

2020–2021 Influenza Hospitalization Report



Oregon Emerging Infections Program
Acute and Communicable Disease Prevention
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Background

The Oregon Emerging Infections Program (EIP) has conducted surveillance for pediatric influenza hospitalizations in collaboration with the Centers for Disease Control and Prevention (CDC) since 2003. Surveillance for adult influenza hospitalizations was added in 2005.

The objectives of EIP influenza surveillance are to:

- Estimate age-specific hospitalization rates.
- Describe the temporal trends of laboratory-confirmed influenza hospitalization, including by influenza subtype.
- Describe characteristics of persons hospitalized with severe influenza illness.
- Describe the clinical features and course of influenza disease (e.g., severe illness and influenza-associated complications) among persons hospitalized with influenza.

In Oregon, the EIP surveillance area for influenza hospitalizations comprises the tri-county (Clackamas, Multnomah, and Washington) Portland metropolitan area with a population of 1,840,747 in 2021—which is 43% of the population of Oregon.

This report summarizes incidence and severity of influenza in Oregon’s EIP surveillance area during the 2020–2021 influenza season (October 1, 2020 to April 30, 2021).

Methods

Cases are defined as laboratory-confirmed influenza hospitalizations among residents of the EIP area (Clackamas, Multnomah, and Washington counties) that test for influenza within 14 days before or 3 days after admission. Cases are reported by hospitals in the tri-county area. Health record reviews using the EIP case report form are performed by trained personnel, who collected standardized data regarding demographic characteristics, clinical manifestations, underlying conditions, and illness outcomes.

Surveillance Results

Between October 1, 2020 and April 30, 2021, only 3 influenza-related hospitalizations were reported in the EIP area—3 adults and 0 pediatric cases. This represents a crude rate of 0.6 cases per 100,000 residents of the EIP area. The number of hospitalized cases for the 2020-2021 influenza season is irregular compared to previous seasons, despite rates of influenza testing during the months of January and February that were comparable to the previous years. Due to the small number of hospitalized cases, tables have been adjusted for the 2020-2021 influenza season.

Table 1 shows the sex, age, ethnicity, and race of Oregon EIP cases in 2020–2021. The median age of hospitalized cases was 58 years (range 50 years – 82 years). Persons aged 50-64 years were the leading age category in influenza hospitalizations (66.7%) this season. All cases were male and were reported as White. Two-thirds of cases were reported as non-Hispanic.

Table 1. Characteristics of all Oregon EIP influenza-associated hospitalized cases, 2020-2021.

Case Characteristics	No. n=3	Percent
Sex		
Male	3	0.0
Female	0	100.0
Age		
<6 months	0	0.0
6–23 months	0	0.0
24–59 months	0	0.0
5–10 years	0	0.0
11–17 years	0	0.0
18–49 years	0	0.0
50–64 years	2	66.7
>64 years	1	33.3
Ethnicity		
Hispanic and Latino	1	33.3
Non-Hispanic	2	66.7
Not specified	0	0.0
Race		
White	3	100.0
Black	0	0.0
Asian/Hawaiian or Pacific Islander	0	0.0
American Indian/Alaska Native	0	0.0
Multiple Races	0	0.0
Unknown	0	0.0

Figure 1 shows the distribution of the three cases during the influenza season. During the surveillance period the first case was reported week 52 (the week ending 12/26/2020), and the last case was reported week 8 (the week ending 2/27/2021).

Figure 1. Number of Oregon EIP influenza-associated hospitalized cases by MMWR week, 2020–2021.

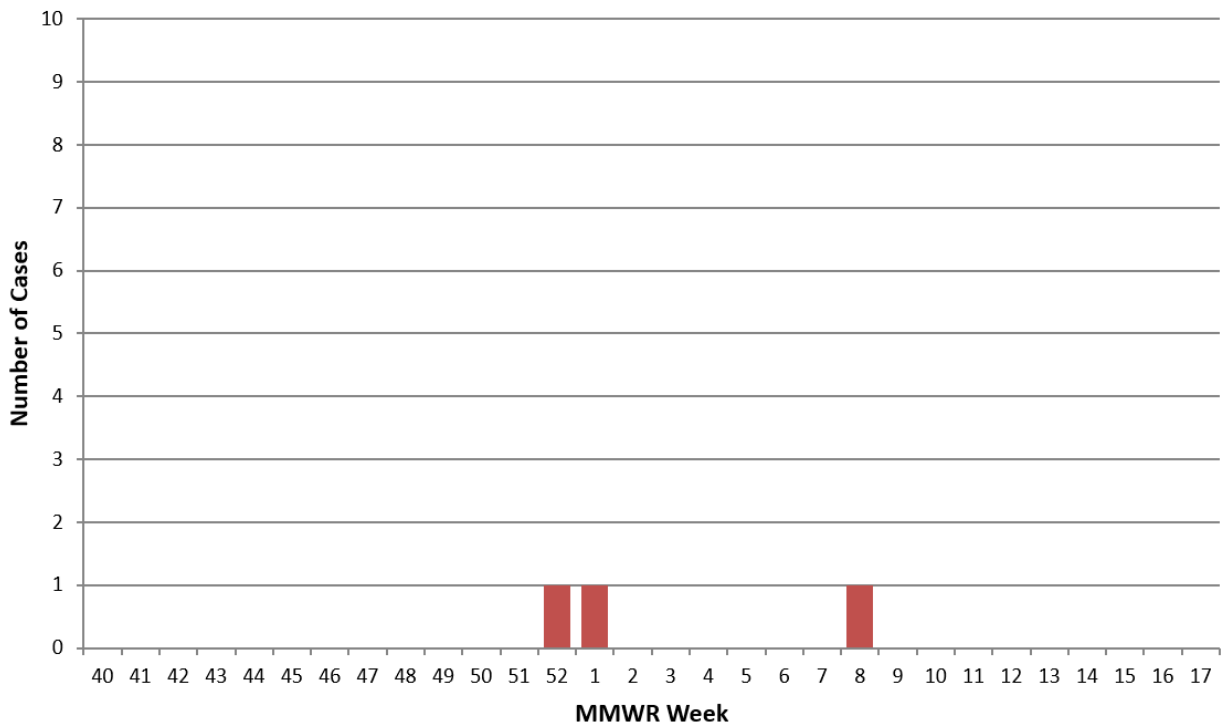


Table 2 shows procedures, conditions, antiviral use, and vaccination status for the three cases. None required mechanical ventilation and one case was admitted to an ICU. All three cases had at least one underlying medical condition, with chronic lung disease (66.7%), cardiovascular disease (66.7%), and obesity among adults (66.7%) being the most frequently reported. All hospitalized cases were reported as vaccinated for influenza prior to hospitalization.

Table 2. Procedures, conditions, antiviral use, and vaccination status for all Oregon EIP influenza-associated hospitalized cases, 2020–2021.

Procedures, conditions, and findings*	No. (n=3)	Percent
Chest x-ray within 3 days of admission	0	0.0
Unknown chest x-ray within 3 days of admission	3	100.0
Mechanical ventilation	0	0.0
ICU	1	33.3
Treated with Antivirals^{&}	1	33.3
Any Underlying Medical Condition**	3	100.0
Condition		
Obese***	2	66.7
Cardiovascular disease	2	66.7
Chronic metabolic disease	1	33.3
Chronic lung disease	2	66.7
Asthma	1	33.3
Renal disease	1	33.3
Neurologic disorder	0	0.0
Immunosuppressive condition	0	0.0
Hemoglobinopathy	0	0.0
Seizure disorder	0	0.0
Cancer	0	0.0
Cognitive dysfunction	0	0.0
Pregnant [†]	0	0.0
History of Guillain-Barre Syndrome	0	0.0
Vaccinated[‡] prior to hospitalization		
Yes	3	100.0
No	0	0.0
Unknown	0	0.0

*Unknown values not shown

**Cases may have more than one underlying condition; categories are not mutually exclusive.

***Obesity among adults aged 18 years and older. Calculated using height and weight or where indicated in medical record if height or weight was unknown. Obesity defined as BMI \geq 30.

[&] Treated with antivirals defined as antiviral treatment during the course of illness.

[†] Percent of females \geq 14-49 years (n=0).

[‡] Vaccination status as reported to the state. CDC determines vaccination status based on an algorithm.

Table 3 shows the frequency of virus types and subtypes detected among influenza-associated hospitalized cases in the Oregon EIP area. Influenza A was detected in 1 hospitalized case, while influenza B was detected in 2 hospitalized cases.

Table 3. Influenza virus types and subtypes among Oregon EIP influenza-associated hospitalized cases, 2020–2021.

Virus	No. n=3	Percent
Influenza A	1	33.3
H3	0	0.0
2009 H1N1	0	0.0
Unknown subtype*	1	100.0
Influenza B	2	66.7
Yamagata Lineage	0	0.0
Victoria Lineage	0	0.0
Unknown Lineage*	2	100.0
Both A and B	0	0

*Specimen not subtyped or lineage not performed.

The age distribution of hospitalized cases in 2020-2021 compared to previous seasons is shown in Figure 2. The rate of hospitalization among those 50–64 years was 0.6 cases per 100,000 population, while the rate of hospitalization among those 65 years and older was 0.4 cases per 100,000 population.

Deaths: There were no deaths among patients hospitalized in the Oregon EIP catchment area in the 2020-2021 influenza season. Data on deaths includes only those who died while hospitalized.

Figure 2. Rates of Oregon EIP influenza-associated hospitalizations by age group, comparison by influenza season, 2010–2011 to 2020–2021.

