



**Summit County Public Health
Influenza Surveillance Report
2017 – 2018 Season
Report #12**



Public Health
Prevent. Promote. Protect.

**Flu Surveillance Weeks 23 & 24 (Beginning 3/11/2018 through 3/24/2018)
Centers for Disease Control and Prevention MMWR Weeks 11 & 12**

Summit County Surveillance Data:

In **Weeks 23 & 24** of influenza surveillance, influenza-related activity continued to remain elevated in Summit County.

Table 1: Overall Influenza Activity Indicators in Summit County by Week				
	Week 23 MMWR Wk 11 N (%)*	Week 24 MMWR Wk 12 N (%)*	% change from previous week	Number of weeks increasing or decreasing
Lab Reports				
Total Test Performed	684	681	-0.4	↓1
Positive Tests (Number and %)	156 (22.8)	186 (27.3)	19.2	↑2
Influenza A (Number and %)	68 (9.9)	80 (11.7)	17.6	↑1
Influenza B (Number and %)	88 (12.9)	106 (15.6)	20.5	↑2
Acute care hospitalization for Influenza:	29	37	27.6	↑2
Influenza ILI Community Report:				
Long-term Care ILI	0	0	--	--
Correctional & Addiction Facility	0	0	--	--
Physician Offices & University Clinic	9	6	-33.3	↓1
Pharmacy Prescriptions				
Amantidine	5	0	-100.0	↓2
Rimantidine Flumadine	0	0	--	--
Relenza	0	0	--	--
Oseltamivir Tamiflu	27	22	-18.5	↓1
<i>Total</i>	32	22	-31.3	↓1
School Absenteeism (%)**	23.2	19.9	-14.2	↓1
Pneumonia and Influenza Deaths (Total for 2017-18 flu season)				
Pneumonia associated	9 (5.8)	6 (3.7)	-33.3	↓1
Influenza associated	1 (0.6)	0 (0.0)	-100.0	↓1
Emergency room visits (Epi Center)***				
Constitutional Complaints	646 (10.5)	636 (10.2)	-2.6	↓1
Fever and ILI	120 (2.0)	133 (2.1)	5.0	↑2
* 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.				
º 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 was one influenza-associated deaths reported in Week 23 and zero in Week 24. **Figure 1** displays weekly Summit County death counts associated with pneumonia and influenza. There were 32 influenza deaths this season, one of which was a pediatric death.

Lab reports: During Week 23, Summit County labs performed 684 tests, of which 68 tested positive for flu A and 80 for flu B. For Week 24, there were 681 total tests: 88 flu A and 106 flu B. (**Figure 4**)

Acute Care Hospitalizations: 29 reported influenza associated hospitalizations during Week 23, and 37 in Week 24. **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 were no cases of ILI reported from Long Term Care facilities in Weeks 23 & 24.

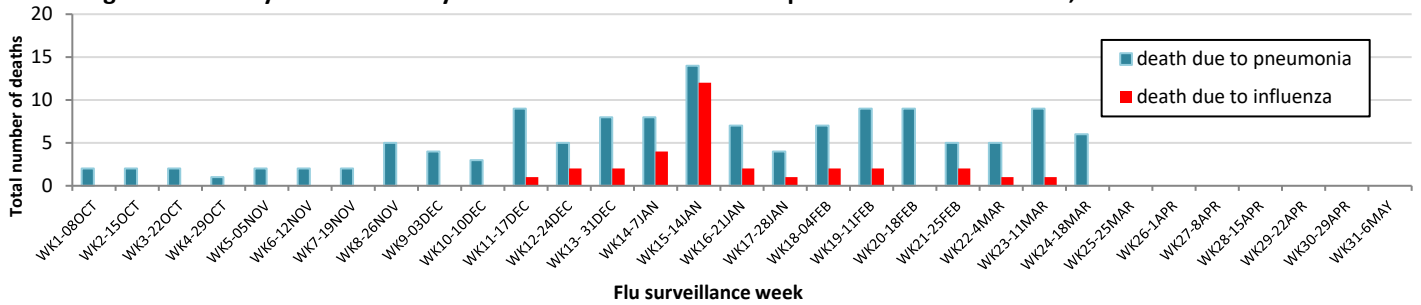
Correctional and Addiction facility: There were no cases of ILI reported in Weeks 23 and 24.

Physician Office and University Clinic: During Week 23, 9 cases of ILI were reported and Week 24 reported 6 cases.

Pharmacy: Amantadine was prescribed 5 times in Week 23 and 0 times in Week 24. Tamiflu was prescribed 27 times in Week 23 and 22 times in Week 24.

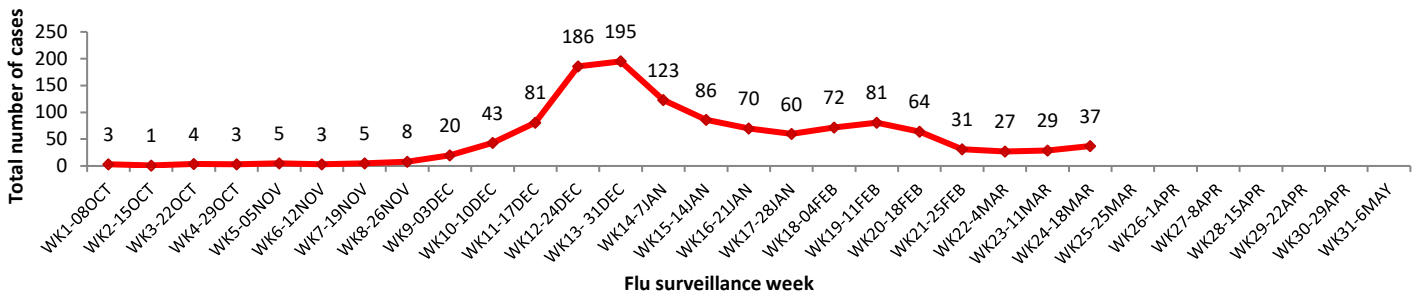
School absenteeism includes absences regardless of reason. In Week 23, there was an absence rate of 23.2% and in Week 24 the absence rate was 19.9%.

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



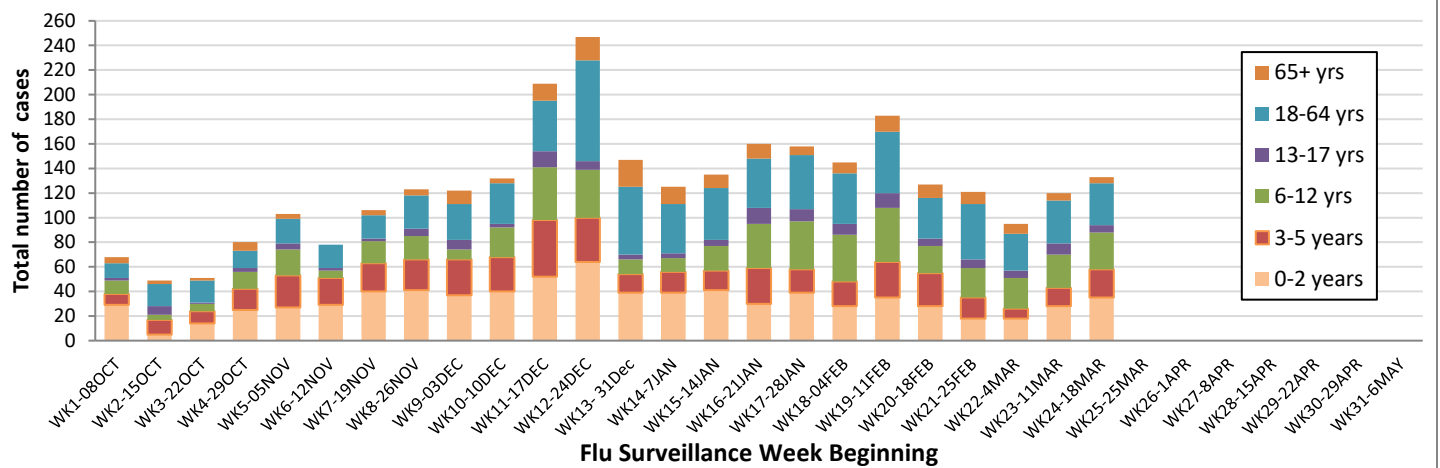
Influenza-associated hospitalization: Summit County hospitals reported 29 influenza-associated hospitalizations in Week 23 and 37 hospitalizations during Week 24. **Figure 2** displays weekly confirmed hospitalization count for Summit County (**cumulative count to date = 1237**).

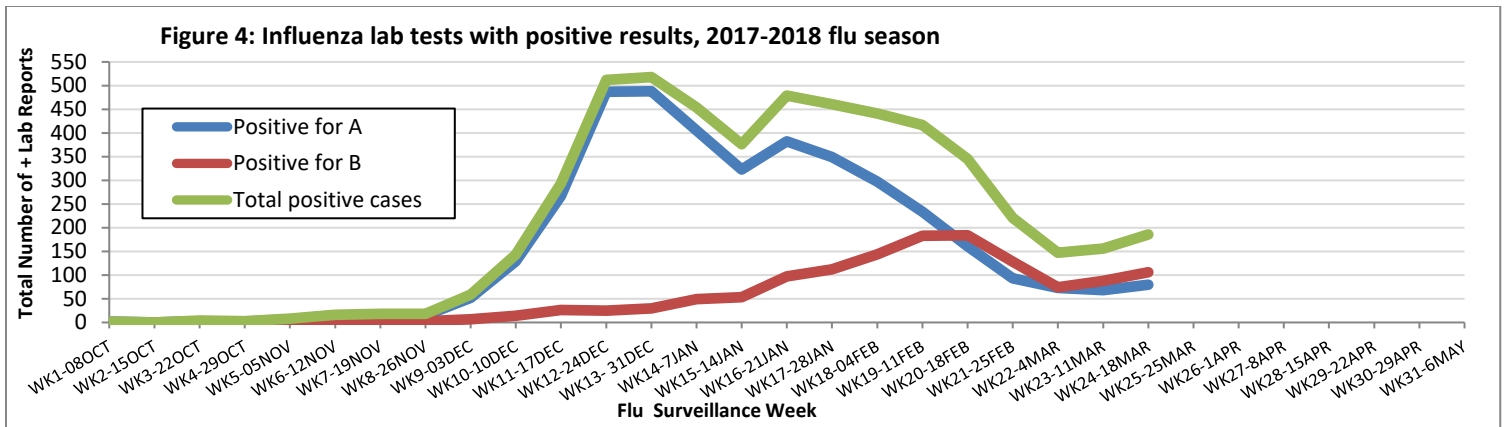
Figure 2. Summit County influenza-associated hospitalizations by week, 2017-2018 influenza season



EpiCenter collects and analyzes health related data in real time to provide information about the health of the community. This system tracks ER visits related to constitutional complaints and fever and ILI. **Figure 3** displays the weekly number of ER visits related to ILI and flu symptoms in Summit County, stratified by age group. During Weeks 23 and 24, children aged less than 18 years accounted for approximately two-thirds of ILI-related ER visits.

Figure 3. Weekly ER visits in Summit County related to Fever + ILI stratified by age groups, 2017 - 2018 flu season





Ohio Influenza Activity: From the Ohio Department of Health:

Current Statewide Influenza Activity (for MMWR Week 12, March 18 – March 24, 2018):

Current Ohio Activity Level (Geographic Spread) – Widespread Definition: Increased ILI in at least half of the regions AND recent (within the past 3 weeks) lab confirmed influenza in the state.

Ohio Influenza Activity Summary Dashboard:

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)	1.37%	-22.16%	↓ 1	
Thermometer Sales (National Retail Data Monitor)	1935	-0.46%	↓ 7	
Fever and ILI Specified ED Visits (EpiCenter)	2.43%	2.97%	↑ 2	
Constitutional ED Visits (EpiCenter)	10.99%	-0.27%	↓ 1	
Confirmed Influenza-associated Hospitalizations (Ohio Disease Reporting System)	430	-5.08%	↓ 5	
Outpatient Medical Claims Data ⁴	1.30%	12.07%	↑ 1	

¹Interpret percent changes with caution. Large variability may be exhibited in data sources with low weekly values.

²Number of weeks that the % change is increasing or decreasing.

³Black lines represent current week's data; red lines represent baseline averages

⁴Medical Claims Data provided by athenahealth®

*The seasonal threshold is 25 cases of influenza-associated hospitalizations; historical data demonstrate that once the weekly count exceeds 25 cases, the number of weekly cases thereafter will likely not decrease until after the peak of influenza activity for the season

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

During week 12 (March 18-24, 2018), influenza activity decreased in the United States.

- **Viral Surveillance:** Overall, influenza A(H3) viruses have predominated this season. However, in recent weeks the proportion of influenza A viruses has declined, and during week 12, influenza B viruses were 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 above 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 96.1 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 2.5%, which is above the national baseline of 2.2%. Nine of 10 regions reported ILI at or above region-specific baseline levels. Four states experienced high ILI activity; eight states experienced moderate ILI activity; New York City, Puerto Rico, the District of Columbia, and 14 states experienced low ILI activity; and 24 states experienced minimal ILI activity.
- **Geographic Spread of Influenza:** The geographic spread of influenza in Puerto Rico and 16 states was reported as widespread; 22 states reported regional activity; the District of Columbia, Guam and eight states reported local activity; four states reported sporadic activity; and the U.S. Virgin Islands 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

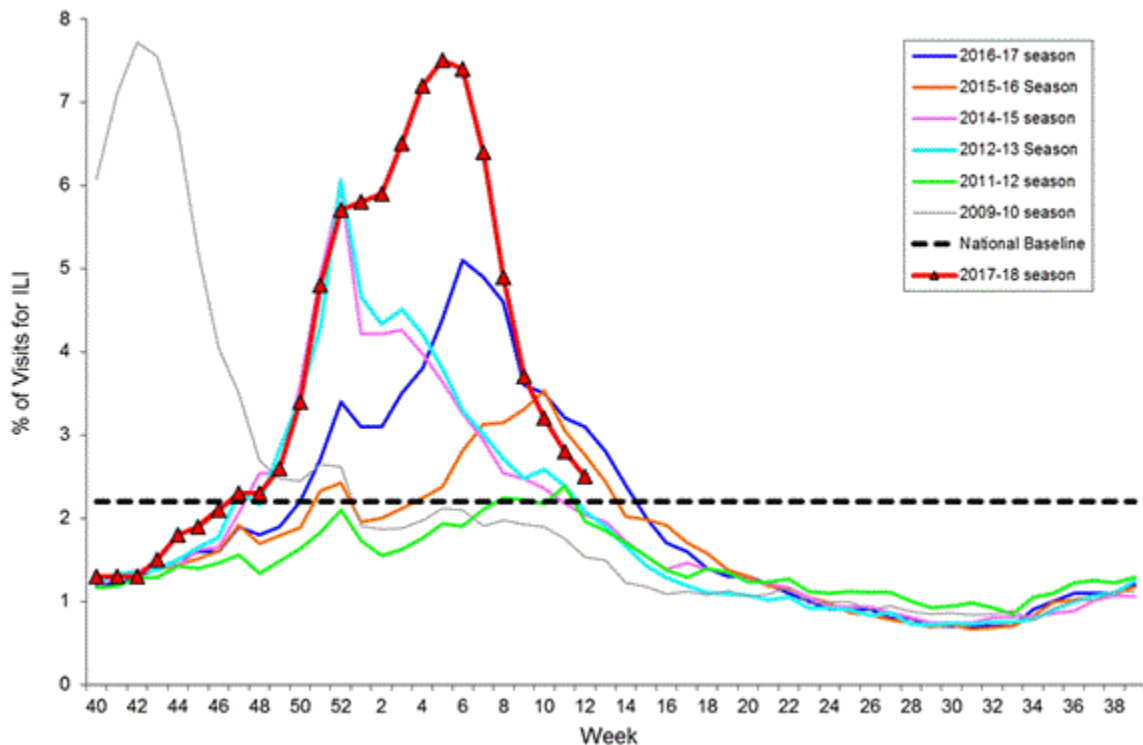


Figure 6. Influenza-like illness (ILI) activity level indicator determined by data reported to ILINet

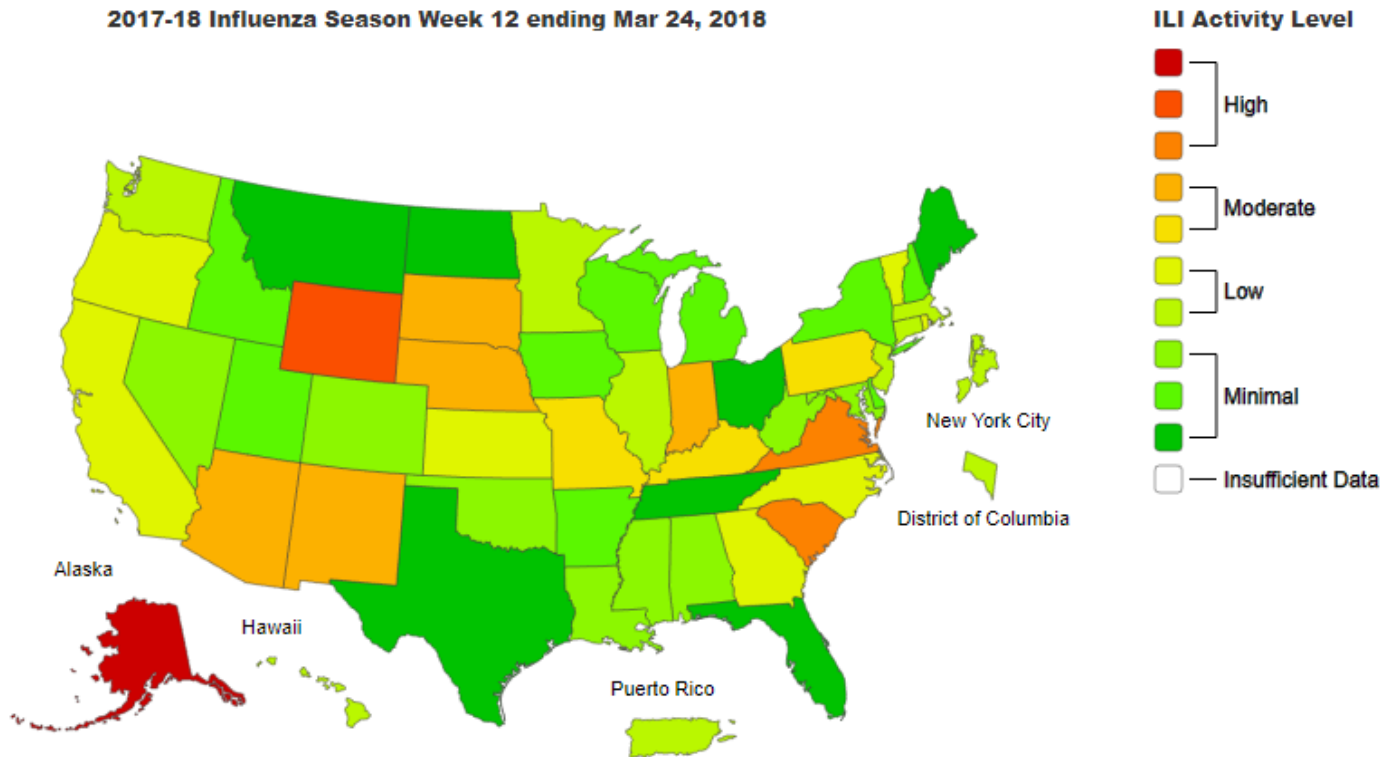
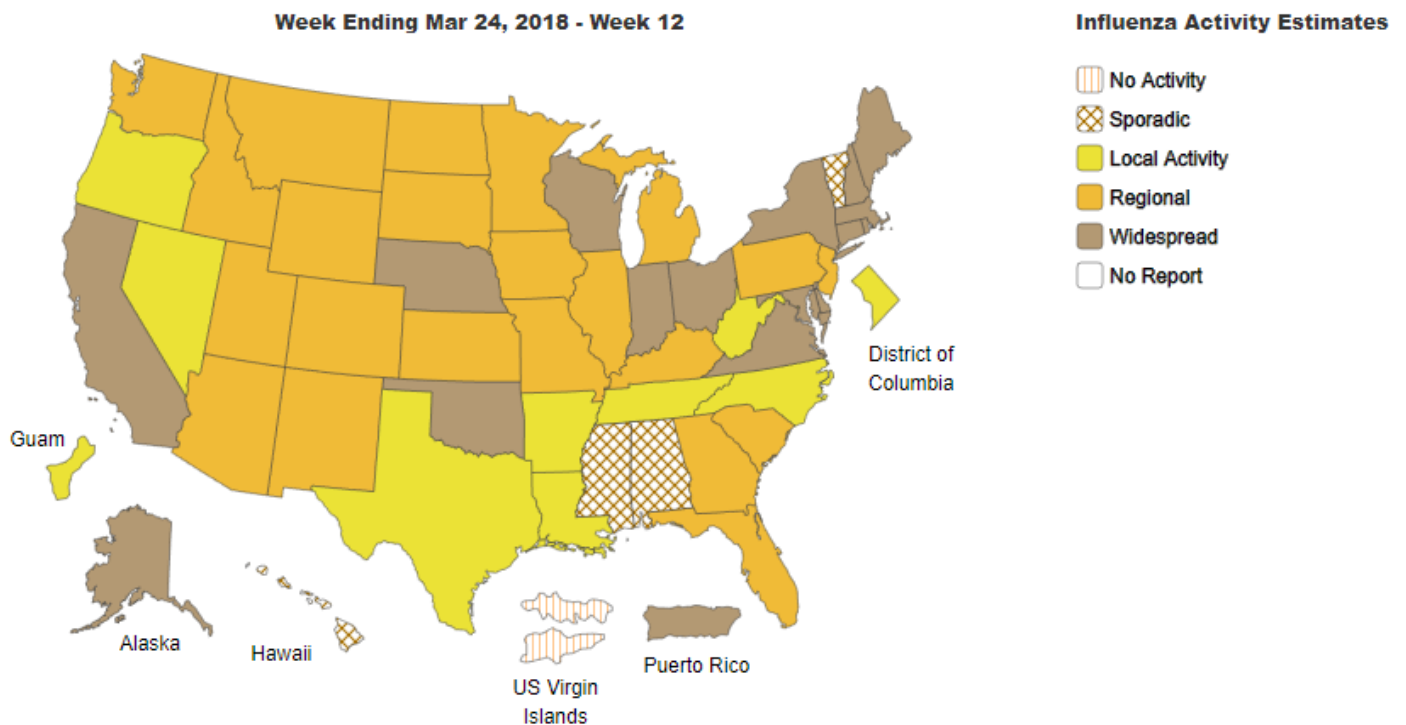


Figure 7. Weekly influenza activity (geographic spread) estimates reported by state and territorial epidemiologists



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

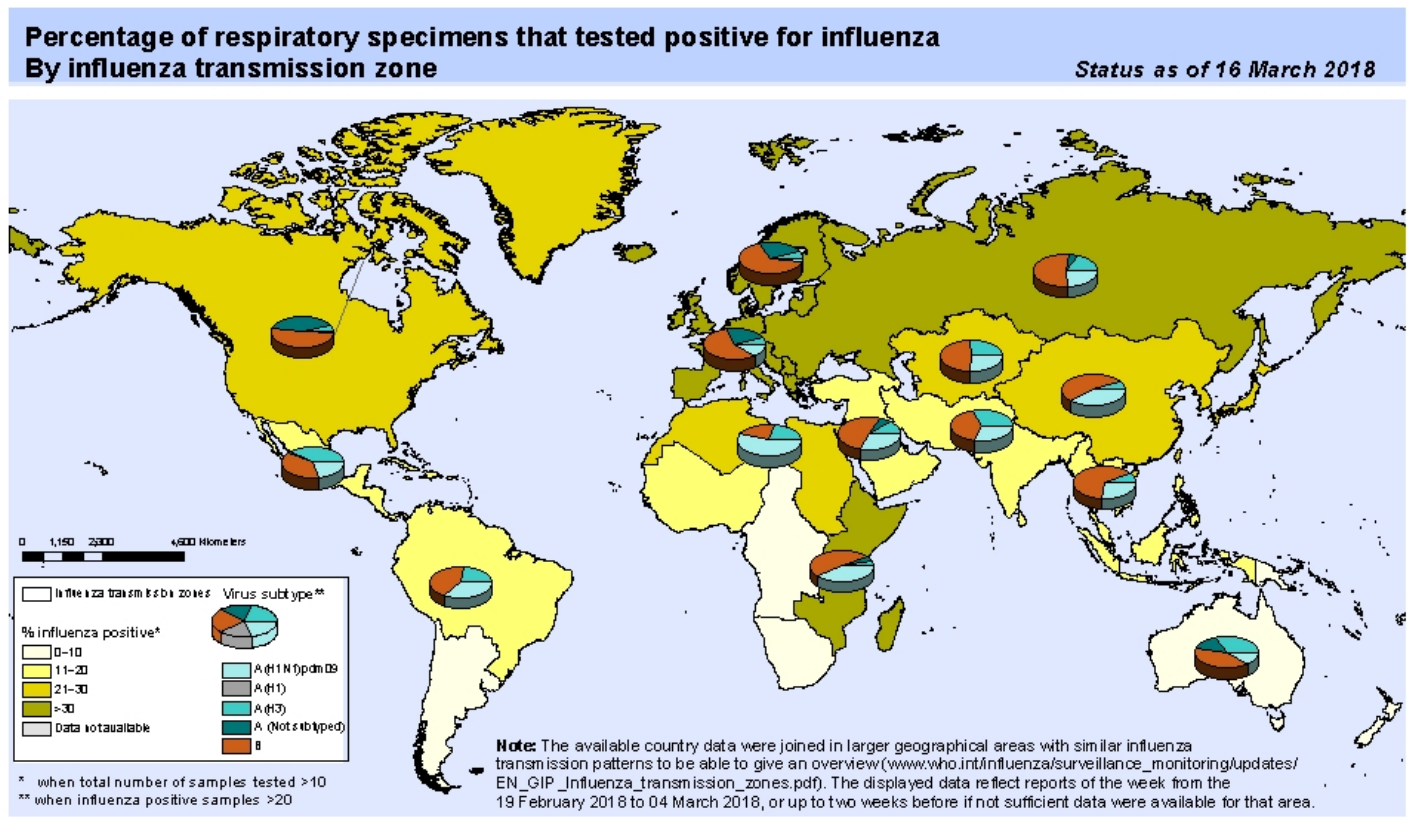
Global Surveillance:

Influenza Update N° 311, World Health Organization (WHO), released 03/19/2018:

Influenza activity remained high but appeared to have peaked in some countries in the temperate zone of the northern hemisphere. In the temperate zone of the southern hemisphere 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 111 countries, areas or territories reported data to FluNet for the time period from 19 February 2018 to 04 March 2018. The WHO GISRS laboratories tested more than 248,161 specimens during that time period. 72,543 were positive for influenza viruses, of which 32,650 (45%) were typed as influenza A and 39,893 (55%) as influenza B. Of the sub-typed influenza A viruses, 7,350 (60.4%) were influenza A(H1N1)pdm09 and 4,817 (39.6%) were influenza A(H3N2). Of the characterized B viruses, 4,820 (94.7%) belonged to the B-Yamagata lineage and 269 (5.3%) to the B-Victoria lineage.

- In North America, overall influenza has decreased. Influenza B was the more predominant type detected in Canada, while types A and B co-circulated in the United States. Influenza A (H3N2) virus was predominately detected in Mexico.
- In Europe, influenza activity remained high in most countries. Influenza B remained the virus most frequently detected, but all types were co-circulating in the region. ILI activity remains elevated in Eastern Europe, with a sharp increase in the Russian Federation, but appears to have peaked in Northern Europe, Southwestern Europe, the United Kingdom and Ireland.
- In the Caribbean region, influenza activity varied by nation, and had decreased throughout most of Central America. Influenza types A (H3N2 and H1N1) and B are co-circulating throughout these regions.
- In South America, influenza activity and respiratory illness indicators were generally low with a few exceptions. Influenza activity slightly increased in Peru and continued to decline in Ecuador.



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

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

Transmission of Influenza Viruses from Animals to People

Influenza A viruses are found in many different animals, including ducks, chickens, pigs, whales, horses, seals and cats.

Influenza B viruses circulate widely only among humans.

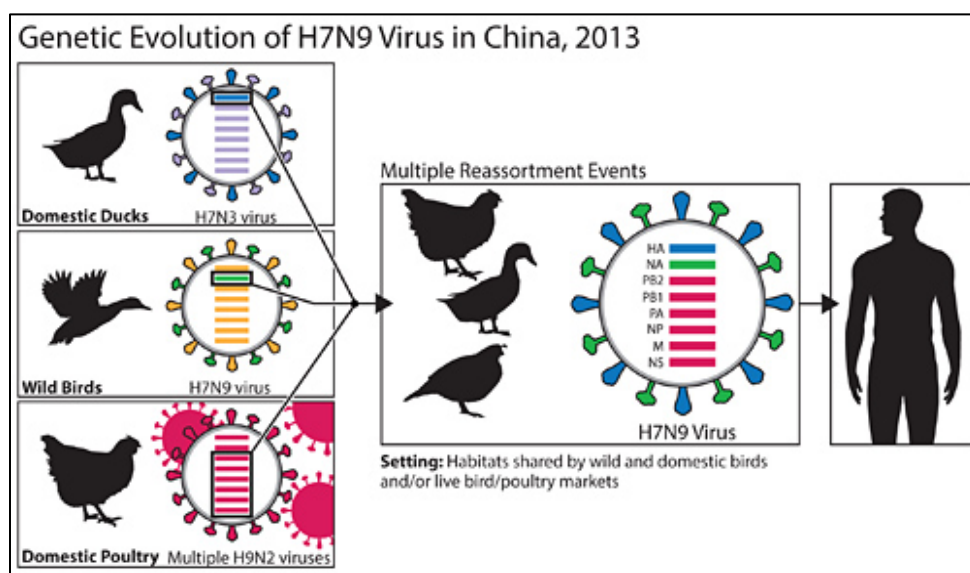
Influenza A viruses are divided into subtypes based on two proteins on the surface of the virus: the hemagglutinin (H) and the neuraminidase (N). There are 18 different hemagglutinin subtypes and 11 different neuraminidase subtypes. All known subtypes of influenza A viruses have been found among birds, except subtype H17N10 and H18N11 which have only been found in bats. Below is a table showing the different hemagglutinin and neuraminidase subtypes and the species in which they have been detected.

Aquatic birds including gulls, terns and shorebirds, and waterfowl such as ducks, geese and swans are considered reservoirs (hosts) for avian influenza A viruses. Most influenza viruses cause asymptomatic or mild infection in birds; however, clinical signs in birds vary greatly depending on the virus. Infection with certain avian influenza A viruses (for example, some H5 and H7 viruses) can cause widespread, severe disease and death among some species of birds. Avian influenza A viruses are designated as highly pathogenic avian influenza (HPAI) or low pathogenicity avian influenza (LPAI) based on molecular characteristics of the virus and the ability of the virus to cause disease and mortality in chickens in a laboratory setting.

Pigs can be infected with both human and avian influenza viruses in addition to swine influenza viruses. Infected pigs exhibit signs of illness similar to humans, such as cough, fever and runny nose. Because pigs are susceptible to avian, human and swine influenza viruses, they potentially may be infected with influenza viruses from different species (e.g., ducks and humans) at the same time. If this happens, it is possible for the genes of these viruses to mix and create a new virus.

An example of reassortment is the Asian lineage H7N9 virus. The eight genes of the H7N9 virus are closely related to avian influenza viruses found in Asian domestic ducks, wild birds and domestic poultry. Experts think multiple reassortment events led to the creation of this H7N9 virus. These events may have occurred in habitats shared by wild and domestic birds and/or in live bird/poultry markets, where different species of birds are bought and sold for food. As this diagram shows, the Asian H7N9 virus likely obtained its HA (hemagglutinin) gene from domestic ducks, its NA (neuraminidase) gene from wild birds, and its six remaining genes from multiple related H9N2 influenza viruses in domestic poultry

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While it is unusual for people to get influenza infections directly from animals, sporadic human infections and outbreaks caused by certain avian influenza A viruses have been reported.

Influenza A Subtypes: Species Affected:

Hemagglutinin

SubType	People	Poultry	Pigs	Bats / Other
H1				
H2				
H3				Other Animals
H4				Other Animals
H5				
H6				
H7				Other Animals
H8				
H9				
H10				
H11				
H12				
H13				
H14				
H15				
H16				
H17				
H18				

Neuraminidase

SubType	People	Poultry	Pigs	Bats / Other
N1				
N2				
N3				
N4				
N5				
N6				
N7				Other Animals
N8				Other Animals
N9				
N10				
N11				

Source: <https://www.cdc.gov/flu/about/viruses/transmission.htm>

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 or Tracy Rodriguez, Summit County Public Health Communicable Disease Unit. Report was issued on March 30, 2018.