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Colorado Department
of Public Health
and Environment

Influenza Surveillance Summary Colorado, 2011-2012

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Summary

Influenza activity in the community during the 2011-2012 season was mild, with only 543 hospitalizations reported from 42 counties. This is the second lowest number of hospitalizations reported during any influenza season since hospitalizations became a reportable condition (2004-2005). The lowest number of hospitalizations reported (364) was during the 2006-2007 influenza season. Based on influenza surveillance data, the 2011-2012 influenza season peaked in mid March. Of those specimens subtyped by the State lab, influenza A (H3) appeared to be the predominant circulating strain.

Components of Colorado's influenza surveillance

Surveillance activities during the 2011-2012 influenza season included: reporting of hospitalizations due to influenza, reporting of influenza-like illness (ILI) visits by selected health care sites, reporting of influenza testing activity by sentinel hospital labs, reporting of influenza outbreaks in long-term care facilities, monitoring circulating influenza viruses through molecular typing at the state public health laboratory, and reporting of influenza-associated deaths in children less than 18 years of age.

Reports of Influenza-Associated Hospitalizations

Influenza activity remained minimal throughout the 2011-2012 season, slowly increasing until the peak during the week ending 3/17/2012. There were a total of 543 influenza-associated hospitalizations reported from 10/2/11 through 5/26/12 in Colorado. Among these reported cases, 524 (96.5%) were type A and only 19 (3.5%) were type B. Of the type A cases, 239 (44%) were subtype H3, 21 were subtype 2009 H1N1, and the remaining 264 (49%) were not subtyped.

The highest age group specific rates of reported hospitalizations were in infants <6 months of age followed by adults 65+ years old (Table 2). Infants 6-23 months and children 2-4 years of age had the third and fourth highest rates.

Reported rates of influenza-associated hospitalizations are especially likely to under-represent true rates of influenza-related hospitalizations among older persons. Such persons are probably less likely to be tested for influenza and rapid flu tests have been demonstrated to be less sensitive in adults than in children.

Table 1

**Numbers of Reported Influenza-Associated Hospitalizations
Colorado, 2004/05 – 2011/12**

Season	Hospitalizations
2004-05	980
2005-06	848
2006-07	364
2007-08	1004
2008-09	547
2009-10	2041*
2010-11	1027
2011-12	543

*2009 H1N1 Pandemic

Figure 1

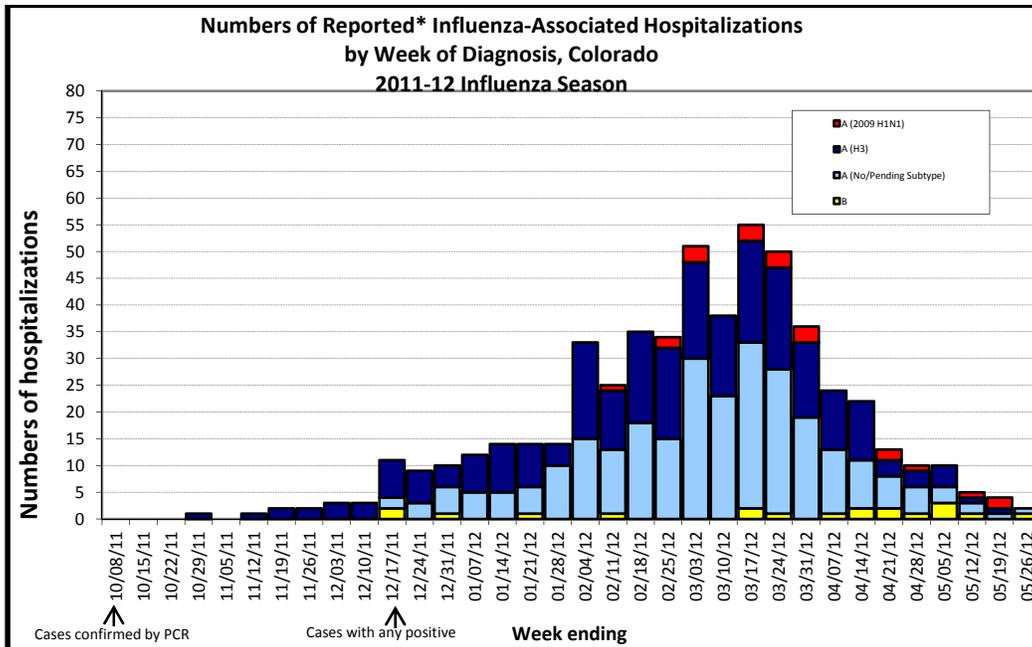
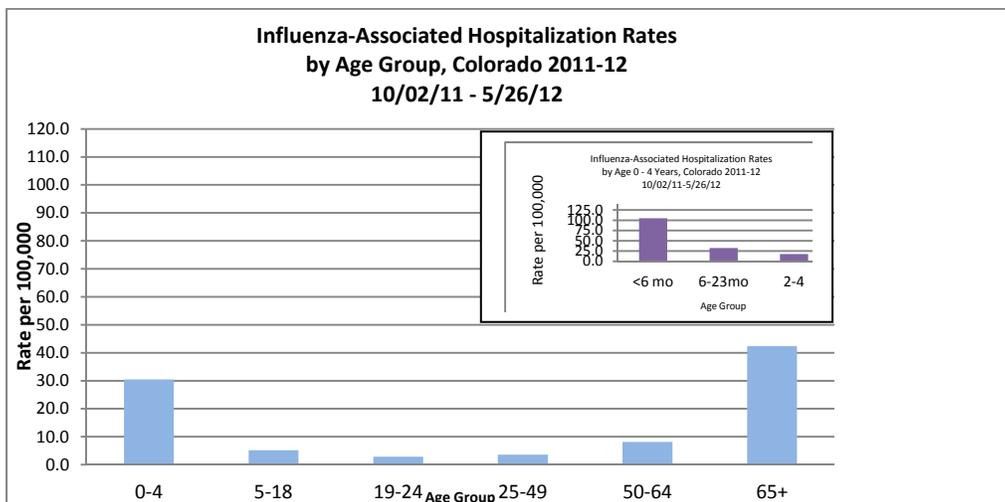


Table 2

Influenza-Associated Hospitalization Rates by Age Group, Colorado 2011-12

Age	No.*	%	CO population	Rate per 100,000
<6 mo	35	6.4	33297	105.1
6-23mo	33	6.1	101568	32.5
2-4	37	6.8	209654	17.6
5-18	49	9.0	950453	5.2
19-24	12	2.2	418894	2.9
25-49	65	12.0	1797557	3.6
50-64	79	14.5	968707	8.2
65+	233	42.9	549625	42.4
Total	543	100.0	5029755	10.8

Figure 2



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

Sentinel providers report the total number of patient visits each week and the number of patient visits for ILI by age group. Kaiser Permanente (KP) for the Denver-Boulder metropolitan area and Primary Care Partners, P.C. of Mesa County reported influenza-like illness based on ICD-9 diagnostic codes 487.1 (influenza with other respiratory manifestations, reported by both groups) and 079.99 (unspecified viral infection, reported only by KP) from their electronic medical records database. Kaiser ILI remained slightly elevated during the weeks ending February 22nd through March 17th. Peak levels of outpatient ILI were 1.6% during the 2011-2012 season.

Figure 3

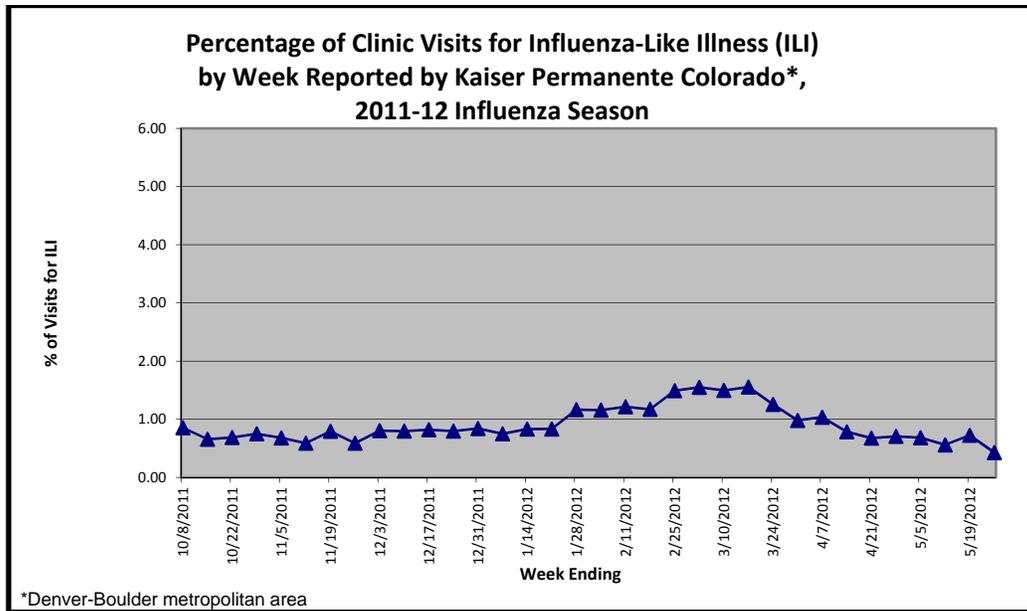
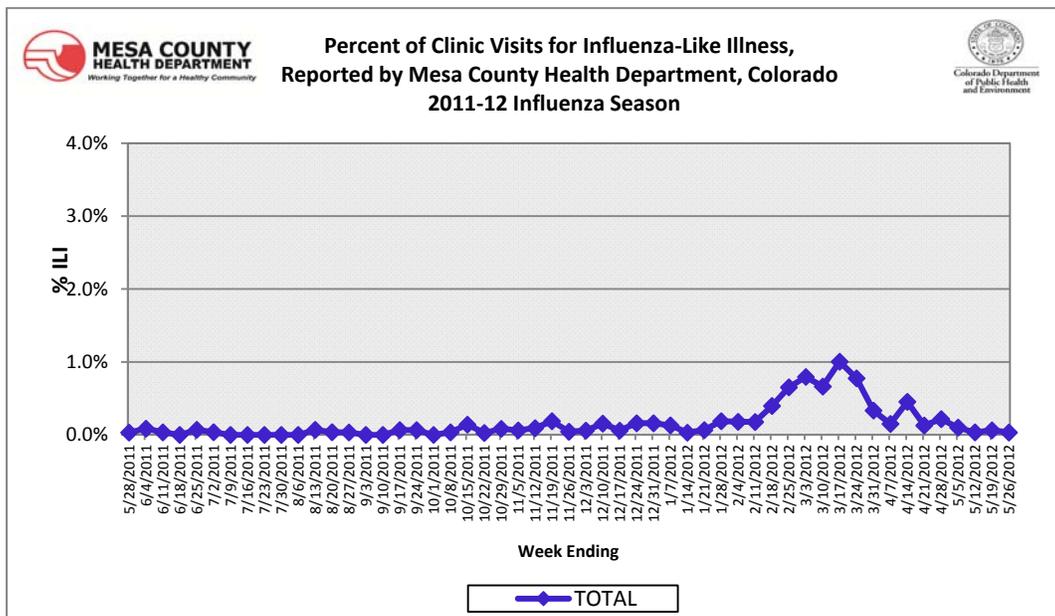


Figure 4



Circulating influenza virus surveillance

An important component of influenza surveillance consists of the typing and subtyping of influenza virus isolates throughout the season to determine the circulating strain(s) of influenza virus. Sentinel providers and hospital laboratories submit clinical specimens to the state laboratory where virus isolation, typing and subtyping are performed. Some of these are then sent to CDC for further antigenic characterization (assessment of match to the vaccine strains).

Based on typing and subtyping at the state laboratory, influenza A (H3) viruses predominated. A total of 596 specimens confirmed positive by PCR with 594 (99.7%) confirming as type A. Of those, 560 (94%) subtyped as H3 and the remaining 34 (6%) as 2009 H1N1.

Table 3

**CDPHE Laboratory Influenza Type and Subtyping Results*
2011-2012 Influenza Season**

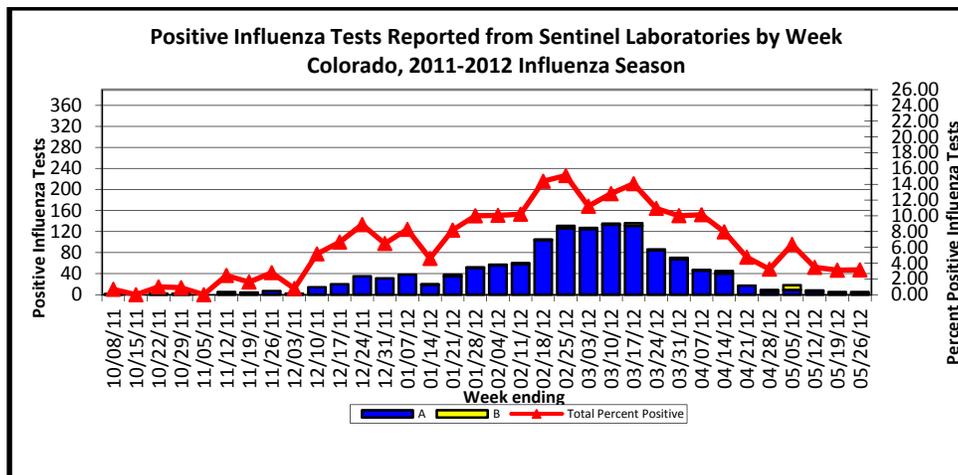
Type and Subtype	Cumulative (10/02/2011-5/26/2012)
Total Positive for A	594 (99.7%)
2009 H1N1	34 (6%)
H3	560 (94%)
Non-typeable	0
Total Positive for B	2 (0.3%)
Total Positive by PCR	596

*By week of diagnosis

Sentinel laboratory reporting of influenza testing

The percentage of respiratory specimens that tested positive for influenza at 18 sentinel hospital labs peaked during the week ending February 25th (red line in graph below). Type B viruses comprised of only .5% of the positive influenza tests reported by sentinel laboratories that week.

Figure 5



Reports of pediatric deaths due to influenza

There were no pediatric deaths (in persons less than 18 years of age) reported during the 2011-2012 influenza season. This is lowest number since pediatric influenza-associated deaths became a reportable condition in Colorado (2004-2005).

Table 4

Influenza-Associated Pediatric Deaths 2003/04-2011/12 Influenza Season

Season	Deaths
2003-04	12
2004-05	2
2005-06	2
2006-07	1
2007-08	2
2008-09	7*
2009-10	12**
2010-11	3
2011-12	0

*Includes death reported in 08-09 season but after defined season dates which may have been acquired on domestic and/or international travel.

** 2009 H1N1 Pandemic

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

Long-term care facilities (LTCF) are requested to report outbreaks of influenza or influenza-like illness (ILI). There were a total of 22 outbreaks reported during the 2011-12 season.

Table 5

Outbreaks of Influenza in Long-Term Care Facilities Colorado, 2004/05 – 2011/12

Season	Outbreaks
2004-05	51
2005-06	34
2006-07	15
2007-08	55
2008-09	11
2009-10	3*
2010-11	37
2011-12	22

*2009 H1N1 Pandemic