

OREGON PUBLIC HEALTH DIVISION • OREGON HEALTH AUTHORITY

INFLUENZA: PREPARING FOR THE ONSLAUGHT

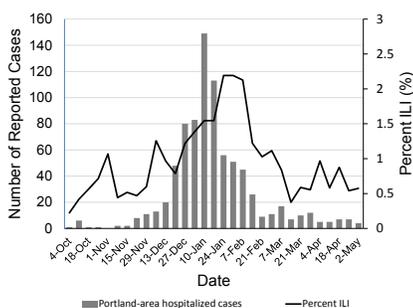
**F**all is coming! So as you dig out your sweaters and scarves, remember that on the chilly fall breeze comes the flu virus.

Several data sources contribute to our understanding of flu activity throughout Oregon. These include: 1) active monitoring of hospitalized, laboratory-confirmed cases the Portland tri-county area; 2) influenza-like illness (ILI) in the chief complaints as reported by Oregon's 60 hospital emergency departments; 3) ILI reported by 23 sentinel providers in 14 counties; 4) reported respiratory outbreaks; and 5) sightings of novel strains of influenza. During each October–April flu season we publish a weekly *Flu Bites* report (<http://bit.ly/flubites>) describing local trends in flu and ILI. In this issue of the *CD Summary* we'll review last year's epic flu season and plan for the inevitable next one.

**LAST YEAR'S FLU**

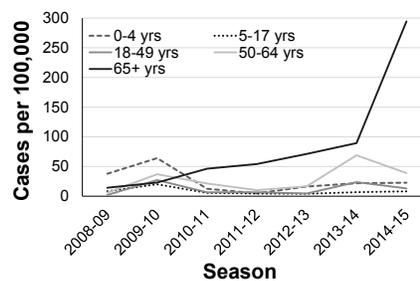
During the 2014–2015 flu season, hospitals in the Portland area (43% of Oregon's population) reported 810 hospitalizations due to flu — more than in any previous season. This represents a crude rate of 49 persons hospitalized with flu for every 100,000 residents. Cases peaked the week of January 4–10, 2015 (figure 1). Flu hospitalizations in adults ≥65 years old

**Figure 1. Portland-area influenza hospitalizations and ILINet percent of ILI outpatient visits**



jumped from 89 per 100,000 in 2013–2014 to 294 per 100,000 in 2014–2015 (figure 2).

**Figure 2. Oregon EIP surveillance area influenza hospitalizations by age; 2008–2009 through 2014–2015 influenza seasons**



Why such morbidity last year? First, H3N2-predominant seasons always cause relatively high rates of hospitalization, especially in folks ≥65 years of age, who accounted for 67% of hospitalized cases in Oregon. Second, the predominant H3N2 virus in circulation (A/Switzerland/9715293/2013) had drifted antigenically from the influenza A (H3N2) component in the seasonal vaccine, so that the vaccine was only 19% effective in preventing flu-related medical visits.<sup>1</sup>

**MONITORING ILI**

Influenza-like Illness (ILI) is defined as fever ≥100°F, plus cough or sore throat. Because many cases of influenza are never confirmed by lab testing, ILI is a more sensitive indicator of flu activity than hospitalizations. Last season, emergency department visits for ILI peaked at 4.1% of visits during the week of January 18–24, 2015. Data from “ILINet” — a network of voluntarily reporting “sentinel” providers — showed that outpatient visits for ILI peaked at 2.2% of visits during the week of January 11–17. However, only 17 Oregon providers reported regularly to ILINet. To strengthen ILINet reporting we are seeking outpatient providers to report aggregate data on

flu visits. The reward for participation is free testing of two respiratory specimens per week at the Oregon State Public Health Laboratory. Email the flu team for details: [Flu.Oregon@state.or.us](mailto:Flu.Oregon@state.or.us)

**OUTBREAKS IN LTCFs**

Last season 80 outbreaks of ILI were reported in Oregon — 65 (80%) of them in long-term care (LTCFs) or assisted-living facilities. Since the residents in LTCFs are generally elderly and often participate in communal activities, they are at increased risk for respiratory illness, and can have more severe outcomes if infected. Flu vaccinations are one way to prevent disease in this population. Many LCTFs offer flu vaccination to all residents, but ILI outbreak investigations have found that LTCF employees, who may bring the virus into their workplace, are often unvaccinated. We surveyed LCTFs and found that during 2011–2014 the LTCF employee vaccination was an inadequate 51%–58%.<sup>\*</sup> All LTCF and assisted-living facility employees should be strongly urged to get immunized annually against influenza, because they work in a communal environment where respiratory illness can spread quickly to a population at high risk for flu complications.

CDC has developed extensive influenza guidance specific for LCTFs: [www.cdc.gov/flu/professionals/infectioncontrol/ltc-facility-guidance.htm](http://www.cdc.gov/flu/professionals/infectioncontrol/ltc-facility-guidance.htm). To control an influenza outbreak:

- Promote handwashing and “cover your cough”
- Implement Standard and Droplet Precautions (i.e., use gowns and gloves) for residents with confirmed or suspected influenza
- Limit communal activities, communal meals, and new resident admission

<sup>\*</sup> [https://public.health.oregon.gov/DiseasesConditions/CommunicableDisease/DiseaseSurveillanceData/Influenza/Pages/Hospital\\_Surveillance.aspx](https://public.health.oregon.gov/DiseasesConditions/CommunicableDisease/DiseaseSurveillanceData/Influenza/Pages/Hospital_Surveillance.aspx)



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- Inform visitors that an ILI outbreak is occurring, and discourage visiting until the outbreak has passed
- Administer antiviral treatment (e.g., oseltamivir) to ill residents
- Offer antiviral chemoprophylaxis to all well residents, regardless of vaccination status. Antiviral administration requires a doctor's prescription, so if your facility does not have a medical director, have plans to contact residents' primary care providers quickly if an outbreak occurs.

## BIRD FLU

Also notable during the 2014–2015 flu season was the detection of highly pathogenic avian influenza (HPAI), first seen in Oregon in wild birds and a backyard flock in December 2014. These illnesses were caused by H5N8 and H5N2 strains. Since then, millions of infected birds have been detected across the U.S., including huge commercial poultry flocks in the Midwest. Poultry is a \$48.3 billion industry in the U.S., so controlling HPAI in such flocks has become a national priority.<sup>2</sup>

Although no transmission from birds to humans has been confirmed, anyone who has contact with infected birds must be monitored for flu-like symptoms, and many are prescribed oseltamivir prophylaxis. Flu vaccination is especially important in individuals working with poultry to prevent dual infection with seasonal flu and HPAI viruses, which could result in viral reassortment and the birth of a pandemic. Working with CDC and USDA, state departments of public health, agriculture, and fish and wildlife are actively monitoring exposed individuals.

## VACCINATION

Vaccination is still our best weapon against the flu. The U.S. Advisory Committee on Immunization Practices recommends annual influenza vaccination for everyone  $\geq 6$  months of age, with either live, attenuated influenza vaccine (LAIV) or inactivated influenza vaccine (IIV); no preference is expressed when either one is otherwise appropriate.<sup>3</sup> The astute clinician may notice that this is a departure from last year's preferential recommendation for LAIV instead of IIV in healthy children 2–8 years of age.

Remind patients and staff that vaccination can protect both those vaccinated and their loved ones, including babies <6 months of age, who are too young to get immunized themselves and elderly grandparents whose immune response to vaccine may be weaker. The flu vaccine is far from perfect, but persons who contract influenza despite vaccination are less likely than the vaccine-naïve to be hospitalized or to die from it. In a recent study CDC found that flu vaccine reduced children's risk of flu-related pediatric intensive care unit (PICU) admission by 74%.<sup>4</sup>

Next season's flu vaccine will contain the following:<sup>5</sup>

- A/California/7/2009 (H1N1)-like virus
- A/Switzerland/9715293/2013 (H3N2)-like virus (last year's drifted strain)
- B/Phuket/3073/2013-like virus (also a new strain this year)
- The quadrivalent vaccine will additionally contain a B/Brisbane/60/2008-like virus (the

same strain contained in the 2014–2015 quadrivalent vaccine).

## ANTIVIRALS

CDC recommends antiviral treatment as early as possible for patients with confirmed or suspected flu who are hospitalized, have severe disease, or are at high risk for complications.<sup>6</sup> High-risk groups include people  $\geq 65$  years of age, young children, pregnant women, and people with underlying medical conditions. There is negligible viral resistance to the neuraminidase inhibitors oseltamivir and zanamivir, and these drugs can shorten the duration of fever and other symptoms, and probably reduce the risk of complications from flu. Forget about adamantanes—they are not active at all against influenza B viruses, and there almost all influenza A viruses isolated in recent years have been resistant.

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