

Influenza Update



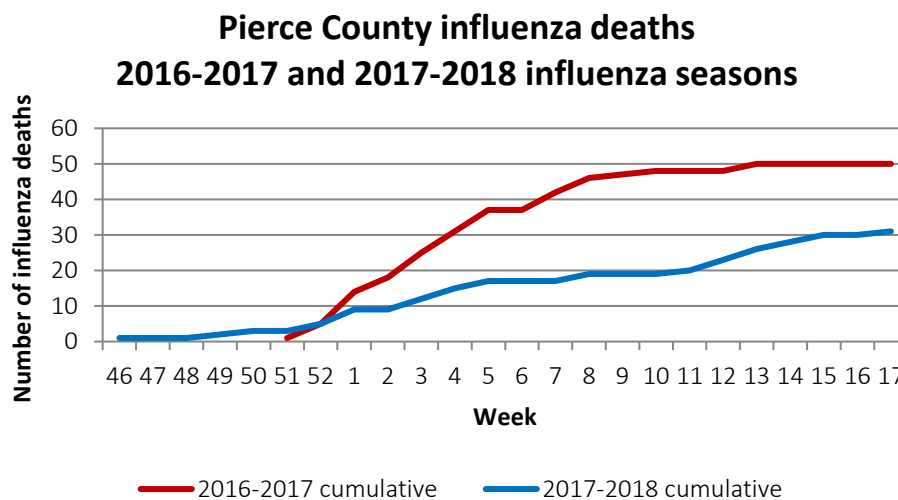
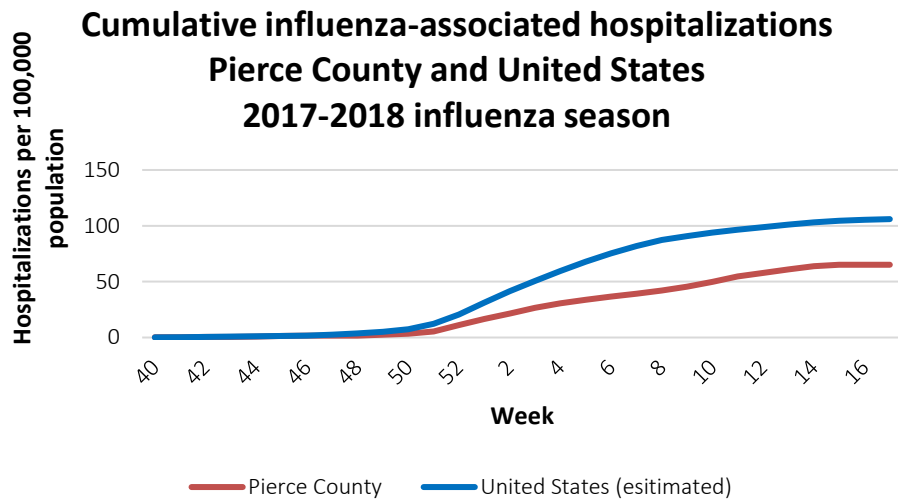
May 21, 2018
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Pierce County 2017-2018 Influenza Season Summary

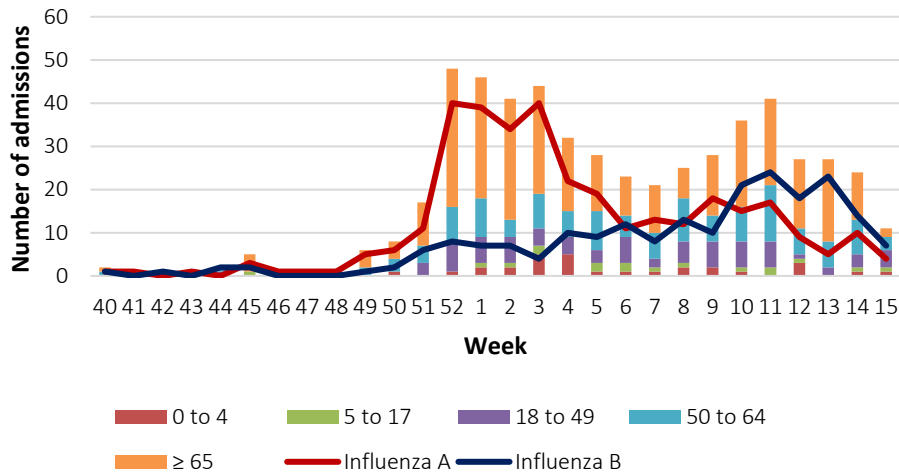
Influenza activity was moderate in Pierce County during the 2017-2018 season. This compares to higher activity nationally this season and higher activity in the county last season.

Oct. 2, 2017 (week 40) through April 12, 2018 (week 15), we received notification of 548 influenza-associated hospitalizations and 31 influenza-associated deaths in Pierce County.



The median age of hospitalized patients was 66.5 years (range: two weeks to 100 years). The median age of people who died was 81 years (range: 44 to 102 years). Influenza-associated hospitalization peaked in January, declined weeks four through seven, then trended upward again to a second peak in week 11 (week ending March 17, 2018). The second peak was largely driven by an increase in influenza B activity, a trend also seen nationally.

Pierce County influenza hospitalizations by age group and virus type



| Age group (years) | Number of hospitalizations | Hospitalization per 100,000 population |
|-------------------|----------------------------|--|
| 0 to 4 | 29 | 49.5 |
| 5 to 17 | 17 | 11.7 |
| 18 to 49 | 76 | 21.3 |
| 50 to 64 | 128 | 75.9 |
| ≥ 65 | 298 | 260.2 |
| Total | 548 | 64.9 |

Risk Factors

Our epidemiology nurses review hospitalization records for demographic information and influenza-related complication risk factors. Of 548 reported influenza-associated hospitalizations, 457 (83%) had at least one comorbid condition that increases the risk of complications.

The most commonly reported conditions:

- Diabetes 164 (36%)
- Chronic obstructive pulmonary disease (COPD) 147 (32%)
- Chronic heart disease 157 (34%)
 - Congestive heart failure 76 (48%)

Obesity has emerged as a risk factor for influenza complications. Of the 490 non-pregnant adults hospitalized with influenza, 344 (70%) were overweight or obese (body mass index [BMI] $\geq 25 \text{ kg/m}^2$) and 211 (43%) were obese (BMI $\geq 30 \text{ kg/m}^2$). The median BMI of non-pregnant adults hospitalized with influenza was 28.6 kg/m^2 .

Of 502 adults hospitalized with influenza, 86 (17%) were smokers, 229 (46%) were former smokers and 180 (36%) reported never smoking.

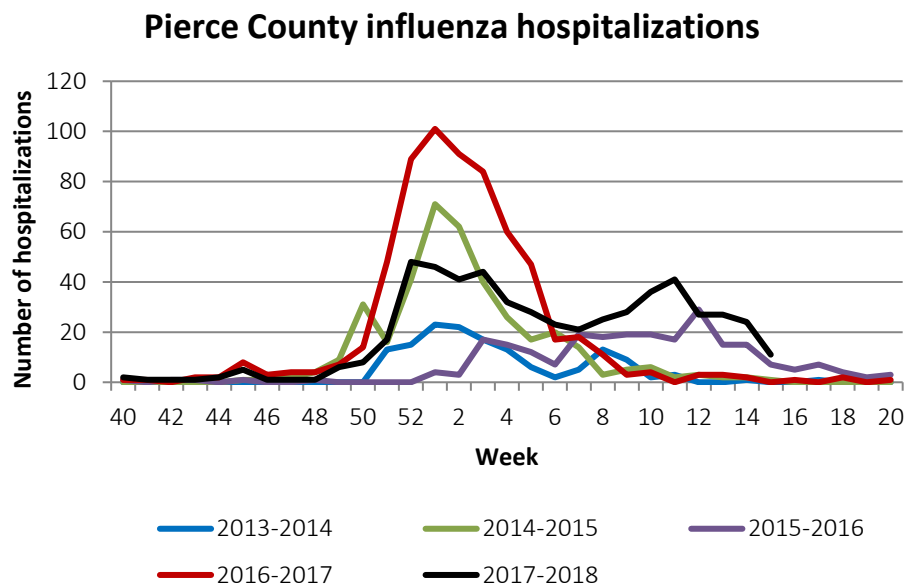
The mean ages of hospitalized adults with regard to smoking:

- Smokers 55 years
- Former smokers 70 years
- Never smoked 68 years

The mean age of smokers was significantly lower than the mean age of former smokers and those who never smoked ($p < 0.00001$). The difference between the mean age of former smokers and those who never smoked was not significant. ($p = 0.35$).

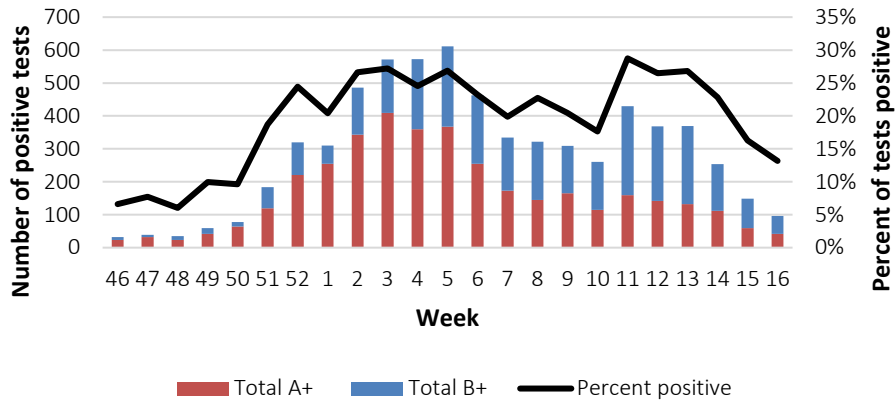
Discussion

We should cautiously interpret apparent influenza activity increases in previous seasons because of improved reporting of influenza-associated hospitalizations and deaths.



Influenza A was the dominant virus week 39 of 2017 through week seven of 2018, then Influenza B became the dominant virus. Throughout the season in Pierce County, influenza B was identified in 43% of positive influenza specimens, 38% of influenza-associated hospitalizations and 35% of influenza-associated deaths.

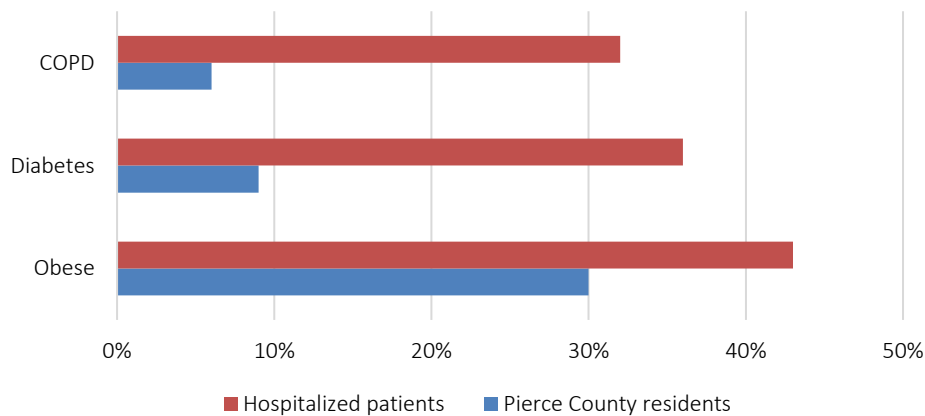
Pierce County influenza tests



Pierce County 2017-2018 influenza season data reflect national trends for risks of influenza-associated complications and death. Hospitalization rates were higher for children under five years of age and adults 50 years and older than people age five to 49 years. Hospitalization rates were highest for adults 65 years and older. The mean age of people who died after being diagnosed with influenza was significantly higher than the mean age of people hospitalized with influenza who survived to discharge (76.5 years vs. 60.6 years, $p < 0.00001$).

Diabetes, chronic heart disease, chronic lung disease and obesity were the most common comorbid conditions among people hospitalized with influenza. The prevalence of COPD, diabetes and obesity among people hospitalized with influenza were significantly higher than the prevalence of those conditions in Pierce County ($p < 0.00001$).

Comorbid conditions, influenza hospitalizations vs. Pierce County residents



Current smoking was significantly associated with influenza-associated hospitalization at a younger age when compared to former smokers and people who never smoked.

Nearly all patients hospitalized with influenza in Pierce County received oseltamivir on admission or soon after testing positive for influenza. When reviewing hospitalization records, we look for documentation of receiving seasonal influenza vaccine. However, many people are vaccinated outside the healthcare system where they are admitted, so this information is not reliably available. Consequently, we cannot calculate vaccine effectiveness with available data.

Conclusions

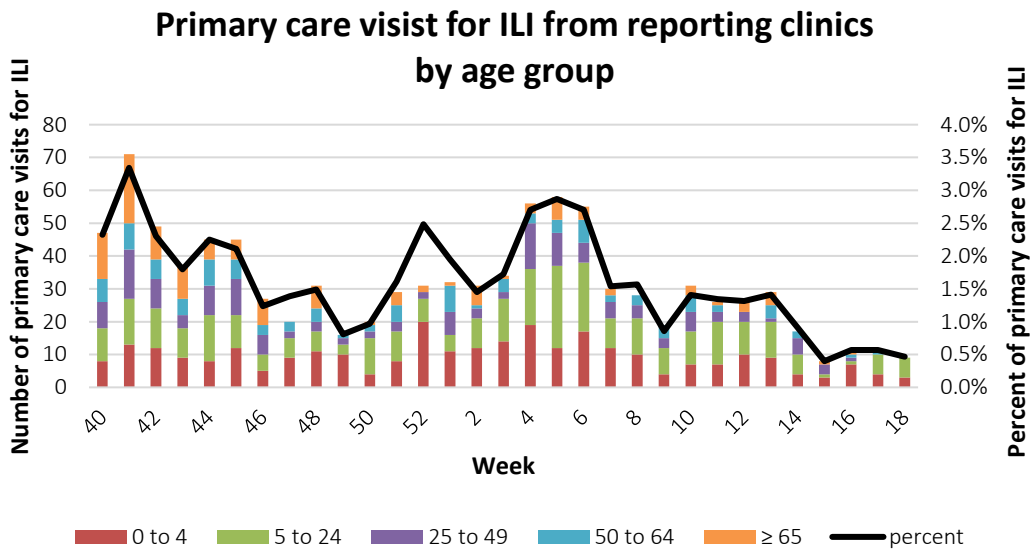
Although Pierce County influenza activity can differ from United States influenza activity, risk factors for influenza complications and death in Pierce County are similar to those observed nationally. Our data reinforce national guidelines for influenza prevention and treatment. People at high risk for influenza-associated complications should receive a seasonal influenza vaccine as soon it becomes available at the beginning of each influenza season. Prompt treatment with a neuraminidase inhibitor can shorten the duration of illness and reduce the risk of influenza-associated complications.

People at high risk for complications include children less than five years of age, adults 65 years of age and older, pregnant women, residents of long-term care facilities, American Indians and Alaskan Natives and people with chronic medical conditions. For more information, see the Centers for Disease Control and Prevention’s influenza-associated complications webpage: www.cdc.gov/flu/about/disease/high_risk.htm.

Acknowledgements

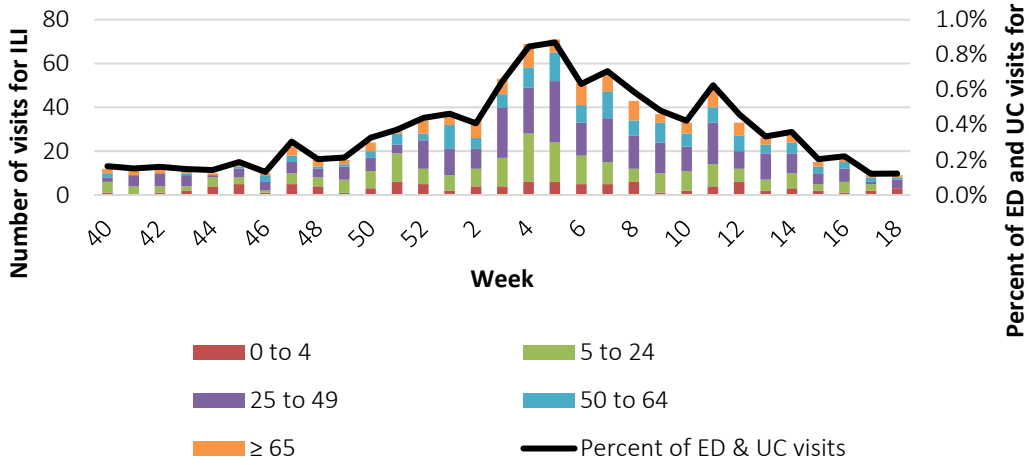
We thank our community partners who report data to us, especially: Rachelle Compton, Jill Toombs, Purity Wakaba, and Claudia Willis at CHI Franciscan; Christy Robinson-Bortel, Jacky Chow, Amye Broyles, and Kellie Knutsen at MultiCare; Tami Lengyel and Vicki Pusateri at Woodcreek, and Ailyn Pérez-Osorio and Vivian Hawkins at Washington State Department of Health; and Nicole Jean at Pediatrics Northwest and Karen Sheldon at Sound Family Medicine. It is a privilege to receive high-quality data.

Syndromic Surveillance for Influenza-like Illness



Source: ESSENCE National Syndromic Surveillance Program

Pierce County emergency department and urgent care visits for ILI by age group



Source: ESSENCE Washington