Summit County Public Health
Influenza Surveillance Report
2018 – 2019 Season
Report #2
Flu Surveillance Week 3 (10/21/2018 to 10/27/2018)
Centers for Disease Control and Prevention MMWR Week 43

Summit County Surveillance Data:

In **Week 3** of influenza surveillance, influenza-related activity remained low in Summit County.

Table 1: Overall Influenza Activity Indicators in Summit County by Week

	Week 2 MMWR 42 N (%)[1]	Week 3 MMWR 43 N (%)[1]	Percent change from previous week	Number of weeks increasing or decreasing
Lab Reports				
Test Performed	305	433	**+ 42.0%**	**↑2**
Positive Tests (Number and %)	1 (0.3)	4 (0.3)	**+ 300%**	**↑1**
Influenza A (Number and %)	1 (0.3)	3 (0.0)	**+ 200%**	**↑1**
Influenza B (Number and %)	0 (0.0)	1 (0.3)	**+ 100%**	**↑1**
Acute care hospitalization for Influenza:	0	3	**+ 100%**	**↑1**
Influenza ILI Community Report:				
Long-term Care ILI	0	0	--	--
Correctional & Addiction Facility	0	0	--	--
Physician Offices & Clinics	0	1	**+ 100%**	**↑1**
Pharmacy Prescriptions				
Amantidine	4	3	**- 25.0%**	**↓1**
Rimantidine Flumadine	0	0	--	--
Relenza	0	0	--	--
Oseltamivir Tamiflu	3	1	**- 66.7%**	**↓1**
Total	7	4	**- 42.9%**	**↓1**
Schools absenteeism[2]	5.1	5.5	**+ 7.8%**	**↑1**
Deaths				
Pneumonia associated	4 (4.1)	6(5.7)	**39.0%**	**↑1**
Influenza associated	0	0	--	--
Emergency room visits (EpiCenter)[3]				
Constitutional Complaints	432 (7.7)	437 (7.6)	**- 1.3%**	**↓2**
Fever and ILI	54 (1.0)	61 (1.1)	**+10.0%**	**↑1**

1) N and % are reported when available

2) Absence is for any reason. Percent is from total number of students enrolled. Data was collected from 7 schools or school districts throughout Summit County (n = ~36,000 students)

3) Percent is from total number of emergency room interactions

Note: *Data is provisional and may be updated as more information is received.* Percentages should be interpreted with caution. Small changes in number can result in large changes in percent. When a percentage , or prevalence, is available in this table, the percent change will be calculated from those values

Zero deaths related to influenza were reported during Week 3, however there were 6 total deaths associated with pneumonia. **Figure 1** displays weekly Summit County death counts associated with pneumonia and influenza.

Acute Care Hospitalizations: There were 3 reported hospitalizations during Week 3. **Figure 2** displays Influenza Associated Hospitalizations in Summit County.

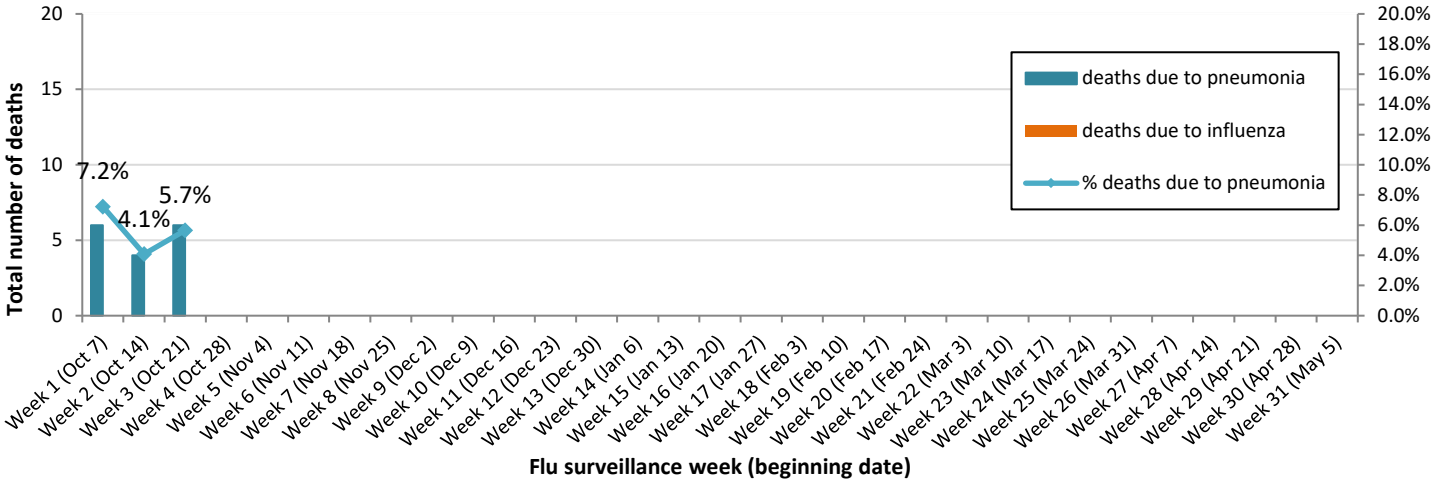
COMMUNITY ILI REPORTS:
Influenza like Illness (ILI) as defined by the CDC is fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. Community ILI reports: **Long Term Care Facilities:** There were 0 cases ILI reported. **Correctional and Inpatient Addiction facilities:** Zero cases ILI reported. **Physician offices and clinics:** During Week 3, there was one case of ILI reported.

Pharmacies: Four prescriptions for antiviral medications were reported during Week 3.

School absenteeism includes absences regardless of reason. In Week 3, the absence rate was 5.5% a 7.8% increase over the Week 2 rate.

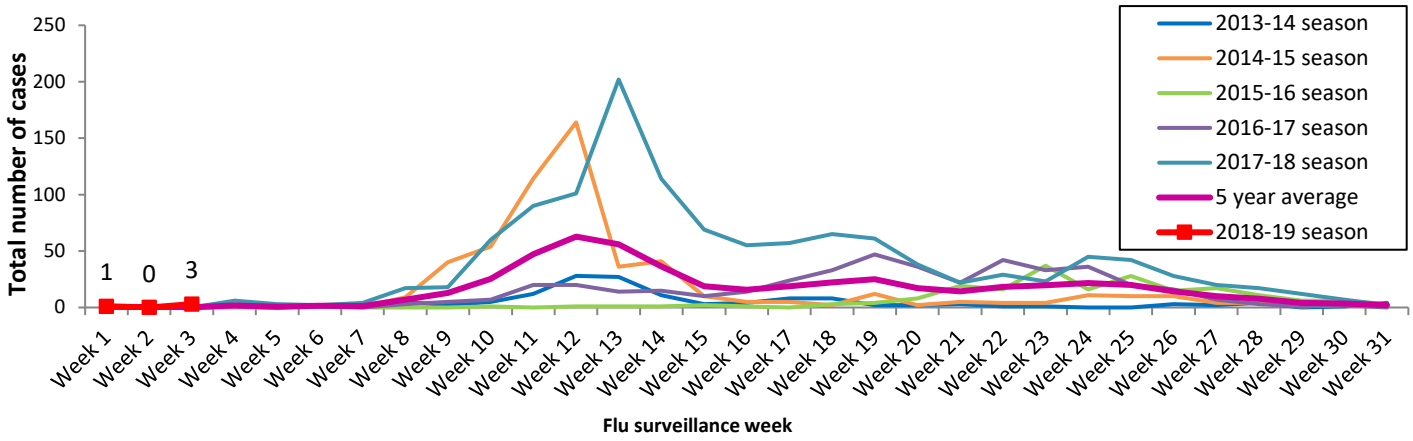
Lab reports: During the first Week 3 of influenza surveillance, Summit County labs performed 433 tests, of which 4 tested positive (3 Type A and 1 Type B). **(Figure 4)** As more hospitals replace the rapid flu test with BIOFIRE respiratory panels, the number of tests performed will likely increase this year.

Figure 1. Weekly Summit County death counts associated with pneumonia and influenza during 2018-2019 flu season



Influenza-associated hospitalization: Summit County hospitals reported 1 influenza-associated hospitalization in Week 1 and 0 hospitalizations during Week 2. **Figure 2** displays weekly confirmed hospitalization count for Summit County **(cumulative count to date =4).**

Figure 2. Summit County influenza-associated hospitalizations by week, 2018-2019 season and previous five seasons



EpiCenter collects and analyzes health related data in real time to provide information about the health of the community. This system tracks ER visits related to constitutional complaints and fever and ILI. **Figures 3** displays the weekly number of ER visits related to ILI and flu symptoms in Summit County, and there were 61 ILI-related visits reported during Week 3.

Figure 3. Weekly ER visits in Summit County related to Fever + ILI stratified by age groups, 2018 to 2019 influenza season

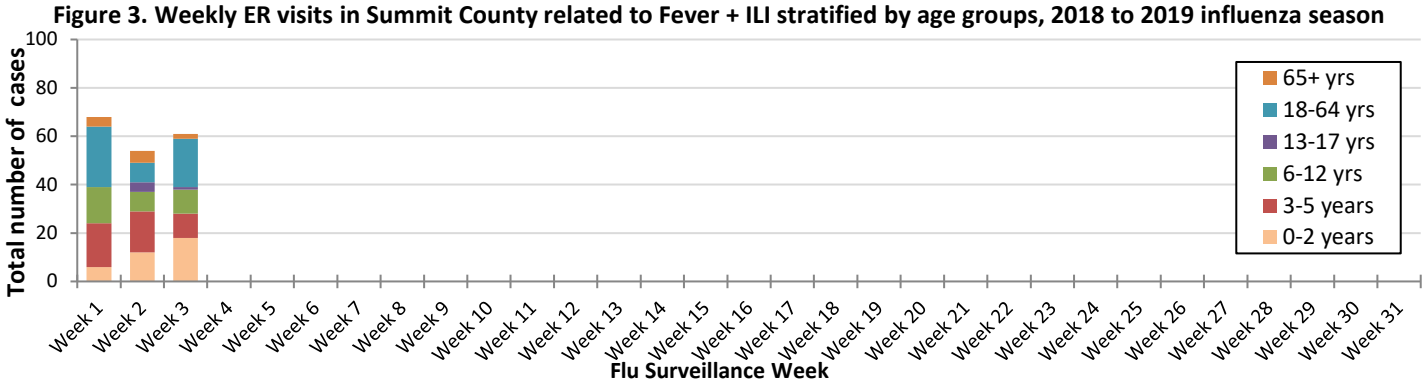
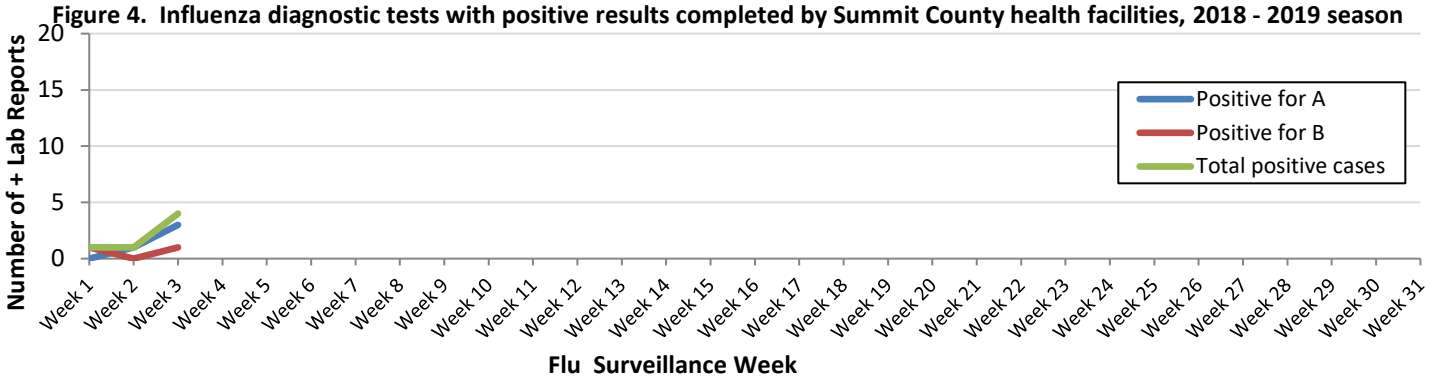


Figure 4. Influenza diagnostic tests with positive results completed by Summit County health facilities, 2018 - 2019 season



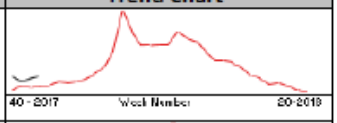
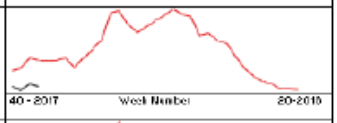
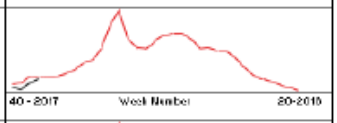
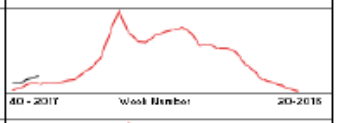
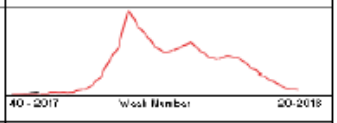
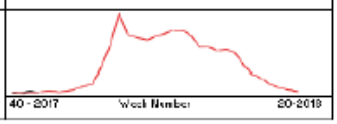
Ohio Influenza Activity:

Current Ohio Activity Level (Geographic Spread) – *Sporadic*

Definition: Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.

During MMWR Week 43, public health surveillance data sources indicate minimal intensity for influenza-like illness (ILI) in outpatient settings reported by Ohio's sentinel providers. The percentage of emergency department visits with patients exhibiting constitutional symptoms are slightly above baseline levels statewide; fever and ILI specified ED visits are below baseline levels. Reported cases of influenza-associated hospitalizations are below the seasonal threshold*. There were 14 influenza-associated hospitalizations reported during MMWR Week 43.

Ohio Influenza Activity Summary Dashboard (October 21 – 27, 2018):

Data Source	Current week value	Percent Change from last week[1]	# of weeks[2]	Trend Chart[3]
Influenza-like Illness (ILI) Outpatient Data (ILINet Sentinel Provider Visits)	0.97%	7.78%	↑ 2	
Thermometer Sales (National Retail Data Monitor)	964	-3.94%	↓ 1	
Fever and ILI Specified ED Visits (EpiCenter)	1.68%	7.01%	↑ 2	
Constitutional ED Visits (EpiCenter)	8.60%	2.38%	↑ 2	
Confirmed Influenza-associated Hospitalizations (Ohio Disease Reporting System)	14	100.00%	↑ 1	
Outpatient Medical Claims Data[4]	0.22%	-12.00%	↓ 1	

[1]Interpret percent changes with caution. Large variability may be exhibited in data sources with low weekly values.
[2]Number of weeks that the % change is increasing or decreasing.
[3]Black lines represent current week's data; red lines represent baseline averages
[4]Medical Claims Data provided by athenahealth®

Source: https://www.odh.ohio.gov/seasflu/Ohio%20Flu%20Activity.aspx

National Influenza Activity

Influenza activity in the United States remains low, although small increases in activity were reported. Influenza A(H1N1)pdm09, influenza A(H3N2), and influenza B viruses continue to co-circulate, with influenza A(H1N1)pdm09 viruses reported most commonly by public health laboratories during the most recent three weeks. Below is a summary of the key influenza indicators for the week ending October 27, 2018:

- **Viral Surveillance:** Influenza A viruses have predominated in the United States since the beginning of July. The percentage of respiratory specimens testing positive for influenza in clinical laboratories was low.
    - **Virus Characterization:** The majority of influenza viruses characterized antigenically and genetically are similar to the cell-grown reference viruses representing the 2018–2019 Northern Hemisphere influenza vaccine viruses.
    - **Antiviral Resistance:** All viruses tested since late May show susceptibility to the antiviral drugs oseltamivir, zanamivir, and peramivir.
- **Influenza-like Illness Surveillance:** The proportion of outpatient visits for influenza-like illness (ILI) increased slightly to 1.7%, which is below the national baseline of 2.2%. All regions reported ILI below their region-specific baseline level.
    - **ILI State Activity Indictor Map (Figure 6):** New York City and two states experienced low ILI activity; the District of Columbia and 48 states experienced minimal ILI activity; and Puerto Rico had insufficient data.
- **Geographic Spread of Influenza (Figure 7):** The geographic spread of influenza in five states was reported as local; the District of Columbia, Puerto Rico, the U.S. Virgin Islands and 43 states reported sporadic activity; two states reported no activity; and Guam did not report.
- **Pneumonia and Influenza Mortality:** The proportion of deaths attributed to pneumonia and influenza (P&I) was below the system-specific epidemic threshold in the National Center for Health Statistics (NCHS) Mortality Surveillance System.
- **Influenza-associated Pediatric Deaths:** Three influenza-associated pediatric deaths were reported to CDC. One occurred during the 2018-2019 season and two occurred during the 2017-2018 season.

National Outpatient Illness Surveillance:

Nationwide during week 42, 1.5% of patient visits reported through the U.S.Outpatient Influenza-like Illness Surveillance Network (ILINet) were due to influenza-like illness (ILI). This percentage is below the national baseline of 2.2%. (ILI is defined as fever (temperature of 100°F [37.8°C] or greater) and cough and/or sore throat.) On a regional level, the percentage of outpatient visits for ILI ranged from 0.6% to 2.5% during week 42. All regions reported a percentage of outpatient visits for ILI below their region-specific baseline.

Figure 5. Percentage of visits for influenza-like illness (ILI) reported by the U.S. Outpatient Influenza-like Surveillance Network (ILINet), weekly national summary, 2018-2019 and selected previous seasons

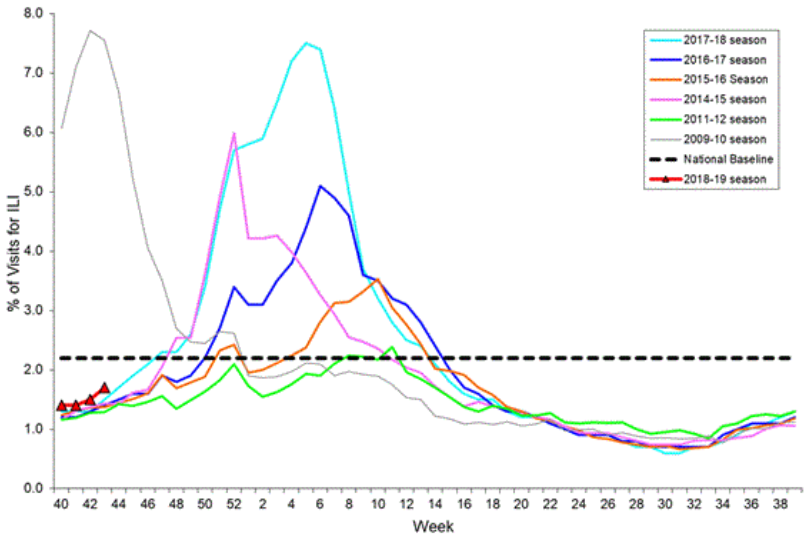


Figure 6. Influenza-like illness (ILI) activity level indicator determined by data reported to ILINet

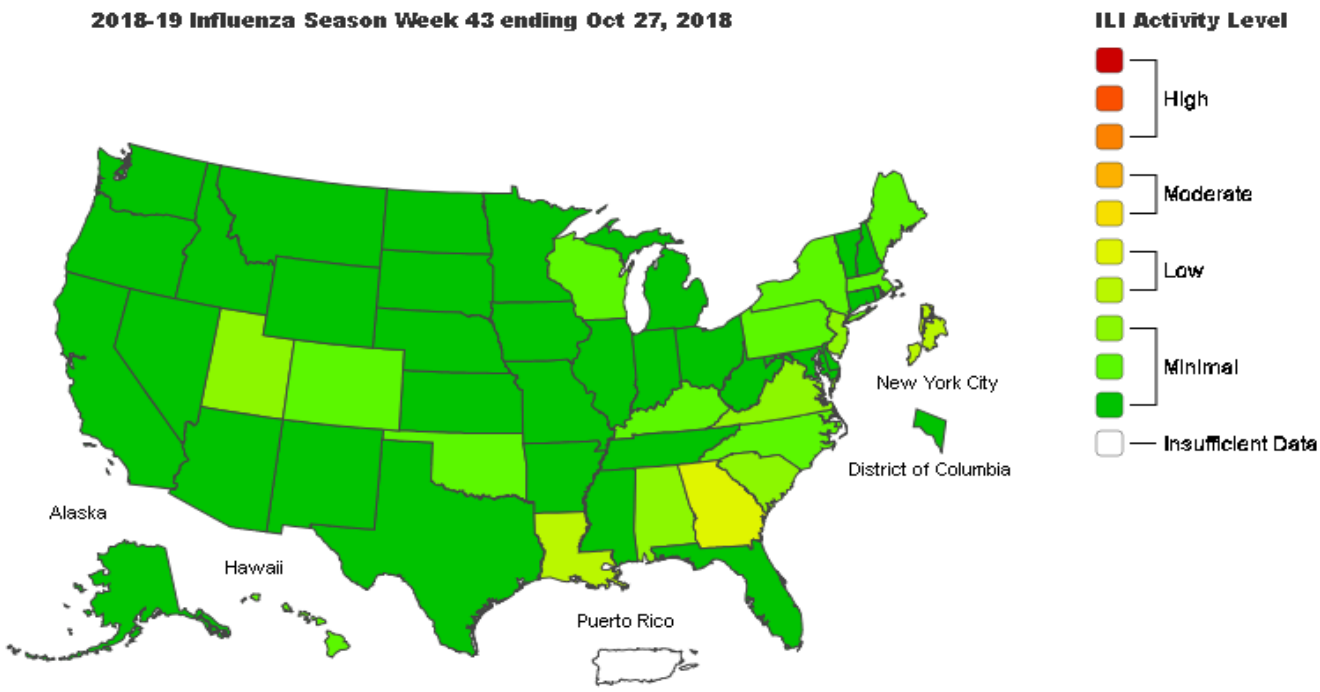
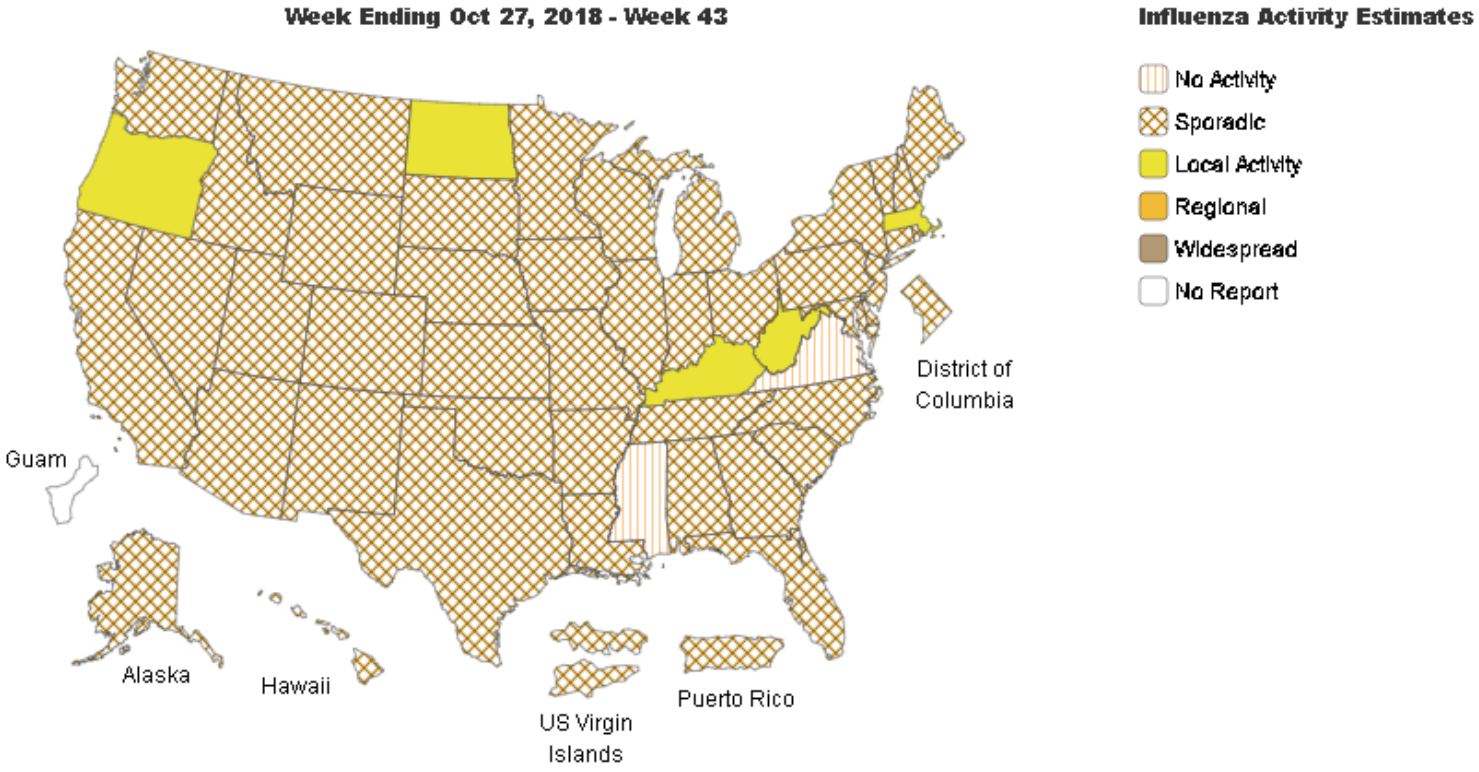


Figure 7. Weekly influenza activity (geographic spread) estimates reported by state and territorial epidemiologists



Source: https://www.cdc.gov/flu/weekly/

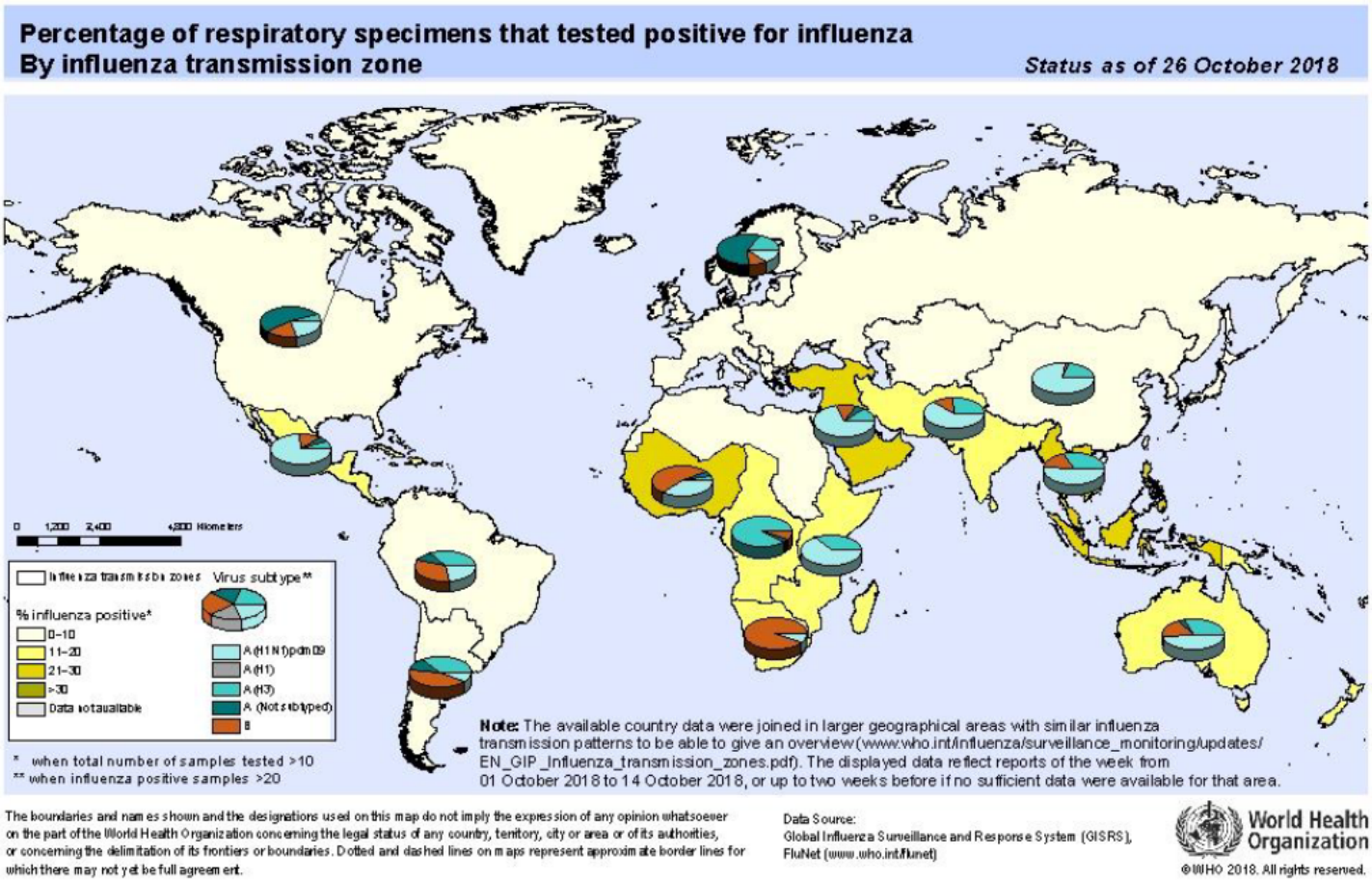
Global Surveillance:

Influenza Update Nº 327, World Health Organization (WHO), published 10/29/2018, based on data up to 10/14/2018. The Update is published every two weeks:

Report Summary:

- In the temperate zone of the northern hemisphere influenza activity remained at inter-seasonal levels. Increased influenza detections were reported in some countries of Southern and South-East Asia. In the temperate zones of the southern hemisphere, influenza activity appeared to decrease overall. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections.

- National Influenza Centres (NICs) and other national influenza laboratories from 114 countries, areas or territories reported data to FluNet for the time period from 01 October 2018 to 14 October 2018 (data as of 2018-10-26 05:19:52 UTC). The WHO GISRS laboratories tested more than 89996 specimens during that time period. 2890 were positive for influenza viruses, of which 2432 (84.2%) were typed as influenza A and 458 (15.8%) as influenza B. Of the sub-typed influenza A viruses, 1559 (80.1%) were influenza A(H1N1)pdm09 and 387 (19.9%) were influenza A(H3N2). Of the characterized B viruses, 67 (62%) belonged to the B-Yamagata lineage and 41 (38%) to the B-Victoria lineage.



Source: https://www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/

Information from the Centers for Disease Control and Prevention (CDC):

Misconceptions about Flu Vaccines

Can a flu vaccine give you the flu?

No, flu vaccines cannot cause flu illness. Flu vaccines given with a needle (i.e., flu shots) are currently made in two ways: the vaccine is made either with a) flu viruses that have been 'inactivated' (killed) and that therefore are not infectious, or b) using only a single gene from a flu virus (as opposed to the full virus) in order to produce an immune response without causing infection. This is the case for recombinant influenza vaccines.

Are any of the available flu vaccines recommended over the others?

CDC recommends use of any licensed, age-appropriate influenza vaccine (inactivated influenza vaccines [IIV], recombinant influenza vaccine [RIV], or live attenuated influenza vaccine [LAIV4]) with no preference expressed for one vaccine over another during the 2018-2019 flu season. Nasal spray vaccine (LAIV4) is again a recommended option for people for whom it is otherwise appropriate. Different flu vaccines are approved for use in different groups of people. Factors that can determine a person's suitability for vaccination, or vaccination with a particular vaccine, include a person's age, health (current and past) and any allergies to flu vaccine or its components.

Unlike the flu shot, the nasal spray flu vaccine (also known as the "live attenuated influenza vaccine" or "LAIV") does contain live influenza viruses, but the viruses are attenuated (weakened), so that they will not cause flu illness. In addition, these weakened viruses are cold-adapted, which means they are designed to only replicate (multiply) at the cooler temperatures found within the nose. These viruses cannot infect the lungs or other areas where warmer temperatures exist.

Is it better to get the flu than the flu vaccine?

No. Flu can be a serious disease, particularly among young children, older adults, and people with certain chronic health conditions, such as asthma, heart disease or diabetes. Any flu infection can carry a risk of serious complications, hospitalization or death, even among otherwise healthy children and adults. Therefore, getting vaccinated is a safer choice than risking illness to obtain immune protection.

Do I really need a flu vaccine every year?

Yes. CDC recommends a yearly flu vaccine for just about everyone 6 months and older, even when the viruses the vaccine protects against have not changed from the previous season. The reason for this is that a person's immune protection from vaccination declines over time, so an annual vaccination is needed to get the "optimal" or best protection against the flu.

Why do some people not feel well after getting the seasonal flu vaccine?

Some people report having mild reactions to flu vaccination. The most common side effects from flu shots are soreness, redness, tenderness or swelling where the shot was given. Low-grade fever, headache and muscle aches also may occur. If these reactions occur, they usually begin soon after the shot and last 1-2 days. In randomized, blinded studies, where some people get inactivated flu shots and others get salt-water shots, the only differences in symptoms was increased soreness in the arm and redness at the injection site among people who got the flu shot. There were no differences in terms of body aches, fever, cough, runny nose or sore throat.

Side effects from the nasal spray flu vaccine may include: runny nose, wheezing, headache, vomiting, muscle aches, fever, sore throat and cough. If these problems occur, they usually begin soon after vaccination and are mild and short-lived. The most common reactions people have to flu vaccines are considerably less severe than the symptoms caused by actual flu illness.

- Carolyn Bridges et al. (2000). Effectiveness and cost-benefit of influenza vaccination of healthy working adults: A randomized controlled trial.

- Kristin Nichol et al. (1995). The effectiveness of vaccination against influenza in healthy working adults. New England Journal of Medicine. 333(14): 889-893.

What about serious reactions to flu vaccine?

Serious allergic reactions to flu vaccines are very rare. If they do occur, it is usually within a few minutes to a few hours after the vaccination. While these reactions can be life-threatening, effective treatments are available.

What about people who get a seasonal flu vaccine and still get sick with flu symptoms?

There are several reasons why someone might get a flu symptoms, even after they have been vaccinated against flu.

1. One reason is that some people can become ill from other respiratory viruses besides flu such as rhinoviruses, which are associated with the common cold, cause symptoms similar to flu, and also spread and cause illness during the flu season. The flu vaccine only protects against influenza, not other illnesses.
2. Another explanation is that it is possible to be exposed to influenza viruses, which cause the flu, shortly before getting vaccinated or during the two-week period after vaccination that it takes the body to develop immune protection. This exposure may result in a person becoming ill with flu before protection from the vaccine takes effect.
3. A third reason why some people may experience flu like symptoms despite getting vaccinated is that they may have been exposed to a flu virus that is very different from the viruses the vaccine is designed to protect against. The ability of a flu vaccine to protect a person depends largely on the similarity or "match" between the viruses selected to make the vaccine and those spreading and causing illness. There are many different flu viruses that spread and cause illness among people. For more information, see Influenza (Flu) Viruses.
4. The final explanation for experiencing flu symptoms after vaccination is that the flu vaccine can vary in how well it works and some people who get vaccinated may still get sick.

Can vaccinating someone twice provide added immunity?

In adults, studies have not shown a benefit from getting more than one dose of vaccine during the same influenza season, even among elderly persons with weakened immune systems. Except for some children, only one dose of flu vaccine is recommended each season.

Is it true that getting a flu vaccine can make you more susceptible to other respiratory viruses?

There was one study (published in 2012) that suggested that influenza vaccination might make people more susceptible to other respiratory infections. After that study was published, many experts looked into this issue further and conducted additional studies to see if the findings could be replicated. No other studies have found this effect. For example, this article [99 KB, 5 pages] in Clinical Infectious Diseases (published in 2013). It's not clear why this finding was detected in the one study, but the preponderance of evidence suggests that this is not a common or regular occurrence and that influenza vaccination does not, in fact, make people more susceptible to other respiratory infections.

Source: https://www.cdc.gov/flu/about/qa/misconceptions.htm

About this report: *Reporting agencies include labs, hospitals, long-term care and community-based care providers, physician offices, university clinic, pharmacies, and schools. Agencies are distributed throughout Summit County and report different indicators of flu activity including total lab tests, numbers of positive tests and type, antiviral prescriptions filled, school absences, and influenza like illness (ILI). Hospitalizations are lab confirmed for influenza and are obtained from the Ohio Disease Reporting System. Number of deaths associated with influenza and pneumonia are gathered from the Summit County Office of Vital Records death listings. Emergency room visits for complaints related to influenza are obtained by syndromic surveillance system (Epicenter).*
Special thanks to all agencies who report Influenza related data weekly.

Reporting from participants may not be complete each week. Numbers may change as updated reports are received. For questions, please contact Joan Hall or Tracy Rodriguez at the Summit County Public Health Communicable Disease Unit (330-375-2662 or cdu@schd.org). Report was issued on November 2, 2018.