Summit County Public Health
Influenza Surveillance Report
2017 – 2018 Season
Report #14
Flu Surveillance Weeks 27 & 28 (Beginning 4/8/2018 through 4/21/2018)
Centers for Disease Control and Prevention MMWR Weeks 15 & 16

Summit County Surveillance Data:

In **Weeks 27 & 28** of influenza surveillance, influenza-related activity has decreased in Summit County.

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

	Week 27 MMWR Wk 15 N (%)*	Week 28 MMWR Wk 16 N (%)*	% change from previous week	Number of weeks increasing or decreasing
Lab Reports				
Total Test Performed	568	482	-15.1	↓2
Positive Tests (number and %)	97 (17.1)	61 (12.7)	-37.1	↓4
Influenza A (number and %)	41 (7.2)	28 (5.8)	-31.7	↓1
Influenza B (number and %)	56 (9.9)	33 (6.9)	-41.1	↓4
Acute care hospitalization for Influenza:	30	20	-33.3	↓3
Influenza ILI Community Report:				
Long-term Care ILI	1	0	-100.0	↓1
Correctional & Addiction Facility	0	0	--	--
Physician Offices & University Clinic	3	2	-50.0	↓1
Pharmacy Prescriptions				
Amantidine	2	3	50.0	↑1
Rimantidine Flumadine	0	0	--	--
Relenza	0	0	--	--
Oseltamivir Tamiflu	9	14	55.6	↑1
Total	11	17	54.6	↑1
School Absenteeism (%)**	13.8	17.0	23.2	↑1
Pneumonia and Influenza Deaths (Total for 2017-18 flu season)	182	183		
Pneumonia associated	4 (2.2)	1 (0.6)	-75.0	↓2
Influenza associated	0 (0.0)	0 (0.0)	--	--
Emergency room visits (Epi Center)***	6133	6014		
Constitutional Complaints	576 (9.4)	526 (8.8)	-6.4	↓3
Fever and ILI	97 (1.6)	69 (1.2)	-25.0	↓3

* N and % are reported when available

**Percent is from total number of students enrolled at all schools reporting, and also accounts for weeks less than 5 days. Seven schools located throughout Summit County, with a total enrollment of approximately 7100 students, report absences.

***Percent is from total number of emergency room interactions

[a] Percentages should be interpreted with caution. Small changes in number can result in big changes in percent.

[b] This percent change is the difference in percent (i.e., the percent change in prevalence). It is not the percent change in the number of tests, number of school absences, number of deaths, etc.)

There were zero influenza-associated deaths reported in Weeks 27 and 28. **Figure 1** displays weekly Summit County death counts associated with pneumonia and influenza. There were 33 influenza deaths this season, one of which was a pediatric death.

Lab reports: During Week 27, Summit County labs performed 568 tests, of which 41 tested positive for flu A and 56 for flu B. For Week 28, there were 482 tests: positive results were 28 flu A and 33 flu B. (**Figure 4**)

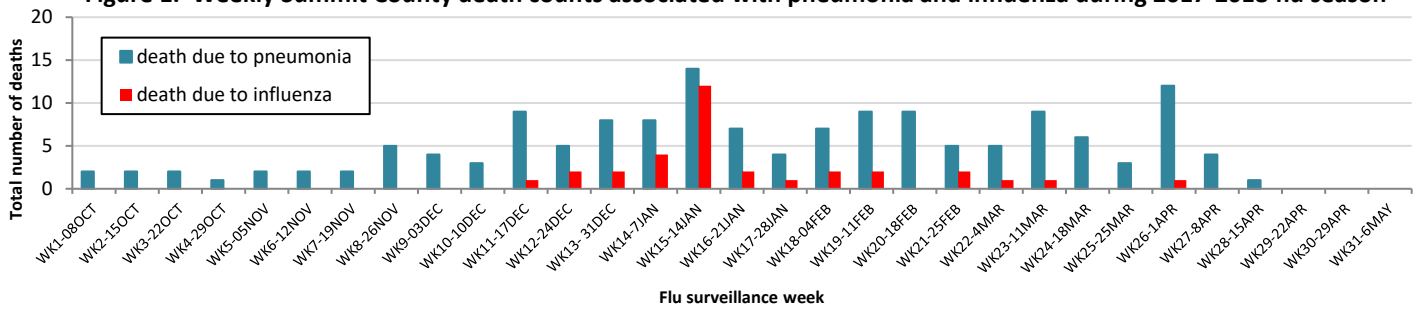
Acute Care Hospitalizations: 30 reported influenza associated hospitalizations during Week 27, and 20 in Week 28. **Figure 2** displays influenza-associated hospitalizations in Summit County.

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.
Long Term Care Facilities: There was 1 case of ILI reported from Long Term Care facilities in Week 27 and 0 in Week 28.
Correctional and Addiction facility: There were no cases of ILI reported in Weeks 27 and 28.
Physician Office and University Clinic: During Week 27, 3 cases of ILI were reported and Week 28 reported 2 cases.

Pharmacy: Amantadine was prescribed 2 times in Week 27 and 3 times in Week 28. Tamiflu was prescribed 9 times in Week 27 and 14 times in Week 28.

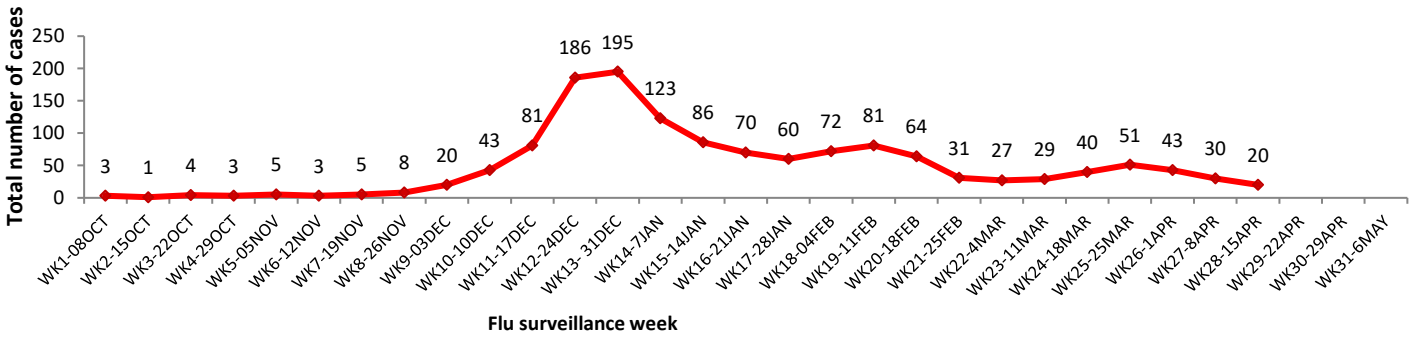
School absenteeism includes absences regardless of reason. In Week 27, there was an absence rate of 13.8% and in Week 28 the absence rate was 17.0%.

Figure 1. Weekly Summit County death counts associated with pneumonia and influenza during 2017-2018 flu season



Influenza-associated hospitalization: Summit County hospitals reported 30 influenza-associated hospitalizations in Week 27 and 20 hospitalizations during Week 28. **Figure 2** displays weekly confirmed hospitalization count for Summit County (**cumulative count to date = 1384**).

Figure 2. Summit County influenza-associated hospitalizations by week, 2017-2018 influenza season



EpiCenter collects and analyzes health related data in real time to provide information about the health of the community. For influenza surveillance, constitutional complaints, influenza-like illness (ILI), and fever are monitored. **Figure 3** displays the weekly number of ER visits related to ILI and fever symptoms in Summit County, stratified by age group. ILI-related ER visits have been steadily decreasing since mid-March. During Week 27, children aged less than 18 years accounted for nearly 75% of ILI-related ER visits and about one-half of visits during Week 28.

Figure 3. Weekly ER visits in Summit County related to Fever + ILI stratified by age

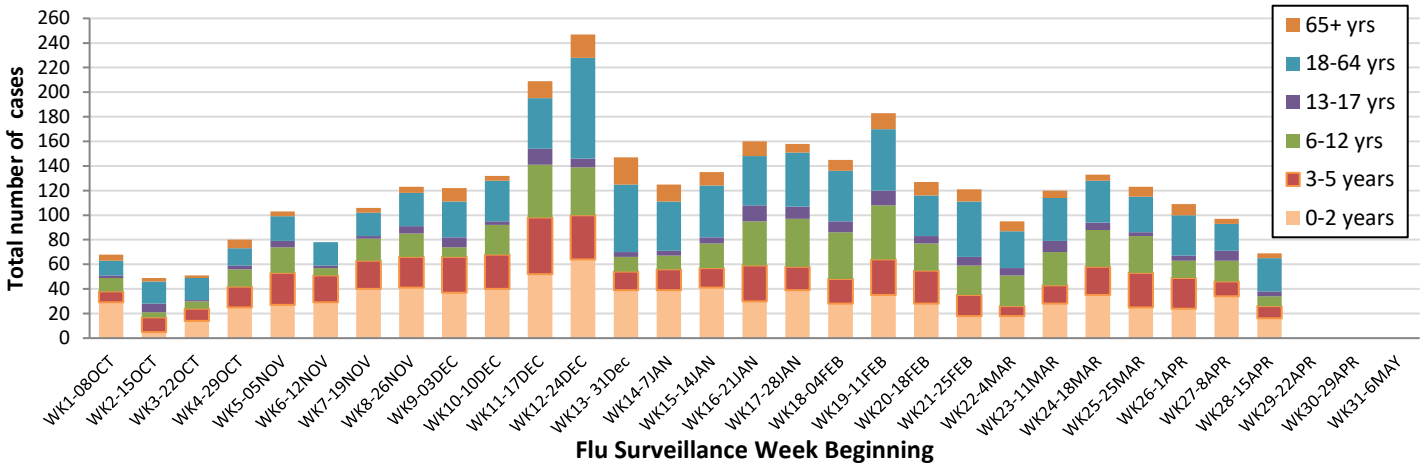
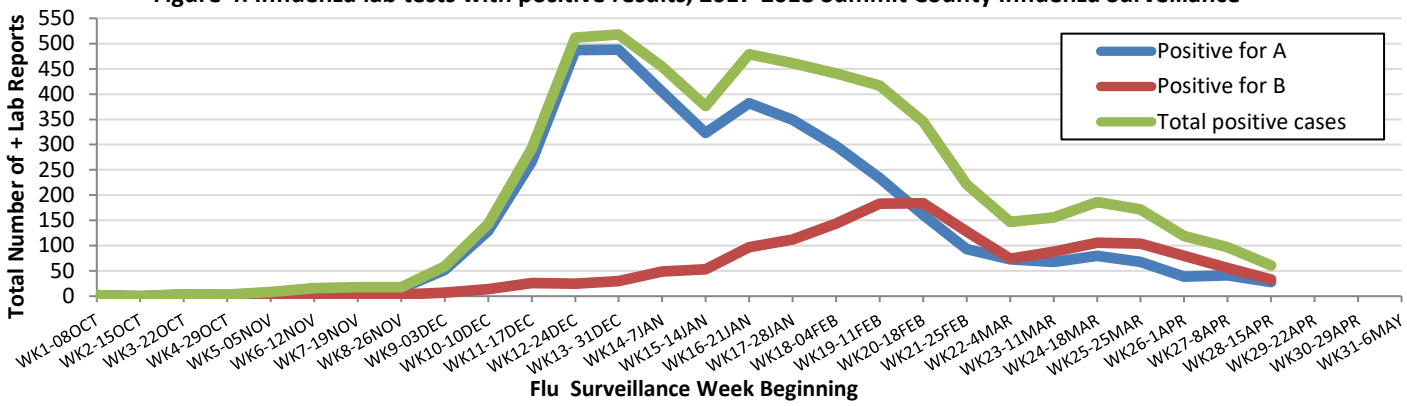


Figure 4: Influenza lab tests with positive results, 2017-2018 Summit County Influenza Surveillance

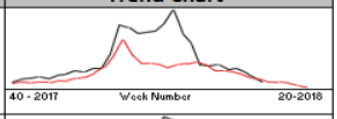
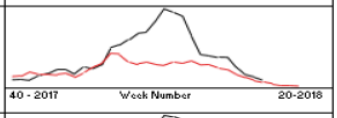
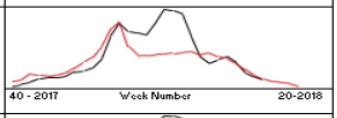
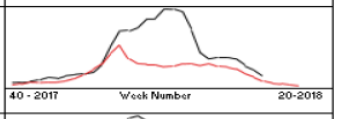
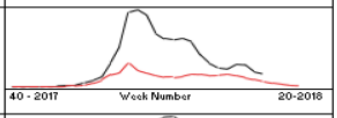
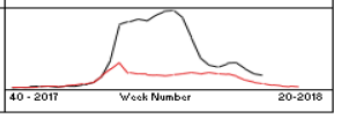


Ohio Influenza Activity: from the Ohio Department of Health:

Current Statewide Influenza Activity (for MMWR Week 16, April 15 – April 21, 2018):

Current Ohio Activity Level (Geographic Spread) – *Regional* *Definition: Increased ILI in > 2 but less than half of the regions AND recent (within the past 3 weeks) lab confirmed influenza in the affected regions, OR institutional outbreaks (ILI or lab confirmed) in > 2 but less than half of the regions AND recent (within the past 3 weeks) lab confirmed influenza in the affected regions.*

Ohio Influenza Activity Summary Dashboard: (April 15 – April 21, 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)	0.64%	-34.02%	↓ 3	
Thermometer Sales (National Retail Data Monitor)	1179	-9.75%	↓ 11	
Fever and ILI Specified ED Visits (EpiCenter)	1.64%	-6.82%	↓ 4	
Constitutional ED Visits (EpiCenter)	9.57%	-5.34%	↓ 5	
Confirmed Influenza-associated Hospitalizations (Ohio Disease Reporting System)	319	-12.60%	↓ 3	
Outpatient Medical Claims Data[4]	0.76%	-8.43%	↓ 3	

[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®

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

During week 16 (April 15-21, 2018), influenza activity decreased in the United States.

- **Viral Surveillance:** Overall, influenza A(H3) viruses have predominated this season. Since early March, influenza B viruses have been more frequently reported than influenza A viruses. The percentage of respiratory specimens testing positive for influenza in clinical laboratories decreased.
- **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:** Four influenza-associated pediatric deaths were reported.
- **Influenza-associated Hospitalizations:** A cumulative rate of 105.3 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported.
- **Outpatient Illness Surveillance:** The proportion of outpatient visits for influenza-like illness (ILI) was 1.7%, which is below the national baseline of 2.2%. One of 10 regions reported ILI at or above their region-specific baseline level. Three states experienced low ILI activity; and New York City, the District of Columbia, Puerto Rico, and 47 states experienced minimal ILI activity.
- **Geographic Spread of Influenza:** The geographic spread of influenza in four states was reported as widespread; Guam, Puerto Rico and nine states reported regional activity; 25 states reported local activity; the District of Columbia, the U.S. Virgin Islands and 10 states reported sporadic activity; and two states reported no influenza activity.

Figure 5. Percentage of visits for influenza-like illness (ILI) reported by the U.S. Outpatient Influenza-like Surveillance Network (ILINet), weekly national summary, 2017-2018 and selected previous seasons

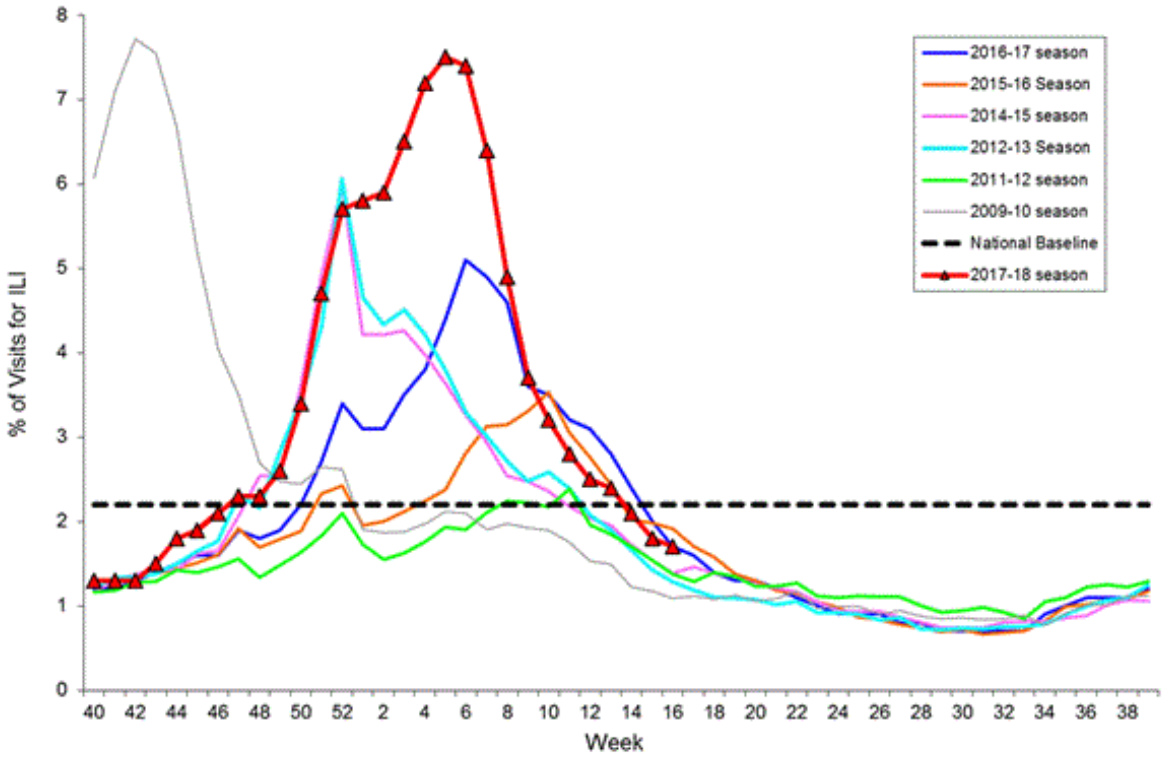


Figure 6. Influenza-like illness (ILI) activity level indicator determined by data reported to ILINet

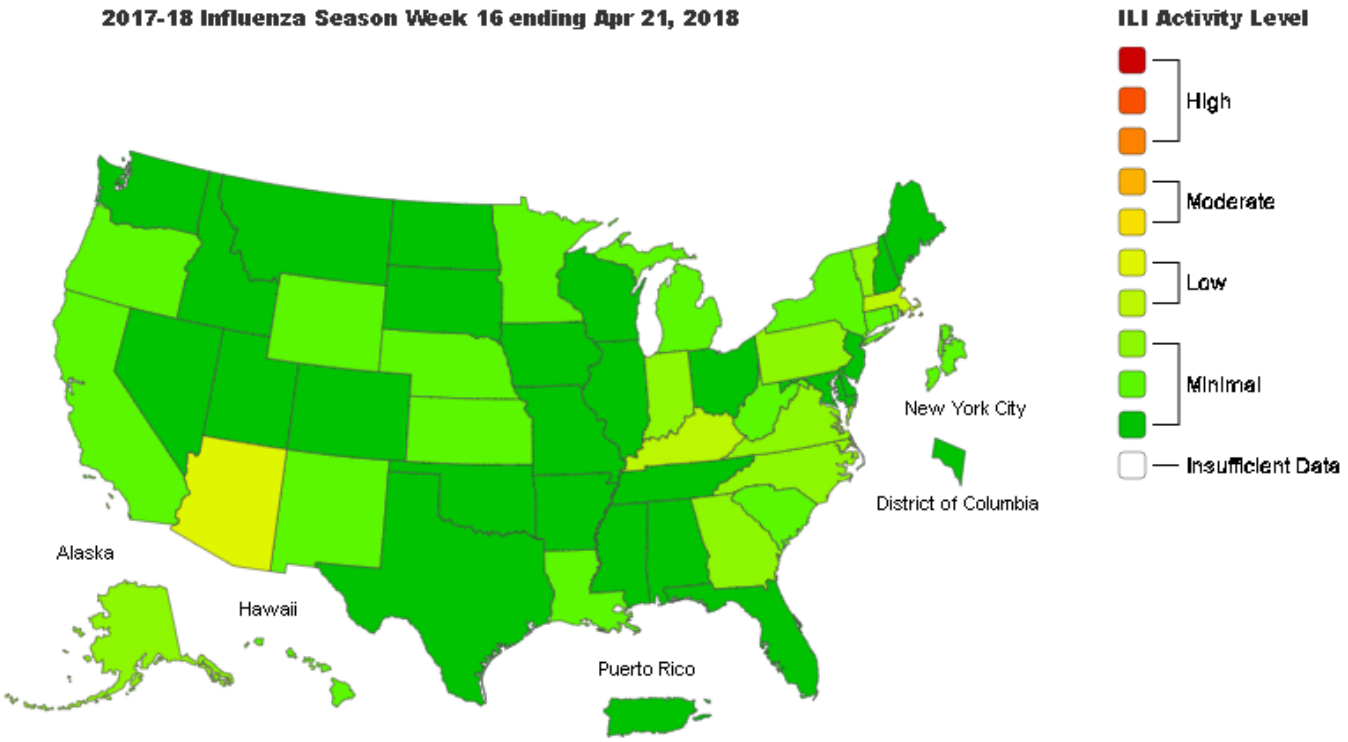
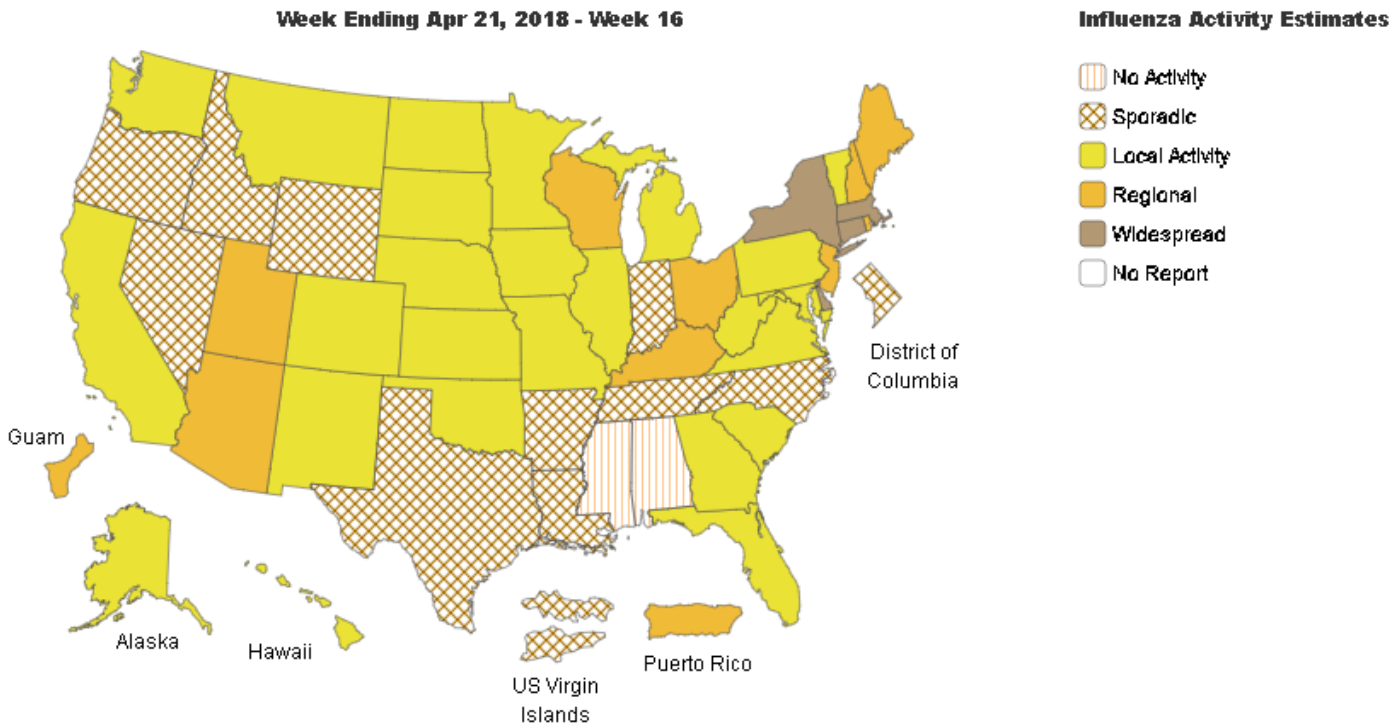


Figure 7. Weekly influenza activity (geographic spread) estimates reported by state and territorial epidemiologists



Reference: https://www.cdc.gov/flu/weekly/fluactivitysurv.htm

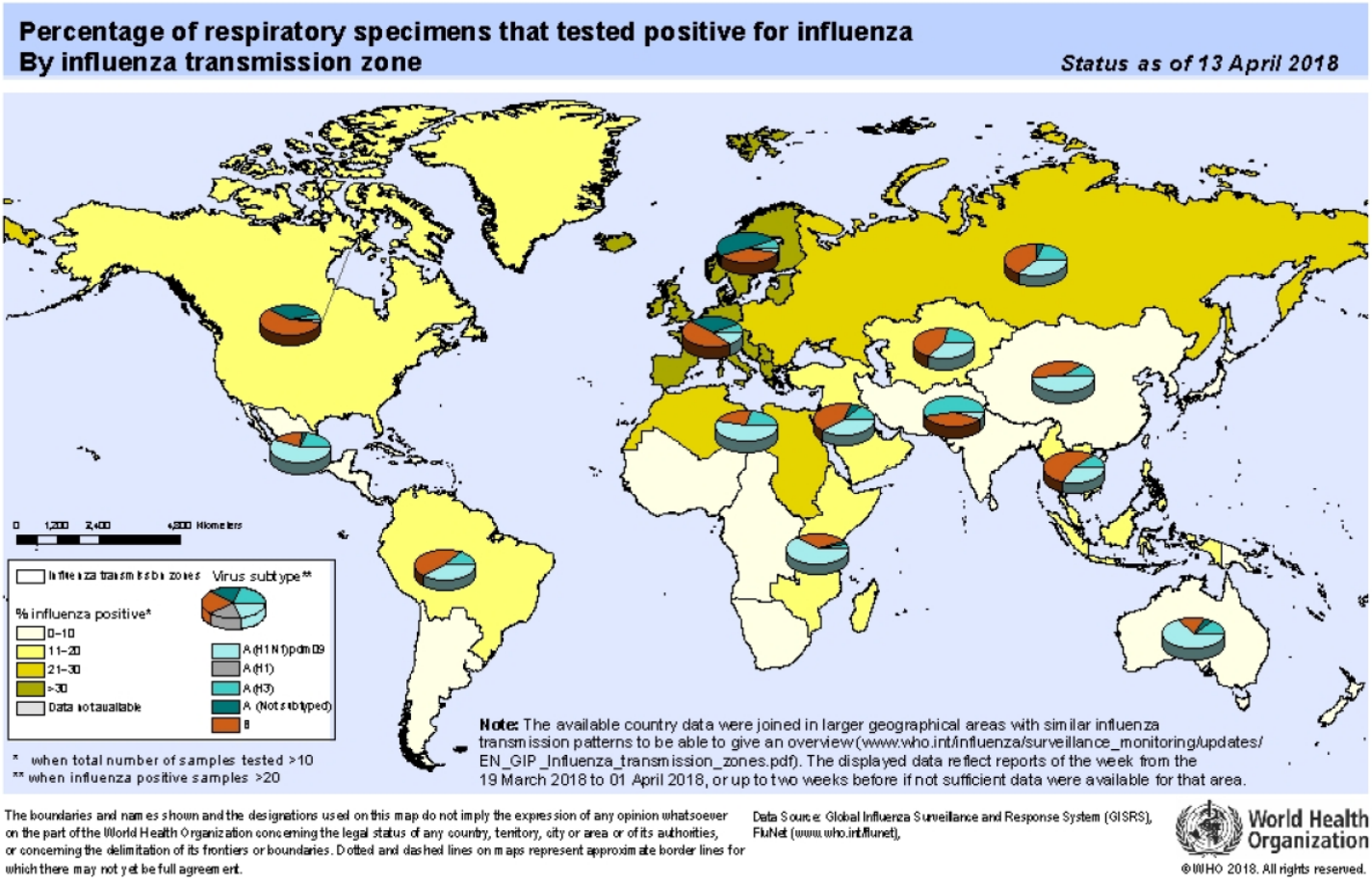
Global Surveillance:

Influenza Update Nº 313, World Health Organization (WHO), released 04/16/2018:

Influenza activity decreased in most of the countries in the temperate zone of the northern hemisphere, with exception of Eastern Europe, where activity continued to increase. In the temperate zone of the southern hemisphere, influenza activity remained at inter-seasonal levels. Worldwide, influenza A and influenza B accounted for a similar proportion of influenza detections.

National Influenza Centres (NICs) and other national influenza laboratories from 107 countries, areas or territories reported data to FluNet for the time period from 19 March 2018 to 01 April 2018 (data as of 2018-04-13 03:50:07 UTC).The WHO GISRS laboratories tested more than 171054 specimens during that time period. 34751 were positive for influenza viruses, of which 18186 (52.3%) were typed as influenza A and 16565 (47.7%) as influenza B. Of the sub-typed influenza A viruses, 4763 (62.7%) were influenza A(H1N1)pdm09 and 2839 (37.3%) were influenza A(H3N2). Of the characterized B viruses, 1704 (91%) belonged to the B-Yamagata lineage and 169 (9%) to the B-Victoria lineage.

- In North America, overall influenza activity and influenza indicators continued to decrease. Type B was the more predominant type detected in Canada, while types A and B co-circulated in the US and Mexico.
- Overall, influenza viruses continued to circulate widely in the European region, but most of the countries reported low to medium intensity. In Eastern Europe, influenza activity continued to increase with detections of influenza A and B viruses, especially in Latvia and the Russian Federation. In Northern and South West Europe, influenza A and B virus detections continued to decrease.
- In the Caribbean region, influenza activity has increased, especially in the Dominican Republic, Jamaica, Puerto Rico, and the French Territories. Influenza activity remains low in Central America.
- In South America, influenza activity varied by country, with increases reported in Venezuela, Bolivia, and Brazil.



Reference: http://www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/

Information from the Centers for Disease Control and Prevention regarding the 2017-2018 Flu Season:

CDC Reports on Vaccine Benefits from 2016-2017 Season

April 19, 2018 — Flu vaccination prevented an estimated 5.3 million influenza illnesses, 2.6 million influenza-associated medical visits, and 85,000 influenza-associated hospitalizations during the 2016-2017 influenza season, according to an online CDC report. These findings underscore the important benefits provided by influenza vaccination, which has been recommended annually in the United States for all persons 6 months and older since 2010.

These estimates are derived using a model first published in PLOS ONE in 2010. The model estimates the numbers of flu illnesses, medical visits and hospitalization prevented by vaccination using season-specific data on burden of disease, vaccine coverage and vaccine effectiveness (VE). Variations in these three inputs can impact both the burden of disease and the burden averted by vaccination from season to season. In the United States, overall vaccine uptake has been relatively stable overall at around 47 percent, but there are differences in uptake between different age groups. Younger children and older adults generally have higher vaccine uptake. Overall VE, on the other hand, has varied from 10% to 60% since 2004-2005, when CDC began estimating VE annually. During 2016-2017, overall VE was 40 percent.
The highest estimated number of flu illnesses, medical visits and hospitalizations prevented from vaccination during one season since CDC began making these estimates in 2010 was during the 2013-2014 season, an H1N1-predominant season of moderate severity when vaccine effectiveness was 52%. During 2013-2014, an estimated 6.7 million illnesses, 3.1 million medical visits and 86,700 hospitalizations were prevented through vaccination.

The lowest number of flu illnesses prevented from vaccination during one season was 1.6 million during 2014-2015, the previously noted H3N2-predominant season with VE of 19%. That same season also saw the lowest estimates for averted medical visits at 800,000 visits prevented as a result of vaccination. So even during seasons when vaccine effectiveness is reduced, flu vaccination still provides substantial public health benefit.

The 2016-2017 estimates reflect a 12 percent reduction in the burden of flu-related hospitalizations as a result of vaccination. The number and proportion of flu hospitalizations prevented by vaccination during 2016–2017 varied by age group, due to age-specific differences in influenza burden, vaccine coverage, and vaccine effectiveness. Vaccination prevented the lowest proportion of hospitalizations among adults aged 18 to 49 years, who had the lowest vaccine coverage, and adults 65 years and older, who had higher vaccine coverage but the lowest VE during this past season. Vaccination prevented the greatest proportion of these outcomes among children aged 6 months to 4 years and 5 to 17 years, where the burden of influenza illness and medical visits was high and VE was greatest.

The proportion of flu hospitalizations averted through vaccination since 2010 has ranged from about 8% during 2014-2015 to nearly 23% during 2011-2012. The 2014-2015 season was an H3N2-predominant season (generally associated with greater severity) and there also was a vaccine mismatch that resulted in overall VE of 19%. The severity of that season was high, based on a methodology to classify flu severity introduced in 2017. The 2011-2012 season was a late season with lower levels of influenza-like-illness and a VE of 47%. Higher VE and less flu activity resulted in a greater impact in terms of reduced burden of disease during that season. The reduction in burden of disease during 2016-2017 is similar to what was seen in estimates for the 2012-2013 (11% reduction), when overall VE was 49%.

Influenza places a substantial burden on the health of people in the United States each year. CDC estimates that from 2010-2011 to 2014-2015, influenza resulted in 9.2 million to 35.6 million illnesses, 4.3 million to 16.6 million medical visits, and 140,000 to 710,000 hospitalizations each year. During 2016-2017, CDC estimates that there were 31 million

flu illnesses, 15 million flu medical visits and 600,000 flu-associated hospitalizations, figures which are on the high end of the 5-year range. Estimates of flu-related deaths lag because of delays in reporting.

This online report underscores the benefits of the current vaccination program, but also highlights areas where improvements in vaccine uptake and vaccine effectiveness could deliver even greater benefits to the public's health. For example, increasing vaccination coverage among adults 18 to 64 years would further reduce the burden of influenza, as this age group continues to have the lowest influenza vaccination coverage. If vaccination rates improved to 70 percent for all age groups, another 1.9 million illnesses, 822,000 medical visits, and 17,300 hospitalizations could have been prevented during the 2016-2017 flu season.

Source: https://www.cdc.gov/flu/spotlights/reports-vaccine-benefits-2016-2017.htm
Link to full article: https://www.cdc.gov/flu/about/disease/2016-17.htm

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About this report: *Reporting agencies include labs, hospitals, long-term care and community-based care providers, physician offices, university clinic, correctional facility, 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 were obtained by syndromic surveillance system (Epicenter).*

Many thanks to all agencies who report Influenza-related data weekly.

For additional information, please visit the 2017-2018 Influenza dashboard at: https://www.scph.org/dashboards

Reporting from participants may not be complete each week. Numbers may change as updated reports are received. For questions, please contact Joan Hall (jhall@schd.org) or Tracy Rodriguez (trodriguez@schd.org), Summit County Public Health Communicable Disease Unit (330-375-2662). Report was issued on April 13, 2018.