

A TALE OF TWO RESPIRATORY PATHOGENS: INFLUENZA AND SARS-COV-2

It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness. – Charles Dickens

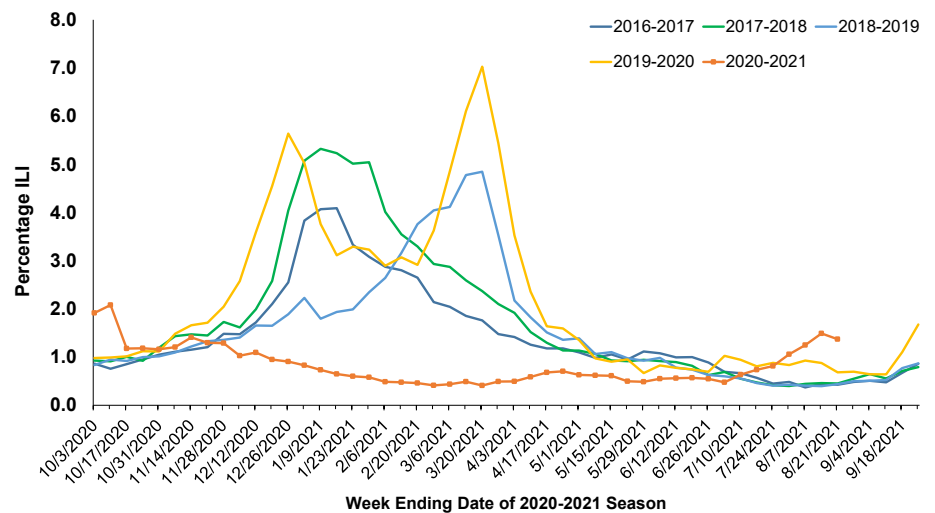
INFLUENZA DURING THE COVID-19 PANDEMIC

We entered the 2020–2021 respiratory viral pathogen season with a fear of the unknown: What would an influenza season superimposed on the COVID-19 pandemic look like? What would be the consequences of influenza and SARS-CoV-2 coinfection? Given that United States hospitals admit between 140,000 and 810,000 influenza hospitalizations annually¹ what would happen to hospital capacity? As we braced for a tumultuous season, CO-VID-19 mitigation strategies remained in place, with mask wearing and social distancing becoming a part of daily life. The results of these mitigation efforts were astounding—the southern hemisphere experienced record low influenza circulation,² and we subsequently experienced an absence of influenza throughout the season.

INFLUENZA CIRCULATION IN OREGON: PAST VS. PRESENT

The 2020–2021 influenza season saw historically low influenza circulation across Oregon. The Figure shows the percentage of hospital emergency department visits due to influenza-like illness (ILI) as captured by the Oregon Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE). Throughout the 2020-2021 influenza season, the percentage of such visits attributable to ILI never exceeded 1.2%. Traditionally, a baseline of 2.6% is used to determine the beginning of influenza circulation.³

Figure. Percentage of ED Visits for ILI, Oregon ESSENCE Syndromic Surveillance, 2016–2017, 2017–2018, 2018–2019, 2019–2020, 2020–2021



Laboratory testing data from the National Respiratory and Enteric Virus Surveillance System (NREVSS) confirmed limited influenza circulation throughout 2020–2021 season. Only 0.1% of all influenza specimens tested at 22 Oregon laboratories reporting to NREVSS tested positive for influenza throughout the season. In comparison, the 2019–2020 season saw a 16.5% influenza test positivity. Influenza activity was low across the United States and globally despite adequate testing. Nationally, there was only one influenza-associated pediatric death, compared to 199 in the preceding season.⁴

Why did influenza disappear during the COVID-19 pandemic? While we can't say for sure, the answer most likely lies in the mitigation measures put in place to reduce the spread of COVID-19. Community-wide restrictions, basic public health interventions such as masking and hand washing, and behavioral changes such as avoiding social gatherings and staying home while sick all probably helped

reduce influenza circulation. Record high influenza vaccine distribution, with 193.8 million doses distributed,⁴ also probably played an important role. These measures taken to lessen the spread of COVID-19 and protect the capacity of our healthcare systems proved effective across respiratory viral pathogens.

INFLUENZA AND COVID-19 HOSPITALIZATIONS

Oregon is one of 14 states that participates in the Centers for Disease Control and Prevention (CDC) Emerging Infections Program (EIP) hospitalization surveillance for influenza (FluSurv-NET) and SARS-CoV-2 (COVID-NET). The FluSurv-NET and COVID-NET surveillance networks identify residents of Clackamas, Multnomah, and Washington counties who are hospitalized within 14 days of a positive laboratory test for influenza or SARS-CoV-2, respectively. Detailed chart reviews are conducted to collect patient risk factor and outcome information.

Given what we've already shared above, this might not surprise you, but only three influenza hospitalizations were captured by FluSurv-NET during the 2020–2021 season. This compares with over 5,000 COVID-NET hospitalizations since the inception of COVID-NET in March 2020. COVID-19-related hospitalizations peaked at 209 during the week of November 11, 2020. Although COVID-19 hospitalizations initially waned as COVID-19 vaccines became broadly available, hospitalizations have increased dramatically in the wake of emerging variants such as B.1.617.2 (Delta) and modest vaccine uptake. The stark dichotomy between these influenza and COVID-19 hospitalization numbers suggests a couple of important take-home messages: 1) the protective measures put in place to mitigate the spread of COVID-19 are highly effective at reducing the transmission of many respiratory viral pathogens, 2) comparing seasonal influenza with pandemic SARS CoV-2, the virus that causes COVID-19, it is clear that a little residual immunity in a population goes a long way. What is less clear as we enter the 2021–2022 season is how influenza transmission will change with fewer COVID-19 mitigation measures in place.

THE 2021–2022 INFLUENZA SEASON

COVID-19 vaccines have been at the forefront of immunization planning, as nearly 170 million individuals have been fully vaccinated in the United States.⁵ Vaccination remains our strongest defense against COVID-19, but routine vaccination against other pathogens remains crucial. Vaccinations for both COVID-19 and influenza help protect both individuals and our health care system by preventing severe illness, hospitalization, and death. Influenza vaccinations for the upcoming season have been updated to match the viruses in circulation. This season's influenza vaccine varieties feature updated Flu A (H1N1) and A (H3N2) components (Table).⁶ Vaccination against influenza continues to be recommended for all individuals 6 months of age and older.

As in recent flu seasons, all regular-dose vaccines will be quadrivalent. Live-attenuated influenza vaccine (LAIV) will also be available. LAIV is not recommended for immunocompromised individuals, close contacts of

Table. 2020–2022 influenza vaccine components

Influenza vaccine strains northern hemisphere, 2020–2021 Season		
Strain	Egg-based vaccines	Cell or recombinant-based vaccines
A/H1N1	A/Victoria/2570/2019 (H1N1)pdm09-like	A/Wisconsin/588/2019 (H1N1)pdm09-like
A/H3N2	A/Cambodia/e0826360/2020 (H3N2)-like	A/Cambodia/e0826360/2020 (H3N2)-like
B/Victoria	B/Washington/02/2019- like (B/Victoria lineage)	B/Washington/02/2019-like (B/Victoria lineage)
B/Yamagata	B/Phuket/3073/2013-like (B/Yamagata lineage)	B/Phuket/3073/2013-like (B/Yamagata lineage)

severely immunosuppressed persons, pregnant women, children 2–4 years of age with asthma, children receiving salicylates (aspirin), or persons who have recently received influenza antiviral medication. Those who have received influenza antiviral medication should wait 48 hours after taking oseltamivir and zanamivir, 5 days after peramivir, and 17 days after baloxavir⁷ before taking LAIV. Licensure of the Flucelvax Quadrivalent vaccine has been updated this year and is now approved for people 2 years and older. Influenza vaccine manufacturers do not expect any delays in production or distribution of this year's vaccine supply.⁶ Individuals can receive COVID-19 vaccines and influenza vaccines at the same visit, and no longer need to wait 14 days between vaccines.⁸

FOR ADDITIONAL INFORMATION

- Oregon FluBites: <http://bit.ly/flubites>
- CDC FAQ for the 2021–2022 Influenza Season: www.cdc.gov/flu/season/faq-flu-season-2021-2022.htm
- CDC FluView: <https://gis.cdc.gov/grasp/fluview/fluportaldashboard.htm/>
- CDC COVID Data Tracker Weekly Review: www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html

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1. CDC. Disease Burden of Influenza. www.cdc.gov/flu/about/burden/index.html?web=1&wdLOR=c25E02630-D5C4-455C-A625-68E3287AE8C8. Updated June 11, 2021.
2. Olsen SJ, Azziz-Baumgartner E, Budd AP, et al. Decreased influenza activity during the COVID-19 pandemic — United States, Australia, Chile, and South Africa, 2020. *MMWR* 2020;69:1305–9.
3. CDC. Weekly U.S. Influenza Surveillance Report. www.cdc.gov/flu/weekly/index.htm?web=1&wdLOR=cE7064CF0-72BB-44C0-8CFE-3B49E1B9C4E5. Accessed August 23, 2021.
4. CDC. 2020–2021 Flu Season Summary. www.cdc.gov/flu/season/faq-flu-season-2020-2021.htm. Updated July 22, 2021.
5. CDC. COVID Data Tracker. https://covid.cdc.gov/covid-data-tracker/#vaccinations_vacc-total-admin-rate-total. Accessed August 23, 2021.

6. CDC Frequently Asked Influenza (Flu) Questions: 2021–2022 Season. www.cdc.gov/flu/season/faq-flu-season-2021-2022.htm. Updated August 6, 2021.
7. CDC. Live Attenuated Influenza Vaccine [LAIV] (The Nasal Spray Flu Vaccine). www.cdc.gov/flu/prevent/nasalspray.htm. Updated May 6, 2021.
8. CDC. Getting Your COVID-19 Vaccine. www.cdc.gov/coronavirus/2019-ncov/vaccines/expect.html. Updated August 19, 2021.

OREGON WANTS YOU!

The Oregon Health Authority is asking Oregon licensed health-care professionals to register with the State Emergency Registry of Volunteers in Oregon (SERV-OR). Volunteers receive notifications about deployment opportunities supporting urgent medical surge issues across the state. Visit SERV-OR to sign up for a local Medical Reserve Corps unit and the State Managed Volunteer Pool, today.

SERV-OR is a statewide registry for licensed health care professionals willing to volunteer for Federal, State, or local public health and medical emergencies

Hospitals and health facilities in Oregon need your expertise. You may be asked to:

- Staff facilities including clinical sitting, ICU, inpatient care, alternate care sites, med surge, outpatient care, etc.
- Fill administrative or clinical roles
- Provide COVID vaccination and testing

Register today! And thank you for doing your part to keep everyone in Oregon safe.

Visit the [COVID FAQ](#) and [Program FAQ](#) pages to learn more.



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