



Summit County Public Health Influenza Surveillance Report 2019 – 2020 Season



Public Health
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Report #20

Flu Surveillance Weeks 20 & 21 (2/16/2020 to 2/29/2020) Centers for Disease Control and Prevention MMWR Weeks 8 & 9

Summit County Surveillance Data:

In **Week 21** of surveillance, influenza-related activity continued to be high in Summit County.

One death related to influenza was reported during Week 21, and there were 4 deaths associated with pneumonia. **Figure 1** displays weekly Summit County death counts associated with pneumonia and influenza. *The seasonal average for pneumonia and influenza (P&I) deaths is 3.2%.*

Acute Care Hospitalizations: 83 hospitalization was reported during Week 21. **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 three cases of ILI reported. **Correctional and Inpatient Addiction facilities:** Six cases of ILI were reported. **Physician offices and clinics:** During Week 21, 12 cases of ILI were reported.

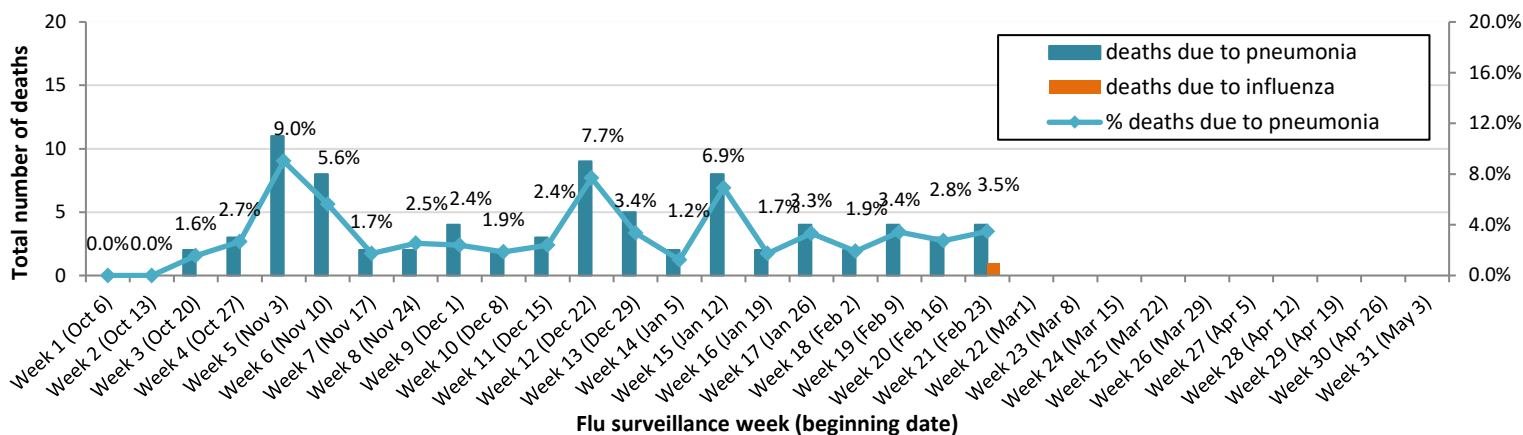
Pharmacies: 79 antiviral prescriptions were filled by reporting pharmacies during Week 21.

School absenteeism includes absences regardless of reason. During Week 21, the reported absence rate was 7.3%, a 7.4% increase from Week 20.

Lab reports: During Week 21 of influenza surveillance, reporting Summit County laboratories performed 1714 flu tests, of which 628 were positive (Type A = 438, Type B = 190). (**Figure 4**).

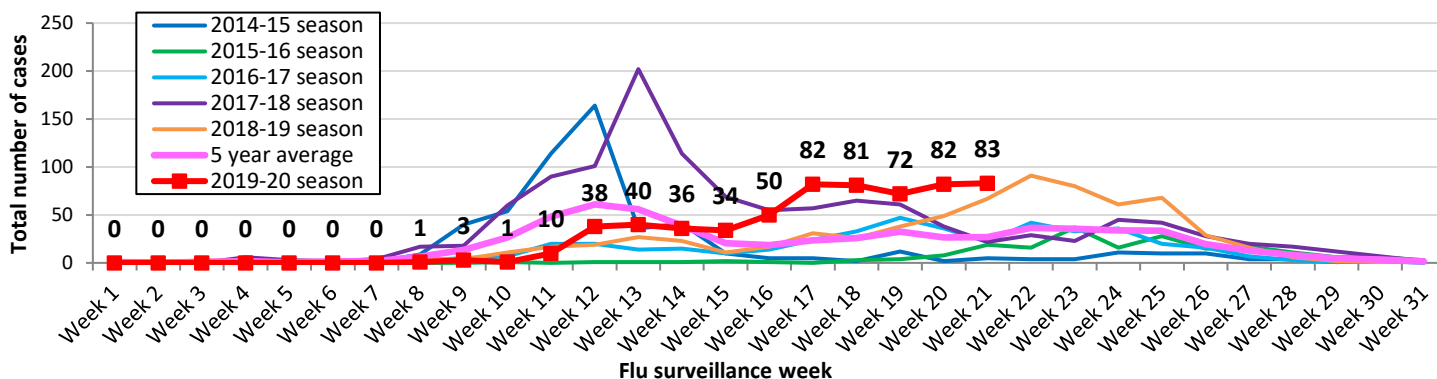
Table 1: Overall Influenza Activity Indicators in Summit County by Week				
	Week 20 MMWR 8 N (%) ¹	Week 21 MMWR 9 N (%) ¹	Percent change from previous week	Number of weeks increasing or decreasing
Lab Reports				
Tests Performed	1814	1714	- 5.5%	↓2
Positive Tests (Number and %)	716 (39.5)	628 (36.6)	- 7.2%	↓1
Influenza A (Number and %)	421 (23.2)	438 (25.6)	+ 10.1%	↑2
Influenza B (Number and %)	295 (16.3)	190 (11.1)	- 31.8%	↓5
Acute care hospitalizations for Influenza:	82	83	+1.2%	NC
Influenza ILI Community Report:				
Long-term Care ILI Cases	1	3	+ 200%	↑1
Correctional & Addiction Facility	1	6	+ 500%	↑2
Physician Offices & University Clinic	16	12	- 75.0%	↓1
Pharmacy Prescriptions				
Zanamivir (Relenza)	0	0	--	--
Oseltamivir (Tamiflu)	106	78	- 26.4%	↓1
Baloxavir marboxil (Xofluza)	1	1	NC	NC
<i>Total</i>	107	79	+ 26.2%	↓1
Schools absenteeism²	6.8%	7.3%	+ 7.4%	↑1
Deaths				
Pneumonia associated	3 (2.8)	4 (3.5)	+ 26.4%	↑1
Influenza associated	0	1(0.9)	+ 100%	↑1
Emergency room visits (EpiCenter)³				
Constitutional Complaints	956 (15.3)	906 (14.8)	- 3.1%	↓3
Fever and ILI	178 (2.8)	160 (2.6)	- 8.1%	↓1
1) N and % are reported when available, NC = no change, or change that is not significant				
2) Absence is for any reason. Percent is from total number of students enrolled. Data was collected from 6 schools or school districts throughout Summit County (n = 32,000 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				

Figure 1. Weekly Summit County death counts associated with pneumonia and influenza during 2019-2020 season



Influenza-associated hospitalization: Summit County hospitals reported 83 influenza-associated hospitalizations during Week 21. **Figure 2** displays weekly confirmed hospitalization count for Summit County (**cumulative count to date = 613**).

Figure 2. Summit County influenza-associated hospitalizations by week, 2019-2020 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. There were 160 ILI-related visits reported during Week 21, which was 2.6% of total ED visits (n = 6111). This rate was 8.1% lower than the ILI rate during Week 20.

Figure 3. Weekly ED visits in Summit County related to Fever + ILI stratified by age groups, 2019 to 2020 season

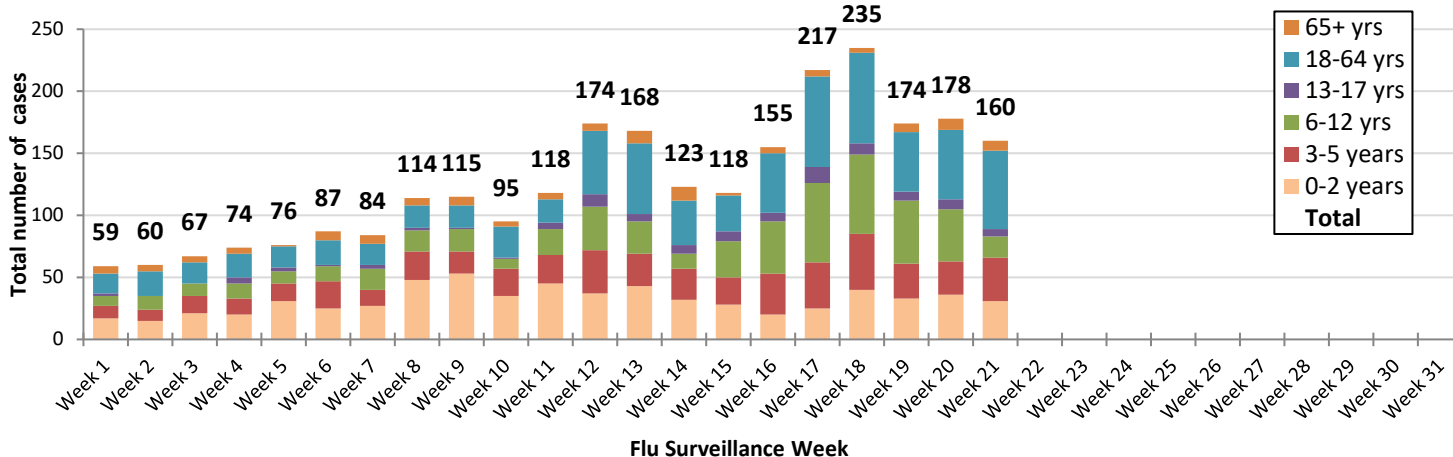
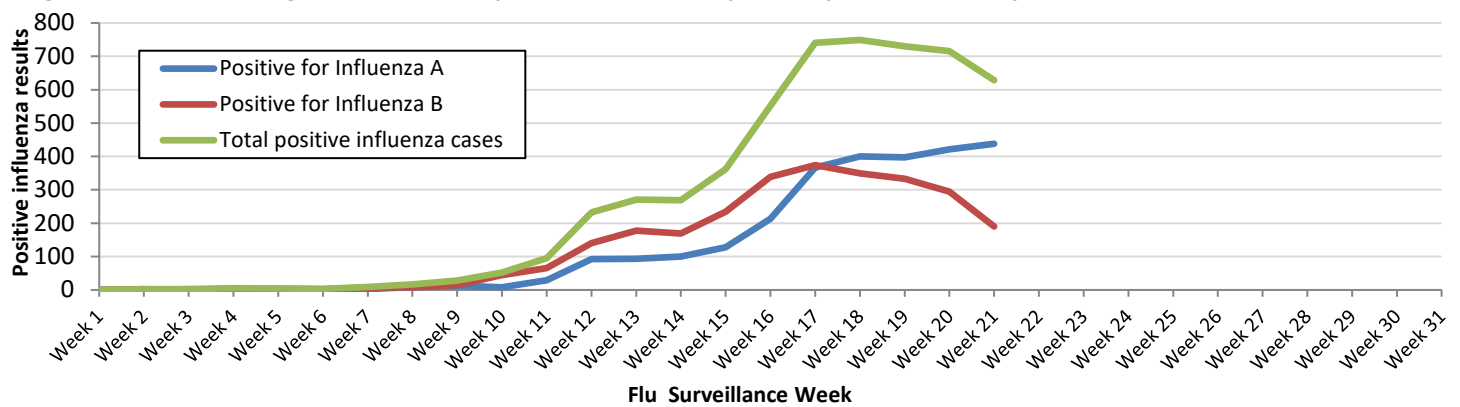


Figure 4. Influenza diagnostic tests with positive results completed by Summit County health facilities, 2019 - 2020 season



Ohio Influenza Activity: from the Ohio Department of Health:

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.

During MMWR Week 9, public health surveillance data sources indicate High 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 decreased but are still above baseline levels statewide; fever and ILI specified ED visits decreased and are also still above baseline levels. Reported cases of influenza-associated hospitalizations are above the seasonal threshold*. There were 959 influenza-associated hospitalizations reported during MMWR Week 9.

Ohio Influenza Activity Summary Dashboard (February 23 - 29, 2020):

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)	3.93%	22.05%	↑ 1	
Thermometer Sales (National Retail Data Monitor)	2536	13.77%	↑ 1	
Fever and ILI Specified ED Visits (EpiCenter)	3.29%	-6.27%	↓ 3	
Constitutional ED Visits (EpiCenter)	14.79%	-4.40%	↓ 3	
Confirmed Influenza-associated Hospitalizations (Ohio Disease Reporting System)	959	-2.24%	↓ 2	
Outpatient Medical Claims Data ⁴	3.62%	-21.13%	↓ 3	

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®

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

Ohio Surveillance Data:

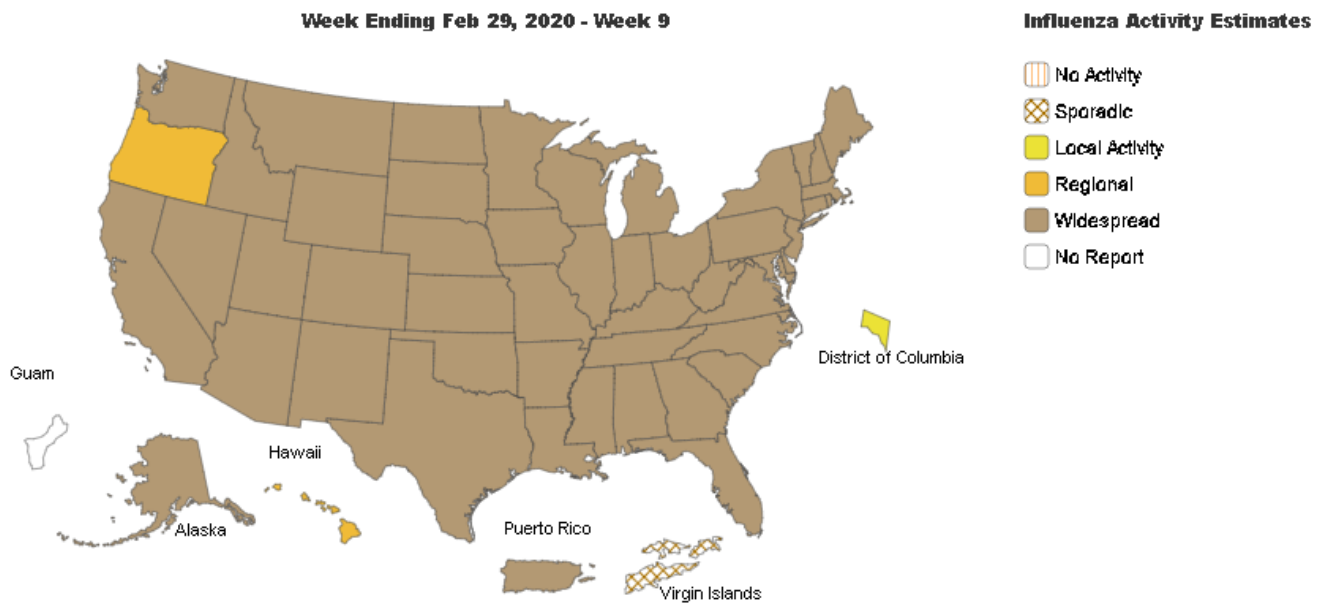
- **ODH lab** has reported **810 positive** influenza tests from specimens sent from sentinel ILINet providers and hospital clinical labs. 2019-2020 influenza season results: **(453) A/H1N1pdm09; (17) A/H3N2; (340) Influenza B;** (through 02/29/2020).
- The **National Respiratory and Enteric Virus Surveillance System (NREVSS)** has reported **67,459** influenza specimens tested by RT-PCR at participating facilities. 2019-2020 influenza season positive results: **(454) A/pdmH1N1; (3) A/H3N2; (7,426) Flu A Not Subtyped; and (7,920) Flu B;** (through 02/29/2020)
- **2 influenza-associated pediatric mortalities** have been reported during the 2019-2020 season (through 02/29/2020).
- **No novel influenza A virus infections** have been reported during the 2019-2020 season (through 02/29/2020).
- Incidence of confirmed **influenza-associated hospitalizations** in 2019-2020 season = **8,545** (through 02/29/2020)

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

Key indicators that track flu activity remain high but decreased for the third week in a row. Severity indicators (hospitalizations and deaths) remain moderate to low overall, but hospitalization rates differ by age group, with high rates among children and young adults.

- **Viral Surveillance:** While influenza B/Victoria viruses predominated earlier in the season, during recent weeks, influenza A(H1N1)pdm09 viruses have been reported more frequently than B/Victoria viruses. For the season, the number of B/Victoria and A(H1N1)pdm09 viruses are approximately equal. The predominant virus continues to vary by region and by age group.
 - **Virus Characterization:** the percentage of viruses that were characterized antigenically are similar to the cell grown reference viruses representing the 2019-20 Northern Hemisphere influenza vaccines are listed by subtype. **A (H1N1)pdm09: 86.3%** (113 of 131 samples); **A (H3N2): 40.8%** (31 of 76 samples); **B/Victoria: 65.1%** (95 of 146 samples); **B/Yamagata: 100%** (10 of 10 samples).
 - **Antiviral Resistance:** the vast majority of influenza viruses tested (99%) show susceptibility to oseltamivir, peramivir, and zanamivir. All influenza viruses tested showed susceptibility to baloxavir.
- **Influenza-like Illness Surveillance (Figure 5):** Nationwide during week 9, 5.3% 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 above the national baseline of 2.4%.* On a regional level, the percentage of outpatient visits for ILI ranged from 3.9% to 8.7% during week 9. All regions reported a percentage of outpatient visits for ILI which is above their region-specific baselines.
 - **ILI State Activity Indicator Map (Figure 6):** Puerto Rico, New York City, and 40 states reported high ILI activity; 7 states reported moderate activity; Idaho experienced low activity, the District of Columbia, Arizona and Florida reported minimal ILI activity, and the US Virgin Islands had insufficient data.
- **Geographic Spread of Influenza (Figure 7):** During Week 9, the geographic spread of influenza was reported widespread in Puerto Rico and 48 states; regional in Oregon and Hawaii, local in the District of Columbia and Hawaii; sporadic in the U.S. Virgin Islands and Guam did not report.
- **Pneumonia and Influenza (P&I) Mortality:** Based on National Center for Health Statistics (NCHS) mortality surveillance data available on March 5, 2020, 6.9% of the deaths occurring during the week ending February 22, 2020 (week 8) were due to P&I. This percentage is below the epidemic threshold of 7.3% for week 8.
- **Influenza-associated Pediatric Deaths:** A total of 136 influenza-associated pediatric deaths occurring during the 2019-2020 season have been reported to CDC.
 - 93 deaths were associated with influenza B viruses. 18 of these had the lineage determined and all were B/Victoria viruses.
 - 43 deaths were associated with influenza A viruses. 23 of these had subtyping performed and 22 were A(H1N1)pdm09 viruses, one was A(H3) virus.

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



Source for Figures 5 - 7: <https://www.cdc.gov/flu/weekly/>

Global Surveillance:

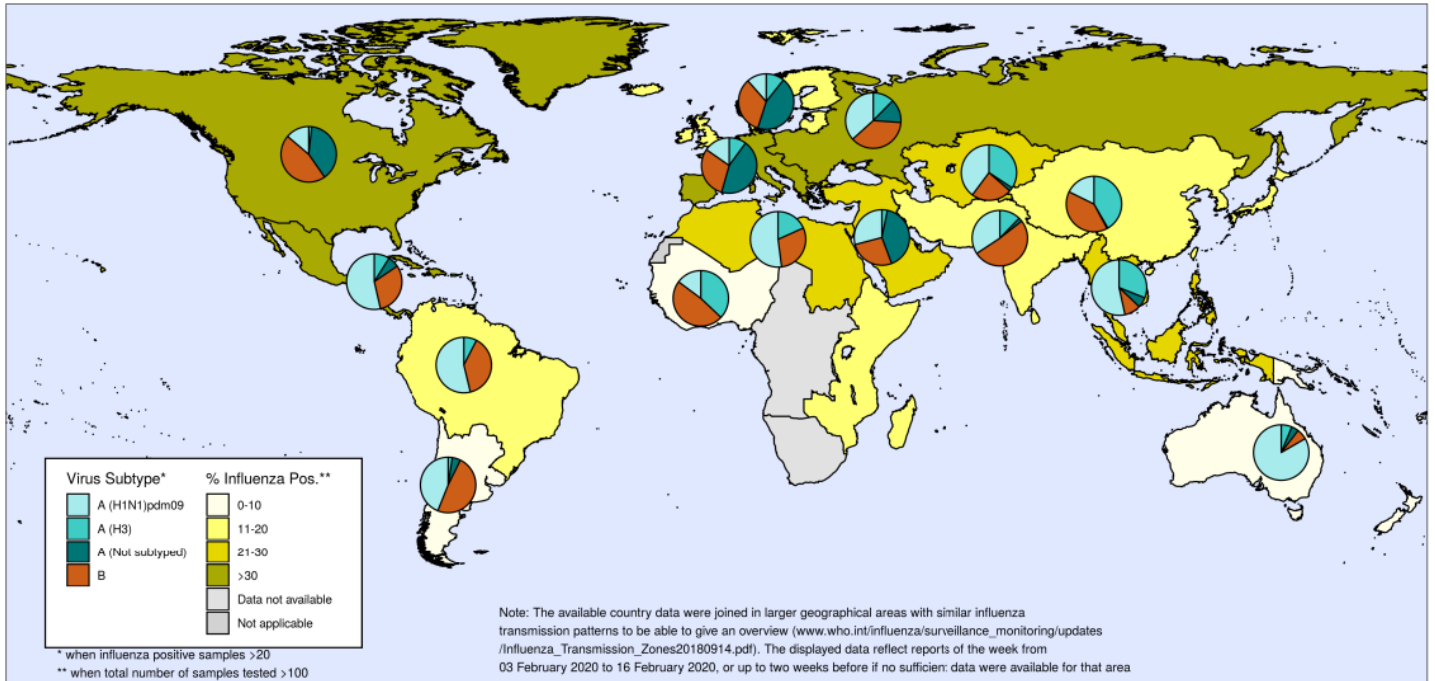
Influenza Update N° 362, World Health Organization (WHO), published 02 March 2020, based on data up to 16 February 2020. The Update is published every two weeks.

Summary

- In the **temperate zone of the northern hemisphere**, respiratory illness indicators and influenza activity remained elevated overall.
 - In **North America**, influenza activity remained elevated influenza A(H1N1)pdm09 and B viruses co-circulating.
 - In **Europe**, influenza activity continued to increase across the region but appeared to have peaked in some countries. In **Central Asia**, influenza activity decreased with detections of all seasonal influenza subtypes. In **Northern Africa**, influenza activity continued to increase in Algeria and Tunisia, with detections of influenza A(H1N1)pdm09 and B viruses. In **Western Asia**, influenza activity remained elevated overall, though in some countries activity returned to low levels. In **East Asia**, influenza-like illness (ILI) and influenza activity appeared to decrease overall.
- In **the Caribbean and Central American countries**, influenza activity was low across reporting countries with some exceptions. In Mexico, influenza activity appeared to decrease, with influenza A(H1N1)pdm09 viruses most frequently detected. In tropical South American countries, influenza activity remained low.
- In **tropical Africa**, influenza detections were low across reporting countries.
- In **Southern Asia**, influenza activity was low overall, though remained elevated in Afghanistan.
- In **South East Asia**, influenza activity continued to be reported in some countries.
- In **the temperate zones of the southern hemisphere**, influenza activity remained at inter-seasonal levels.
- **Worldwide**, seasonal influenza A viruses accounted for the majority of detections.

National Influenza Centres (NICs) and other national influenza laboratories from 122 countries, areas or territories reported data to FluNet for the time period from 03 February 2020 to 16 February 2020 (data as of 2020-02-28 03:57:53 UTC). The WHO GISRS laboratories tested more than 201954 specimens during that time period. A total of 58268 were positive for influenza viruses, of which 36 580 (62.8%) were typed as influenza A and 21 688 (37.2%) as influenza B. Of the sub-typed influenza A viruses, 7897 (66.5%) were influenza A(H1N1)pdm09 and 3978 (33.5%) were influenza A(H3N2). Of the characterized B viruses, 21 (1%) belonged to the B-Yamagata lineage and 2177 (99%) to the B-Victoria lineage.

Figure 8. Percentage of respiratory specimens that tested positive for influenza, by influenza transmission zone
Map generated by the WHO on 28 February 2020



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

Influenza News from CIDRAP, WHO and CDC:

WHO advisors: Use 3 new strains for next Northern Hemisphere flu vaccine

The World Health Organization (WHO) flu vaccine strain selection committee met this week to assess what strains to include in the 2020-21 Northern Hemisphere flu season and today recommended swapping out three of the strains.

In their report, they recommend replacing egg-based flu vaccine strains:

- H1N1 (A/Brisbane/02/2018-like) with A/Guangdong-Maonan/SWL1536/2019-like
- H3N2 (A/Kansas/14/2017-like virus) with A/Hong Kong/2671/2019-like
- B Victoria (B/Colorado/06/2017-like) with B/Washington/02/2019-like

However, for cell-based and recombinant vaccines, the group recommends different H1N1 (A/Hawaii/70/2019-like) and H3N2 (A/Hong Kong/45/2019-like) strains.



For trivalent vaccines that include only one influenza B strain, they recommend the Victoria lineage vaccine virus. When compared with the 2020 Southern Hemisphere vaccine strains, only the influenza B Victoria lineage is the same. The team also assessed the latest zoonotic flu viruses and didn't recommend any new candidate vaccine viruses for pandemic preparedness. Extensive strain selection changes have sometimes led to delays in flu vaccine production. The committee meets again in September to recommend the strains to include in the Southern Hemisphere's 2021 flu season.

Feb 28 WHO [recommendations for 2020-21 strains](#)

Feb 28 WHO [zoonotic flu vaccine virus assessment](#)

Sep 27, 2019, CIDRAP News story "[Two strains changed for Southern Hemisphere 2020 flu vaccine](#)"

Source: <http://www.cidrap.umn.edu/news-perspective/2020/02/flu-scan-feb-28-2020>

Children derive significant protection from flu vaccines, review finds

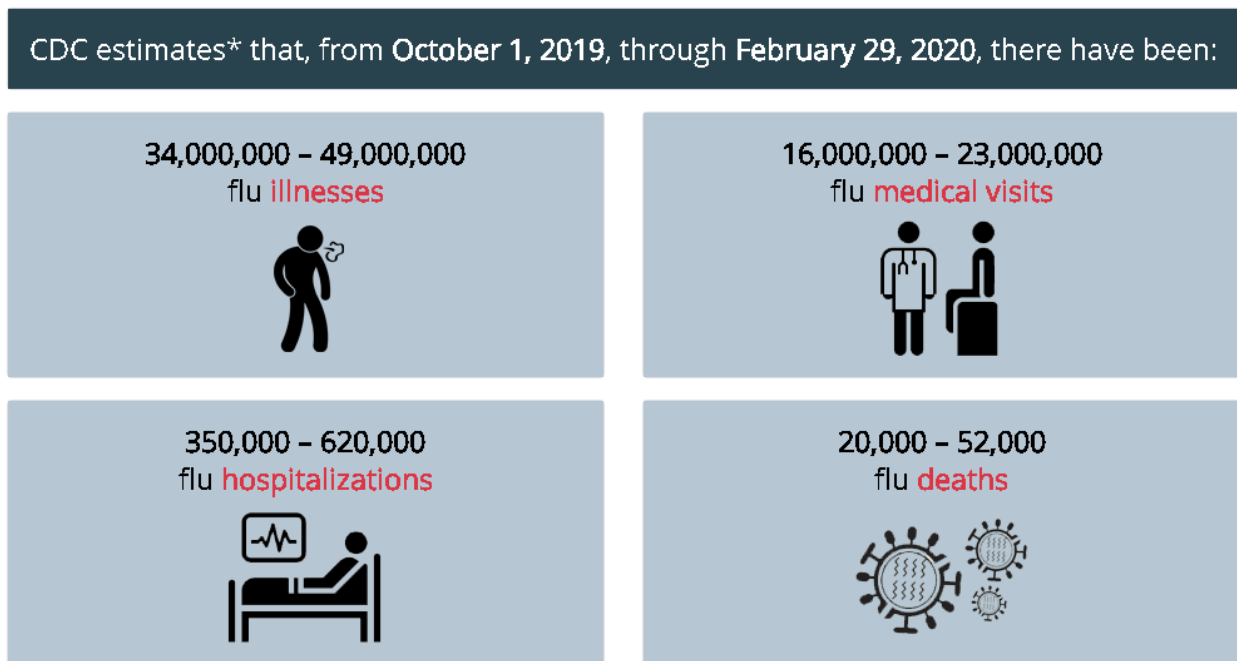
A systematic review and meta-analysis of 28 studies of flu vaccine effectiveness (VE) against hospitalization in children published yesterday in *Vaccine* found overall VE of 57.5% and VE against H1N1 of 74.1%, H3N2 of 40.8%, and influenza B of 50.9%. The study, led by Brown University researchers, compared the findings of test-negative design trials from 2005 to 2019 that estimated flu VE with laboratory-confirmed flu-related hospitalizations in children 6 months to 17 years old.

The researchers found that flu vaccine conferred significant protection against any type of flu-related hospitalization (57.5%; 95% confidence interval [CI], 49.5% to 65.5). VE was high against H1N1 (74.1%; 95% CI, 54.9% to 93.3%) and moderate against influenza B (50.9%; 95% CI, 41.8% to 60.0%) and H3N2 (40.8%; 95% CI, 25.7% to 55.9%). Flu VE was 61.7% in children younger than 5 years (95% CI, 49.3% to 74.1%) and 54.4% in those 6 to 17 years (95% CI, 35.1% to 73.6%). And flu vaccination conferred significantly higher protection in fully vaccinated children (61.8%; 95% CI, 54.5% to 69.1%) than in those only partially vaccinated (33.9%; 95% CI, 21.1% to 46.7%).

While vaccination is the most effective way to prevent the flu, VE varies by year in part because of circulating seasonal flu strains' antigenic variability and their match with the vaccine strains. Children, particularly those younger than 5 years, and older adults are at highest risk for flu-related complications, hospitalizations, and death. Children also tend to introduce and spread the virus at home and in the community, the authors note.

Feb 27 [Vaccine abstract](#)

Source: <http://www.cidrap.umn.edu/news-perspective/2020/02/flu-scan-feb-28-2020>



Source: <https://www.cdc.gov/flu/about/burden/preliminary-in-season-estimates.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). This report was issued on March 6, 2020.