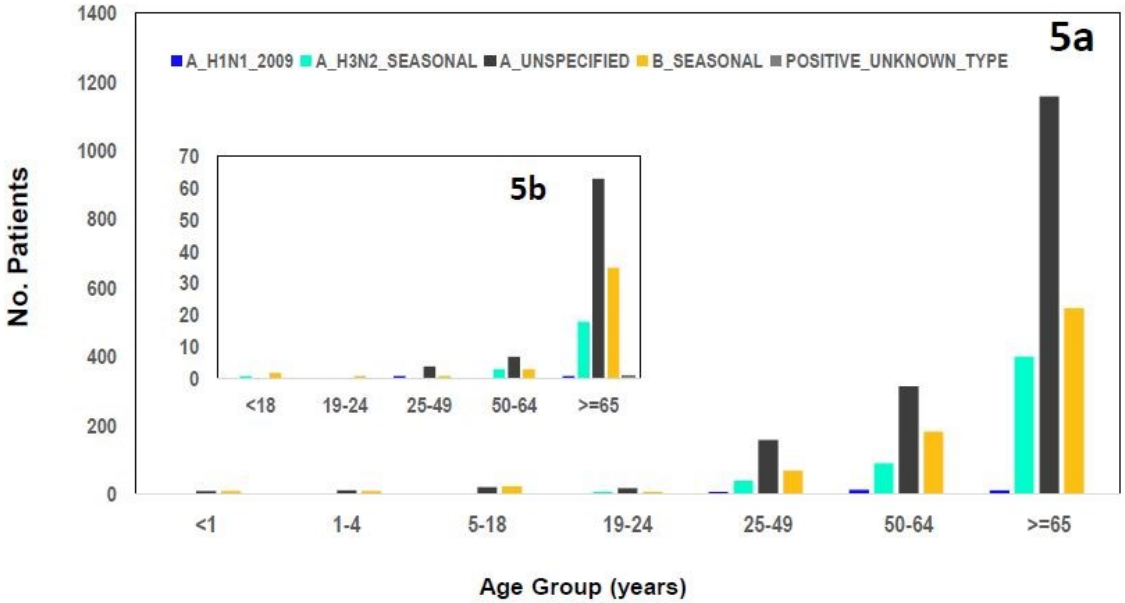
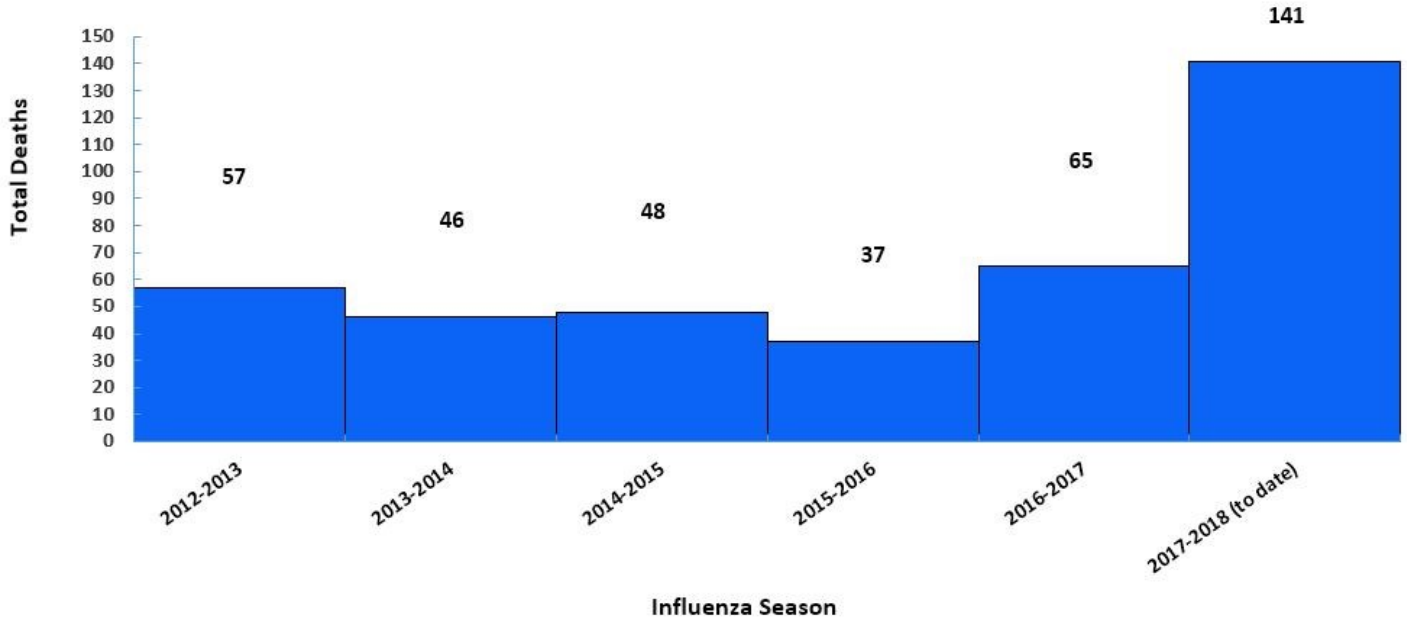


Figure 5. Hospitalized Patients (5a, n= 3135) and Flu-Associated Death (5b, n=141) with Positive Laboratory Tests by Influenza Subtype and Age Group, Connecticut, through 4/14/2018



Influenza-associated Deaths: Comparison of the total number of flu-associated deaths reported in Connecticut during the current and previous five flu seasons starting with the onset of improved reporting during the 2012-13 flu season.

Figure 5c. Total Number of Influenza-associated Deaths in Connecticut by Influenza Season, 2012-13 through 4/18/2018



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 = 10624) by Influenza Subtype and Week, Connecticut, through 4/14/2018

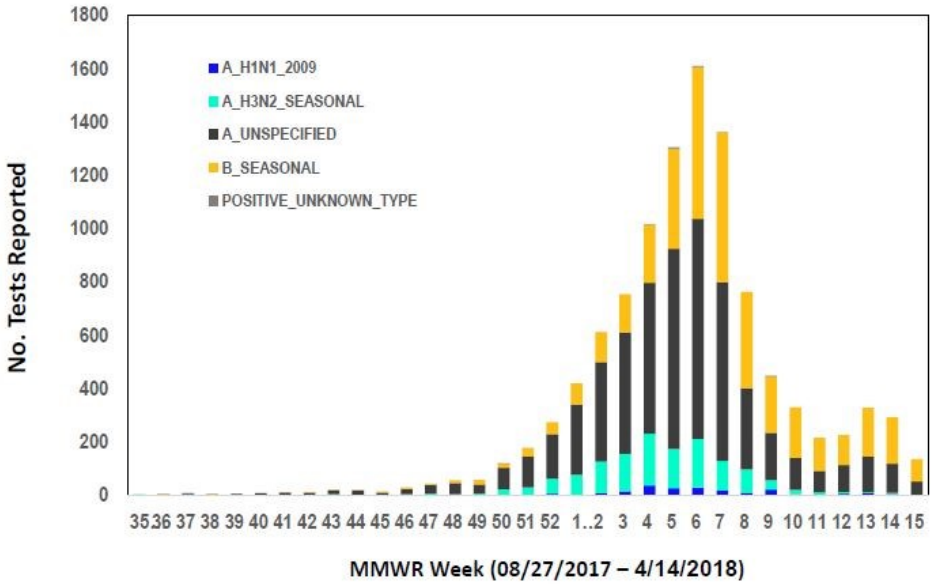
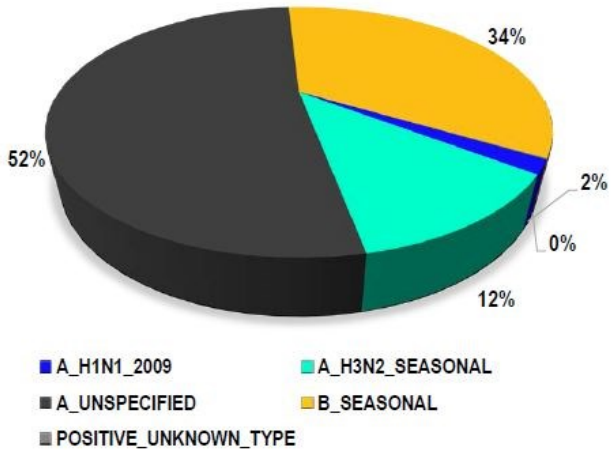


Figure 7. Proportion of Cumulative Positive Laboratory Tests (n = 10624) by Influenza Subtype, Connecticut, through 4/14/2018



Hospitalizations in residents of New Haven and Middlesex Counties: Three new figures are included in this week's update. Since 2003, the Connecticut Emerging Infections Program at the Yale School of Public Health conducts active surveillance for laboratory-confirmed, influenza-associated hospitalizations as part of the national FluSurv-NET system. EIP staff work with the Connecticut Department of Public Health (CTDPH), the Centers for Disease Control and Prevention (CDC), and local hospitals to conduct surveillance for hospitalized cases of influenza among residents of southern Connecticut. Together with other FluSurv-NET sites, these data provide near real time estimates of influenza severity in the US: https://publichealth.yale.edu/eip/projects/flu.aspx

Figure 8: Influenza-Associated Hospitalizations, by Age Group
New Haven and Middlesex Counties,
1 October 2017- 18 April 2018

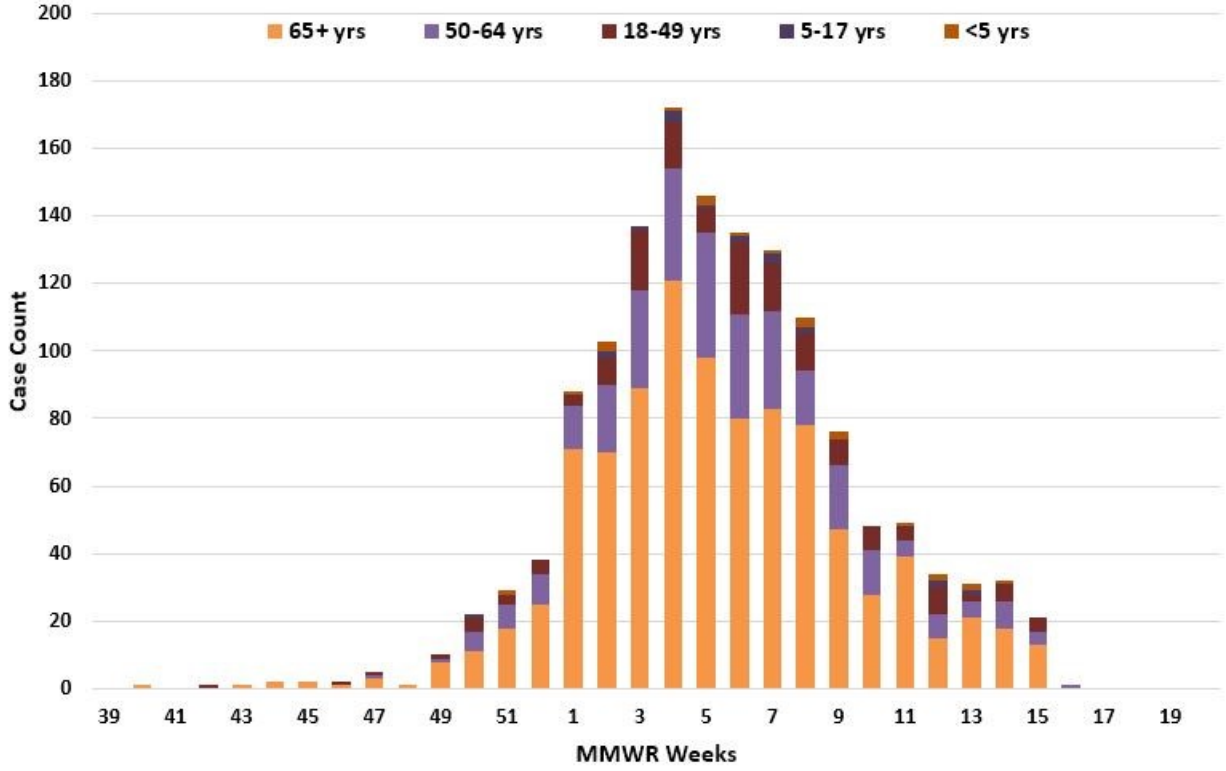


Figure 9: Influenza-Associated Hospitalizations,
New Haven and Middlesex Counties, CT Emerging Infections Program
2017-18 (preliminary)

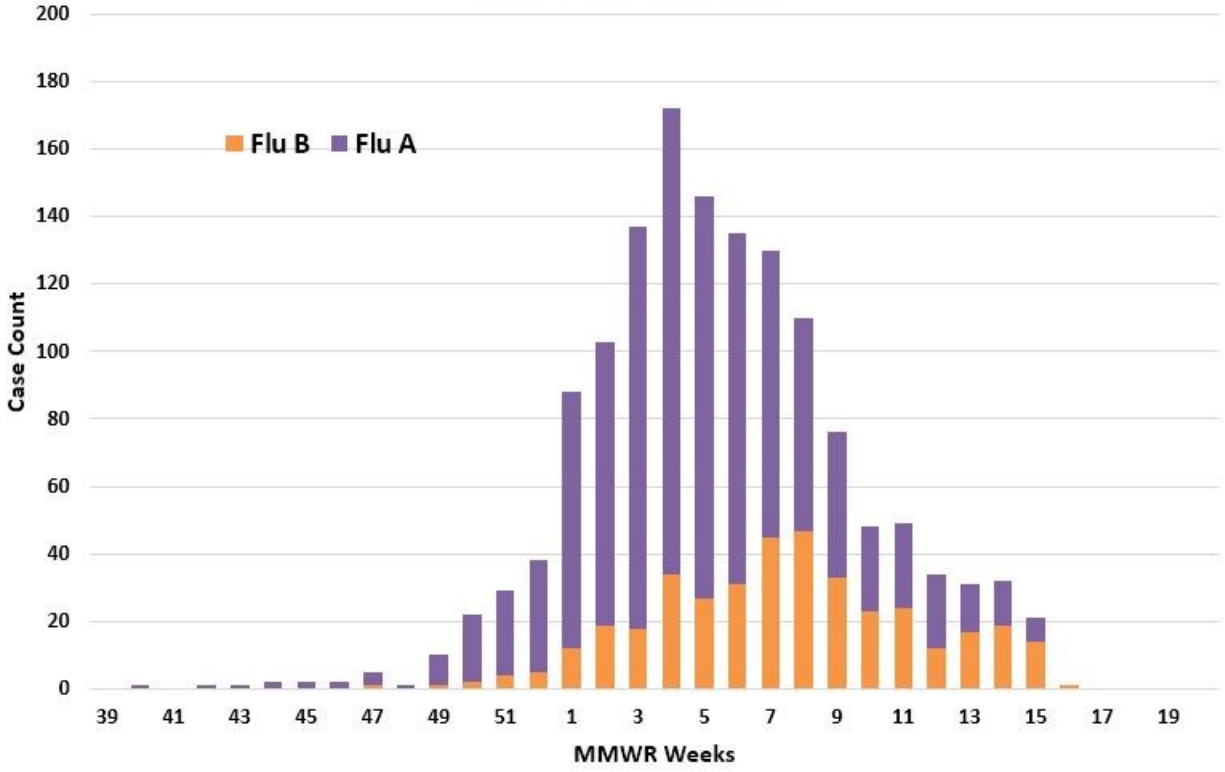


Figure 10: Influenza Hospitalizations, New Haven and Middlesex Counties
CT Emerging Infections Program,
2015-16 through 2017-18 (preliminary)