

California Influenza and Respiratory Disease Surveillance for Week 4 (January 23-29, 2011)

Note: This report includes data from many different sources of influenza surveillance, including syndromic surveillance, laboratory surveillance, voluntary case-based reporting of severely ill cases and mandatory reporting of influenza deaths for cases ages 0-17 years. The information contained in this report should be viewed as a “snapshot” of influenza activity for each surveillance week, and should not be considered as population-based data or representative of all California jurisdictions.

Overall influenza activity in California for Week 4 remains “regional.”*

Influenza and Other Respiratory Disease Highlights (Week 4)

- With 88 sentinel providers reporting Week 4 data so far, influenza-like illness (ILI) activity decreased by 1.2% in Week 4 compared to the previous week. The ILI activity in California for Week 4 remained “low.”**
- Of 127 specimens tested by PCR statewide by the Respiratory Laboratory Network (RLN) during Week 4, 60 (47.2%) were positive for influenza; of these 43 (71.7%) were influenza A and 17 (28.3%) were influenza B. Of the 42 influenza A specimens that have been subtyped, 24 (57.1%) were subtyped as A (H3) and 18 (42.9%) were subtyped as A (2009 H1N1). The percentage of influenza detections in northern California has increased in recent weeks.
- The percentage of influenza detections in sentinel laboratories increased slightly during Week 4; 469 (16.6%) of 2,832 specimens tested were positive, compared to 355 (16.0%) of 2,220 specimens tested during the previous week.
- Of 11 influenza A (2009 H1N1) specimens and 32 influenza A (H3N2) specimens tested by the CDPH Viral and Rickettsial Disease Laboratory (CDPH-VRDL), no neuraminidase-inhibitor resistance has been found.
- During Week 4, the proportion of specimens tested statewide that were positive for respiratory syncytial virus (RSV) decreased; 910 (32.8%) of 2,775 specimens tested were positive, compared to 813 (37.2%) of 2,186 specimens tested during the previous week. Overall RSV activity remains high compared to previous years.

*Regional activity is defined by the CDC as “outbreaks of influenza or increases in influenza-like illness (ILI) and recent laboratory-confirmed influenza in at least two but less than half the regions of the state with recent laboratory evidence of influenza in those regions.”

**Activity levels range from minimal to high and are based on the percent of outpatient visits due to ILI compared to the average percent of ILI visits that occur during spring and fall weeks with little or no influenza virus circulation.

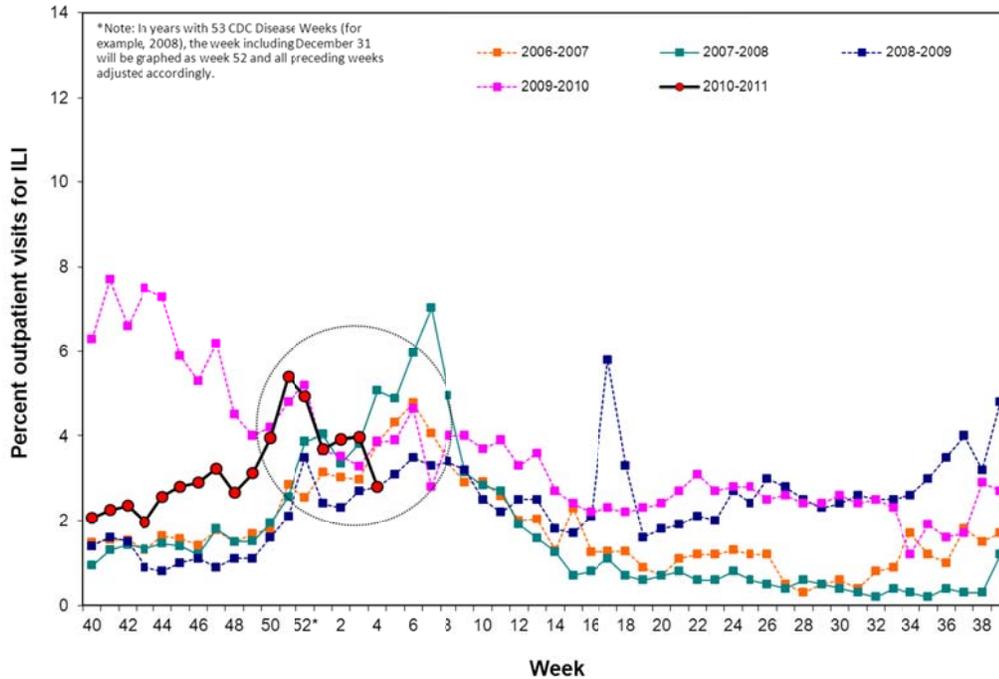
A. Syndromic Surveillance

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.

The percentage of ILI visits decreased during Week 4 (2.8%) compared to the previous week (4.0%). A total of 88 sentinel providers reported data in Week 4 compared to an average of 123 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



B. Laboratory Update

1. Respiratory Laboratory Network (RLN) 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 4 (47.2%) compared to Week 3 (37.1%). Of 127 specimens tested by the RLN during Week 4, 43 (33.9%) were positive for influenza A, including 24 (55.8%) influenza A (H3), 18 (41.9%) influenza A (2009 H1N1), and 1 (2.3%) influenza A pending subtyping. An additional 17 (13.4%) specimens were positive for influenza B (Table 1). The percentage of influenza detections in northern California has increased in recent weeks.

Table 1. Respiratory Laboratory Network (RLN) Surveillance Results from Selected Laboratories*, January 23–29, 2011

	Total RLN*	Northern CA	Central CA	Southern CA
	No. (%)	No. (%)	No. (%)	No. (%)
Number of specimens tested by PCR	127	45	17	65
Influenza A	43 (33.9) [†]	26 (57.8) [†]	6 (35.3) [†]	11 (16.9) [†]
A (seasonal H1N1)	0 (0.0) [‡]	0 (0.0)	0 (0.0)	0 (0.0)
A (H3)	24 (55.8) [‡]	13 (50.0) [‡]	3 (50.0) [‡]	8 (72.7) [‡]
A (2009 H1N1)	18 (41.9) [‡]	13 (50.0) [‡]	2 (33.3) [‡]	3 (27.3) [‡]
A (subtyping pending)	1 (2.3) [‡]	0 (0.0)	1 (16.7) [‡]	0 (0.0)
Influenza B	17 (13.4) [†]	2 (4.4) [†]	0 (0.0)	15 (23.1) [†]
Number of specimens tested by R-mix	21	2	19	0
RSV	6 (28.6) [¶]	2 (100.0) [¶]	4 (21.1) [¶]	0 (0.0)
Other respiratory viruses	0 (0.0) [¶]	0 (0.0)	0 (0.0)	0 (0.0)

* RLN labs reporting Week 4 data, by region:

Northern CA: Contra Costa, Humboldt, Placer, Sacramento, San Francisco, Santa Clara, Shasta, Sonoma

Central CA: Fresno, Monterey, San Joaquin, Tulare

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

† Percent of total specimens tested for influenza by PCR

‡ Percent of influenza A positives

¶ Percent of total specimens tested by R-mix

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 4. The percentage of specimens that tested positive for influenza increased in Week 4 (469 of 2,832; 16.6%) compared to the previous week (355 of 2,220; 16.0%). Of the 2,832 specimens tested for influenza in Week 4, 321 (11.3%) were positive for influenza A and 148 (5.2%) were positive for influenza B. Of 2,754 specimens tested for RSV during Week 4, 904 (32.8%) were positive. This was a decrease from the previous week, when 809 (37.4%) of 2,163 specimens tested positive for RSV.

Table 2. Influenza and other respiratory virus detections from Sentinel Laboratories, January 23-29, 2011

	No. (%)
Number of sites reporting	75
Total specimens tested for influenza	2,832
Influenza A	321 (11.3)*
Influenza B	148 (5.2)†
Total specimens tested for RSV	2,754
RSV	904 (32.8)‡

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

* Alameda (75), Contra Costa (19), Fresno (9), Imperial (17), Kern (1), Kings (1), Long Beach (14), Los Angeles (26), Madera (1), Marin (4), Napa (1), Orange (3), Placer (9), Riverside (2), Sacramento (24), San Diego (11), San Francisco (22), San Joaquin (2), San Luis Obispo (1), San Mateo (24), Santa Clara (33), Solano (12), Sonoma (5), Stanislaus (3), Yolo (2)

† Alameda (19), Contra Costa (5), Fresno (7), Imperial (2), Kern (1), Long Beach (9), Los Angeles (19), Madera (1), Marin (1), Napa (1), Orange (2), Placer (6), Riverside (3), Sacramento (2), San Bernardino (2), San Diego (14), San Francisco (8), San Mateo (8), Santa Clara (30), Solano (2), Sonoma (3), Stanislaus (3)

‡ Alameda (85), Contra Costa (60), Fresno (98), Imperial (26), Kern (10), Kings (9), Long Beach (69), Los Angeles (58), Madera (11), Marin (5), Merced (3), Napa (1), Orange (8), Placer (34), Riverside (15), Sacramento (71), San Bernardino (4), San Diego (54), San Francisco (27), San Joaquin (19), San Luis Obispo (1), San Mateo (37), Santa Clara (121), Solano (32), Sonoma (16), Stanislaus (13), Tulare (11), Yolo (6)

Figures 2 through 4 summarize the combined laboratory data from both the RLN and the sentinel laboratories. Figure 2 shows that influenza detections increased slightly in Week 4 (17.9%) compared to the previous week (17.6%). Of the samples tested during Week 4, 12.3% were influenza A and 5.6% were influenza B (Figure 3). Figure 4 shows that the percentage of RSV detections decreased in Week 4 (32.8%) compared to the previous week (37.2%), continuing a downward trend that began in Week 1. However, overall RSV activity remains high; the percentage of RSV detections in Week 4 exceeds the range of percentages seen for RSV at the same time in previous years.

Figure 2. Influenza detections in Sentinel Laboratories/Respiratory Laboratory Network, 2006-2011

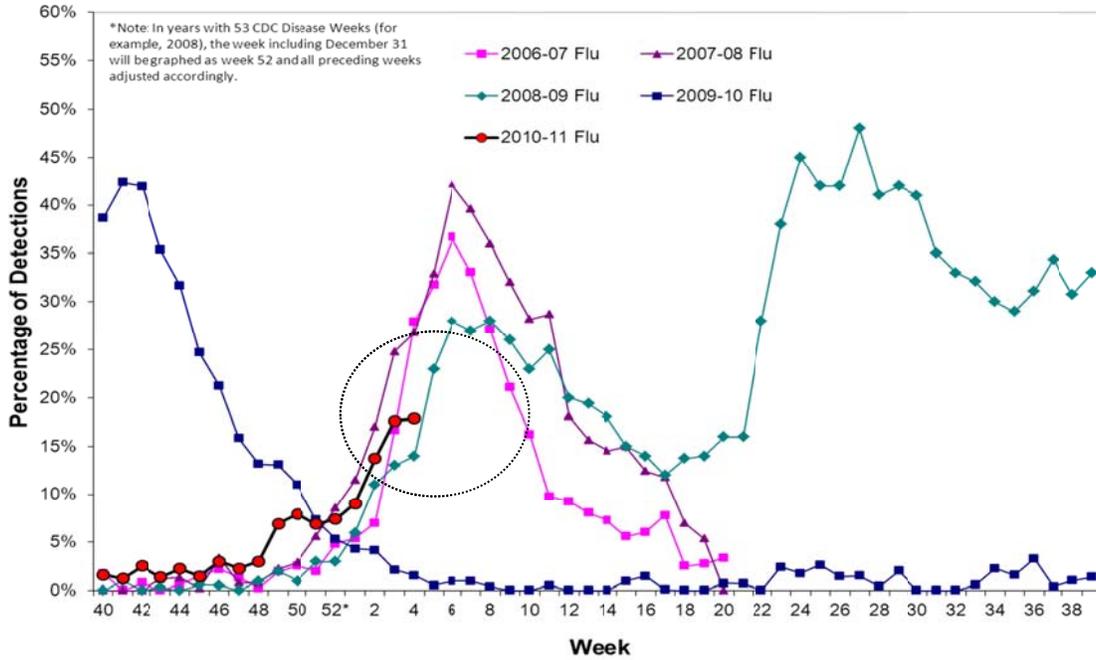


Figure 3. Influenza detections in Sentinel Laboratories/Respiratory Laboratory Network, by influenza type

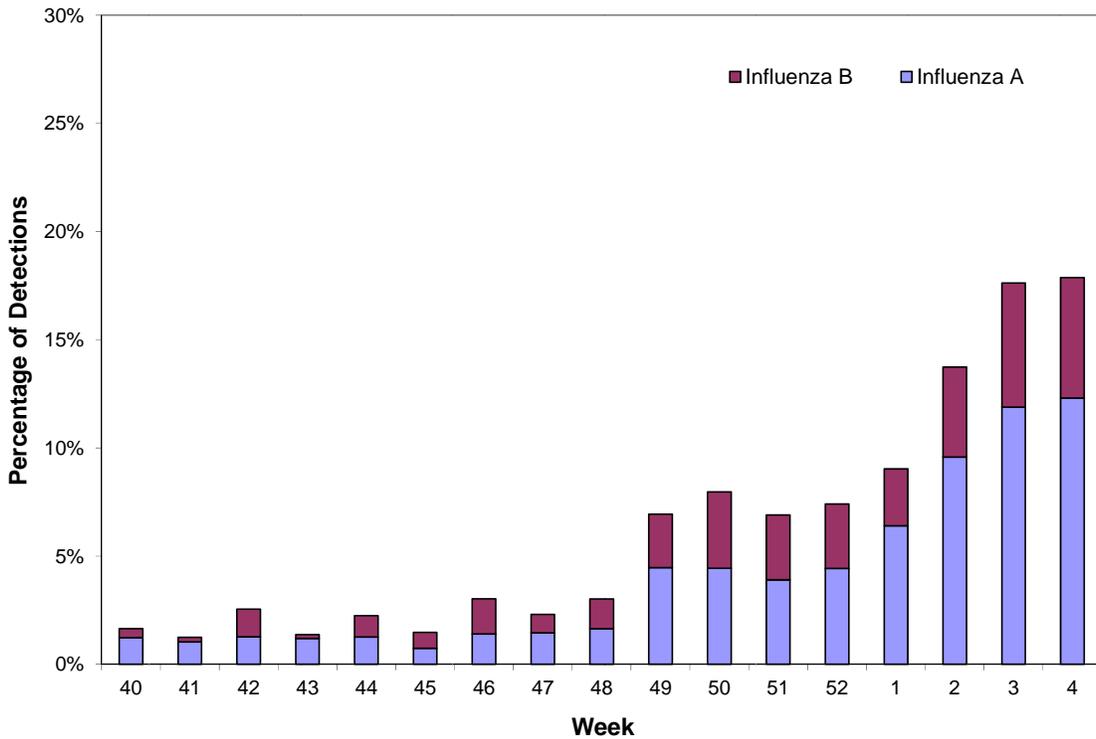
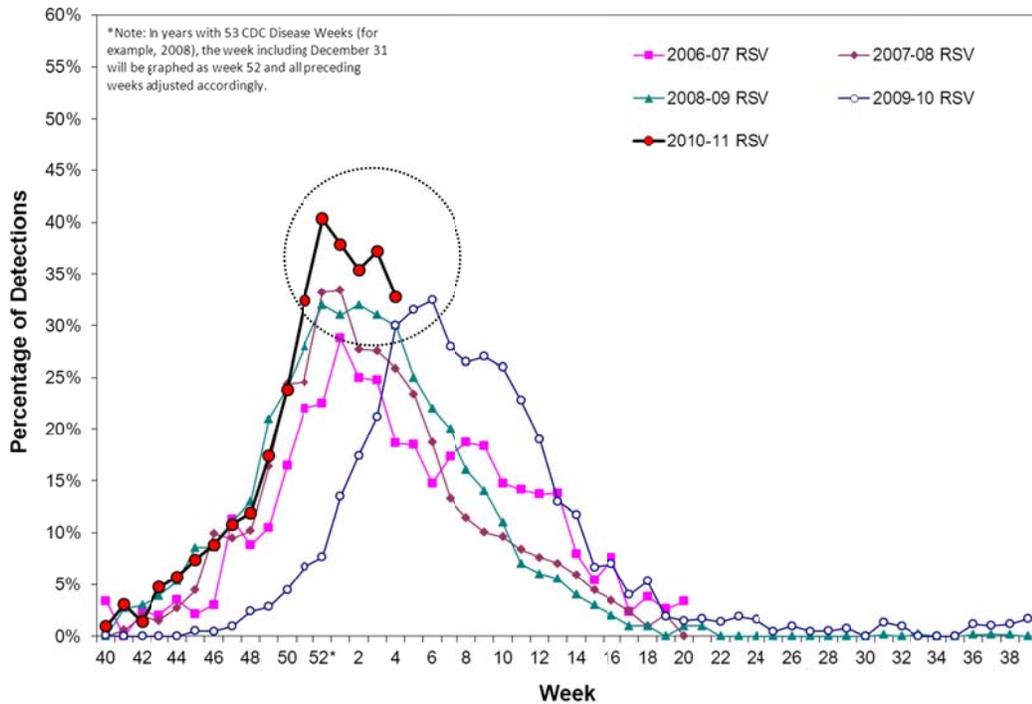


Figure 4. RSV detections in Sentinel Laboratories/Respiratory Laboratory Network, 2006-2011



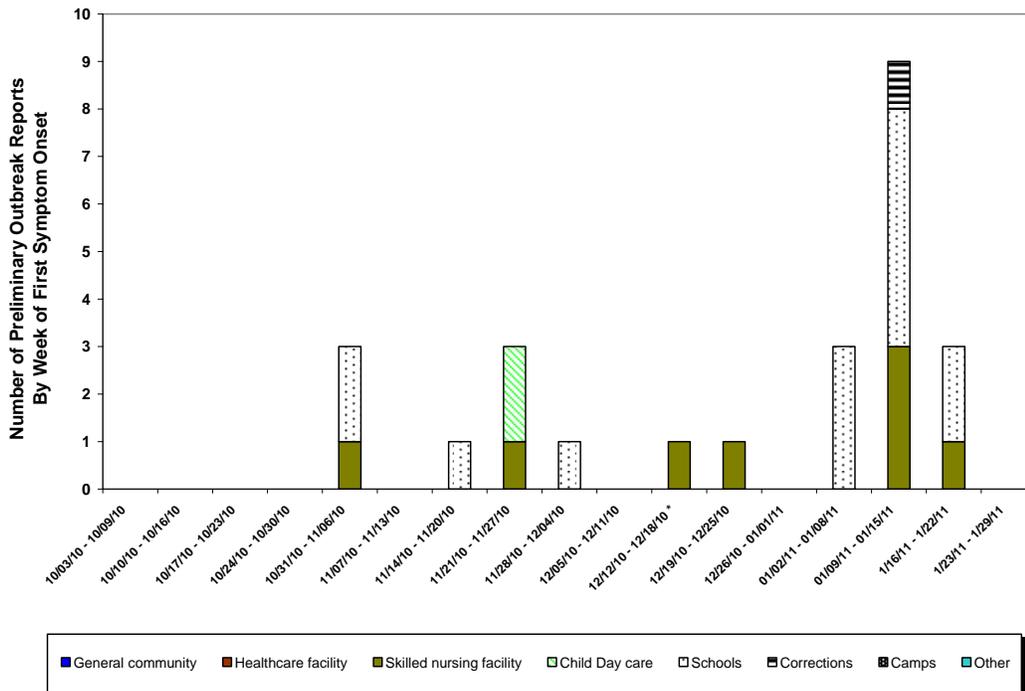
C. Preliminary Reports of Respiratory Disease Outbreaks

Nine preliminary outbreaks of respiratory disease were reported to CDPH during the reporting period January 23–29, 2011, from both northern and southern California. Seven outbreaks were in schools and two in skilled nursing facilities, with a total of 73 ill persons reported. One school outbreak in Alameda County with 18 ill persons had a case that tested positive for influenza B by PCR. One outbreak in a long term care facility in San Diego County of an unknown number of ill persons had one case that tested positive for influenza A 2009 H1N1. No hospitalizations or fatalities were reported.

Table 3. Preliminary reports of respiratory disease/ILI outbreaks as reported to the California Department of Public Health; Cumulative from October 3, 2010–January 29, 2011

Jurisdiction	Total	General Community	Health Care Facility	Skilled Nursing Facility	Day care	Schools	Camps	Corrections	Other
Statewide Cumulative 10/03/10-01/29/11	32	0	0	8	2	19	0	1	2
Statewide For Time Period 01/23/11-01/29/11	9	0	0	2	0	7	0	0	0

Figure 5. Number of respiratory/ILI preliminary reports of outbreaks from local health departments to the California Department of Public Health, by week of first symptom onset, October 3, 2010 – January 29, 2011



D. Antiviral Resistance Testing

The influenza A (2009 H1N1) and A (H3) viruses are tested for a single known mutation that confers resistance to oseltamivir and adamantanes using pyrosequencing and conventional sequencing. The combined data are summarized below and should be considered for epidemiological purposes only.

CDPH-VRDL has tested 11 influenza A (2009 H1N1) and 32 influenza A (H3N2) specimens for antiviral resistance; none have been found to have neuraminidase-inhibitor resistance (Table 4).

Table 4: Number of specimens tested by the California Department of Public Health for antiviral resistance

	Oseltamivir Resistant	Adamantanes Resistant
Influenza 2009 A (H1N1)	0/11	8/8
Influenza A (H3N2)	0/32	23/23

For questions regarding this report or influenza surveillance and reporting in California, please email InfluenzaSurveillance@cdph.ca.gov. This account is monitored daily by several epidemiologists.

To obtain additional information regarding influenza, please visit the CDPH influenza website at [http://www.cdph.ca.gov/HealthInfo/discond/Pages/Influenza\(Flu\).aspx](http://www.cdph.ca.gov/HealthInfo/discond/Pages/Influenza(Flu).aspx).

A copy of the case report form for reporting any laboratory-confirmed influenza case that was either admitted to the ICU or died can be downloaded from <http://cdphinternet/programs/immunize/Documents/SevereInfluenzaCaseHistoryForm.pdf>.