

California Influenza Surveillance Project

Viral and Rickettsial Disease Laboratory

2008-2009

Influenza Update – Week 1 (January 4 – January 10, 2009)

National Influenza Activity

Overall influenza activity in the United States remained relatively low, but increased compared to previous weeks. Two hundred forty-two (7.1%) specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories and reported to CDC/Influenza Division were positive for influenza. The proportion of deaths attributed to pneumonia and influenza (P&I) was below the epidemic threshold. The proportion of outpatient visits for influenza-like illness (ILI) was below national and region-specific baseline levels. One state reported widespread influenza activity, five states reported regional activity; 10 states reported local influenza activity; the District of Columbia, Puerto Rico and 33 states reported sporadic influenza activity; and one state reported no influenza activity.

California Influenza Activity

Influenza activity, including sentinel provider outpatient influenza-like illnesses (ILI), Kaiser Permanente P&I (pneumonia and influenza) hospitalizations and influenza laboratory tests in both Northern and Southern California, remained sporadic (defined by the CDC as “Isolated cases of lab confirmed influenza in the state, but ILI activity is not increased”).

Kaiser Permanente inpatient, sentinel providers’ outpatient influenza-like illnesses, and Kaiser Permanente antiviral data:

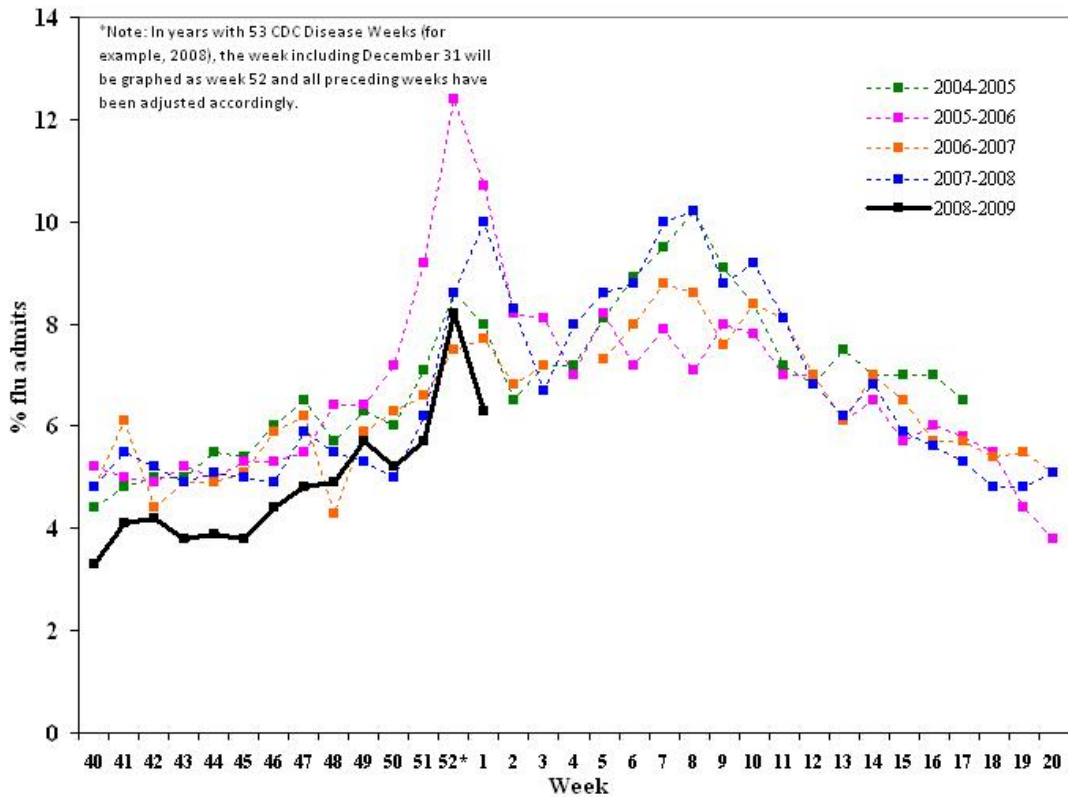
| Week | Kaiser Inpatient Data % (range)* | | Outpatient ILI Data %(# reported)‡ | Kaiser Antiviral Data§ | |
|----------------------|----------------------------------|---------------|------------------------------------|------------------------|-------------|
| | Northern CA | Southern CA | | Northern CA | Southern CA |
| 1 | 6.3 (2.5–14.0) | 2.5 (0.6–5.0) | 1.9 (72 reported) | 70 | 71 |
| Previous week | 8.2 (3.7–14.8) | 3.1 (1.3–5.8) | 1.6 (90 reported) | 66 | 68 |

* “Flu admissions” are present year-round. During the off-season, these consist chiefly of pneumonia, which represents approximately 3–5% of all admissions

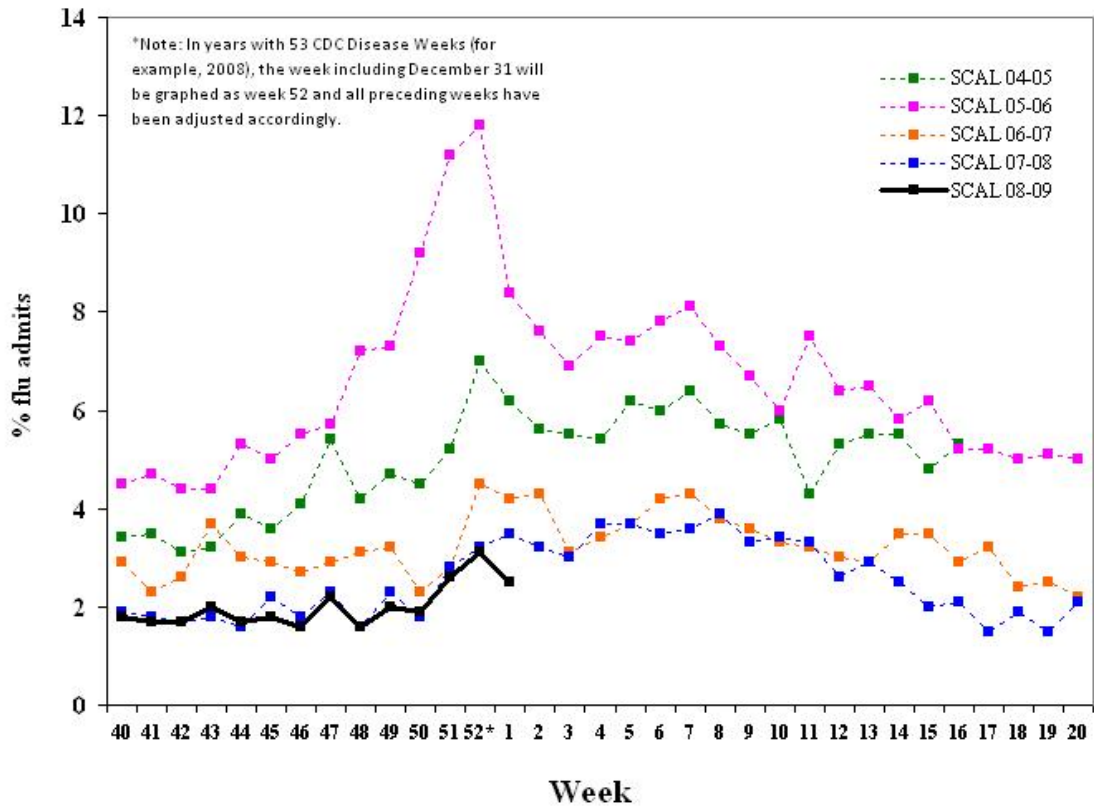
‡ The percentage of outpatient visits for influenza-like illness (ILI) is calculated by dividing the number of ILI visits by the total number of outpatient visits per week

§ The number of prescriptions filled for the antiviral drugs used for influenza (amantadine, rimantadine, zanamivir, and oseltamivir) by Kaiser outpatient pharmacies in California

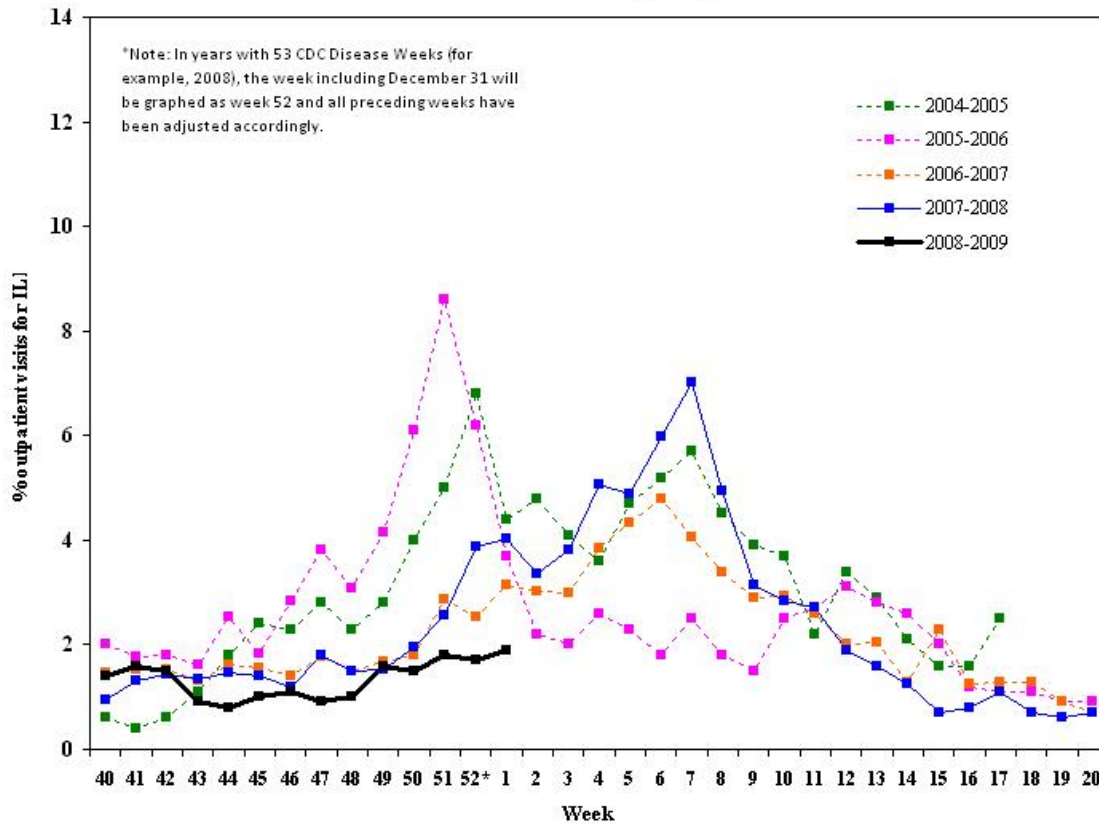
Inpatient "Flu" Admissions 2004-2009 Northern California Kaiser



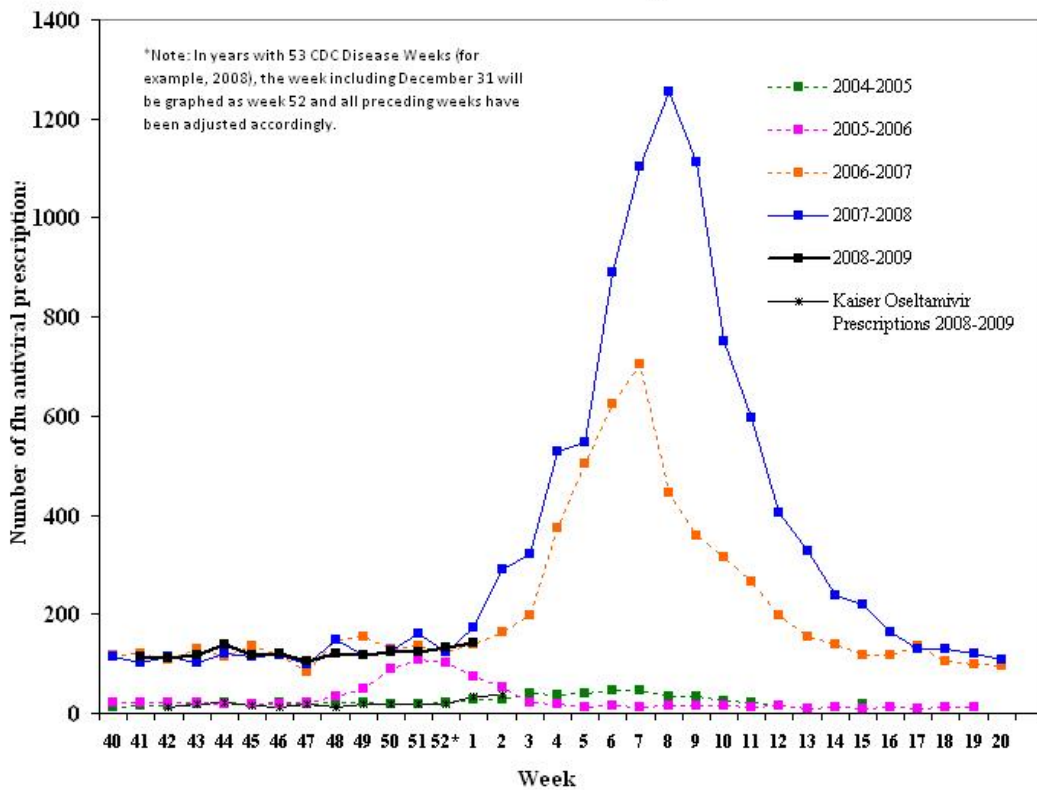
Inpatient "Flu" Admissions 2004-2009 Southern California Kaiser



California Sentinel Providers Influenza-Like Illness (ILI) Visits 2004-2009



Kaiser Pharmacy Data Influenza Antiviral Usage 2004-2009



Laboratory Data (viral isolation and detection)

| | | Sentinel Laboratories/Respiratory Laboratory Network [‡] | Sentinel Providers |
|--------|---------------------------|---|---|
| Week 1 | Number of Sites Reporting | 26 | 71 specimens submitted through week 1 (11 pending, 2 positive by PCR) |
| | Influenza A | 78 ^a Total to date: 188 | 1 ^e |
| | Influenza B | 6 ^b Total to date: 29 | 1 ^f |
| | Influenza A/B | 0 Total to date: 0 | 0 |
| | RSV | 512 ^c Total to date: 2087 | 0 |
| | Other Respiratory Viruses | 5 ^d Total to date: 87 | 0 |

[‡]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 (18); Contra Costa (5); Fresno (2); Marin (2); Orange (3); Placer (3); Sacramento (7); San Diego (7); San Francisco (6); San Joaquin (4); San Mateo (4); Santa Clara (12); Solano (1); Sonoma (3); Stanislaus (1)

^b Alameda (1); Marin (1); Sacramento (3); San Joaquin (1)

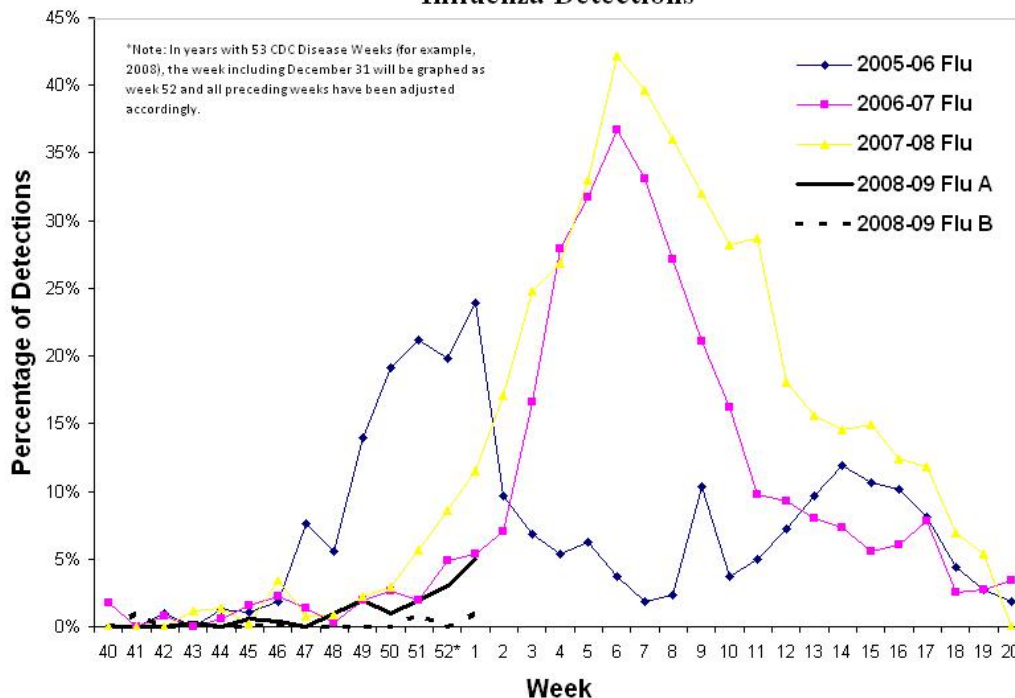
^c Alameda (67); Contra Costa (26); Fresno (29); Kern (3); Kings (1); Long Beach (53); Los Angeles (20); Madera (4); Marin (2); Napa (2); Placer (6); Riverside (2); Sacramento (60); San Diego (19); San Francisco (13); San Joaquin (19); San Mateo (27); Santa Barbara (1); Santa Clara (110); Santa Cruz (1); Solano (28); Sonoma (6); Stanislaus (10); Tulare (2); Yolo (1)

^d human metapneumovirus (1); parainfluenza type 2 (3); parainfluenza type 3 (1)

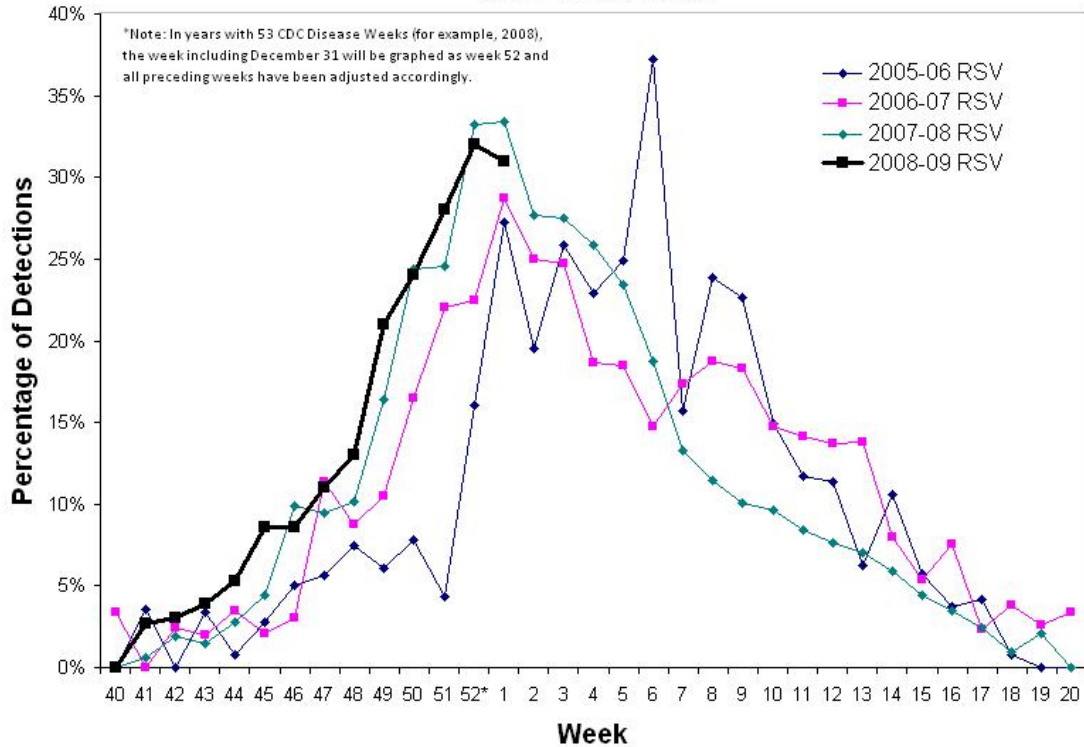
^e Northern California (1)

^f Northern California (1)

Sentinel Laboratories/Respiratory Laboratory Network Influenza Detections

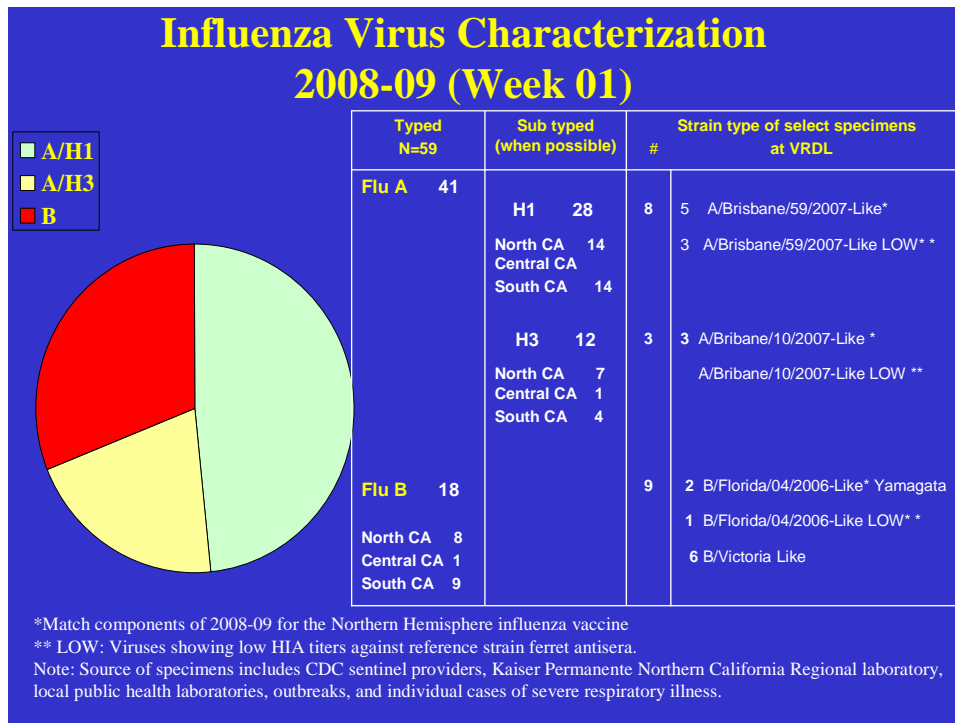


Sentinel Laboratories/Respiratory Laboratory Network RSV Detections



Virologic Characterization

Because of the low activity so far this season, VRDL and the local public health laboratories have characterized only a few influenza viruses. Out of 59 influenza specimens, both influenza A (41) and influenza B (18) have been identified. Results to date for influenza subtypes and antigenic characterization (strain-typing) are shown below; "low reactors" are influenza viruses that do not appear by hemagglutinin inhibition assay to match current vaccine strains and are sent to CDC for further characterization. The source of the majority of the influenza specimens characterized so far has been from the Kaiser Permanente Northern California Regional Laboratory and Orange and San Diego public health laboratories.



Antiviral Resistance

In December 2008, a Health Advisory was issued by the CDC providing interim recommendations for use of antiviral medications given the observation of high levels of resistance to oseltamivir in influenza A/subtype H1 viral isolates. While the data is preliminary and the number of influenza viruses tested is small, CDC has recommended that when influenza A (H1N1) virus infection or exposure is suspected, zanamivir or a combination of oseltamivir and rimantadine should be used. Because determination of subtype (H1 versus H3) is often not available at point-of-care testing, these recommendations can be applied to any situation where influenza A infection is suspected but subtype is not known. Oseltamivir is still recommended for influenza B infection. In some counties, subtyping may be available at local public health laboratories. Identification of subtype following confirmation of influenza A infection may be very useful in situations such as institutional outbreaks (e.g. long term care facilities or prisons), where implementation of mass treatment or chemoprophylaxis with antivirals is considered. Throughout the season the CDPH Viral and Rickettsial Disease Laboratory will continue to perform surveillance for antiviral resistance and provide periodic updates. The [CDC Health Advisory](https://emergency.cdc.gov/han/dir.asp) can be accessed at: <https://emergency.cdc.gov/han/dir.asp>

Antiviral Resistance

| | Oseltamivir Resistant | Adamantanes Resistant |
|--------------------|-----------------------|-----------------------|
| Influenza A (H1N1) | 11/12 | 0/12 |
| Influenza A (H3N2) | 0/6 | 6/6 |

Respiratory Laboratory Network:

| County Name | Rmix | PCR |
|--------------------|-------------|------------|
| Alameda | X | X |
| El Dorado | X | X |
| Contra Costa | | X |
| Fresno | X | X |
| Humboldt | | X |
| Imperial | X | |
| Long Beach | X | X |
| Los Angeles | X | X |
| Monterey | | X |
| Orange | X | X |
| Placer | X | X |
| Riverside | | X |
| Sacramento | X | |
| San Bernardino | X | X |
| San Diego | X | X |
| San Francisco | X | X |
| San Joaquin | X | X |
| Santa Clara | X | X |
| Shasta | X | X |
| Solano | X | X |
| Sonoma | X | |
| Stanislaus | X | |
| Tulare | X | X |
| Ventura | X | X |
| VRDL | X | X |

Please continue to assist us in recruiting primary care providers (physicians, nurse practitioners, and physician assistants) to be sentinel physicians in your area. For more information, contact Melissa Dahlke at flu@cdph.ca.gov or 510-620-3494.

For questions about the California Influenza Surveillance Project, please contact Erica Boston (erica.boston@cdph.ca.gov) or Janice Louie (janice.louie@cdph.ca.gov).