California Influenza and Respiratory Disease Surveillance for Week 51 (December 19–25, 2010)

For Week 51, overall influenza activity in California remained "sporadic.*"

Influenza Highlights (Week 51)

- In Week 51, the California Department of Public Health (CDPH) received five reports of laboratory-confirmed severe (defined as ICU admission or death) influenza among patients under 65 years of age. Since Week 40, the start of this reporting year, 15 severe cases under 65 years of age have been reported; seven were pediatric patients under 18 years of age. No fatalities were reported in Week 51.
- With a low number of sentinel providers reporting during the holiday week, influenza-like illness (ILI) increased by 1.6% in Week 51 compared to the previous week. The ILI activity in California for Week 51 remained "minimal**".
- The percentage of Kaiser Permanente hospitalizations for pneumonia and influenza (P&I) increased in both northern and southern California during Week 51.
- Of 108 specimens tested by polymerase chain reaction (PCR) statewide by the Respiratory Laboratory Network (RLN) during Week 51, 24 (22.2%) were positive for influenza; 15 were influenza A and 9 were influenza B. The influenza A specimens were subtyped as H3 (10) and 2009 H1N1 (5). The majority of positive specimens were from Orange and San Diego counties.
- The proportion of specimens tested statewide that were positive for respiratory syncytial virus (RSV) continued to increase substantially.

*Sporadic is defined by the Centers for Disease Control and Prevention (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 influenza-like-illness (ILI)."
**Minimal is defined by the CDC as ILI activity from outpatient clinics being below the average percent of ILI visits that occur during spring and fall weeks with little or no influenza virus circulation.

A. Laboratory-confirmed case reports

During Week 51, CDPH received five reports of severe laboratory-confirmed influenza among patients under 65 years of age.

A total of 15 severe cases under 65 years of age have been reported since October 1, 2010; a variety of influenza types and subtypes have been detected, with the exception of seasonal A (H1N1). The median age is 18 years, with a range of 2 months-59 years. Of the 15 cases, seven were previously healthy, seven had medical conditions identified by the Advisory Committee on Immunization Practices (ACIP) as a high risk for severe influenza, and one case was an infant born prematurely. One of the cases with an ACIP-defined high risk condition was a 32-week pregnant woman infected with influenza A (H3), who required a prolonged hospitalization in intensive care prior to being discharged. Three cases were associated with secondary bacterial infections. No influenza-associated fatalities were reported in Week 51.

For cases where influenza is identified by rapid test or direct fluorescence assay (DFA) only, local health jurisdictions are encouraged to collect specimens for further confirmatory PCR testing and subtyping at the local public health laboratory. We are requesting local health departments to forward any specimen collected from a case with severe influenza to the CDPH Viral and Rickettsial Laboratory (VRDL) for further characterization.

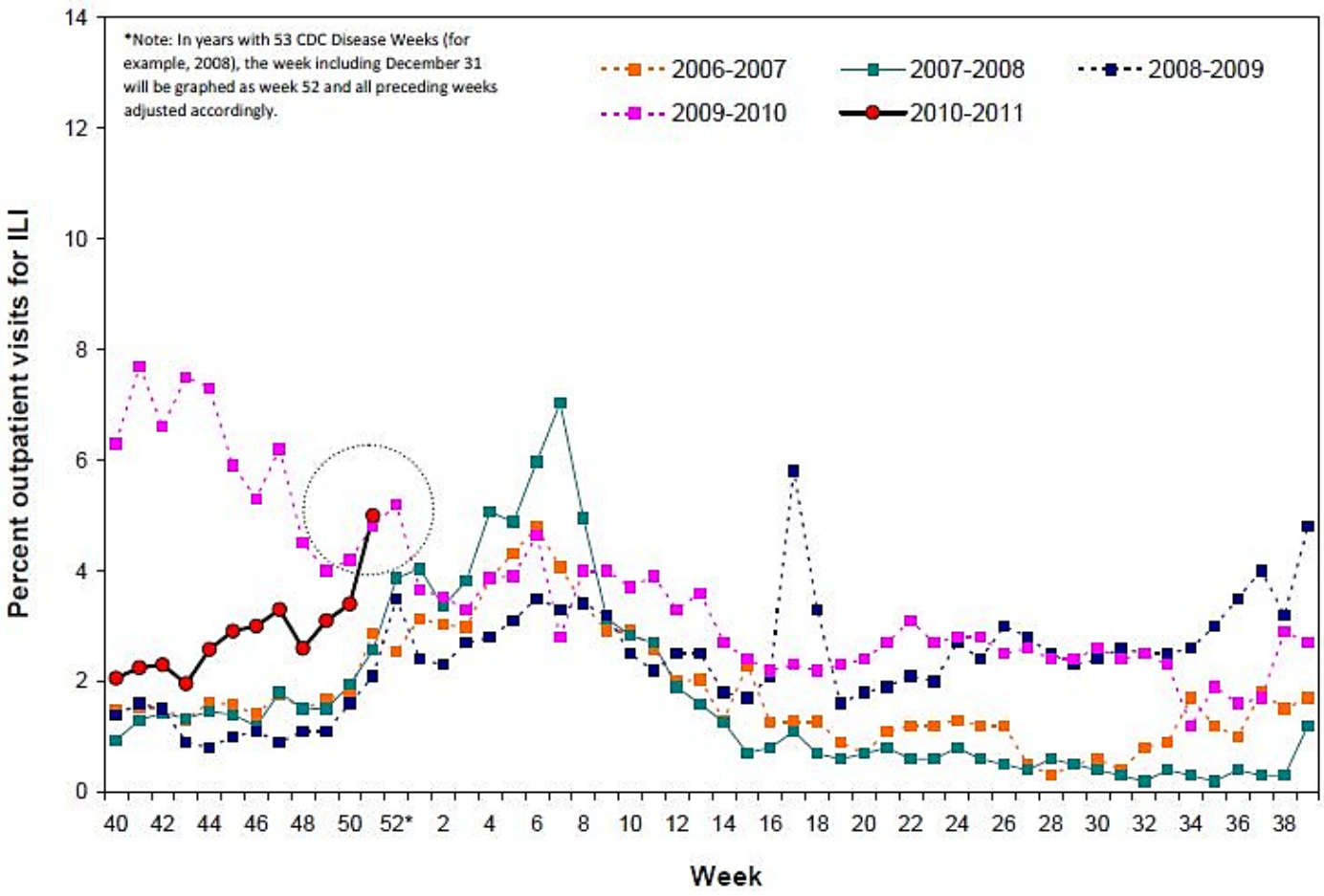
B. Syndromic Surveillance

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 due to ILI. The ILI case definition is fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat in the absence of a known cause other than influenza.

ILI increased during Week 51 (5.0%) compared to the previous week (3.4%). A total of 59 sentinel providers reported data in Week 51 compared to an average of 120 providers reporting in prior weeks. Some ILI visits during recent weeks may not yet be reported.

Figure 1. California Sentinel Providers – Influenza-Like Illness Visits, 2006-2011



C. Laboratory Update

1. Respiratory Laboratory Network (RLN) PCR Surveillance Results

The Respiratory Laboratory Network is composed of 23 local public health laboratories that offer PCR testing for influenza A and B and testing using the R-mix shell vial culture system to identify five other common respiratory viruses (RSV, adenovirus, and parainfluenza virus type 1-3).

The percentage of specimens that tested positive for influenza increased in Week 51 (22.2%) compared to Week 50 (19.1%). Of 108 specimens tested by the RLN during Week 51, 15 were positive for influenza A, including 10 influenza A (H3) and 5 influenza A (2009 H1N1). An additional nine specimens were positive for influenza B (Table 1). The majority of positive specimens were from southern California.

While the overall number of specimens tested by R-mix was small, the percentage of specimens that tested positive for RSV from the RLN increased in Week 51 (8.3%) compared to Week 50 (6.3%).

Table 1. Respiratory Laboratory Network (RLN) Influenza PCR Surveillance Results from Selected Laboratories[a], Week 51 (December 19–25, 2010)

	Total RLN[a] No. (%)	Northern CA No. (%)	Central CA No. (%)	Southern CA No. (%)
Number of specimens tested by PCR	**108**	**25**	**11**	**72**
Influenza A	15 (13.9)[b]	3 (12.0)[b]	1 (9.1)[b]	11 (15.3)[b]
A (H1)	0 (0.0)[c]	0 (0.0)	0 (0.0)	0 (0.0)
A (H3)	10 (66.7)[c]	3 (100.0)[c]	0 (0.0)	7 (63.6)[c]
A (2009 H1N1)	5 (33.3)[c]	0 (0.0)	1 (100.0)[c]	4 (36.4)[c]
Influenza B	9 (8.3)[b]	1 (4.0)[b]	0 (0.0)	8 (11.1)[b]
Number of specimens tested by R-mix	**24**	**0**	**23**	**1**
RSV	2 (8.3)[d]	0 (0.0)	2 (8.7)[d]	0 (0.0)
Other respiratory viruses	3 (12.5)[d,e]	0 (0.0)	3(13.0)[d]	0 (0.0)

[a] RLN labs reporting Week 51 data, by region:

Northern CA: Contra Costa, El Dorado, Sacramento, Santa Clara, Shasta

Central CA: Fresno, San Joaquin, Tulare

Southern CA: Long Beach, Los Angeles, Orange, Riverside, San Diego, San Luis Obispo

[b] Percent of total specimens tested for influenza by PCR

[c] Percent of influenza A positives

[d] Percent of total specimens tested by R-mix

[e] Parainfluenza type 1 (1), parainfluenza type 2 (2)

2. Sentinel Laboratory Surveillance Results

Sentinel laboratories are a network of clinical, commercial, academic, and hospital laboratories located throughout California that provide weekly data on the number of laboratory-confirmed influenza and other respiratory virus detections and isolations.

Table 2 shows positive influenza and RSV results reported from sentinel laboratories during Week 51. The percentage of specimens that tested positive for influenza decreased in Week 51 (6.0%) compared to Week 50 (7.1%). Of the 1,134 specimens tested for influenza in Week 51, 34 (3.0%) were positive for influenza A and 34 (3.0%) were positive for influenza B. Of 1,188 specimens tested for RSV during Week 51, 401 (33.8%) were positive. This was an increase from the previous week, when 325 (24.3%) of 1,340 specimens tested positive for RSV.

Table 2. Influenza and other respiratory virus detections from Sentinel Laboratories, December 19–25, 2010

	No. (%)
Number of sites reporting	**66**
Total specimens tested for influenza	**1,134**
Influenza A	34 (3.0) [a]
Influenza B	34 (3.0) [b]
Total specimens tested for RSV	**1,188**
RSV	401 (33.8) [c]

Total number of positive lab results reported, by local health jurisdiction of patient's residence and/or site location:

[a] Alameda (4), Contra Costa (2), Fresno (1), Imperial (1), Los Angeles (4), Placer (2), Riverside (1), San Francisco (3), Sacramento (3), San Diego (3), San Mateo (2), Santa Clara (5), Sonoma (2), Stanislaus (1)

[b] Alameda (4), Contra Costa (3), Fresno (2), Imperial (2), Long Beach (2), Los Angeles (9), Orange (1), Placer (1), Riverside (2), San Francisco (1), San Bernardino (1), San Diego (2), Santa Clara (2), Sonoma (2)

[c] Alameda (68), Contra Costa (28), Fresno (23), Kern (4), Kings (1), Long Beach (38), Los Angeles (22), Madera (6), Marin (6), Mendocino (2), Merced (8), Orange (3), Placer (5), Riverside (2), San Francisco (14), Sacramento (26), San Diego (2), San Joaquin (18), San Mateo (20), Santa Clara (75), Solano (3), Sonoma (10), Stanislaus (14), Tulare (2), Yolo (1)

Figures 2 and 3 summarize the combined laboratory data from both the RLN and the sentinel laboratories. Figure 2 shows that influenza detections decreased slightly in Week 51 (7.4%) compared to Week 50 (8.0%). Of the samples tested during Week 51, 3.9% were influenza A and 3.5% were influenza B. Figure 3 shows that there was a sharp increase in RSV detections during Week 51 (33.3%, compared to 23.8% the previous week), continuing an upward trend that started in Week 43 (October 24–30, 2010). This increase is consistent with trends in RSV activity seen at this time in previous years.

Figure 2. Influenza detections at Sentinel Laboratories/Respiratory Laboratory Network, 2007-2011

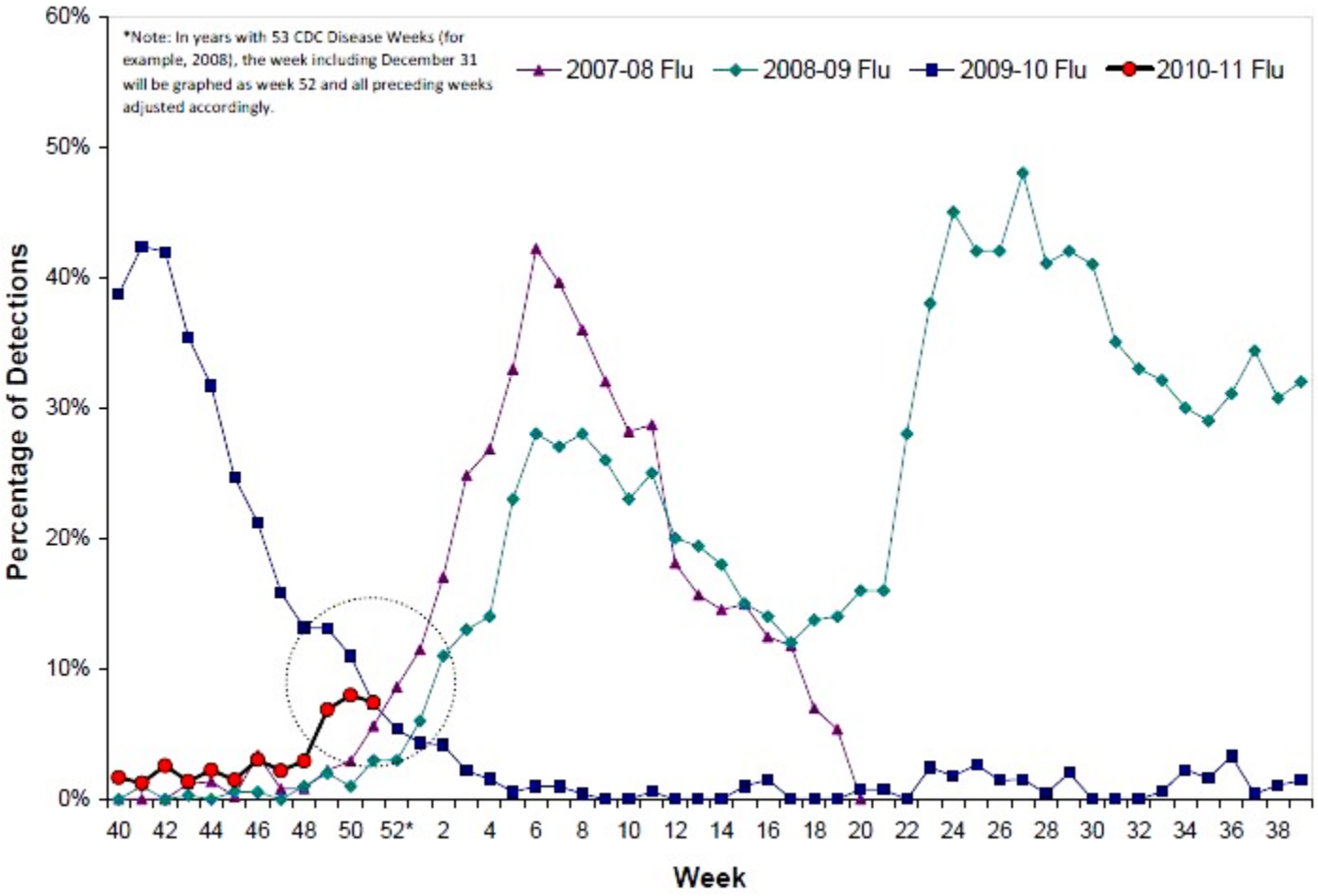


Figure 3. RSV detections at Sentinel Laboratories/Respiratory Laboratory Network, 2006-2011