

STATE OF COLORADO

Bill Owens, Governor
Douglas H. Benevento, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
TDD Line (303) 691-7700
Located in Glendale, Colorado

Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

<http://www.cdphe.state.co.us>



Colorado Department
of Public Health
and Environment

Influenza Surveillance Summary, Colorado 2004-2005

**Ken Gershman, MD, MPH
Melina Evdemon-Hogan, MSPH
Barbara Stone, MSPH
Erin Barnes, MSPH**

Communicable Disease Epidemiology Program

**For a color copy of this document please visit our website:
<http://www.cdphe.state.co.us/dc/Influenza/index.html>**

Components of influenza surveillance

During the 2004-2005 influenza season, surveillance was based on six different parameters:

- Reports of influenza-associated hospitalizations
- Circulating strain surveillance
- Reports of influenza-like illness (ILI) by sentinel providers
- Reports of pediatric deaths due to influenza
- Reports of influenza outbreaks in long-term care facilities (LTCF)
- Sentinel school reports of all-cause absenteeism

On September 30th, 2004, influenza-associated hospitalizations became a reportable condition in Colorado and replaced reporting of positive influenza tests. This major change in surveillance methodology was intended to provide a better understanding of the more significant impact of influenza as measured by numbers and rates of hospitalizations. It also focuses influenza surveillance on the more serious, vaccine-preventable aspects of the annual epidemic.

Reports of influenza-associated hospitalizations

The number of influenza-associated hospitalizations reported during the 2004-05 season peaked during the week of February 13-19, after a “late” start which didn’t begun steadily increasing until late December. There were a total of 980 reported influenza-associated hospitalizations from 10/03/04 through 5/21/05 in Colorado. Among hospitalizations, influenza A predominated (80%), with type b accounting for only 13% of reported hospitalizations.

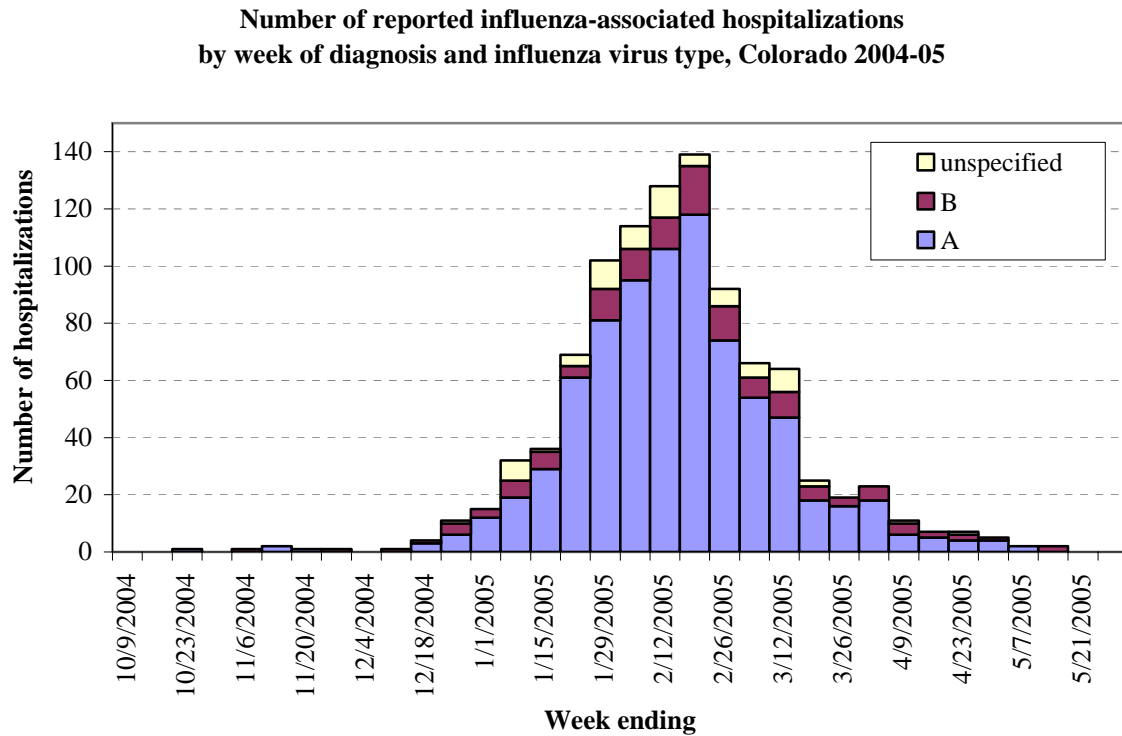


TABLE. Number, percentage, and rate* of laboratory-confirmed, influenza-associated hospitalizations reported† by 50 hospitals, by age group — Colorado, 2004–05 influenza season

Age group	No.	(%)	Rate
<6 mos	63	(6.5)	183.0
6–23 mos	68	(7.1)	66.3
2–4 years	56	(5.8)	28.9
5–17 years	51	(5.3)	6.1
18–39 years	87	(9.0)	5.8
40–49 years	51	(5.3)	6.8
50–59 years	92	(9.5)	16.4
60–69 years	101	(10.5)	33.5
70–79 years	157	(16.3)	78.0
≥80 years	238	(24.7)	207.3
Total	964	(100)	21.0

* Per 100,000 population.

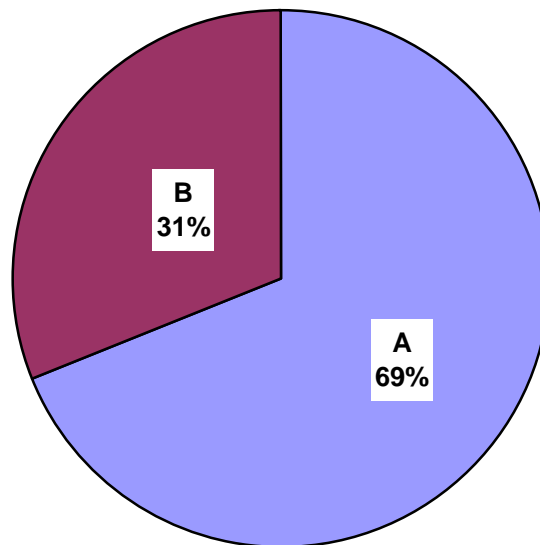
† As of April 16, 2005 (week 15).

Circulating strain surveillance

An important component of influenza surveillance consists of the typing and characterization of clinical specimens throughout the season to determine the circulating strain(s) of influenza virus. Sentinel providers submit samples to the state laboratory where they are typed and subtyped; some of these are then sent to CDC for further antigenic characterization. Several hospitals in Colorado have the capability to determine virus type by performing viral culture or direct fluorescent antibody test (DFA).

During the 2004-05 season 184 specimens were typed by viral culture or DFA. 127 out of the 184 (69%), were type A, 46 of these were subtype H3N2, 8 specimens were characterized as H3N2/Fujian-like and 4 were characterized as H3N2/California-like. Fifty seven (31%) specimens were type B and of these, 25 were Shanghai-like. Seven samples were collected from patients that had been previously vaccinated for the 2004-05 season: of those, three were infected with the A/H3N2/Fujian-like strain, three were infected with the A/H3N2/California-like strain (not included in the 2004-05 vaccine) and one was infected with the B/Shanghai-like strain. A type A/California-like virus has been selected for inclusion in the 2005-06 influenza vaccine.

Cumulative circulating influenza virus by type^a
Colorado, 10/3/04 - 05/21/05

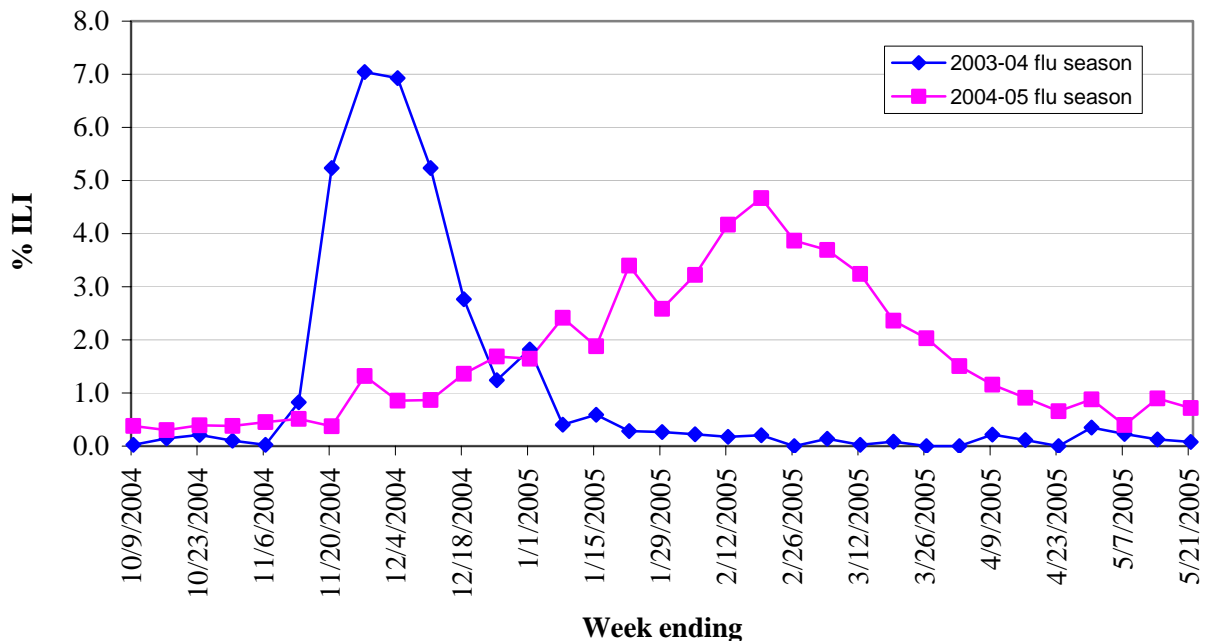


a. Based on viral culture and direct fluorescent antibody (DFA).

Reports of influenza-like illness (ILI) by sentinel providers

Beginning with the 1999-2000 season, Colorado enrolled providers to be a part of CDC's U.S. Influenza Sentinel Provider Network. In 2000, Kaiser-Permanente (KP) physicians were recruited to be sentinel providers. Providers report the total number of patient visits each week and number of patient visits for ILI by age group. The season peaked during the week of February 13-19 at 4.7 percent. This peak strongly correlates with the peak for influenza-associated hospitalizations. Based on ILI reports from sentinel providers, the 2004-05 season appears to have been less severe and peaked later compared to the 2003-04 season which peaked in late November 2003 at 7.0%.

Percent of patients seen weekly by a participating sentinel provider with a diagnosis of influenza-like illness (ILI), Colorado 2004-05 influenza season vs. 2003-04 influenza season

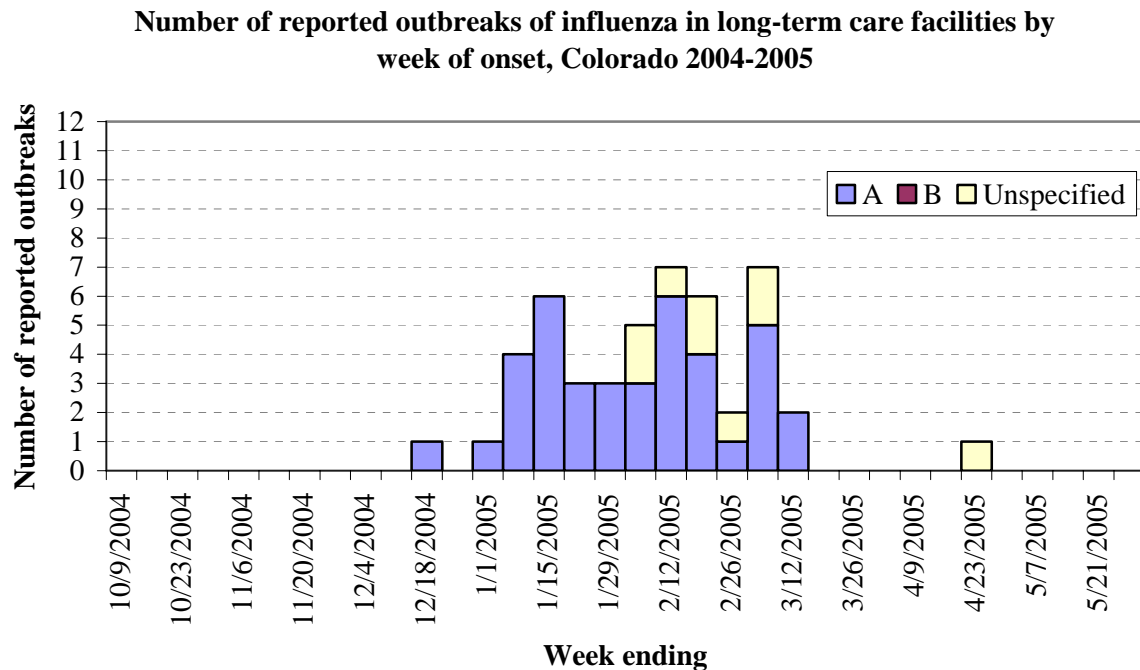


Reports of pediatric deaths due to influenza

During the 2004-05 influenza season, there were two pediatric deaths reported. The first death occurred during the month of February and was a 15-year-old female who suffered from severe underlying conditions. She tested positive for influenza type B. The second death was an 8-year-old female with a history of non-severe asthma who had respiratory failure due to influenza type A and died during March. During the 2003-04 influenza season, 12 influenza-associated pediatric deaths were reported.

Reports of influenza outbreaks in long-term care facilities (LTCF)

Beginning with the 2001-02 season, long-term care facilities (LTCF) were requested to report outbreaks of influenza or ILI. The Influenza Surveillance Project in conjunction with the Colorado Medical Directors Association developed guidelines for prevention and control of influenza outbreaks in LTCF. Instructions for reporting outbreaks are included in the guidelines. For the 2004-05 season, the number of outbreaks reported by LTCF ($n = 48$) was very similar to the number reported during the previous season ($n = 47$) and 100% of those in which A vs. B testing was done were type A. There was no distinct peak to the numbers of LTCF outbreaks reported by week, outbreaks were mainly reported from early January through mid-March.



Sentinel school reports of all-cause absenteeism

Since the 1998-99 season, 21 schools throughout Colorado have provided absenteeism data as a component of influenza surveillance. Each Tuesday, the sentinel schools reported their all-cause absenteeism. School absenteeism peaked during the second week in February at 7.1%, which correlates with the peaks in influenza-associated hospitalizations and ILI reports from sentinel providers.

Comparison of percent absenteeism at the 20 participating sentinel schools, Colorado 2004-05 vs. 2003-04 influenza season

