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RETURN OF THE FLU: EPISODE XXII-XXIII

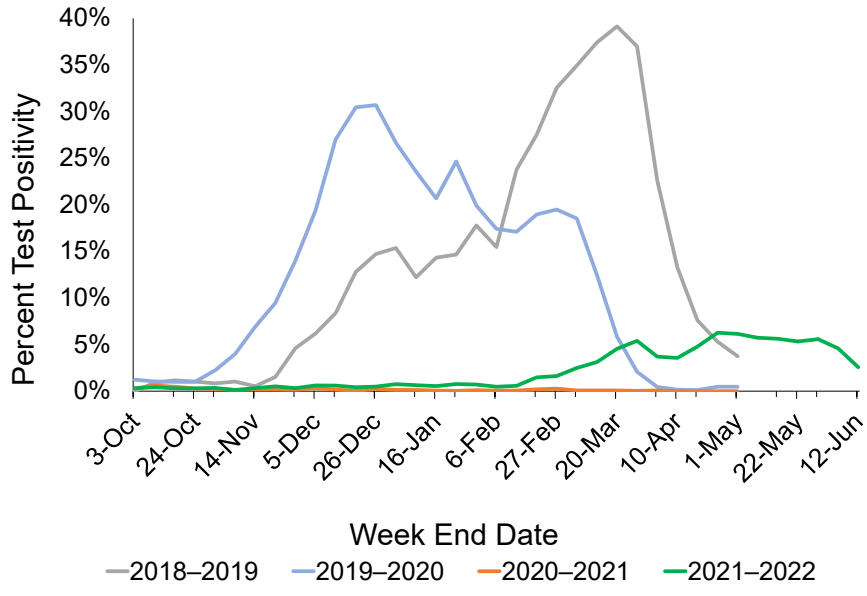
2020–2022 FLU SEASON RE-CAP

(Note to readers: As this issue is released, Oregon hospitals are in crisis, overflowing with patients as influenza and respiratory syncytial virus transmission appear to be at or near peak, at the same time as we're seeing an uptick in COVID-19 hospitalizations. In the face of this, and in addition to recommending vaccination, please advise your patients that wearing a well-fitting quality mask in indoor public settings can reduce transmission of all of these viruses.)

A long time ago in a galaxy far, far away…influenza ruled the respiratory season. Before the COVID-19 pandemic, the Centers for Disease Control and Prevention (CDC) estimated that influenza caused 9–41 million infections annually in the United States between 2010–2020.[1] The Oregon Health Authority (OHA) monitors statewide influenza transmission using influenza percent test positivity through voluntary reporting by laboratories to CDC's National Respiratory and Enteric Virus Surveillance System (NREVSS) platform.[2] OHA also tracks influenza-associated hospitalizations in Clackamas, Multnomah, and Washington counties as part of its Emerging Infections Program (EIP).[3]

In Oregon, previous influenza seasons have seen weeks with 30%–40% test positivity and more than 200 hospitalizations. However, the last two years have been blessed with record-low levels of influenza transmission due to social distancing, travel limitations and widespread masking during the COVID-19 pandemic. During the 2020–2021 respiratory season, Oregon enjoyed historically low influenza transmission with a peak test positivity of 0.6% and only three influenza hospitalizations in the Portland tri-county area. Low influenza circulation continued into the 2021–2022 respiratory season until March 2022, when widespread masking guidance changed and both test positivity and tri-county hospitalizations began to climb.[4] Influenza surveillance is usually conducted October–May but was extended into June 2022 to capture the later season during which test positivity reached 6.3% and weekly tri-county hospitalizations peaked at 13. (Figures 1 and 2, *infra*).

Figure 1. Oregon influenza percent test positivity per week, 2018–2019, 2019–2020, 2020–2021, 2021–2022

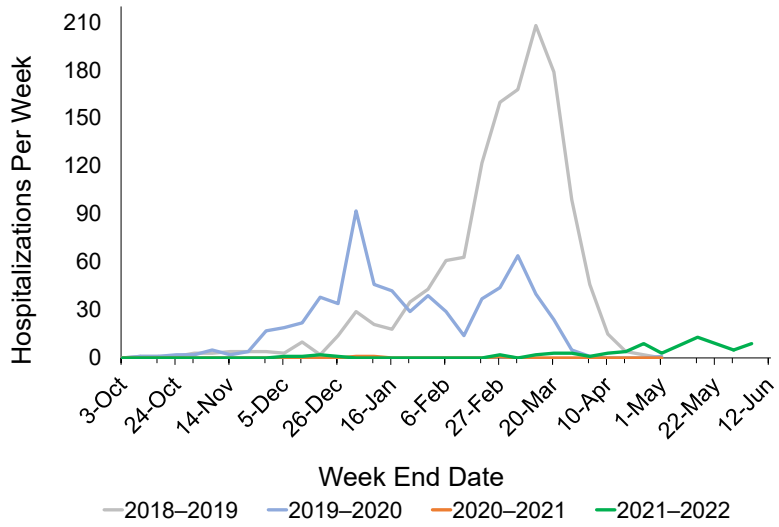


ENTER HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI)

Highly Pathogenic Avian Influenza (HPAI) A viruses are highly contagious among birds and deadly among domestic birds. Some strains of H5N1 influenza are HPAI. HPAI sightings have been flying high this season, with infected wild birds identified in 46 states and domestic poultry outbreaks in at least 40 states.[5] Although birds infected with H5N1 HPAI do not usually infect humans, the case-fatality rate for human infections is >50%, so HPAI circulation is a public health as well as an animal husbandry concern.[6]

The World Health Organization (WHO) began HPAI surveillance in 2003 for all strains of HPAI. A/H5N1 is the most common type of HPAI virus, and 862 human cases have since been identified worldwide, 53% of them fatal.[6] In 2021, a new mutation of H5N1 was identified, with two known human infections. The first case was identified in December 2021 in the United Kingdom and the second in April 2022 in the United States.[7] In May 2022, the U.S. began to see high HPAI circulation in both wild and domestic birds. As of November 2022, 48 Oregonians have been exposed to HPAI-infected birds, with no human acquisition. Individuals exposed to HPAI-infected birds should monitor themselves for influenza-like symptoms for 10 days; symptomatic

Figure 2. Multnomah, Clackamas, and Washington county influenza hospitalizations per week: 2018–2019, 2019–2020, 2020–2021, 2021–2022



individuals should immediately report their symptoms to their local public health authority for testing and empiric treatment.

VARIANT INFLUENZA

Variant influenza viruses are strains of Influenza A traditionally seen in swine (i.e., pigs) that have infected humans. These viruses are denoted with the letter "v." Human infections by H1N1v, H3N2v and H1N2v viruses have been detected in the United States following exposures to swine at fairs and in agricultural work settings.[8]

Variant influenza viruses are usually spread via respiratory droplets shed by infected swine. There is no evidence that influenza variants are transmitted through improper handling of food products. During the 2021–2022 respiratory season, 12 cases of variant influenza virus infection were identified in the United States.[9] The first 2022 case of H1N2v infection in the U.S. was identified in an Oregonian who did not report having contact with swine or agriculture settings. The person was not hospitalized, has recovered from the illness, and is not known to have transmitted the H1N2v to anyone else. We encourage health care providers to inquire about agriculture exposures for patients seeking care for influenza-like illness (ILI) outside of influenza season; and to test for influenza using a nasopharyngeal swab anyone with such exposure.

2022–2023 INFLUENZA VACCINE AND RECOMMENDATIONS

As people excitedly make plans to reunite with family and plan long-awaited travel, OHA recommends everyone ≥6 months of age schedule their flu shot. High-risk individuals who receive an influenza vaccine are less likely to suffer severe complications from influenza. Individuals at high risk for severe complication include those with certain chronic medical conditions such as asthma, diabetes, or heart disease; pregnant people; children <5 years of age; and people ≥65 years of age. The vaccination of health care workers is crucial; it has been associated with reduced work absenteeism and fewer deaths among nursing-home patients.[10]

Vaccination is recommended while influenza virus is circulating. Most people should get vaccinated during September–October, but there are a few exceptions:[11]

- Children <8 years of age who have not previously received a total of two or more doses in their lives should get two doses. They should get their first dose as soon as it is available and their second dose before the influenza season begins.
- People in their third trimester of pregnancy may consider summer vaccination to protect their infants who will be too young to be vaccinated. Pregnant people who have missed the summer vaccination window can still benefit from vaccination and are encouraged to get vaccinated during the fall.

For people <65 years of age there is no preferred vaccine product.

For people ≥65 years of age, one of the following three influenza vaccines is preferred over a standard-dose, unadjuvanted flu vaccine:[11]

- Fluzone® High-Dose flu vaccine
- Flublok® recombinant flu vaccine
- Fluad® adjuvanted flu vaccine

All flu vaccines for the 2022–2023 season are quadrivalent, designed to protect against four different flu viruses, including two influenza A and two influenza B viruses. The egg-based quadrivalent vaccine will contain:

- an A/Victoria/2570/2019 (H1N1) pdm09-like virus
- an A/Darwin/9/2021 (H3N2)-like virus
- a B/Austria/1359417/2021-like virus (B/Victoria lineage)
- a B/Phuket/3073/2013-like virus (B/Yamagata lineage)

The recombinant-based quadrivalent vaccine will contain the identical egg-based strains with the exception that A/Wisconsin/588/2019 (H1N1) pdm09-like virus will be used instead of the A/Victoria/2570/2019 (H1N1) pdm09-like virus.

Most influenza vaccines have trace amounts of egg protein, while recombinant-based vaccines are egg-free. Persons with a history of egg allergy who have experienced only urticaria (hives) after exposure to egg should receive influenza vaccine. Individuals with severe egg allergies (i.e., involving severe symptoms other than urticaria, e.g., angioedema, swelling, respiratory distress, lightheadedness or vomiting) or who required epinephrine or another emergency medical intervention should be vaccinated in a medical setting under supervision of a provider who can recognize and manage a severe allergic reaction.[12]

Influenza vaccine may be administered with other live or inactivated vaccines. We encourage anyone who has not yet received their COVID-19 bivalent booster to get both the COVID-19 bivalent booster and the flu vaccine at the same time.

FOR MORE INFORMATION

- OHA. Flu Bites. Available at www.healthoregon.org/fludata.
- CDC. FluView. Available at www.cdc.gov/flu/weekly/fluactivitysurv.htm
- Grohskopf LA, Blanton LH, Ferdinands JM, et al. Prevention and control of seasonal influenza with vaccines: Recommendations of the Advisory Committee on Immunization Practices—United States, 2022–23 influenza season. MMWR Recommendations and Reports 2022;71(1):1–28. Available at www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm.

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11. CDC. Influenza Vaccination: A Summary for Clinicians. Available at www.cdc.gov/flu/professionals/vaccination/vax-summary.htm

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