

INFLUENZA

National Influenza Surveillance Data

The 2018-2019 influenza season was a moderate severity season with two waves of influenza A activity of similar magnitude during the season: A(H1N1) pdm09 predominated from October 2018 to mid-February 2019, and A(H3N2) activity increased from mid-February through mid-May.

Nationally, influenza-like illness (ILI) activity began increasing in November, peaked during Mid-February, and returned to below baseline in mid-April; the season lasted 21 weeks, making it the longest season in 10 years.

Influenza-associated hospitalizations peaked during the week ending March 16, 2019 (week 11). The hospitalization rate was highest among persons aged ≥ 65 years, who accounted for approximately 47% of reported influenza-associated hospitalizations.

Flu deaths in children are reported to CDC, flu deaths in adults are not nationally notifiable. To monitor influenza related deaths in all age groups, CDC tracks pneumonia and influenza (P&I)-attributed deaths through the National Center for Health Statistics (NCHS) Mortality Reporting System. This system tracks the proportion of death certificates processed that list pneumonia or influenza as the underlying or contributing cause of death. This system provides an overall indication of whether flu-associated deaths are elevated but does not provide an exact number of how many people died from flu.

During the 2018-19 season, the percentage of deaths attributed to P&I was at or above the epidemic threshold for 10 weeks, Mortality attributed to P&I peaked two times at 7.7% during the weeks ending

February 23 (week 8) and March 16, 2019 (week 11).

As of May 18, 2019, a total of 118 laboratory confirmed pediatric deaths had been reported to CDC during the 2018-19 season. Two deaths occurred in non-U.S. residents. Twenty-five (22%) of the deaths were associated with influenza A(H3N2) infection 43 (37%) with influenza A(H1N1)pdm09, 39 (34%) with an influenza A virus for which no subtyping was performed, eight (7%) with an influenza B virus, and one (1%) with an influenza virus for which the type was not determined. The mean age of the pediatric deaths reported this season was 6.1 years (range = 2month-17 years); 75 (66%) children died after admission to the hospital. Among the 104 children with known medical history, 53 (51%) had at least one underlying medical condition. Placing them at high risk. Among the 89 children who were eligible for influenza vaccination and for whom vaccination status was known 30 (34%) had received at least one dose of influenza vaccine before illness onset (25 were fully vaccinated and five had received 1 of 2 recommended doses).

Overall vaccine effectiveness (VE) of the 2018-19 flu vaccine against both influenza A & B viruses for all ages is estimated to be 47%. This means the flu vaccine reduced a person's overall risk of having to seek medical care at a doctor's office for flu illness by 47%. Flu vaccination is the best way to prevent flu and its potentially serious complications and prevents millions of flu illnesses and related doctors' visits and tens of thousands of hospitalizations. Influenza vaccination also has been shown to reduce the risk of flu death in children.

Antiviral resistance means that a virus has changed in such a way that antiviral drugs are less effective or not effective at all in

treating or preventing illnesses with that virus. Since October 1, 2018 CDC tested 1,240 influenza A(H1N1pdm09), 1,016 influenza A(H3N2), and 191 influenza B viruses for resistance to antiviral medications (i.e., oseltamivir, zanamivir, or peramivir). Five (0.3%) influenza A(H1N1) pdm09 viruses had the amino acid substitution H275Y and displayed highly reduced inhibition by oseltamivir and peramivir. In addition, four (0.3%) influenza A(H1N1) pdm09 viruses displayed some reduction in inhibition by oseltamivir, and two influenza B viruses (0.4%) from different lineages had the amino acid substitution H273Y and displayed highly reduced inhibition by peramivir.

Although summer influenza activity in the United States typically is low, influenza cases and outbreaks have occurred during summer months and clinicians should remain vigilant in considering influenza in the differential diagnosis of summer respiratory illnesses. Testing for seasonal influenza viruses and monitoring for novel influenza A virus infections should continue year-round. Health care providers also are reminded to consider novel influenza virus infections in persons with influenza-like illness and swine or poultry exposure, or with severe acute respiratory infection after travel to areas where avian influenza viruses have been detected. Providers should alert the local public health department if novel influenza virus infection is suspected. Clinical laboratories using a commercially available influenza diagnostic assay that includes influenza A virus subtype determination should contact their state public health laboratory to facilitate, transport, and additional testing of any specimen that is positive for influenza A, but for which the subtype cannot be determined. Public Health laboratories should immediately send influenza A virus specimens that they cannot subtype using standard methods to CDC and submit all

specimens that are otherwise unusual as soon as possible after identification.

Ref:

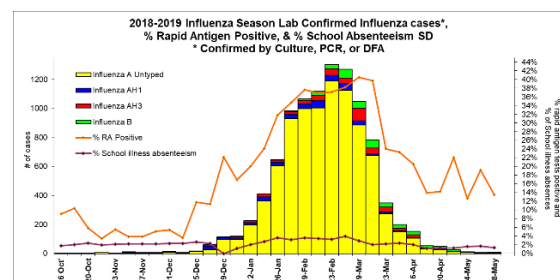
<https://www.cdc.gov/mmwr/volumes/68/wr/mm6824a3.htm>

South Dakota Influenza Epidemiology and Laboratory Surveillance

The South Dakota Department of Health (SD DOH) and SD Public Health Laboratory (SDPHL) conduct surveillance for influenza year-round, and conducts enhanced surveillance October through May. The components of South Dakota’s influenza surveillance program for the 2018-19 season included 57 laboratory sentinel sites; 34 Influenza Like Illness Network (ILINet) providers); viral culture, PCR and DFA testing for confirmatory testing; reporting of aggregate rapid antigen results; influenza associated hospitalizations and deaths, and institutional outbreaks. During the influenza season, weekly summary reports are posted on the SD DOH website at:

www.doh.sd.gov/Flu/.

During the 2018-19 flu season, there were 9,555 confirmed influenza cases, A(H3N2) 462 (5%), A(H1N1) 381 (4%), A-not subtyped 8,336 (87%) and 376 (4%) influenza B, were reported to SDDOH. Additionally, 33,968 rapid antigen influenza tests were accomplished with 9,857 positives (29%), 8,345 (85%) positive for influenza A and 1,512 (15%) positive for influenza B.



South Dakota seasonal distribution of influenza by MMWR week

The 2018-19 influenza viruses had a substantial impact on all age groups. The median age of confirmed influenza cases was 11 years with an age range of 4 weeks to 110 years.

Lab Confirmed Influenza Cases (by DFA, PCR, or culture)		Influenza Associated Hospitalizations	Influenza Associated Deaths
Age Group	# Cases (%)	# Hosp (%)	# Deaths
0-4	2,428 (25%)	89 (14%)	1 (2%)
5-18	1,635 (37%)	31 (5%)	0
19-49	1,222 (20%)	104 (16%)	5 (12%)
50-64	732 (9%)	134 (21%)	10 (23%)
> 64	1,145 (9%)	295 (45%)	27 (63%)
Total	9,555	653	43

South Dakota distribution of influenza hospitalizations & deaths by age

The first confirmed case of influenza was reported the first week of October 2018 and the last case reported late September 2019. The peak of the season was the third week in February 2019 with A(H1N1), A(H3N2) and Influenza B viruses all circulating at the same time.

Forty-three individuals died due to influenza and its complications during the 2018-19 season. Gender breakdown was 58% female and 42% male. The median age was 75 years, with an age range of one year to 98 years. 72% of the influenza associated deaths were White and 27% were Unknown and <1% were Native American.

There were 653 individuals reported hospitalized during the 2018-19 influenza season. The first hospitalization was identified 1st week of October 2018 and the last was reported late July 2019. Hospitalizations peaked 3rd week of February. For patients who were hospitalized with influenza, the age range was 4 weeks to 97 years with a median age of 62 years.

