

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 9 (February 28-March 6, 2010). Laboratory detections of influenza remained at 1% and detection of respiratory syncytial virus (RSV) remained elevated above reports from previous years.

NATIONAL PERSPECTIVE

During the week February 21 – 27, 2010, CDC reported that overall flu activity remained low in the United States. No states reported widespread flu activity and 4 states reported regional flu activity, an increase of one state from last week.

The proportion of visits to doctors for influenza-like illness (ILI) is 1.7%, below the national baseline level (2.3%).

Total influenza EIP hospitalization rates for laboratory-confirmed flu remained elevated. Over 99% subtyped influenza A viruses tested 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**.

*Last week, CDC reported 278 2009 H1N1 pediatric deaths. One pediatric death was reclassified from a 2009 H1N1 virus to an influenza A virus for which the subtype was unknown.

**Since April 2009, 60 cases of oseltamivir resistance have been found in the United States, with no new cases during the last week.

CALIFORNIA 2009 H1N1 INFLUENZA UPDATE

Summary:

- 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 39 new cases (hospitalized and/or fatal) were reported to CDPH this week, 15 of which were from the current reporting period (February 28 – March 6, 2010). Reported cases of new hospitalizations decreased from 24 cases last week to 15 cases this week. As in previous weeks, the rate of hospitalization remains highest among children under one year of age. A total of seven fatalities were reported to CDPH this week, all of which were delayed reports from prior to this reporting week (February 28 – March 6, 2010).

ILI from sentinel providers decreased this past week (February 28 – March 6, 2010) but may increase as delayed reports are received. Detections of RSV continue to increase. None of the specimens tested by the RLN were positive for influenza A during week 9.

H1N1 Highlights:

- Local health departments have been reporting hospitalized 2009 H1N1 influenza cases as weekly aggregate numbers since August 12, 2009. From February 28 – March 6, 39 hospitalized and/or fatal cases were reported to CDPH, 15 of which were from the current reporting period (February 28 – March 6).
- There have been 8,837 hospitalizations and/or fatalities reported to date since the beginning of the pandemic, of which 1,937 cases required intensive care.
- The statewide cumulative rate of reported 2009 H1N1 influenza hospitalizations and/or fatalities is 22.8 per 100,000 population.
- CDPH received seven reports of fatal 2009 H1N1 influenza cases for the week ending on March 6, 2010, all of which were delayed reports from prior to the reporting week (February 28 – March 6, 2010); a total of 553 deaths caused by 2009 H1N1 influenza have been reported to CDPH to date.
- The case-fatality ratio among hospitalized and/or fatal cases is highest among individuals aged 50-64 years (10.8%, the same as the previous reporting week) and second-highest among individuals aged 36-49 years (10.3%, a decrease of 0.1 from the previous reporting week). The case-fatality ratio among hospitalized and/or fatal cases for all ages combined is 6.1%.
- A total of 3,070 hospitalized and/or fatal 2009 H1N1 influenza cases in pediatric patients 18 years or younger, including 53 deaths, have been reported to CDPH to date.
- Two new cases meeting the case definition for severe pediatric influenza were reported this week; no fatalities were reported. One of these cases are confirmed/probable 2009 H1N1 influenza.
- From February 28 – March 6, 2010, one pregnant 2009 H1N1 influenza case was reported to CDPH as aggregate numbers and was from the current reporting period (February 28 – March 6, 2010). A total of 574 pregnant hospitalized and/or fatal cases, including 17 deaths (case-fatality proportion 3.0%), have been reported to CDPH to date.
- In the last several weeks, the percentage of specimens testing positive for influenza by VRDL and the RLN has been low.
- Of 2213 specimens tested, a total of nine 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 very low.
- For the week of March 1 through March 7, VRDL received 22 respiratory samples of which 2 were positive for Influenza A by PCR. Both positive samples were received from Kaiser Regional Laboratory and supplemental testing for both positive samples is in progress.

Seasonal Influenza Highlights:

- Reports of ILI from sentinel providers decreased from last week.
- After increasing for four weeks, Kaiser hospitalizations for pneumonia and influenza (P&I) decreased this week in northern California.
- None of the specimens received by the Respiratory Laboratory Network (RLN) were positive for influenza. Last week 2% of specimens were positive for influenza A.

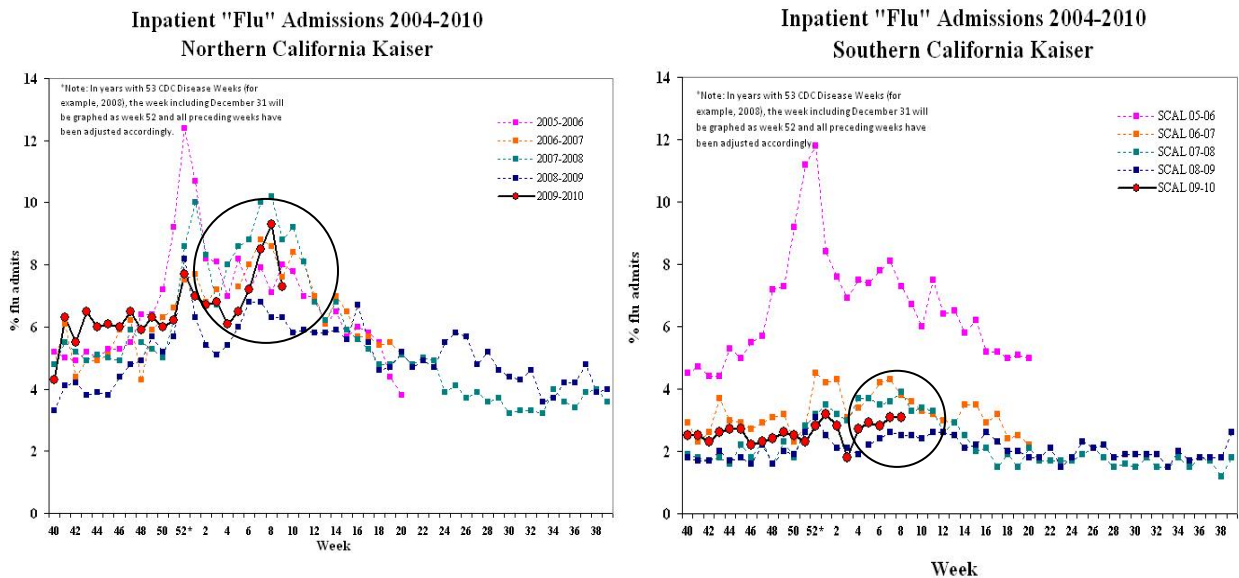
Other Respiratory Disease Highlights:

- This week, 31% of specimens submitted to sentinel laboratories/RLN were positive for RSV; 29% were positive during the previous week.
- This week, 20% of specimens tested were positive for other respiratory viruses, which is an increase of 5% from last week. Of those that tested positive for other respiratory viruses, 66% were human metapneumovirus and 32% were rhinovirus.

Kaiser Permanente Hospitalization Data ("Flu Admits")

The admission diagnoses of flu, pneumonia, and influenza ("Flu Admits") serve as surrogate markers for the more accurate, but less timely, diagnoses contained in discharge data. 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 1 shows that during week 9 (February 28-March 6, 2010), the percentage of Kaiser hospitalizations for pneumonia and influenza (P&I) decreased in northern California. No data was received from southern California. Both data points remain within the range of percentages seen for seasonal influenza in previous years.

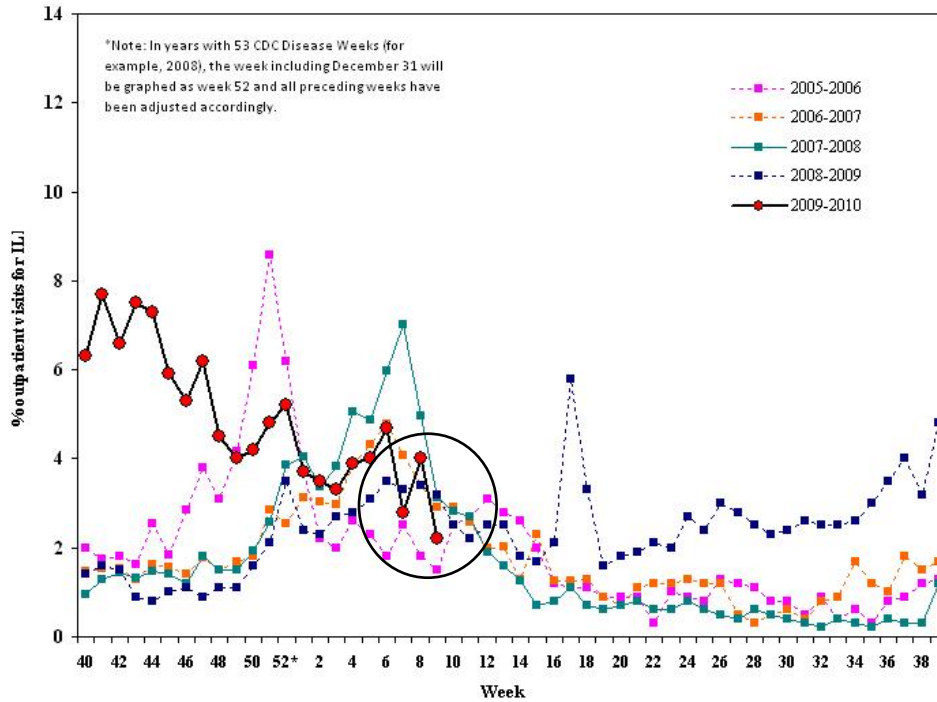
Figures 1-2. Inpatient "Flu" Admissions at Kaiser Facilities, 2004-2010.



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 9 (February 28 – March 6, 2010). As a result of a delay in reporting, the actual percentage may be higher. A total of 79 sentinel providers reported in Week 9.

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 9 (February 28 – March 6, 2010), none of the specimens received by the Respiratory Laboratory Network were positive for influenza A. Last week 2% of specimens tested were positive for influenza A.

Table 1. Respiratory Laboratory Network (RLN) Influenza PCR Surveillance Results from Selected Laboratories*, Week 9 (February 28 – March 6, 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*	181	0 (0%)	0 (0%)	0 (0%)	0 (0%)	179	0 (0%)	13	4 (31%)
Northern	121	0 (0%)	0 (0%)	0 (0%)	0 (0%)	119	0 (0%)	4	0 (0%)
Central	36	0 (0%)	0 (0%)	0 (0%)	0 (0%)	36	0 (0%)	9	4 (44%)
Southern	24	0 (0%)	0 (0%)	0 (0%)	0 (0%)	22	0 (0%)	0	0 (0%)

* 18 RLN laboratories reporting, including:
 Northern CA: Contra Costa, El Dorado, Marin, Placer, 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

2. Laboratory Positive Results Data

Table 2 shows positive influenza and other virus results from sentinel laboratories, local public health laboratories and VRDL.

Table 2. Influenza and other respiratory virus detections, February 28 – March 6, 2010.

		Sentinel Laboratories/Respiratory Laboratory Network [†]	Sentinel Providers
Week 9	Number	27 sites reporting	545 specimens submitted (261 positive by PCR, 16 pending)
	Influenza A	8 ^a Total tested week 9: 1359	0
	Influenza B	0 Total tested week 9: 1357	0
	RSV	372 ^b Total tested week 9: 1197	N/A
	Other Respiratory Viruses	56 ^c Total tested week 9: 275	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 Los Angeles (2); Sacramento (1); San Francisco (1); Santa Clara (2); Solano (1); Sonoma (1)

^b Alameda (46); Contra Costa (19); Fresno (36); Kern (9); Kings (2); Long Beach (44); Los Angeles (18); Madera (2); Marin (2); Mariposa (1); Merced (2); Monterey (1); Orange (5); Placer (10); Sacramento (40); San Diego (29); San Francisco (9); San Joaquin (15); San Mateo (10); Santa Clara (37); Shasta (1); Solano (12); Sonoma (11); Stanislaus (7); Tulare (2); Yolo (1); Unknown (1)

^c human metapneumovirus (37); rhinovirus (18); adenovirus (1)

Figure 4 shows that laboratory detections for influenza peaked in week 27 (July 5 - 11, 2009). 1% of specimens tested by sentinel laboratories during week 9 (February 28-March 6, 2010) were positive for influenza A. Figure 5 shows that RSV increased slightly during week 9.

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

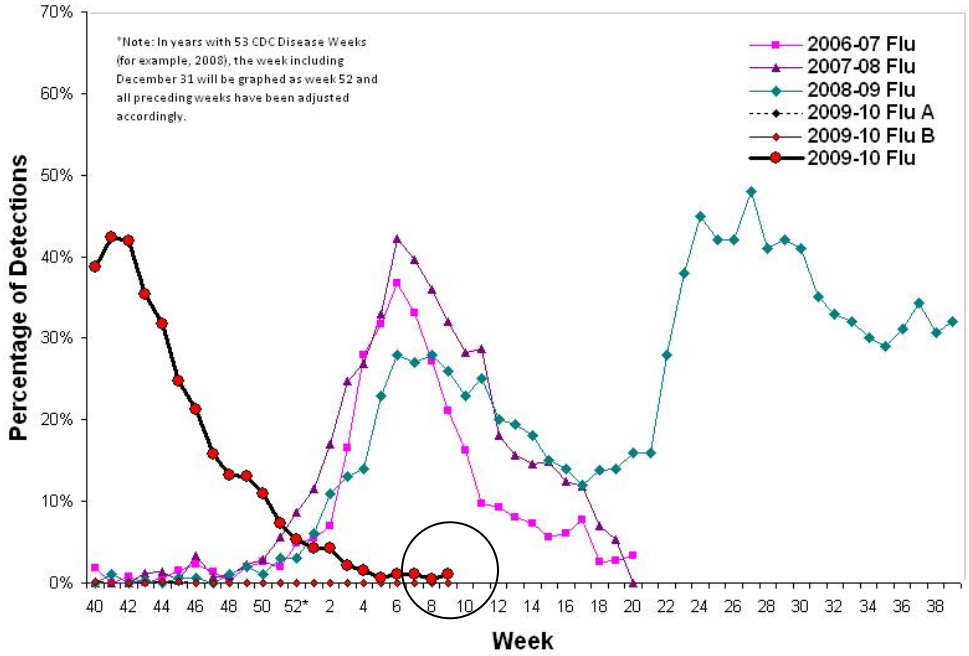


Figure 5. RSV detections at sentinel laboratories, 2005-2010.

