

South Dakota Influenza Surveillance Report, 2006-2007 Season

Joshua Clayton, Dr Lon Kightlinger

Summary

The 2006-07 influenza season was of mild severity, typical duration, and peaked mid season. A total of 400 laboratory confirmed influenza cases, 370 influenza A and 30 influenza B, were reported to the South Dakota Department of Health (SD DOH) from the beginning of the influenza season starting October 1st through season's end on May 26th. The peak of the influenza season occurred during the second full week of February, MMWR Week 7 ending February 17th. One hundred thirty-two influenza hospitalizations and six influenza deaths were reported for the season. This was the first year influenza hospitalizations and all influenza deaths were mandatory reportable.

Background

The Centers for Disease Control and Prevention (CDC) guidelines for the 2006-07 season were published in the *Prevention and Control of Influenza* MMWR on July 28th, 2006, Vol. 55, No. RR-10, <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5510a1.htm>

Approximately 110 to 115 million doses of influenza vaccine were produced for the 2006-07 influenza season. The doses were produced by four companies: Sanofi Pasteur, MedImmune Vaccines, Novartis (formerly Chiron Corporation), and GlaxoSmithKline. The trivalent vaccine included A/New Caledonia/20/1999 (H1N1)-like, A/Wisconsin/67/2005 (H3N2)-like, and B/Malaysia/2506/2004-like antigens.

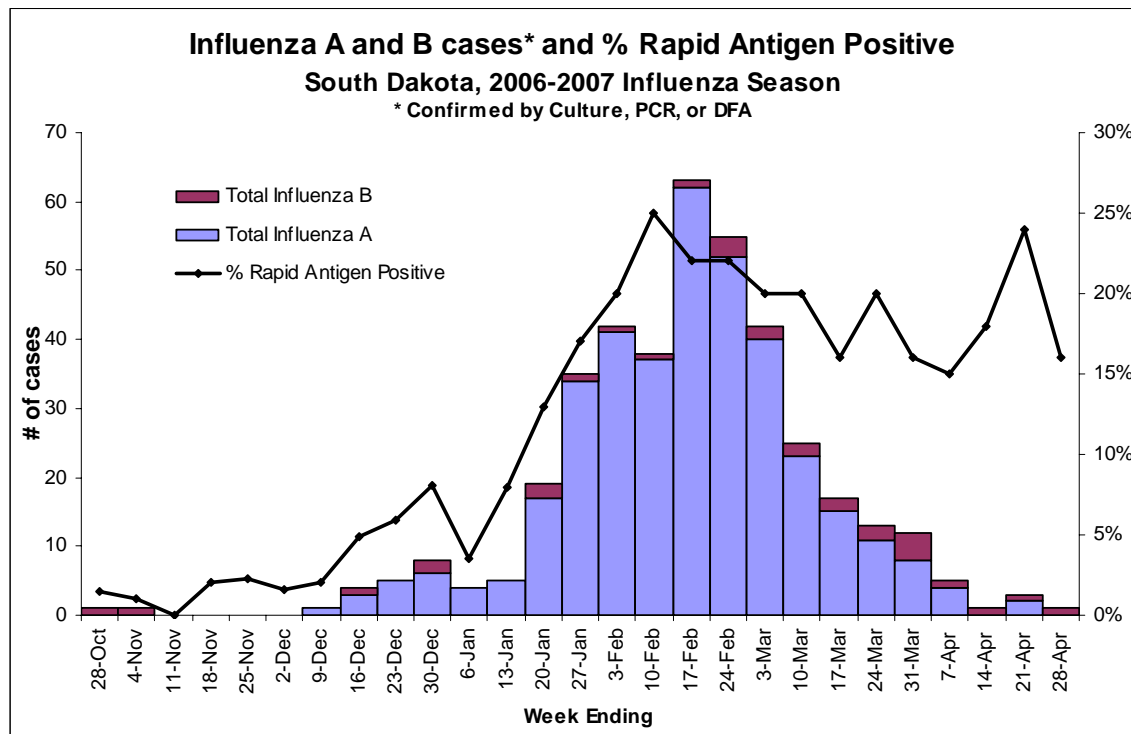
The South Dakota Department of Health (SD DOH) ordered a total of 44,300 doses of influenza vaccine, 23,900 doses for Community Health Services field offices and 20,400 doses for clinics participating in the Vaccines For Children program. In addition, SD DOH promoted the influenza prevention campaign *Stop it . . . Don't spread it* by distributing posters in newspapers and to healthcare and childcare facilities. New for the season were the *Be A Germ Stopper!* clings which were distributed to schools and healthcare facilities.

Results from the 2005 Behavioral Risk Factor Surveillance System (BRFSS) showed South Dakota ranking 2nd in the nation with 76.3 percent of individuals aged ≥ 65 years receiving influenza vaccination. The survey also showed the state ranking 22nd in pneumococcal vaccination coverage with 66.3 percent of individuals in that age group receiving vaccine.

Epidemiology and Laboratory Surveillance

The 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 2006-07 season included 30 sentinel sites, five Sentinel Provider Network physicians, SDPHL culture and PCR testing, reporting of aggregate rapid antigen results, confirmed influenza, influenza hospitalizations and deaths, and institutional outbreaks.

South Dakota's first case of influenza was identified during MMWR Week 43, ending October 28th, 2006. The case, a 7 month-old male from Lyman County, was positive for influenza B by PCR and culture at the SD Public Health Laboratory.



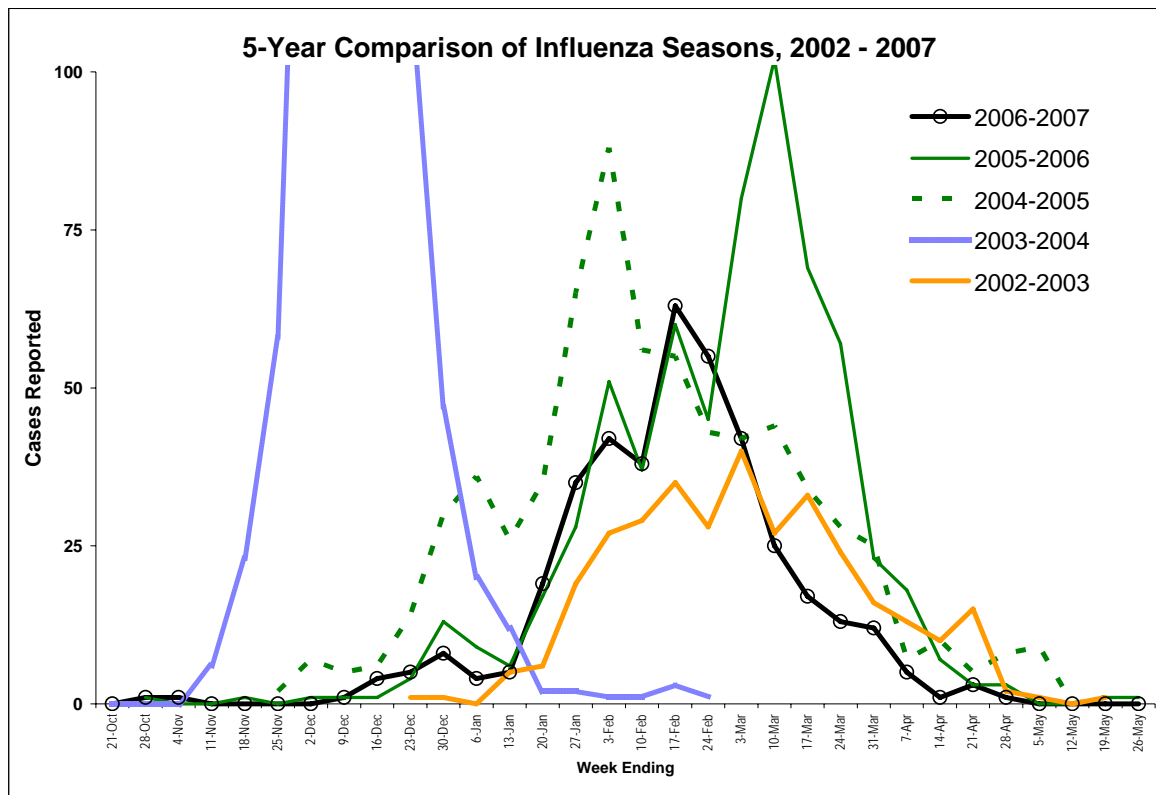
Following the first positive detection, influenza activity remained low until the end of January. Activity then steadily increased in both percentage of positive rapid antigen tests and laboratory confirmed cases until the peak was reached during the second full week of February, MMWR Week 7, ending February 17th. This coincided well with both the peaks in influenza-associated hospitalizations occurring week ending February 24th and national influenza test data occurring during weeks ending February 10th and 17th.

A total of 400 influenza isolates, 370 (93%) influenza A and 30 (7%) influenza B, were reported to SD DOH from SDPHL, Pine Ridge Indian Health, and the University of South Dakota Clinical Virology Laboratories (USD-CVL) in Sioux Falls and Rapid City. Of 370 influenza A isolates, 140 (38%) subtyped as A/H1, 37 (10%) subtyped as A/H3, and 193 (52%) were not subtyped. Of the 30 influenza B isolates identified, 2 (7%) were subtyped as B/Malaysia, and 28 (93%) were untyped.

Other viral respiratory pathogen reports included 130 adenovirus, 14 parainfluenza type 1, 21 parainfluenza type 2, 206 parainfluenza type 3, 29 parainfluenza type 4, and 437 respiratory syncytial virus (RSV).

Viral Respiratory Reports			
SDPHL and USD-CVL			
Oct 1, 2006 – May 26, 2007			
	SDPHL [□]	USD-CVL	TOTAL
Influenza A	183*	192	386
Influenza B	16 [†]	21	37
Adenovirus	3	127	130
RSV	4	433	437
Parainfluenza-1	3	11	14
Parainfluenza-2	2	19	21
Parainfluenza-3	6	200	206
Parainfluenza-4	0	29	29

*140 influenza A/H1; 37 influenza A/H3
[†] 2 influenza B/Malaysia
[□] In cooperation with Influenza Sentinel Sites (including Pine Ridge Indian Health)



The median age of confirmed influenza cases was 8 years of age with an age range of 26 days to 99 years. There were 226 (57%) cases < 10 years old and 281 (70%) were <20 years old. Individuals >65 years of age accounted for only 32 (8%) cases. Gender data were available for 389 (97%) influenza cases. 183 (47%) were female, 206 (53%) were male.

Influenza-associated hospitalizations became officially reportable on December 25th, 2006. Prior to that, SD DOH requested hospitals, clinics, physicians, and nurses report those events voluntarily. The first hospitalization was identified during MMWR Week 49, ending December 9th. Cases peaked during week ending February 24th when 23 patients were hospitalized for influenza.

Age Distribution of Reported Influenza Cases, South Dakota, 2006-2007 Season.

Age group	#	Percent
0 - 9 yr	226	57%
10 - 19 yr	55	14%
20 - 29 yr	28	7%
30 - 39 yr	23	6%
40 - 49 yr	22	6%
50 - 59 yr	12	3%
60 - 69 yr	7	2%
70 - 79 yr	10	3%
80 - 89 yr	13	3%
90+ yr	4	1%
TOTAL	400	

For patients who were hospitalized with influenza, the age range was 25 days to 97 years with a median age of 25.5 years. Further age stratification revealed 43% of hospitalized cases were <10 years of age and 33% were >65 years of age. Seventy-two (55%) cases were female and 60 (45%) were male.

