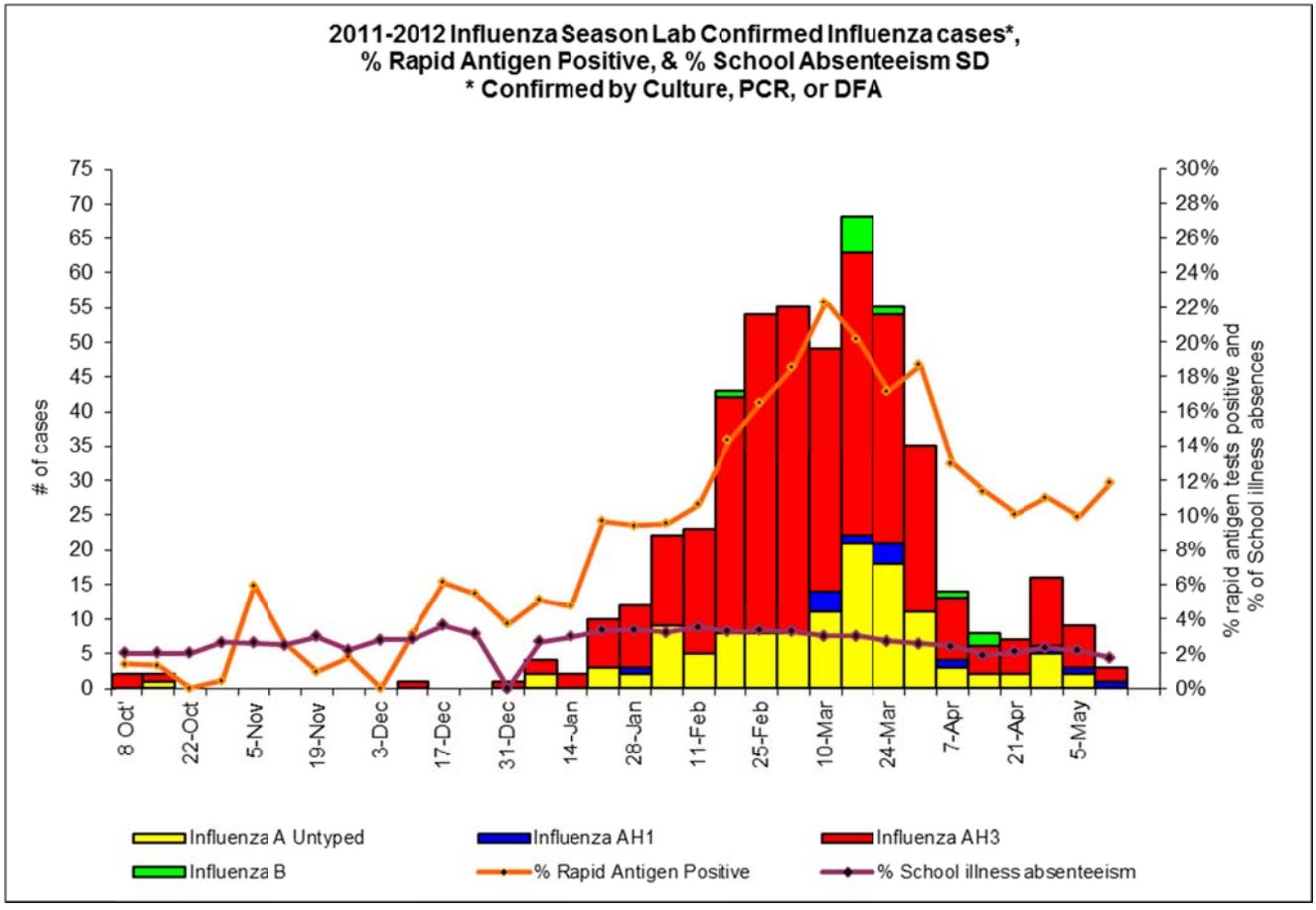
South Dakota Influenza Epidemiology and Laboratory Surveillance, 2011-2012 Season
(Vickie Horan, Influenza Surveillance Coordinator)

The South Dakota Department of Health (SD DOH) and SD Public Health Laboratory (SDPHL) conduct surveillance for influenza year-round, and intensifies activities October through May. The components of South Dakota's influenza surveillance program for the 2011-2012 season included 66 laboratory sentinel sites; 21 Influenza Like Illness Network (ILINet) providers); viral culture and PCR testing (SDPHL); DFA testing (Pine Ridge, Rapid City Regional, and Sanford Laboratories); reporting of aggregate rapid antigen results; confirmed influenza, influenza 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/.



Source: South Dakota Department of Health, Office of Disease Prevention

A total of 505 confirmed influenza cases, A(H3N2) 352 (70%), A(H1N1) 11 (2%), A-not subtyped 130 (26%) and 12 (2%) influenza B, were reported to SD DOH. Additionally, 23,842 rapid antigen influenza tests were accomplished with 3,191 positive (13%), 3,085 (97%) positive for influenza A and 106 (3%) positive for influenza B. Other viral respiratory pathogen reports included 67 adenovirus, 125 hMPV, 50 parainfluenza-1, 19 parainfluenza-2, 32 parainfluenza-3, 55 parainfluenza-4, and 538 respiratory syncytial virus.

The 2011-2012 influenza viruses had a substantial impact on all age groups. The median age of confirmed influenza cases was 26 years with an age range of 4 weeks to 102 years. The first confirmed case of influenza was reported the last week of October 2011 and the last case reported mid-June 2012. The predominant virus in South Dakota was influenza A(H3N2). The peak of the season was mid-March 2012 with few A(H1N1) and Influenza B viruses circulating.

There were 164 individuals reported hospitalized with influenza-associated illness during the 2011-2012 influenza season. The first hospitalization was in early October 2011 and the last was during mid-June 2012. Hospitalizations peaked mid-March. For patients that were hospitalized with influenza, the age range was 2 months to 101 years with a median age of 73 years.

Seventeen individuals died due to influenza and its complications during the 2011-2012 season. Gender breakdown was 41% male and 59% female. The median age was 86 years, with an age range of 63-95 years. 100% of the influenza associated deaths were White race individuals.

Age Distribution of Reported Influenza Cases, South Dakota, 8 Oct 2011 - 28 Jul 2012			
Lab Confirmed Influenza Cases (by DFA, PCR, or culture)		***Influenza Associated Hospitalizations***	***Influenza Associated Deaths***
Age Group	***# Cases (%)***	***# Hosp (%)***	***# Deaths (%)***
0-4 yr	**116 (23%)**	**25 (15%)**	**0**
5-24 yr	**132 (26%)**	**10 (6%)**	**0**
25-49 yr	**90 (18%)**	**14 (9%)**	**0**
50-64 yr	**47 (9%)**	**17 (10%)**	**1 (6%)**
> 64 yr	**120 (24%)**	**98 (60%)**	**16 (94%)**
Total	**505**	**164**	**17**

Source: South Dakota Department of Health, Office of Disease Prevention

National Influenza Surveillance Data for the 2011-2012 Influenza Season.

Influenza-like-illness (ILI) in the United States typically begins to increase in late December or early January and peaks in February most commonly. This season, ILI remained low through February and did not reach baseline until mid-March. ILI never exceeded baseline during the season.

Nationally, 26 pediatric deaths occurring during the 2011-2012 season had been reported to the CDC (as of May 25, 2012). This was the lowest number of pediatric deaths reported during a season since such record keeping began. These are deaths in children younger than 18 who test positive for influenza.

The reason for the mildness and lateness of the season isn't certain, but it's likely that there were a number of contributing factors, including a mild winter, the fact that most of the influenza viruses circulating this season were similar to those that have circulated for the past two seasons and the fact that most circulating viruses were similar to the viruses that the 2011-2012 vaccine was designed to protect against. The low levels of influenza virus "drift" for two consecutive years and steadily increasing influenza vaccination coverage in the country likely contributed to broad levels of immunity in the population.

How well the flu vaccine works can range widely from season to season. During the 2011-2012 flu season, influenza A(H3N2), 2009 influenza A(H1N1), and influenza B viruses co-circulated in the United States. Over the course of the season, predominant viruses varied from region to region and between states, but nationally, influenza A(H3N2) influenza viruses predominated. Most of the viruses tested this season were well matched to the vaccine viruses the vaccine is designed to protect against.

Influenza A (H3N2) Variant Virus Outbreaks

Since July 2012, there have been outbreaks of H3N2 variant viruses with the matrix (M) gene from the 2009 A(H1N1) pandemic virus in multiple U.S. states. As of August 2012, there have been 296 confirmed cases, 16 hospitalizations, and one death reported. Investigations into A(H3N2)v cases indicate that the main risk factor for infection is prolonged exposure to pigs, mostly in fair settings. Found in the U.S. pigs in 2010 and humans in July 2011, this virus appears to spread more easily from pigs to people than other variant viruses. Though limited person-to-person spread with this virus has occurred, no sustained community spread of A(H3N2)v has been detected at this time. Associated illness so far has been mostly mild with symptoms similar to seasonal flu and most cases have occurred in children who have little immunity against this virus. The Centers for Disease Control and Prevention (CDC) is working with states to respond to these outbreaks and continues to monitor the situation closely.