



**Summit County Public Health
Influenza Surveillance Report
2017 – 2018 Season
Report #13**



Public Health
Prevent. Promote. Protect.

**Flu Surveillance Weeks 25 & 26 (Beginning 3/25/2018 through 4/7/2018)
Centers for Disease Control and Prevention MMWR Weeks 13 & 14**

Summit County Surveillance Data:

In **Weeks 25 & 26** 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 25 MMWR Wk 13 N (%)* | Week 26 MMWR Wk 14 N (%)* | % change from previous week | Number of weeks increasing or decreasing |
| Lab Reports | | | | |
| Total Test Performed | 649 | 651 | 0.0 | -- |
| Positive Tests (Number and %) | 172 (26.5) | 119 (18.3) | -30.8 | ↓2 |
| Influenza A (Number and %) | 68 (10.5) | 39 (6.0) | -42.6 | ↓2 |
| Influenza B (Number and %) | 104 (16.0) | 80 (12.3) | -23.1 | ↓2 |
| Acute care hospitalization for Influenza: | 51 | 43 | -15.9 | ↓1 |
| Influenza ILI Community Report: | | | | |
| Long-term Care ILI | 0 | 0 | -- | -- |
| Correctional & Addiction Facility | 0 | 0 | -- | -- |
| Physician Offices & University Clinic | 1 | 2 | 100.0 | ↑1 |
| Pharmacy Prescriptions | | | | |
| Amantidine | 4 | 2 | -50.0 | ↓1 |
| Rimantidine Flumadine | 0 | 0 | -- | -- |
| Relenza | 0 | 0 | -- | -- |
| Oseltamivir Tamiflu | 33 | 18 | -45.5 | ↓1 |
| <i>Total</i> | 37 | 20 | -46.0 | ↓1 |
| School Absenteeism (%)** | 17.1 | 15.0 | -12.3 | ↓3 |
| Pneumonia and Influenza Deaths (Total for 2017-18 flu season) | | | | |
| Pneumonia associated | 3 (1.8) | 12 (6.7) | 300.0 | ↑1 |
| Influenza associated | 0 (0.0) | 1 (0.6) | 100.0 | ↑1 |
| Emergency room visits (Epi Center)*** | | | | |
| Constitutional Complaints | 654 (10.9) | 594 (10.1) | -7.3 | ↓1 |
| Fever and ILI | 123 (2.1) | 109 (1.9) | -9.5 | ↓1 |
| * 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 were zero influenza-associated deaths reported in Week 25 and one in Week 26. **Figure 1** displays weekly Summit County death counts associated with pneumonia and influenza. There are 33 influenza deaths this season, one of which was a pediatric death.

Lab reports: During Week 25, Summit County labs performed 649 tests, of which 68 tested positive for flu A and 104 for flu B. For Week 26, there were 651 total tests: 39 flu A and 80 flu B. (**Figure 4**)

Acute Care Hospitalizations: 51 reported influenza associated hospitalizations during Week 25, and 43 in Week 26. **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 25 & 26.

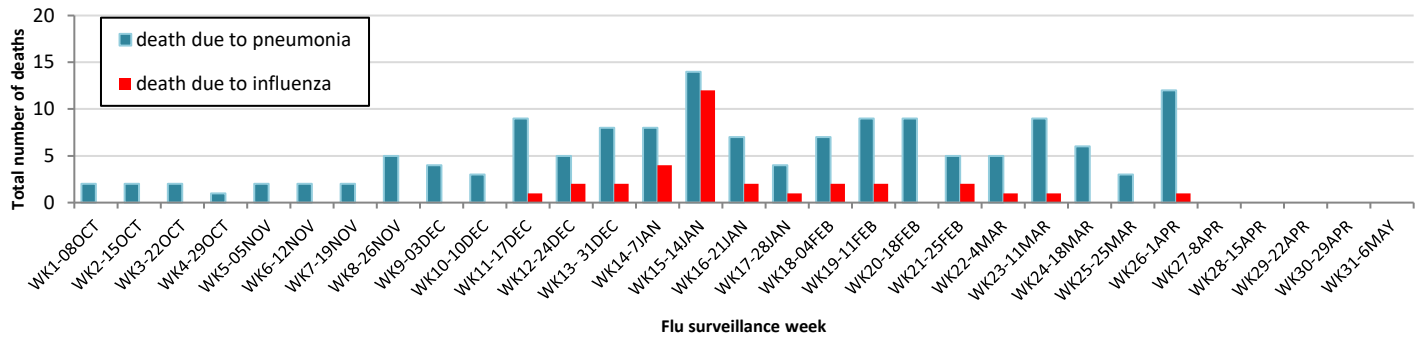
Correctional and Addiction facility: There were no cases of ILI reported in Weeks 25 and 26.

Physician Office and University Clinic: During Week 25, 1 case of ILI was reported and Week 26 reported 2 cases.

Pharmacy: Amantidine was prescribed 4 times in Week 25 and 2 times in Week 26. Tamiflu was prescribed 33 times in Week 25 and 18 times in Week 26.

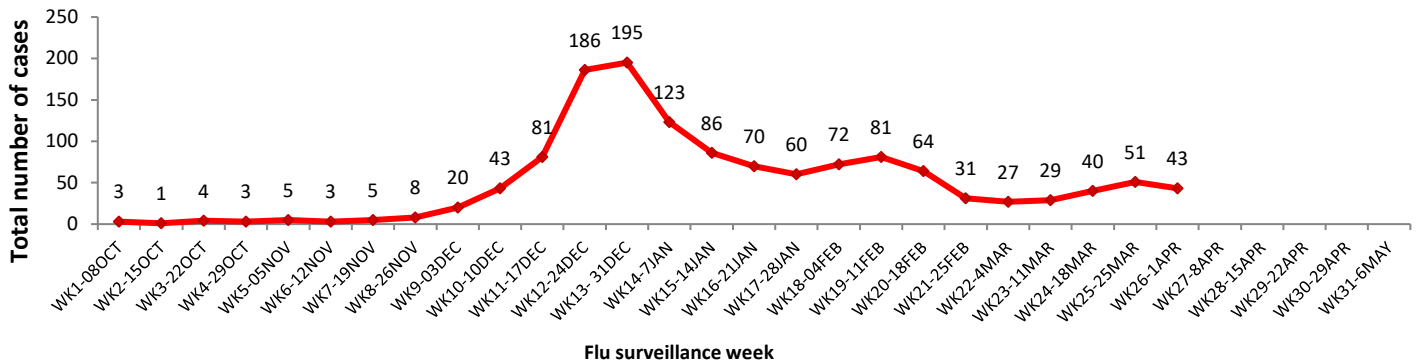
School absenteeism includes absences regardless of reason. In Week 25, there was an absence rate of 17.1% and in Week 26 the absence rate was 15.0%.

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



Influenza-associated hospitalization: Summit County hospitals reported 51 influenza-associated hospitalizations in Week 25 and 43 hospitalizations during Week 25. **Figure 2** displays weekly confirmed hospitalization count for Summit County (**cumulative count to date = 1334**).

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. During Weeks 25 and 26, 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

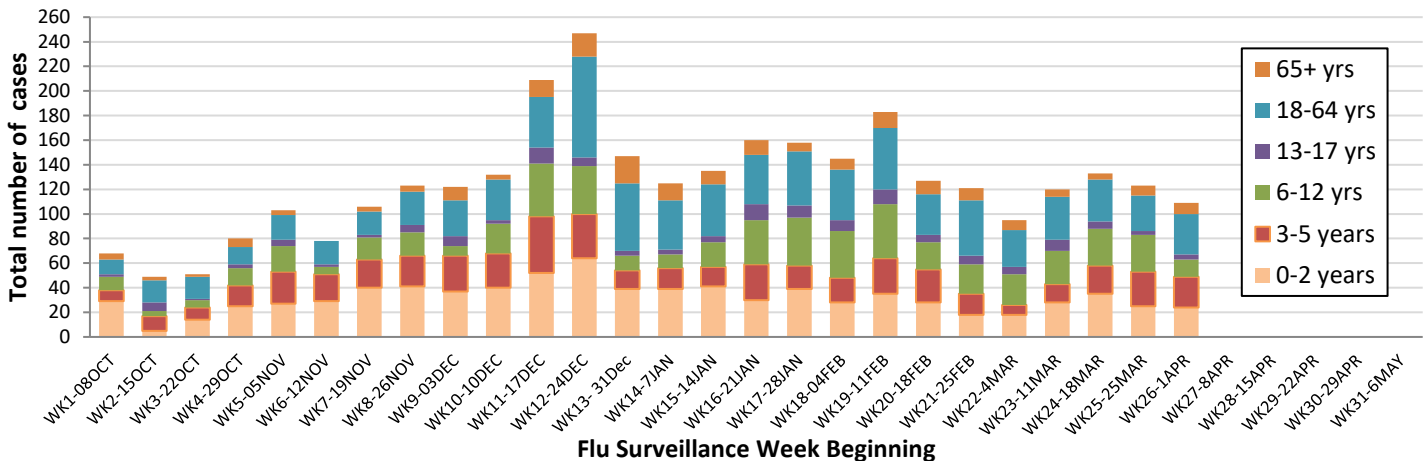
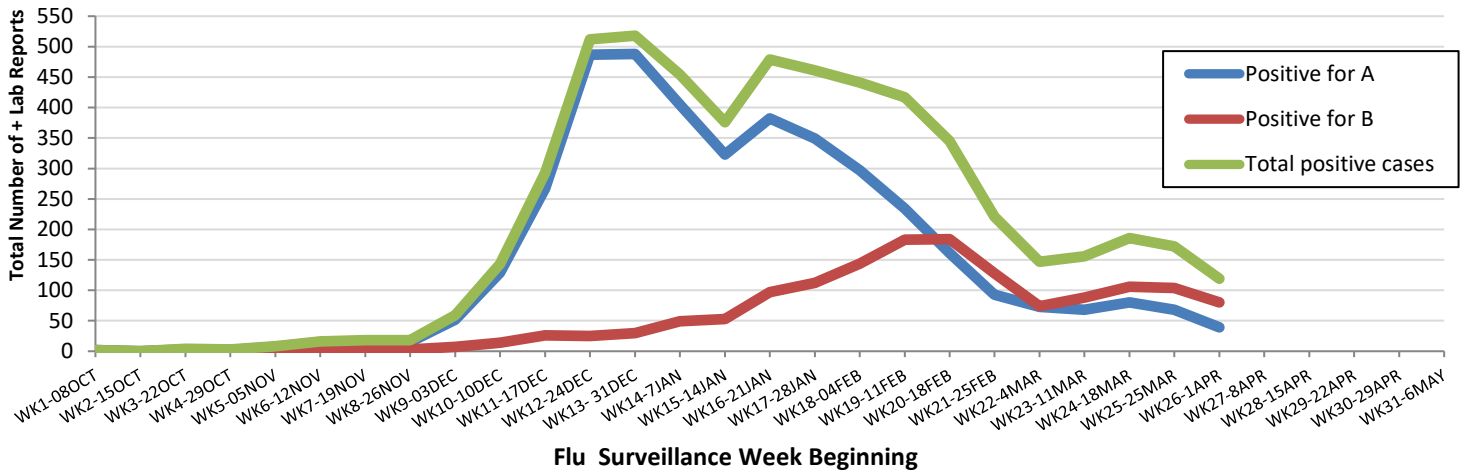


Figure 4: Influenza lab tests with positive results, 2017-2018 Summit County Influenza Surveillance



Ohio Influenza Activity: from the Ohio Department of Health:

Current Statewide Influenza Activity (for MMWR Week 14, April 1 – April 7, 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) | 1.06% | -31.61% | ↓ 1 | |
| Thermometer Sales (National Retail Data Monitor) | 1541 | -18.04% | ↓ 9 | |
| Fever and ILI Specified ED Visits (EpiCenter) | 1.91% | -15.11% | ↓ 2 | |
| Constitutional ED Visits (EpiCenter) | 10.07% | -7.70% | ↓ 3 | |
| Confirmed Influenza-associated Hospitalizations (Ohio Disease Reporting System) | 526 | -2.41% | ↓ 1 | |
| Outpatient Medical Claims Data ⁴ | 1.06% | -20.90% | ↓ 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®

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

During week 14 (April 1-7, 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:** Nine influenza-associated pediatric deaths were reported.
- **Influenza-associated Hospitalizations:** A cumulative rate of 101.6 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 2.1%, which is below the national baseline of 2.2%. Six of 10 regions reported ILI at or above region-specific baseline levels. Two states experienced high ILI activity; two states experienced moderate ILI activity; 11 states experienced low ILI activity; and New York City, the District of Columbia, Puerto Rico, and 35 states experienced minimal ILI activity.
- **Geographic Spread of Influenza:** The geographic spread of influenza in seven states was reported as widespread; Guam, Puerto Rico and 22 states reported regional activity; the District of Columbia and 16 states reported local activity; and the U.S. Virgin Islands and five states reported sporadic 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

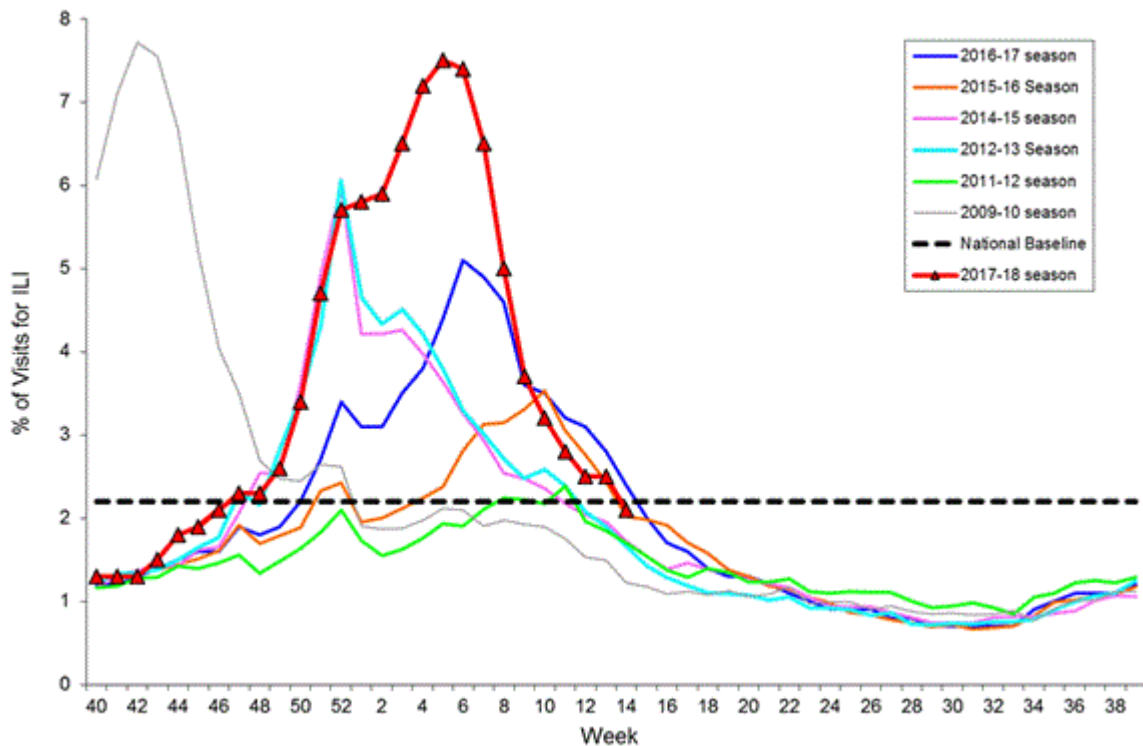


Figure 6. Influenza-like illness (ILI) activity level indicator determined by data reported to ILINet

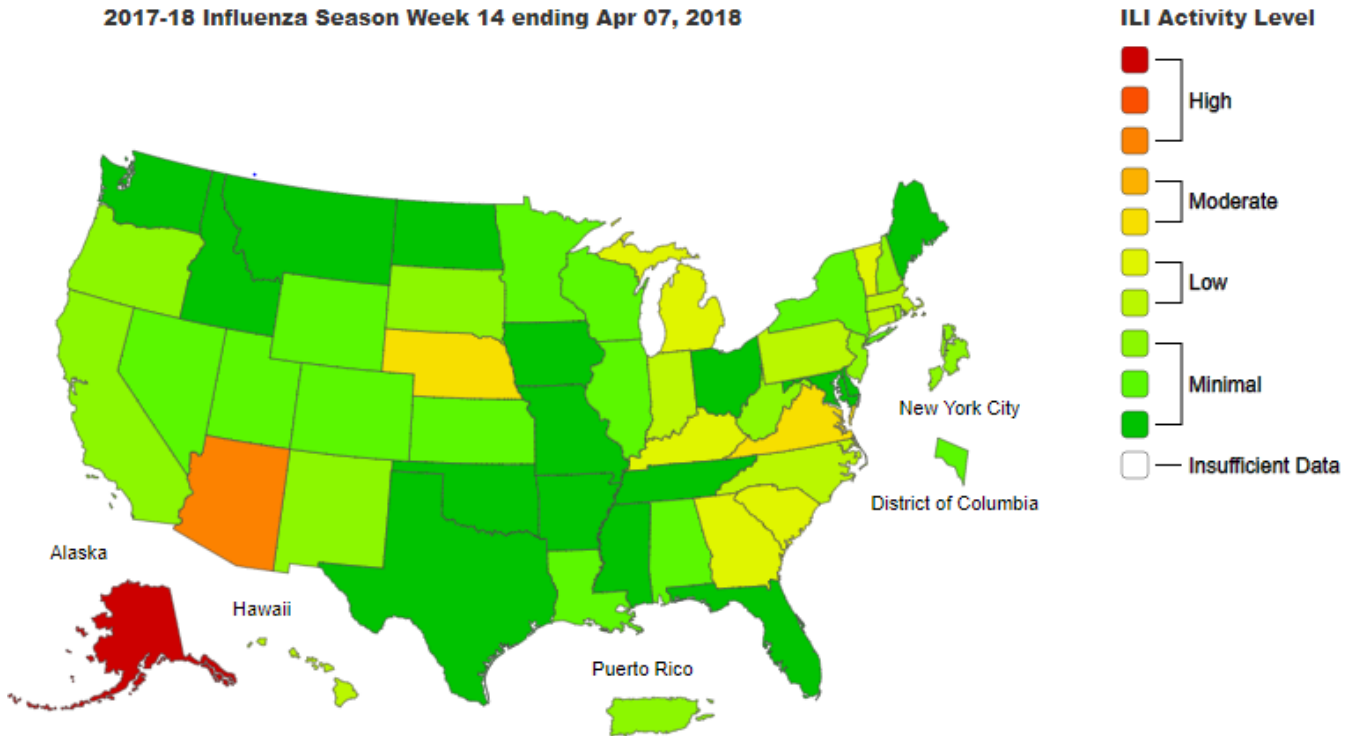
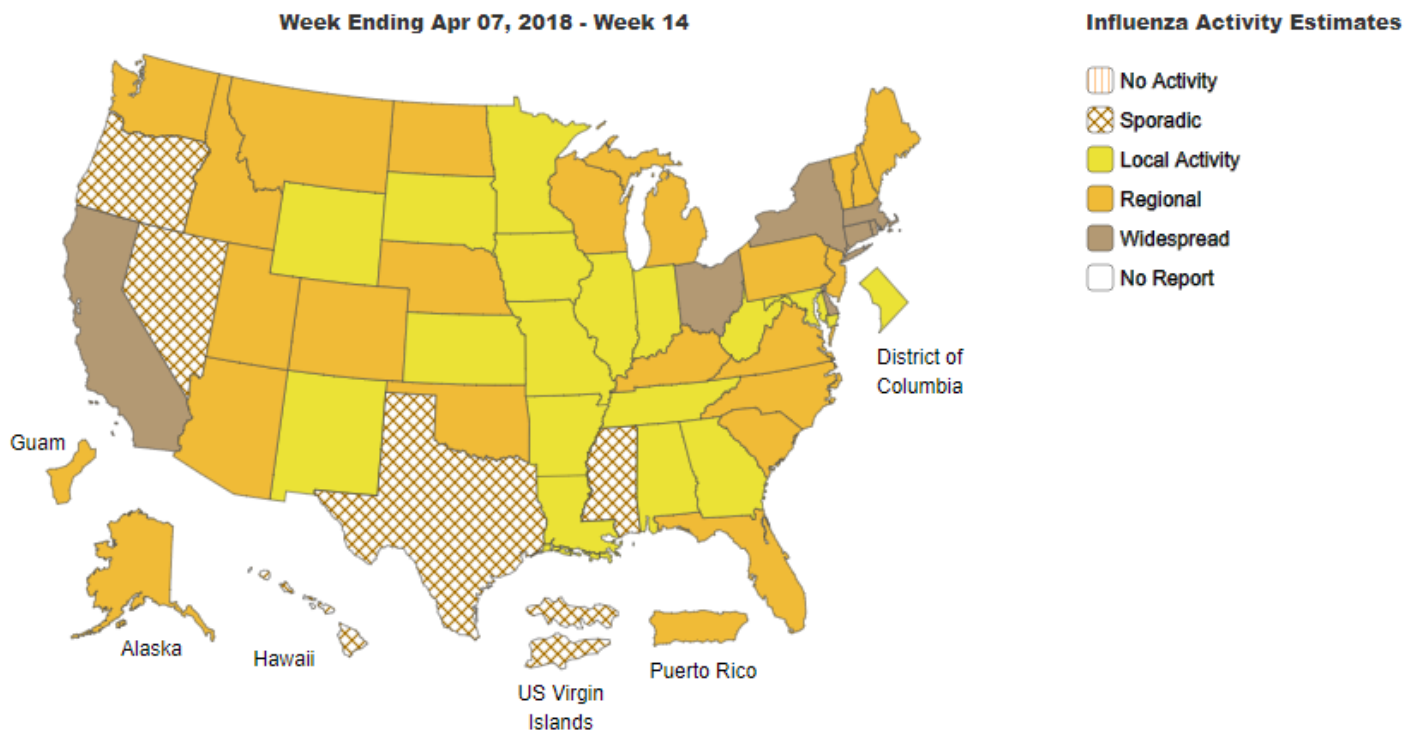


Figure 7. Weekly influenza activity (geographic spread) estimates reported by state and territorial epidemiologists



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

Global Surveillance:

Influenza Update N° 312, World Health Organization (WHO), released 04/02/2018:

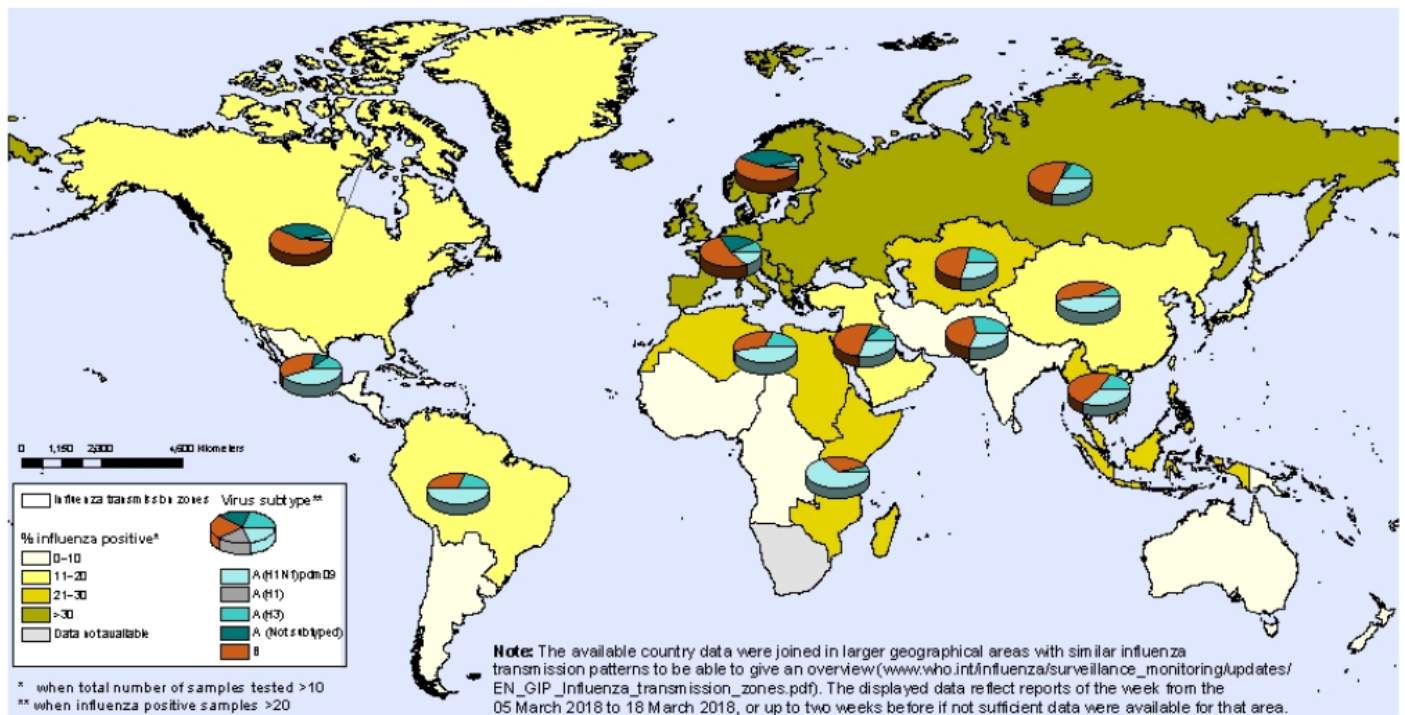
Influenza activity appeared to decrease in most of the countries in the temperate zone of the northern hemisphere, with the exception of Eastern Europe where activity continued to increase. In the temperate zone of the southern hemisphere, influenza activity remained at inter-seasonal levels. Worldwide, 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 05 March 2018 to 18 March 2018 (data as of 2018-03- 30 04:46:41 UTC). The WHO GISRS laboratories tested more than 206175 specimens during that time period. 50579 were positive for influenza viruses, of which 23651 (46.8%) were typed as influenza A and 26928 (53.2%) as influenza B. Of the sub-typed influenza A viruses, 6313 (64%) were influenza A(H1N1)pdm09 and 3552 (36%) were influenza A(H3N2). Of the characterized B viruses, 3184 (91%) belonged to the B-Yamagata lineage and 316 (9%) to the B-Victoria lineage.

- In North America, overall influenza has decreased. Type B was the more predominant type detected in Canada, while types A and B co-circulated in the US and Mexico. Hospitalization rates remain high in the US, especially for adults aged 65 and over.
- In Europe, influenza activity is decreasing in most countries, except for Germany, Denmark, the Russian Federation, and countries in Eastern Europe. Influenza B remained the virus most frequently detected, but all types were co-circulating in the region. As seasonal reassortant influenza A(H1N2) was detected in the Netherlands (see article on page 7)
- 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 decreased in Peru, Ecuador and Columbia, but increased in Venezuela.

Percentage of respiratory specimens that tested positive for influenza By influenza transmission zone

Status as of 30 March 2018



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.

Data Source: Global Influenza Surveillance and Response System (GISRS), FluNet (www.who.int/flu-net).



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:

Influenza A (H1N2) Reassortant Infection in the Netherlands (Issued March 29, 2018)

Background:

On Thursday, March 22, 2018, the Netherlands reported a human infection with an influenza A(H1N2) virus. The virus likely resulted from a reassortment event between circulating human seasonal influenza A(H1N1)pdm09 and influenza A(H3N2) viruses. The infected person experienced mild illness and has since recovered. No further spread of this virus has been detected. Surveillance in the area has been enhanced. The World Health Organization (WHO) first reported the case in its International Health Regulations (IHR) report.

Influenza Virus Reassortment:

Reassortment happens when two or more influenza viruses infect a single host and swap genetic material. While this can sometimes result in the emergence of new influenza viruses, genetic sequencing shows that the A(H1N2) virus in the Netherlands is a reassortant of human seasonal flu viruses containing the same hemagglutinin “H1” gene as circulating seasonal A(H1N1)pdm09 viruses and the same neuraminidase “N2” gene as circulating seasonal A(H3N2) viruses.

Human infections with reassortant A(H1N2) viruses have occurred rarely in the past, but these were reassortants with the A(H1N1) virus that circulating prior to emergence of the 2009 A(H1N1)pdm09 virus that triggered a pandemic. This is the first reassortant of seasonal 2009 A(H1N1)pdm09 and seasonal A(H3N2) viruses. Previous laboratory experiments with past A(H1N1) reassortants has suggested that these have limited capacity for transmission.

Risk Assessment:

This A(H1N2) reassortant virus is thought to pose a health risk similar to other seasonal influenza viruses. The virus has not been detected beyond this one person and current seasonal flu vaccines would likely offer protection against this virus. Additionally, this virus does not have markers associated with resistance to the neuraminidase inhibitor class of antiviral drugs, and thus should be susceptible to treatment with currently licensed and available flu antiviral medications, such as oseltamivir, zanamivir and peramivir.

Source: <https://www.cdc.gov/flu/news/netherlands-infection.htm>

Study of Flu-Related Deaths in Children Shows Healthy Children at Risk (Issued February 12, 2018)

A CDC study published in the journal *Pediatrics* shows just how vulnerable U.S. children are to the flu each year. The study, titled “Influenza-Associated Pediatric Deaths in the United States, 2010-2016,” analyzed reported flu-related deaths in children younger than 18 over the course of six flu seasons from October 2010 through September 2016. Results showed that half of flu-related deaths occurred in otherwise healthy children, 22% of whom were fully vaccinated. This is an update to the 2013 Wong, et al paper published in *Pediatrics* in 2013 that showed similar findings regarding overall flu risk in children. One notable difference, however, was the increase in flu-related deaths among healthy children. Previously, fewer than 40% of children who died had no underlying high-risk medical conditions.

These findings also show antiviral treatment was only given in about half of all pediatric flu deaths. CDC recommends that flu antiviral drugs be started as soon as possible when young children and children with high-risk conditions are suspected of having the flu.

During 2010-2016, young children continued to be at the greatest risk for flu-associated pediatric deaths. The findings show that vaccination coverage was low among these children. This supports CDC's recommendation that all children 6 months of age and older should receive a flu vaccination each year. Pregnant women and caregivers of infants should also get vaccinated to help protect them.

This study stresses how quickly the flu can become life-threatening for children. Nearly two-thirds of children died within seven days of developing symptoms. Over one-third died at home or in the emergency department prior to hospital admission. In fact, children without other medical conditions that would predispose them to serious flu complications were more likely to die before hospital admission. This is a reminder that parents should seek prompt medical care for young children and children at high risk for flu complications with flu symptoms.

During all six seasons, mortality rates were highest in children younger than 2 years of age. Native Hawaiian/Pacific Islander and American Indian/Alaska Native children were also at higher risk.

The greatest number of pediatric deaths in the study occurred during the 2012-13 season while the fewest occurred during the 2011-12 season. Flu A viruses were associated with the majority of deaths in children (65%), while flu B viruses accounted for 33% of deaths.

Bacterial co-infections were more common among otherwise healthy children than among children with a high-risk medical condition. Clinical complications were reported for 75% of children, with the most common being pneumonia (41%) and sepsis (31%).

Source: <https://www.cdc.gov/flu/news/flu-death-children.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 (jhall@sched.org) or Tracy Rodriguez (trodriguez@sched.org), Summit County Public Health Communicable Disease Unit (330-375-2662). Report was issued on April 13, 2018.