

California Influenza Surveillance Project

California Department of Public Health

2009-2010

Influenza Update

This week, overall influenza activity in California remained “sporadic” (defined by the CDC as “small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI”). Reports of ILI from sentinel providers decreased in *MMWR* week 6 (February 7 - 13, 2010). Laboratory detections of influenza remained steady while detections of respiratory syncytial virus (RSV) continued to increase.

NATIONAL PERSPECTIVE

During the week January 31 – February 6, 2010, CDC reported that overall flu activity remained low in the United States. No states reported widespread flu activity and 6 states reported regional flu activity.

The proportion of visits to doctors for influenza-like illness (ILI) is 2.1%, just below the national baseline level (2.3%). Nationally, 7.3% of deaths were attributed to pneumonia and influenza (P&I), just below the epidemic threshold (7.8%).

All subtyped influenza A viruses reported were identified as 2009 H1N1 influenza. These viruses remain similar to the virus chosen for the 2009 H1N1 vaccine, and remain susceptible to the antiviral drugs oseltamivir and zanamivir with rare exception*.

*Since April 2009, 60 cases of oseltamivir resistance have been found in the United States, with one new case during the last week.

CALIFORNIA 2009 H1N1 INFLUENZA UPDATE

- In California, 2009 H1N1 influenza activity remains “sporadic” this week. Most indicators suggest that illness continues to decline, with levels of illness at or below the usual range for this time of year. A total of 36 new cases (hospitalized and/or fatal) were reported to CDPH this week, 31 of which were from the current reporting period (February 7 - 13, 2010) and 5 of which were delayed reports from prior to February 7, 2010. Reported cases of new hospitalizations decreased from 62 cases last week to 36 cases this week. As in previous weeks, the rate of hospitalizations remains highest among children under one year of age. A total of 12 fatalities were reported to CDPH this week, one of which occurred during this reporting week (February 7 - 13, 2010). Reports of ILI from sentinel providers decreased this past week (February 7 - 13, 2010) but may increase as delayed reports are received. Detections of respiratory syncytial virus (RSV) continue to increase. One percent of specimens tested by the Respiratory Laboratory Network (RLN) were influenza A, 100% of which were unsubtypeable.

H1N1 Highlights:

- Local health departments have been reporting hospitalized 2009 H1N1 influenza cases as weekly aggregate numbers since August 12, 2009. From February 7 – 13, 2010, 36 hospitalized and/or fatal cases were reported to CDPH, 31 of which were from the current reporting period (February 7 – 13, 2010) and 5 of which were delayed reports from prior to February 7, 2010.
- There have been 8,739 hospitalizations and/or fatalities reported to date since the beginning of the pandemic, of which 1,875 cases required intensive care.
- The statewide cumulative incidence rate of reported 2009 H1N1 influenza hospitalizations and/or fatalities is 22.6 per 100,000 population.
- CDPH received 12 reports of fatal 2009 H1N1 influenza cases for the week ending on February 13, 2010, one of which occurred during the reporting week (February 7 - 13, 2010); a total of 527 deaths caused by 2009 H1N1 influenza have been reported to CDPH to date.
- The case-fatality ratio is highest among individuals aged 50-64 years (10.6%, an increase of 0.2% from the previous reporting week) and second-highest among individuals aged 36-49 years (10.3%, an increase of 0.2% from the previous reporting week). The case-fatality ratio for all ages combined is 6.0%.
- A total of 3,049 hospitalized and/or fatal 2009 H1N1 influenza cases in pediatric patients (18 years or younger), including 51 deaths, have been reported to CDPH to date.
- Three new cases meeting the case definition for severe pediatric influenza were reported this week, with no fatalities. All of these cases are confirmed/probable 2009 H1N1 influenza.
- From February 7 - 13, 2010, one pregnant 2009 H1N1 influenza case was reported to CDPH as aggregate numbers and was from the current reporting period (February 7 - 13, 2010). A total of 565 pregnant hospitalized and/or fatal cases, including 17 deaths (case-fatality proportion 3.0%), have been reported to CDPH to date.
- In recent months, almost all influenza A-positive specimens tested by PCR by the RLN have been subsequently confirmed as 2009 H1N1 influenza, reflecting that the predominant circulating influenza strain in California remains 2009 H1N1 influenza.
- One percent of specimens received by the Respiratory Laboratory Network (RLN) were positive for influenza, representing no change from the previous reporting week.
- This week, none of the specimens tested by the RLN that were positive for influenza A was A/H1 or A/H3, while 100% were unsubtypeable. There was one detection of influenza B from a sentinel lab.
- Of 2,146 specimens tested, eight cases of oseltamivir resistance have been identified in California residents with laboratory-confirmed 2009 H1N1 influenza infections. Available data indicate that prevalence of oseltamivir-resistant 2009 H1N1 influenza is quite limited.

Seasonal Influenza Highlights:

- Reports of ILI from sentinel providers decreased from last week.
- No isolates reported this week from the RLN were positive for influenza A/H1 or A/H3 or for influenza B; there was one isolate positive for influenza B from a sentinel lab.

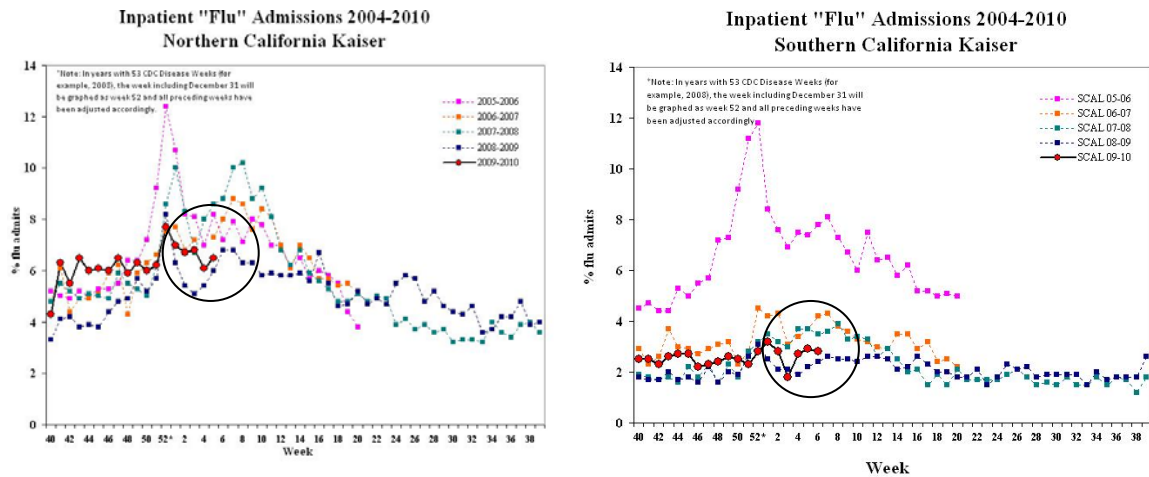
Other Respiratory Disease Highlights:

- This week, 34% of specimens tested for RSV were positive, which is an increase of two percent from last week.
- This week, 11% of specimens tested for other respiratory viruses were positive, which is the same as last week. Detections of human metapneumovirus decreased from 48 in week 5 to 13 in week 6.

Kaiser Permanente Hospitalization Data ("Flu Admits")

The admission diagnoses of flu, pneumonia, and influenza ("Flu Admits") serve as surrogate markers for the more accurate discharge diagnoses. Influenza activity is tracked by dividing the number of Flu Admits by the total number of hospital admissions for the same day to obtain a percentage of influenza and pneumonia admissions. As indicated in the circle, Figure 2 shows that during week 6 (February 7 - 13, 2010), the percentage of Kaiser hospitalizations for pneumonia and influenza (P&I) remained steady in southern California. No data were received for northern California for week 6 (Figure 1). Both data points remain within the range of percentages seen for seasonal influenza in previous years.

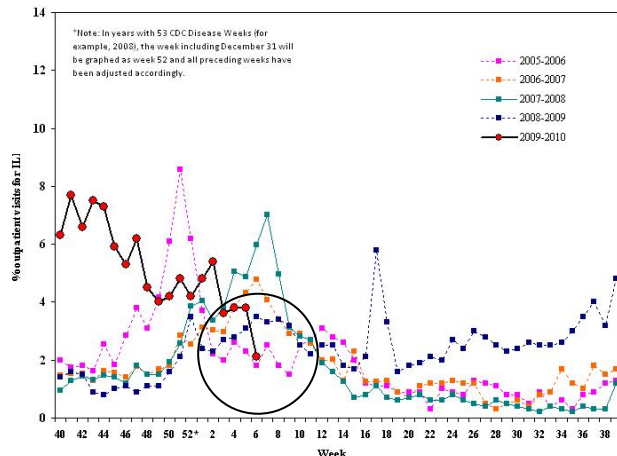
Figures 1-2. Inpatient "Flu" Admissions at Kaiser Facilities, 2004-2010.



CDC Influenza Sentinel Providers

Sentinel providers report the number of outpatient visits for influenza-like illness (ILI) and the total number of visits per week. These data are reported weekly as a percentage of total visits. Figure 3 shows a peak in Weeks 17-18 (April 26 – May 9, 2009) when 2009 H1N1 influenza was first identified. ILI decreased during Week 6 (February 7 - 13, 2010). Due to a delay in reporting, the percentage may be higher. A total of 53 sentinel providers reported in Week 6.

Figure 3. California Sentinel Providers – Influenza-Like Visits, 2004-2010.



Respiratory Laboratory Network (RLN) Influenza PCR Surveillance Results

As noted in Table 1, during Week 6 (February 7 - 13, 2010), 1% of specimens received by the Respiratory Laboratory Network were positive for influenza A. This represents no change from the previous week. 2009 H1N1 influenza remains the predominant strain circulating in California.

Table 1. Respiratory Laboratory Network (RLN) Influenza PCR Surveillance Results from Selected Laboratories*, Week 6 (February 7 - 13, 2010)

	Total Flu A tested	Flu A (% of total)	H1 (% of Flu A)	H3 (% of Flu A)	Unsubtypeable (% of Flu A)	Total Flu B tested	Flu B (% of total)	Total RSV tested (R-mix)	RSV (% of total)
Total RLN*	229	3 (1%)	0 (0%)	0 (0%)	3 (100%)	223	0 (0%)	15	2 (13%)
Northern	131	1 (1%)	0 (0%)	0 (0%)	1 (100%)	131	0 (0%)	7	1(14%)
Central	60	1 (2%)	0 (0%)	0 (0%)	1 (0%)	60	0 (0%)	8	1(13%)
Southern	38	1 (3%)	0 (0%)	0 (0%)	1 (100%)	32	0 (0%)	0	0

* 17 RLN laboratories reporting, including:

Northern CA: Contra Costa, El Dorado, Sacramento, San Francisco, San Mateo, Santa Clara, Shasta, Sonoma,

Central CA: Fresno, Monterey, San Joaquin, Tulare

Southern CA: Long Beach, Orange, Riverside, San Luis Obispo, Santa Barbara,

Laboratory Positive Results Data

Table 2 shows positive influenza and other virus results from sentinel laboratories, local public health laboratories and VRDL. This week there was one detection of influenza B from Fresno County. Detections of RSV continue to increase.

Table 2. Influenza and other respiratory virus detections, February 7 - 13, 2010.

		Sentinel Laboratories/Respiratory Laboratory Network [†]	Sentinel Providers
Week 6	Number	25 sites reporting	515 specimens submitted (251 positive by PCR, 37 pending)
	Influenza A	14 ^a Total tested week 6: 1887	0
	Influenza B	1 ^b Total tested week 6: 1881	0
	RSV	571 ^c Total tested week 6: 1663	N/A
	Other Respiratory Viruses	32 ^d Total tested week 6: 296	N/A

[†]Sentinel laboratories are hospital, academic, private, and public health laboratories located throughout California that provide data on the number of laboratory-confirmed influenza and other respiratory virus detections and isolations. The Respiratory Laboratory Network (RLN) is a network of 23 local public health laboratories that offer enhanced diagnostic testing with the "R-mix" shell vial assay, which detects several respiratory pathogens, including influenza A and B viruses, respiratory syncytial virus, parainfluenza virus, and adenovirus. Some RLN labs also offer PCR testing for influenza A and B.

- a Alameda (2); Long Beach (1); Los Angeles (1); Orange (1), Riverside (1); Sacramento (1); San Mateo (1); Santa Clara (2); Solano (2), Stanislaus (1), Tulare (1)
- b Fresno (1)
- c Alameda (86), Contra Costa (37), Fresno (51), Kern (2), Kings (6), Long Beach (64), Los Angeles (33), Madera (11), Marin (2), Mendocino (1), Merced (3), Napa (3), Orange (8), Placer (17), Riverside (9), Sacramento (61), San Bernardino (1), San Diego (22), San Francisco (17), San Joaquin (11), San Mateo (26), Santa Clara (62), Shasta (1), Solano (6), Sonoma (13), Stanislaus (9), Tulare (5), Yolo (4)
- d Rhinovirus (16), human metapneumovirus (13), parainfluenza type 1 (3)

Figure 4 shows that laboratory detections for influenza peaked in week 27 (July 5 - 11, 2009). Influenza A detections remained similar to the previous reporting period during week 6 (February 7 - 13, 2010). Figure 5 shows that RSV detections continue to increase.

Figure 4. Influenza detections at sentinel laboratories/Respiratory Laboratory Network (RLN), 2005-2010.

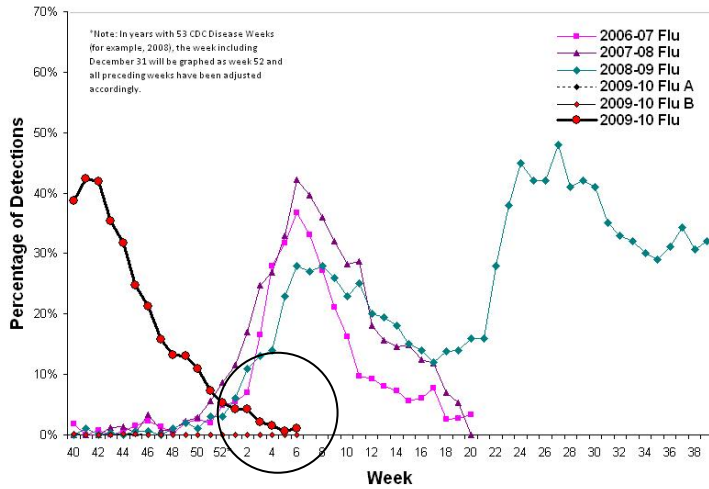


Figure 5. RSV detections at sentinel laboratories, 2005-2010.

