

CD

## Summary

Contact: 971-673-1111 | [cd.summary@state.or.us](mailto:cd.summary@state.or.us) | [www.healthoregon.org/cdsummary](http://www.healthoregon.org/cdsummary)

## FLU IN THE TIME OF COVID-19

Every year, we put out the call for people to get vaccinated against influenza. This year, the call is particularly pressing. The 2020–2021 flu season begins amidst a pandemic of another respiratory disease and an unsettling number of unknowns — the pathophysiology of COVID-19, treatment strategies for this new disease, and the design and delivery of a novel vaccine. We worry about influenza and SARS-CoV-2 coinfection and the potential for a synergistic increase in disease severity: little is known about the possible interactions of the two viruses, but both have been associated with serious cardiovascular complications, for example.<sup>1,2</sup> Moreover, we foresee an increased burden on our health systems — personnel, hospital beds, personal protective equipment, specimen collection kits, testing supplies, and laboratory capacity — as we collectively battle seasonal flu (itself nothing to sneeze at, with 12,000–61,000 deaths nationally per year<sup>3</sup>) and an infectious disease disaster unlike any the world has seen in a century.<sup>4</sup>

### INFLUENZA AND COVID-19 HOSPITALIZATIONS

Oregon is one of 13 states that participates in the Influenza Hospitalization Surveillance Network (FluSurv-NET), a Centers for Disease Control and Prevention (CDC) Emerging Infections Program surveillance network that covers more than 27 million people (approximately 8% of the US population) in 80 counties.<sup>5</sup> In Oregon, FluSurv-NET identifies patients who are residents of Clackamas, Multnomah, and Washington counties and who are hospitalized within 14 days of a positive laboratory test for influenza from October 1 to April 30 each flu season. Detailed chart reviews are conducted to collect case risk factor and outcome information.

As COVID-19 rose from faraway disease emergence to pressing pandemic threat, CDC established a new surveillance system, COVID-19-Associated Hospitalization Surveillance Network (COVID-NET), based on FluSurv-NET, to identify and review laboratory-confirmed COVID-19 hospitalizations. This surveillance captures cases admitted from March 1, 2020, onwards and in Oregon includes residents of Clackamas, Multnomah, and Washington counties.

The 2019–2020 flu season was unusual in that it was initially dominated by influenza B circulation. Flu activity crested at the end of the year with 89 FluSurv-NET hospitalizations during the week of December 29, 2019 (Figure). The season then took on a bimodal character as declines in influenza B activity were overlaid with increases in influenza A/H1N1, most notably in late February 2020. Over the course of the season, 708 individuals in the Portland tri-county

area were hospitalized with influenza, and 26 (3.7%) of them died during their hospitalizations.

Following the start of surveillance on March 1, COVID-NET hospitalizations rose rapidly before peaking with 72 hospitalizations during the week of March 29<sup>th</sup>. After substantial declines during May–June, COVID-19 hospitalizations increased again during the summer, reaching 67 hospitalizations each during the weeks of July 5<sup>th</sup> and August 9<sup>th</sup>. In total, 1,090 Portland tri-county residents with COVID-19 were admitted from March 1 to September 5, 2020, and 125 (11.5%) died during their hospitalizations.

The period from March 1 to April 30 (from the start of surveillance for Portland Metro COVID-19 hospitalizations to the end of the 2019–2020 surveillance season for influenza) tells the complicated story of the real-world interactions of these two respiratory diseases. On the one hand, precautions put in place in March (under Governor Brown's executive orders as well as electively un-

Figure. FluSurv NET and COVID-NET hospitalizations, Clackamas, Multnomah, and Washington counties, October 1, 2019– September 5, 2020

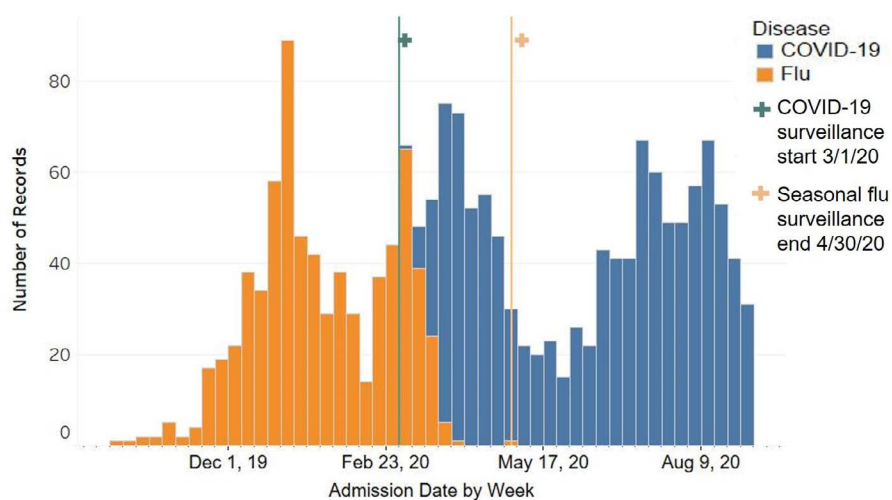


Table. 2020–2021 U.S. Influenza Vaccine Components

| STRAIN     | EGG-BASED VACCINES                               | CELL- OR RECOMBINANT-BASED VACCINES          |
|------------|--|--|
| A/H1N1     | A/Guangdong-Maonan/SWL1536/2019 (H1N1)pdm09-like | A/Hawaii/70/2019 (H1N1)pdm09-like            |
| A/H3N2     | A/Hong Kong/2671/2019 (H3N2)-like                | A/Hong Kong/45/2019 (H3N2)-like              |
| B/Victoria | B/Washington/02/2019-like (Victoria lineage)     | B/Washington/02/2019-like (Victoria lineage) |
| B/Yamagata | B/Phuket/3073/2013-like (Yamagata lineage)       | B/Phuket/3073/2013-like (Yamagata lineage)   |

dertaken by individuals) to prevent the transmission of COVID-19 helped to bring about a precipitous decline in influenza activity. On the other hand, we can see the combined burden of these two diseases from March to April (Figure). This graph also invites us to consider the costs of nine straight months of sustained respiratory disease activity — and with no end in sight.

### THE 2020–2021 FLU SEASON

Vaccination against influenza takes on a new urgency this year—to prevent both the misery of *la grippe* and concern for COVID-19, which presents with similar symptoms; the latter is important for the individuals who might be asked to isolate themselves and for health care systems that will expend additional personal protective equipment and testing supplies in ruling out SARS-CoV-2 infection. Influenza vaccination is recommended for all individuals 6 months of age and older without medical contraindications before the end of October. This season’s flu vaccine features updated influenza A/H1N1, A/H3N2, and B/Victoria components, though the specific viral strains differ by vaccine brand (Table).<sup>4</sup>

While vaccination is broadly recommended for all persons, it is particularly needed for those at higher risk of complications, including children <5 and adults ≥50 years of age, persons with chronic health conditions, immunocompromised persons, pregnant and postpartum persons, American Indians and Alaska Natives, and people living in congregate settings. Additionally, people who live with or take care of any of these high-risk groups are a priority for vaccination.<sup>4</sup>

The sole contraindication for inactivated and recombinant influenza vaccines is a history of a previous severe allergic reaction to a prior influenza vaccine or one of its components. A history of developing Guillain-Barré syndrome within 6 weeks of a previous

influenza vaccine dose is considered a “precaution” for vaccination. Live attenuated influenza vaccine (LAIV) use requires additional consideration, and there are newly listed contraindications for it: asplenia (both anatomical and functional), presence of a cochlear implant, and any cranial cerebrospinal fluid (CSF) leak. As in previous years, LAIV should also be avoided by immunocompromised persons and their close contacts, pregnant persons, kids 2–4 years of age with asthma, kids of any age receiving salicylates (aspirin), or persons who have recently received influenza antiviral medications — with expanded timeline restrictions: within 48 hours for oseltamivir and zanamivir, 5 days for peramivir, and 17 days for baloxavir.<sup>4</sup>

Two new vaccine licensures mean that quadrivalent protection will be available for the high-dose and adjuvanted vaccines recommended for adults ages ≥65: Fluzone High-Dose Quadrivalent (HD-IIV4, requiring a slightly higher dose volume (0.7 mL) than its trivalent predecessor) and Flud Quadrivalent (aIIV4).<sup>4</sup> Multiple studies — including one based on Oregon FluSurv-NET and immunization registry data — show that both high-dose and adjuvanted vaccines provide better protection for older adults than do standard-dose vaccines, though CDC’s Advisory Committee on Immunization Practices has expressed no preference for one formulation over the other.<sup>6–9</sup> In general, better to vaccinate with what you have than to miss an opportunity that may never be made up.

There are plenty of unknowns on the path ahead—with our first fall and winter with COVID-19 and the flu season never easy to predict — but one known is that the influenza vaccine is available and offers protection. And that now is the time to get one.

### FOR MORE INFORMATION

- Oregon FluBites: <http://bit.ly/flubites>

- CDC FAQ for the 2020–2021 Influenza Season: [www.cdc.gov/flu/season/faq-flu-season-2020-2021.htm](http://www.cdc.gov/flu/season/faq-flu-season-2020-2021.htm)
- CDC FluView: <https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html>
- CDC COVIDView: [www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html](http://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html)

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