



# Archived Document

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# Eye on Influenza

October 17, 2008  
Volume 5, Issue 1

Orange County Health Care Agency, Epidemiology & Assessment, 1719 W. 17<sup>th</sup> St. Santa Ana, CA 92706, (714) 834-8180

**The Orange County Health Care Agency has confirmed its first influenza case (influenza A) of the 2008-2009 season. Consider influenza in your patients with fever and/or respiratory systems.**

- **Stay healthy, get vaccinated!** The Orange County Health Care Agency will be offering free flu shots at numerous locations throughout the County beginning the week of October 27<sup>th</sup>. For flu shot locations and eligible groups, see <http://www.ochealthinfo.com/Public/flu/index.htm>. In addition, available retail flu clinics can be found at [www.flucliniclocator.org](http://www.flucliniclocator.org).
- **Flu shot requirements for healthcare workers in acute care hospitals.** Since July 1, 2007, California has required that each general acute care hospital offer free onsite flu vaccinations (if quantities suffice) and *require* its employees to be vaccinated (or decline in writing). The Association for Professionals in Infection Control and Epidemiology (APIC) is now recommending that influenza vaccine be required annually for *all* healthcare personnel with direct patient care. A new element of the APIC recommendation is that an *informed* declination be obtained from employees that decline for other than medical reasons; employees will be informed that by declining flu vaccine, they will not only be putting their patients at risk but also themselves, their family, and the community as a whole. The policy statement notes that healthcare workers can transmit the flu virus to others before they have any symptoms. In addition, multiple studies have shown that 70% of health workers continue to work even when sick with the flu. The proposed goal for vaccination among healthcare workers is at least 75%. For more information, review the California Health and Safety Code Section 1288.7 and visit <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/oct1008apic.html>.
- **CDC contracts with private biological resource business to establish the Influenza Reagent Resource Center (CDC-IRR).** The purpose of the CDC-IRR is to improve researchers', developers' and public health officials' access to influenza viruses (including viruses that could pose a pandemic risk), test kits, and reagents via a secured internet web portal for approved users. The CDC expects the system will speed the development of better diagnostic tests, antiviral drugs, and vaccines. In addition, the CDC-IRR will serve as a source of reagents for qualified laboratories to provide additional support in the event of an emerging pandemic. See <http://www.cdc.gov/media/pressrel/2008/r081008.htm>.
- **Seven states reported sporadic flu cases.** During disease week 41 (week ending October 11<sup>th</sup>; the second official week of the 2008-09 influenza season), CDC reported that seven states, including Alaska, California, Connecticut, Florida, Hawaii, New York, and Wyoming, reported sporadic influenza activity; defined as small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak with no increase in cases of influenza-like illness. The remaining 43 states reported no activity. From May 18 to September 27, CDC antigenically characterized six flu viruses (four A/H1, one A/H3, and one B), all of which were antigenically similar to the viruses selected for the 2008-2009 vaccine. See the map below and the influenza season summary for weeks 40 & 41 <http://www.cdc.gov/flu/weekly/fluactivity.htm>.

## Avian Influenza Update

- No new human H5N1 cases have been reported by the WHO since Sept. 10<sup>th</sup>. For the latest WHO H5N1 updates, see [www.who.int/csr/disease/avian\\_influenza/en/](http://www.who.int/csr/disease/avian_influenza/en/).

## National Update (week ending October 11<sup>th</sup>)



### Recommended Resources

CDC: <http://www.cdc.gov/flu/weekly/>;  
 OC: <http://www.ochealthinfo.com/epi/flu/surveillance.htm>;  
 CA: <http://www.dhs.ca.gov/ps/dcdc/VRDL/html/FLU/Fluintro.htm>;  
 HHS: <http://www.pandemicflu.gov/>; General: <http://www.cdc.gov/flu>

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# Eye on Influenza

November 3, 2008  
Volume 5, Issue 2

Orange County Health Care Agency, Epidemiology & Assessment, 1719 W. 17<sup>th</sup> St. Santa Ana, CA 92706, (714) 834-8180

**Influenza activity continues to be sporadic in Orange County; consider influenza in your patients with fever and/or respiratory symptoms and test for influenza. Information about testing for influenza is available at <http://www.cdc.gov/flu/professionals/diagnosis/index.htm>. The Orange County Health Care Agency (HCA) is offering free flu vaccines for eligible groups at various locations throughout the county:**

**<http://www.ochca.com/Public/flu/index.htm>**

- **Study finds that a universal approach to flu immunization decreases flu-related deaths and healthcare visits.** In 2000, Ontario began offering free seasonal influenza vaccine to all persons over 6 months of age. Subsequently, Canadian researchers compared universal versus targeted vaccination (used in other provinces), for all 10 provinces by analyzing hospitalization and mortality data from 1997 to 2004. In Ontario, influenza vaccination rates for those aged 12 and older increased and hospitalization, emergency department use, and outpatient visits decreased overall when compared to other provinces. Influenza-related mortality decreased in Ontario (74% compared to 57% in other provinces), but a statistically significant decrease was seen only in those aged 85 or older. The researchers concluded that universal vaccination may be an effective strategy for increasing a population's protection against seasonal influenza, including protecting seniors  
<http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/oct2908ontario.html>.
- **Influenza A/H1N1 virus resistance to oseltamivir (Tamiflu) continues to increase in many areas.** In South Africa, 100% of the 225 A/H1N1 isolates tested for oseltamivir resistance were found to be resistant by genotypic analysis. WHO continues to receive reports of oseltamivir resistance in northern hemisphere countries, including the United States. To see a list of countries reporting resistance, visit <http://www.who.int/csr/disease/influenza/H1N1200801013.pdf>.
- **Promising phase II trial results for new antiviral flu drug.** A single dose of peramivir, an injectable neuraminidase inhibitor, when given within 48 hours of symptom onset, was found to reduce the duration of symptoms of influenza-positive outpatients by about 22 hours when compared with a placebo group. Hospitalized patients with serious influenza illness treated with oseltamivir (Tamiflu) or peramivir for 5 days had similar outcomes. To read more, visit <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/oct3108peramivir.html>.
- **University of Minnesota breaks Guinness world record for seasonal flu vaccine administered in a single day.** 11,358 doses were administered at four campus locations. For more info, visit <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/oct3008record.html>.
- **Revised WHO pandemic influenza preparedness plan open for comment until November 7.** Some of the changes include "simpler and more precise" definitions of the six pandemic phases with more emphasis on the social and economic effects of a global epidemic. The phases have been regrouped to emphasize planning and preparedness considerations. WHO plans to publish the final version in December. See [http://www.who.int/csr/disease/influenza/EN\\_guidancereview/en/index.html](http://www.who.int/csr/disease/influenza/EN_guidancereview/en/index.html) or <http://www.cidrap.umn.edu/cidrap/content/influenza/biz-plan/news/oct2408who.html>.



## 2008 Point of Distribution Exercise

- HCA will partner with city and community response agencies to offer **free seasonal flu shots** to the public on **Friday, November 7, 2008, from 11:30am to 2:00 pm** at Magnolia Baptist Church (Anaheim) and Irvine Valley College. For more information, see [http://healthdisasteroc.org/events/Free\\_Flu\\_Shots.htm](http://healthdisasteroc.org/events/Free_Flu_Shots.htm).



## Orange County, California, and U.S. \*\*

- To date, four influenza cases have been reported in OC for the 2008-09 season; 2 A & 2 B. One of the influenza A viruses was subtyped as A/H1.
- As of October 25, 2008, sporadic influenza cases have been reported in 13 states, including California. Overall influenza activity remains low in the U.S. with no states reporting regional or widespread activity.

\*\*Note: The number of reported cases does NOT correspond to the total number of cases occurring in OC as not all labs participate, the surveillance programs are not population based, and testing may be influenced by many factors such as public interest. However, the trends in influenza activity are likely to be reflected accurately.

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- **Promising results during phase I clinical trial for “universal” flu A vaccine.** The M2e universal flu A vaccine targets the M2 protein of influenza A viruses, a surface protein that differs little among different strains of type A, and therefore would reduce or eliminate the need to change the vaccine every year. Existing influenza vaccines target the surface protein hemagglutinin, which often mutates. During the phase I trial, one of four doses (0.3, 1.0, 3.0, and 10.0 micrograms (mcg)) of the vaccine or placebo were administered in two injections to 60 healthy volunteers between the ages of 18 and 49 years. The two lowest doses were safe and well-tolerated in all the volunteers yielding an immune response in 18 of 24 volunteers after the first dose and in 23 of 24 after two doses. Because the two highest doses were associated with the presence of flu-like symptoms in some of the subjects, development and clinical evaluation of the vaccine will continue at doses of 1.0 mcg and less. A second generation universal influenza vaccine is also being developed that targets a conserved antigen in B viruses as well as the M2 protein, to address both influenza A and B strains. See <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/nov1108flushot.html>.
- **Google plans to estimate influenza activity daily within the United States.** The internet search company unveiled a new system called Google Flu Trends that it says will estimate daily flu activity based on the volume of internet searches for information about flu. Last year, Google found that flu searches closely correlated with CDC’s influenza-like illness (ILI) reports, both regionally and nationally. Because the data predicted flu activity up to two weeks before official reports did, Google suggests the system may provide an early-warning for outbreaks of influenza. CDC says it plans to monitor Google’s data closely. Visit <http://www.google.org/about/flutrends/how.html> or <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/nov1308google-jw.html>.
- **CDC updates advice for persons traveling to H5N1-affected countries in the latest Outbreak Notice.** Prior to travel, CDC recommends visiting a travel medicine specialist, getting up-to-date on vaccinations, both routine (e.g. influenza) and travel-related, packing a travel kit with first aid supplies, and knowing where healthcare resources near your destination are located. During travel, CDC advises travelers to avoid direct and indirect contact with birds, eat only thoroughly cooked bird products, practice good hygiene to reduce the spread of germs, and seek medical care if illness arises. In addition, CDC recommends that travelers closely monitor their health for seven days after returning and seek medical care if fever and a cough, sore throat, or trouble breathing develops. See [http://wwwn.cdc.gov/travel/contentAvianFluAsia.aspx?s\\_cid=ccu111008\\_Travelers1](http://wwwn.cdc.gov/travel/contentAvianFluAsia.aspx?s_cid=ccu111008_Travelers1).
- **Federal officials conduct full-scale tabletop exercise at Miami’s International Airport to test the risk-based border strategy** developed to slow the spread of a flu pandemic across U.S. borders. The plan involves screening international air passengers to gauge illness and/or possible exposure to the virus. <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/nov1208airport.html>.



### Avian Influenza Update

- No new human H5N1 cases have been reported by the WHO since Sept. 10<sup>th</sup>. For the latest WHO H5N1 updates, see [www.who.int/csr/disease/avian\\_influenza/en/](http://www.who.int/csr/disease/avian_influenza/en/).

### Orange County, California, and U.S. \*\*

- To date this season, five influenza reports have been received in OC; 2 A & 3 B. One of the influenza A viruses was subtyped as A/H1.
- Influenza activity in California remains sporadic. Overall influenza activity remains low in the U.S. with no states reporting regional or widespread activity.

#### Recommended Resources

CDC: <http://www.cdc.gov/flu/weekly/>;  
 OC: <http://www.ochealthinfo.com/epi/flu/surveillance.htm>;  
 CA: <http://www.dhs.ca.gov/ps/dcdc/VRDL/html/FLU/Fluintro.htm>;  
 HHS: <http://www.pandemicflu.gov/>; General: <http://www.cdc.gov/flu>

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**Influenza activity remains sporadic in Orange County; consider influenza in your patients with fever and/or respiratory symptoms and test for influenza. The Orange County Health Care Agency is offering free flu vaccines for eligible groups: <http://www.ochealthinfo.com/Public/flu/index.htm>.**

- **School-based flu immunization programs may be an efficient way to improve vaccination rates in children.** With the new recommendation this season to vaccinate all school-age children against influenza, experts are weighing options relating to school-based immunization programs. See [http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/nov1908schools\\_ms.html](http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/nov1908schools_ms.html).
- **Novel influenza virus infection detected in a Texas resident – swine flu.** One case of human infection with a swine influenza A/H1N1 virus was reported in a person who had several swine exposures—including close contact with an ill pig—prior to onset. Human infection with swine influenza is uncommon and sporadic human cases of in recent years have not resulted in sustained human-to-human transmission or community outbreaks. However, changes in swine influenza viruses can occur and immunity to swine H1N1 viruses is low in the general human population, so reports of human cases are closely monitored for further transmission. For more information on swine flu: <http://www.cdc.gov/flu/swine/>.
- **Hospital pandemic influenza drill shows a far greater need for basic PPE than expected.** Based on the drill, use of aprons, gloves, and masks would increase 13-fold, 10-fold, and 450-fold, respectively, above normal levels during the height of a pandemic. Waste generated from the increased basic PPE usage was 3-times the normal amount. Quantities of high-level PPE (gowns, respirators, goggles) used were much lower than expected. Although this drill was conducted in the United Kingdom, the findings may be useful for U.S. planning efforts. For a summary of findings and link to the abstract preview, see: [http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/nov\\_2508ppe-jw.html](http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/nov_2508ppe-jw.html).
- **Canadian study suggests N95 respirator fit testing and training alone does not ensure correct respirator use later on.** In a sample of health care workers with no prior respirator fit testing or training, 44% were able to don the N95s properly without receiving instructions. Fit test pass rates rose to 74% immediately after they received training; pass rates dropped to 47%-65% at 3 and 14 months post-training for those who did not receive training or routinely use N95s in the interim, but rose to 87-100% in those who did. The abstract is available at: <http://www.journals.uchicago.edu/doi/abs/10.1086/591860?prevSearch=%28Respirator-fit%29+AND+%5Bjournal%3A+iche%5D>
- **Recent studies indicate foxes and raccoons could play a role in the spread of influenza viruses.** Red foxes fed H5N1-infected bird carcasses can excrete the virus without developing severe disease, thereby potentially playing a role in virus dispersal: <http://www.cdc.gov/eid/content/14/12/1835.htm>. Wild raccoons were found to be susceptible to avian and human influenza A viruses, to shed and transmit virus to uninfected animals, and to seroconvert. Animals that can be co-infected with multiple subtypes of influenza increase the potential for development of novel strains through genetic reassortment: <http://www.cdc.gov/eid/content/14/12/1842.htm>.



### Orange County, California, and U.S. \*\*

- To date this season, 7 influenza reports have been received in OC: 4 A & 3 B. One of the influenza A viruses was subtyped as A/H1.
- Influenza activity in California remains sporadic. Overall influenza activity remains low in the U.S. with no states reporting regional or widespread activity.

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### Avian Influenza Update

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**Recommended Resources**  
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 OC: <http://www.ochealthinfo.com/epi/flu/surveillance.htm>;  
 CA: <http://www.dhs.ca.gov/ps/dcdc/VRDL/html/FLU/Fluintro.htm>;  
 HHS: <http://www.pandemicflu.gov/>; **General:** <http://www.cdc.gov/flu>

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- **Survey finds that by mid-November, only 30% of US adults have received the flu shot this season; 53% of the remainder do not plan to get the flu shot at all.** The survey, conducted by the Rand Corporation, found the same flu vaccination rates among health care workers and caregivers (30%), with 57% of the remainder not planning to get vaccinated. Flu vaccination rates among the high risk groups were greater (age 50+ or any high risk condition-37%, asthma patients-33%, chronic lung disease patients-67%). Lack of time was cited as the primary reason (41%) for not getting or planning to get the flu shot this season. Other reasons included perceived lack of need (25%), beliefs against flu shots (20%), fear of illness/side effects (19%), and the perception that others need it more (8%). The full report is at [http://www.rand.org/health/projects/flu\\_survey/](http://www.rand.org/health/projects/flu_survey/). **There is still time to act – get vaccinated now!**
- **College students who received the flu shot had a significantly lower rate of flu-like illness and associated impacts.** Minnesota college students were studied from the 2002-03 through 2005-06 influenza seasons. Influenza vaccination was associated with significant reduction in the likelihood of flu-like illness and provider visits, antibiotic use, impaired school performance, and numbers of missed days of class/work during the influenza season. Differences were not seen during non-influenza periods. For the abstract, see <http://archpedi.ama-assn.org/cgi/content/short/162/12/1113>.
- **Elderly African-Americans and Hispanics have lower influenza vaccination rates compared to elderly Non-Hispanic Whites.** The American Association of Retired Persons (AARP) Public Policy Institute reports that in 2006, among people aged 65 years and older, only 47% of African-Americans and 45% of Hispanics received the flu shot compared to 67% of Non-Hispanic Whites. The gap is even wider for pneumococcal vaccine; both of these vaccines are covered by Medicare. The report encourages education of all patients about the benefits of vaccination and prioritization of adult vaccination by health care providers and systems. See [http://www.aarp.org/research/medicare/coverage/i12\\_flu.html](http://www.aarp.org/research/medicare/coverage/i12_flu.html).
- **Half-dose trivalent inactivated influenza vaccine (TIV) generates immune response.** Antibody responses to specific influenza strains were elicited by half-doses of TIV in healthy, previously immunized young adults, especially women. Although it is not clear if the antibody titer cut-off used in the study would be protective against infection, further research could help elucidate if the strategy of half-doses would be useful to extend the vaccine supply during a critical shortage. For abstract, see <http://archinte.ama-assn.org/cgi/content/short/168/22/2405>.
- **U.S. Health and Human Services releases draft national vaccine strategy.** The plan describes the need to organize, practice, and evaluate mass vaccination activities for various scenarios including an influenza pandemic. Next steps involve input from the public, vaccine industry, and other stakeholders. The plan will be finalized in late 2009. The draft plan is available at [http://www.hhs.gov/nvpo/vacc\\_plan/](http://www.hhs.gov/nvpo/vacc_plan/).

## Orange County, California, and U.S. \*\*

- To date this season, 11 influenza reports have been received in OC: 6 A (includes 1 subtyped as A/H1), 3 B, and 1 A/B unspecified.
- Influenza activity in California remains sporadic. Overall influenza activity remains low in the U.S. with no states reporting regional or widespread activity.

## Avian Influenza Update

- New human H5N1 cases have been reported in Cambodia (1) and Indonesia (2) since the last update. The cumulative number of cases for 2008 is now 390, with a mortality rate of 63%. For the latest WHO H5N1 updates, see [www.who.int/csr/disease/avian\\_influenza/en/](http://www.who.int/csr/disease/avian_influenza/en/).

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<b>Recommended Resources</b>	
CDC: <a href="http://www.cdc.gov/flu/weekly/">http://www.cdc.gov/flu/weekly/</a> ;	
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CA: <a href="http://www.dhs.ca.gov/ps/dcdc/VRDL/html/FLU/Fluintro.htm">http://www.dhs.ca.gov/ps/dcdc/VRDL/html/FLU/Fluintro.htm</a> ;	
HHS: <a href="http://www.pandemicflu.gov/">http://www.pandemicflu.gov/</a> ; General: <a href="http://www.cdc.gov/flu">http://www.cdc.gov/flu</a>	



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- **Influenza A/H1N1 antiviral resistance update.** Due to low levels of influenza activity in the U.S. so far this season, very few virus specimens have been available for testing. However, early and limited testing data for this season shows an increase in the proportion of flu A/H1N1 viruses that are resistant to oseltamivir (Tamiflu) compared to last season. The U.S. increase parallels an increasing proportion of resistant H1N1 viruses in other regions of the world. There is no evidence that the resistant viruses are causing more severe illness or are transmitted differently than other influenza viruses. CDC has issued interim guidance for health care providers on which antiviral medications to use, see: <http://www.cdc.gov/flu/professionals/antivirals/index.htm>.
- **Health & Human Services (HHS) issues new guidance for use and stockpiling of antiviral drugs for pandemic influenza; emphasis on employer responsibility.** HHS places responsibility on employers to have adequate supplies and plans for ensuring workers who could have direct contact with ill persons (health care workers, certain emergency services personnel) will receive antiviral drugs *before* exposure and throughout a pandemic. The new guidance also includes recommendations for key groups to receive antivirals *after* exposure: health care and emergency services workers who would not routinely have contact with ill persons, residents of group settings (nursing homes, prisons), and those with weakened immune systems. Government antiviral stockpiles, as in previous guidance, will be intended primarily for treatment of those already ill as a means of slowing pandemic disease spread. Synopsis of the new guidance: <http://www.hhs.gov/news/press/2008pres/12/20081216a.html>. Full text of antiviral use guidance: [http://www.pandemicflu.gov/vaccine/antiviral\\_use.html](http://www.pandemicflu.gov/vaccine/antiviral_use.html). Full text of stockpiling guidance: [http://www.pandemicflu.gov/vaccine/antiviral\\_employers.html](http://www.pandemicflu.gov/vaccine/antiviral_employers.html).
- **Avian influenza vaccine clinical trial in children finds it is safe and immunogenic.** (Pediatric Infectious Disease Journal. 27(12):1052-1056, December 2008). Twelve healthy children, ages 9-17 years, were given one injection of an inactivated whole virus influenza A (H5N1) vaccine called Fluval. After 21 days, 75% of the test subjects had seroconverted (produced a detectable antibody response) and 75% were seroprotected (produced sufficient antibody levels for protection). No side effects were observed. Similar results have been found in clinical trials of the same vaccine on adults; trials on elderly subjects are underway. The abstract is available at <http://www.pidj.com> (go to Archive, December 2008 issue).
- **Travel to Asia for Lunar New Year – tips for avoiding avian influenza and other health issues.** The Year of the Water Buffalo begins on January 26, 2009. CDC has issued safety tips specific to travel to Asia: [http://wwwn.cdc.gov/travel/contentLunarNewYear09.aspx?s\\_cid=ccu122208\\_LunarNewYear\\_e](http://wwwn.cdc.gov/travel/contentLunarNewYear09.aspx?s_cid=ccu122208_LunarNewYear_e).

## Orange County, California, and U.S. \*\*

- To date this season, 13 influenza reports have been received in OC: 8 flu A (3 subtyped as A/H1, 5 not subtyped), 3 flu B, and 2 flu A/B unspecified.
- Influenza activity in California remains sporadic. Overall influenza activity remains low in the U.S. with no states reporting regional or widespread activity.



## Avian Influenza Update

- One new human H5N1 case has been reported in Egypt since the last update. The cumulative number of cases for 2003-2008 is now 391, with a mortality rate of 63%. For the latest WHO H5N1 updates, see [www.who.int/csr/disease/avian\\_influenza/en/](http://www.who.int/csr/disease/avian_influenza/en/).

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CA: <a href="http://www.dhs.ca.gov/ps/dcdc/VRDL/html/FLU/Fluintro.htm">http://www.dhs.ca.gov/ps/dcdc/VRDL/html/FLU/Fluintro.htm</a> ;	
HHS: <a href="http://www.pandemicflu.gov/">http://www.pandemicflu.gov/</a> ; General: <a href="http://www.cdc.gov/flu">http://www.cdc.gov/flu</a>	

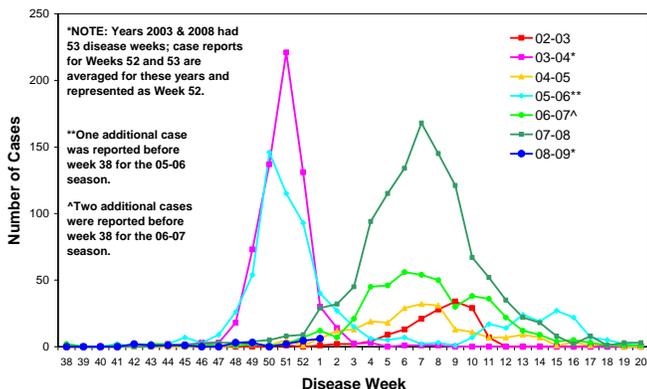


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**Influenza activity remains sporadic in Orange County; consider influenza in your patients with fever and/or respiratory symptoms and test for influenza. The Orange County Health Care Agency is offering free flu vaccines for eligible groups: <http://www.ochealthinfo.com/Public/flu/index.htm>.**

- **Interim recommendations about influenza antiviral use and resistance available as Podcast at <http://www2a.cdc.gov/podcasts/player.asp?f=10652>.** For more comprehensive review, see CDC Clinician Outreach and Communication Activity (COCA) conference call slides, available at <http://www.emergency.cdc.gov/coca/callinfo.asp>.
- **Norwegian study examines epidemiologic and clinical characteristics of oseltamivir-resistant influenza A/H1N1 viruses, 2007-08 season.** Clinical presentation and hospitalization rates were not statistically different for patients with oseltamivir (Tamiflu®)-resistant viruses compared to susceptible viruses after adjusting for age, gender, and predisposing disease. The emergence of resistant viruses was not associated with prior oseltamivir use in Norway. The study shows that resistant influenza viruses are capable of persistent spread among humans, even when antiviral medications are not widely used. See <http://www.cdc.gov/eid/content/15/2/pdfs/08-1031.pdf> or Feb. 2009 issue of *Emerging Infectious Diseases* (<http://www.cdc.gov/ncidod/EID/index.html>).
- **Uncommon avian influenza human infection detected in Hong Kong, but virus is unlikely to spread easily among humans.** A 2-month-old baby from China tested positive while in Hong Kong for avian influenza A/H9N2, which is one of the subtypes thought to have the potential to evolve into a pandemic strain. DNA sequencing, however, shows that this case's virus contained only avian genes and had not reassorted with human influenza viruses, indicating it is not likely to spread easily among humans. Hong Kong's last human case of H9N2 was in 2007; only five cases have been reported there since 1999. Hong Kong public health press release: <http://www.dh.gov.hk/english/press/2009/090107-2.html>. News report of infection: <http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/dec3008influenza.html>.
- **HHS releases Pandemic Update VI** summarizing progress made in vaccine development including cell-based vaccines, point-of-care testing to distinguish pandemic from seasonal influenza, stockpiling of pre-pandemic H5N1 vaccine, antivirals, personal protective equipment, and other supplies, and global surveillance. See <http://pandemicflu.gov/plan/panflureport6.html>.

Reported Influenza Cases by Week and Season, Orange County, 2002-2009



### Orange County, California, and U.S. \*\*

- To date this season, 27 influenza reports have been received in OC: 52% flu A (36% subtyped as A/H1N1, 64% not subtyped), 22% flu B, and 26% flu A/B unspecified.
- Influenza activity in California remains sporadic. Overall influenza activity remains low in the U.S. Because of the low activity, only a few viruses have been characterized; it is too early to predict whether circulating strains will match the vaccine strains or how prevalent antiviral resistance will be.

**\*\*Note:** The number of reported cases does NOT correspond to the total number of cases occurring in OC as not all hospitals/labs participate, the surveillance programs are not population based, and testing may be influenced by many factors such as public interest. However, the trends in influenza activity are likely to be reflected accurately.

### Avian Influenza Update

- Two new human H5N1 cases have been reported in China (1, death) and Vietnam (1) since the last update. The cumulative number of cases for 2003-08 is 393, with a mortality rate of 63%. For the latest WHO H5N1 updates, see [www.who.int/csr/disease/avian\\_influenza/en/](http://www.who.int/csr/disease/avian_influenza/en/).

**Recommended Resources**  
**CDC:** <http://www.cdc.gov/flu/weekly/>;  
**OC:** <http://www.ochealthinfo.com/epi/flu/surveillance.htm>;  
**CA:** <http://www.dhs.ca.gov/ps/dcdc/VRDL/html/FLU/Fluintro.htm>;  
**HHS:** <http://www.pandemicflu.gov/>; **General:** <http://www.cdc.gov/flu>

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**It's not too late to vaccinate! The Orange County Health Care Agency is offering free flu vaccines for eligible groups: [www.ochealthinfo.com/Public/flu/index.htm](http://www.ochealthinfo.com/Public/flu/index.htm).**

- **Experts consider a four-strain influenza vaccine for 2009-10:** The FDA's Vaccines and Biological Products Advisory Committee (VRBPAC) will meet on February 18<sup>th</sup> to select flu strains to include in the 2009-10 season influenza vaccine. Prior vaccines have had three strains: two A (an H1N1 and an H3N2) and one B. However, influenza B strains fall into two distinct lineages which appear to have little cross-protection but have both been circulating in the U.S. since 2001. The addition of a second B strain to the vaccine is under consideration to improve the protection against both lineages in a single season. Questions on potential impact to vaccine manufacturing, supply, cost and side effects will be discussed. See: [www.cidrap.umn.edu/cidrap/content/influenza/general/news/jan1609flub.html](http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/jan1609flub.html).
- **Novartis receives contract for cell-based flu vaccine plant in U.S.:** HHS has awarded Novartis a \$487 million contract to help build a plant in North Carolina that will be the first in the U.S. to produce cell-based vaccine for seasonal and pandemic influenza. Cell-based vaccines can be made faster and in larger quantities than traditional egg-based vaccines and can be used in persons who are egg-allergic. Press release: [www.hhs.gov/news/press/2009pres/01/20090115b.html](http://www.hhs.gov/news/press/2009pres/01/20090115b.html).
- **Second human infection with swine flu in U.S. in past 2 months:** South Dakota reported a human case with swine influenza A/H1 infection who did not have direct contact with pigs, but indirect contact is being explored. Human infection with swine influenza is uncommon and the sporadic human cases that occur in the U.S. on average once a year have not resulted in sustained human-to-human transmission or community outbreaks. However, changes in swine influenza viruses can occur and immunity to swine H1N1 viruses is low in the general human population, so reports of human cases are closely monitored for further transmission. The last human infection was reported from Texas. Press release: [www.state.sd.us/news/printDoc.aspx?i=10260](http://www.state.sd.us/news/printDoc.aspx?i=10260).
- **Canadian low-pathogenic avian influenza outbreak:** Officials in southern British Columbia are investigating an avian influenza outbreak among farmed turkeys. The outbreak has been confirmed as due to an influenza A/H5 virus, although it is thought to be a low-pathogenic strain because of low observed mortality among the turkeys. This same area was affected by a large outbreak of highly pathogenic avian influenza A/H7N3 in 2004. Canadian Food Inspection Agency press release: [www.inspection.gc.ca/english/corpaffr/newcom/2009/20090124e.shtml](http://www.inspection.gc.ca/english/corpaffr/newcom/2009/20090124e.shtml).
- **Researchers isolate lethal 1918 influenza genes:** University of Wisconsin scientists recently published a report in the Proceedings of the National Academy of Sciences ([www.pnas.org](http://www.pnas.org)) that identified three genes that in combination contributed to the lethality of the Spanish Flu by allowing the virus to reproduce in lung tissue causing pneumonia. Usually flu viruses replicate mainly in the upper respiratory tract. See: [www.news.wisc.edu/16103](http://www.news.wisc.edu/16103).

## Avian Influenza Update

- 10 new human H5N1 cases have been reported since the last update: China (6), Egypt (2), Indonesia (2). The cumulative number of cases for 2003-08 is 403, with 63% mortality. For the latest WHO updates: [www.who.int/csr/disease/avian\\_influenza/en/](http://www.who.int/csr/disease/avian_influenza/en/).
- H5N1 has been detected among poultry in a new country: Nepal. For an updated map, see [www.pandemicflu.gov/](http://www.pandemicflu.gov/)

## Orange County, California, and U.S. \*\*

- To date this season, 66 influenza reports have been received in OC: 53% flu A (of which 31% were A/H1N1, 9% A/H3N2, and 60% were not subtyped), 15% flu B, and 32% flu A/B unspecified.
- Overall influenza activity is slowly increasing in the U.S. Activity in California has been upgraded from sporadic to local.
- H1N1 resistance to oseltamivir (Tamiflu®) continues to be reported in nearly 100% of isolates tested in CA and in other states. See <http://www.cdc.gov/flu/professionals/antivirals/index.htm> for recommendations on antiviral usage.

**\*\*Note:** The number of reported cases does NOT correspond to the total number of cases occurring in OC as not all hospitals/labs participate, the surveillance programs are not population based, and testing may be influenced by many factors such as public interest. However, the trends in influenza activity are likely to be reflected accurately.

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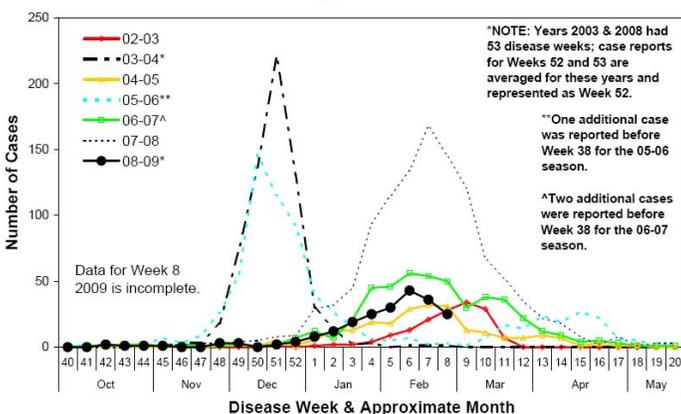


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**It's not too late to vaccinate! Influenza activity is increasing throughout the U.S. Free flu vaccine for eligible groups is still available: [www.ohealthinfo.com/Public/flu/index.htm](http://www.ohealthinfo.com/Public/flu/index.htm).**

- **Rise in pediatric influenza deaths mirrors increase in influenza activity.** CDC reported an increase in pediatric flu deaths over the past few weeks; 60% of the 17 cases this season have had bacterial coinfections, in particular with *Staphylococcus aureus*. CDC recommends that all children aged 6 months and over get vaccinated against influenza annually.
- **FDA panel makes recommendations on influenza strains for 2009-2010 vaccine.** Following the lead of the WHO, a FDA Vaccines and Related Biological Products Advisory Committee has recommended that the influenza A H1N1 and H3N2 strains for the Northern Hemisphere 2009-2010 vaccine remain the same as for 2008-09 and the B strain (currently from the Yamagata lineage) be replaced by one from the Victoria lineage (B/Brisbane/60/2008-like). See [www.cidrap.umn.edu/cidrap/content/influenza/general/news/feb1809selection.html](http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/feb1809selection.html).
- **Intradermal influenza vaccine approved in Europe.** The first injected flu vaccine to be given by a shallow needle prick into the skin (intradermal, ID) instead of into the muscle (IM) was approved for use in adults, including those over age 60. According to the manufacturer, potential advantages of this method of vaccine delivery include ease of administration, comfort, and a stronger immune response due to the high concentration of specialized immune cells in the dermal skin layer. A similar ID version of the US-licensed vaccine Fluzone is currently in phase 3 trials. See [www.cidrap.umn.edu/cidrap/content/influenza/general/news/feb2609sanofi.html](http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/feb2609sanofi.html).
- **Monoclonal antibodies (mAbs) identified able to neutralize both H5N1 and seasonal influenza strains.** Researchers at Dana-Farber Cancer Institute have identified mAbs that were active against H5N1 as well as other known flu A viruses including the 1918 pandemic and seasonal H1 strains. If safe and effective in humans, the mAbs could potentially be useful to treat and prevent influenza during an outbreak or pandemic. Researchers also identified a highly conserved region in the neck of the hemagglutinin protein that could be used as a target for a universal flu vaccine. See NIAID press release: [www.eurekalert.org/pub\\_releases/2009-02/nioa-sil021909.php](http://www.eurekalert.org/pub_releases/2009-02/nioa-sil021909.php).
- **Avian influenza update:** Five new human H5N1 cases have been reported since the last update: China (1), Egypt (2), Vietnam (2). The cumulative number of cases for 2003-08 is 408, with 63% mortality. For updates from the WHO, see [www.who.int/csr/disease/avian\\_influenza/en/](http://www.who.int/csr/disease/avian_influenza/en/).
- **Allocating scarce resources during a pandemic.** Report from Minnesota expert panel open for public comment until 3/16/09. See [www.health.state.mn.us/news/pressrel/2009/pandemic013009.html](http://www.health.state.mn.us/news/pressrel/2009/pandemic013009.html).
- **HHS webcasts on pandemic planning.** 2/18 webcast was on mental health planning. 3/18 webcast is on air travel and border screening. See [http://pandemicflu.gov/news/panflu\\_webinar.html](http://pandemicflu.gov/news/panflu_webinar.html).

Reported Influenza Cases by Week and Season, Orange County, 2002-2009



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### Orange County\*\*, California, and U.S. to date

- 219 influenza reports have been received in OC: 65% flu A (of which 35% were H1, 11% H3, 54% not subtyped), 11% flu B, and 25% flu A/B unspecified.
- Overall flu activity is increasing in the US and has been upgrade from local to regional in CA.
- Circulating A/H1 and H3 strains appear to be matching this season's vaccine, but 71% of the B strains characterized are of the Victoria lineage not in the vaccine. 99% of H1N1 strains tested have been resistant to oseltamivir (Tamiflu®).

**SAVE THE DATE! A Pandemic Influenza and Hospital Surge Tabletop Exercise will be held on Thursday, March 26<sup>th</sup>. For more information, see <http://healthdisasteroc.org/registration/surgetabletop/index.htm>.**

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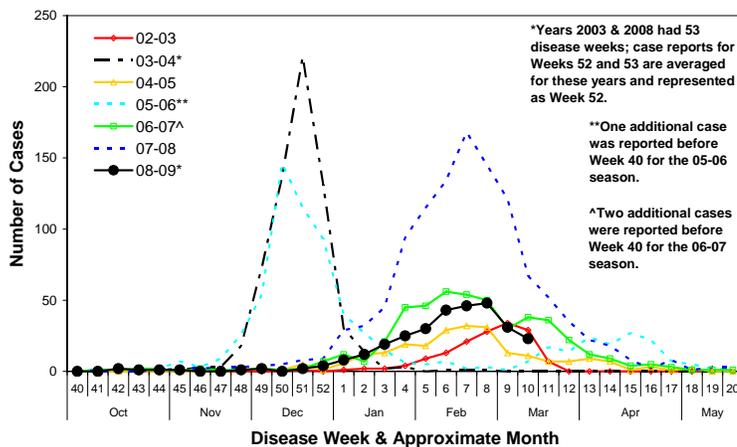


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**Influenza activity continues throughout the U.S. It's not too late to vaccinate! Free flu vaccine for eligible groups is still available:** [www.ohealthinfo.com/Public/flu/index.htm](http://www.ohealthinfo.com/Public/flu/index.htm).

- **Flu shot results in fewer medical encounters for respiratory illness than nasal spray vaccine (FluMist®) in annually immunized healthy young adults.** A study of US military personnel over three influenza seasons showed that in highly immunized, healthy adults (age 17-49 years), injected trivalent inactivated vaccine (TIV) was more effective at preventing medical visits for pneumonia and influenza than live attenuated influenza vaccine (LAIV). In adults that had not been vaccinated in previous seasons, the efficacy of LAIV was more robust and comparable to TIV, similar to what has previously been seen in studies in young children who in general have limited previous influenza vaccine exposure. Overall, those vaccinated with either type of flu vaccine had fewer medical visits for respiratory illness than those not vaccinated. See: <http://jama.ama-assn.org/cgi/content/full/2009.265>. Results from this study may not be generalizable to other adults in the population who are not immunized annually.
- **Oseltamivir (Tamiflu®)-resistant H1N1 flu viruses cause illnesses similar to those caused by susceptible viruses.** Recent studies suggest that resistant viruses do not have reduced pathogenicity, transmission, or virulence as once assumed. Several items in the most recent issue of *JAMA* describe these findings for the 2007-2008 season (<http://jama.ama-assn.org/cgi/content/full/2009.294>), in a nosocomial outbreak in the Netherlands (<http://jama.ama-assn.org/cgi/content/full/2009.297>), and through an editorial (<http://jama.ama-assn.org/cgi/content/full/2009.324>). 99% of circulating H1N1 viruses in the US this season are resistant to oseltamivir, but remain sensitive to zanamivir (Relenza®). For guidelines on antiviral use for 2008-09, see <http://www.cdc.gov/flu/antivirals/>.
- **HHS releases interim guidance on cleaning transit vehicles and facilities during a pandemic:** [http://pandemicflu.gov/plan/workplaceplanning/transit\\_guidance.html](http://pandemicflu.gov/plan/workplaceplanning/transit_guidance.html).
- **Federal spending bill includes \$700 million in pandemic preparedness funds** for the rest of fiscal year 2009 (through 9/30). None of these pandemic funds will go to state or local public health agencies. See: <http://www.cidrap.umn.edu/cidrap/content/influenza/biz-plan/news/mar1209bill-jw.html>.

Reported Influenza Cases by Week and Season, Orange County, 2002-2009



### Orange County\*\*, California, and U.S. to date

- 310 influenza reports have been received in OC: 63% flu A (of which 44% were H1, 11% H3, 45% not subtyped), 12% flu B, and 25% flu A/B unspecified. OC has reported 3 cases of severe pediatric influenza (PICU admit); all were flu A/H1N1.
- Overall flu activity remains high in the US. CA remains at regional influenza activity.
- Circulating A/H1 and H3 strains appear to be matching this season's vaccine, but 76% of the B strains characterized are of the Victoria lineage, which is not in the vaccine.

\*\*Note: The number of reported cases does NOT correspond to the total number of cases occurring in OC as not all hospitals/labs participate, the surveillance programs are not population based, and testing may be influenced by many factors such as public interest. However, the trends in influenza activity are likely to be reflected accurately.

### Avian Influenza Update

Eight new human H5N1 cases have been reported since the last update: Egypt (5), Vietnam (2), China (1). The cumulative number of cases for 2003-2009 is 411, with 62% mortality. For the latest WHO updates: [http://www.who.int/csr/disease/avian\\_influenza/en/](http://www.who.int/csr/disease/avian_influenza/en/).

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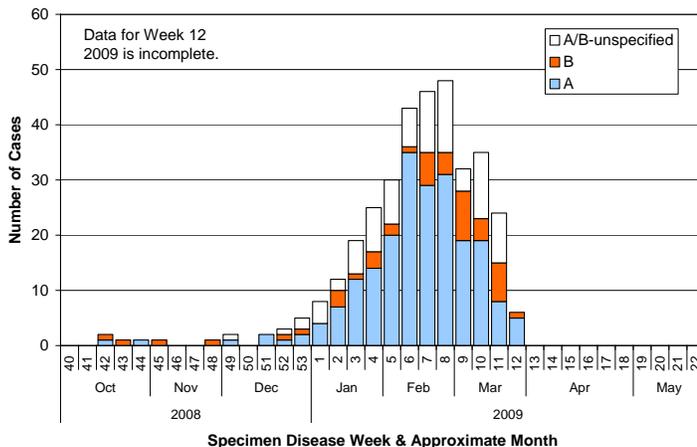
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- **Highly pathogenic H5N1 viruses in Africa elucidated; genetic mutations raise concern.** Sixty-seven H5N1 viruses from across Africa were analyzed in a recent study. Three sub-lineages (families) of virus were found and were co-circulating in Africa in 2006-2008, indicating multiple independent introductions of H1N1 into the continent. Genetic analysis found mutations in these viruses that are typical of human influenza viruses and resistance to antiviral drugs, raising concern of future human-to-human transmission and challenges to treatment/prophylaxis. See: <http://www.plosone.org/article/info:doi/10.1371/journal.pone.0004842>
- **Online pandemic influenza resource library now available.** The National Public Health Information Coalition has created a clearinghouse of pandemic communication and planning materials online at <http://www.nphicpanflu.org/panflusearch.aspx>. Users can search by keyword or pre-categorized topic, resource type, audience, originating state, and language. Users can also add their own materials.
- **Hospital survey identifies factors associated with successful health care worker (HCW) flu vaccination programs.** Fifty hospitals in 33 states were surveyed. Programs with vaccine available on weekends; train-the-trainer programs; or visible support from, and accountability to, hospital leadership had significantly higher HCW vaccination coverage. Requirement of declination statements did not significantly improve coverage. Survey results were presented at this year's Society for Healthcare Epidemiology of American (SHEA) conference. Abstract available through: <http://www.shea-online.org/>. Click on Online Program Planner and search for presentation # 268.
- **Canadian study finds that HCWs with acute respiratory illness (ARI) work while sick.** In a prospective study of 56 Toronto HCWs during the 2007-2008 influenza season (when the flu vaccine was poorly protective), 87% developed at least one ARI (16% were flu-positive among 44 episodes of illness tested), 92% of those who had an ARI worked on the first day of their illness and 85% worked all days of their illness. Study results were presented at this year's SHEA conference. Abstract available through: <http://www.shea-online.org/>. Click on Online Program Planner and search for presentation # 270.
- **International insurance/financial industry trade group urges members to plan for pandemic flu.** London-based Chartered Insurance Institute issued a report that encourages businesses to plan for reduced service levels, ensuring staff safety, telecommuting, and liability issues related to event cancellations. See: [http://www.cii.co.uk/downloaddata/TP\\_15\\_Maynard.pdf](http://www.cii.co.uk/downloaddata/TP_15_Maynard.pdf)

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**Reported Influenza Cases, by Week and Type, Orange County, CA  
2008-2009**



### Orange County\*\*, California, and U.S. to date

- 347 influenza reports have been received in OC: 61% flu A (of which 44% were H1, 10% H3, 46% not subtyped), 14% flu B, and 25% flu A/B unspecified.
- Overall flu activity has declined slightly in the US while the proportion of flu B cases has increased.
- CA flu activity has been upgraded to “widespread”, mostly due to increased activity in the central region of the state.
- 79% of the B strains characterized in the US this season were of the Victoria lineage, which is not in this season’s vaccine. Circulating A/H1 and H3 strains appear to match the vaccine.

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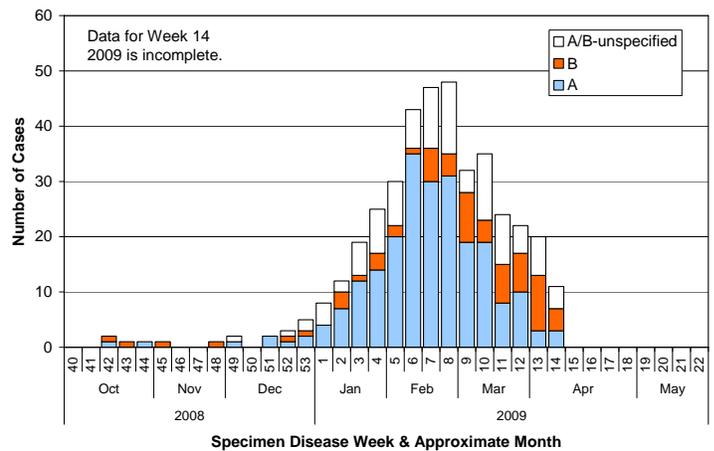
- **Rapid H5N1 flu test approved by FDA.** The new rapid test – AVantage A/H5N1 Flu Test – takes less than 40 minutes to identify the presence of H5N1, compared to 3-4 hours in previously approved tests. The test detects a specific H5N1 protein (NS1) using a patient throat or nasal swab. FDA press release: <http://www.fda.gov/bbs/topics/NEWS/2009/NEW01987.html>.
- **Disinfection methods and survival conditions for H5N1 explored.** Scientists in Pakistan examined the effects of a variety of physical and chemical conditions on local H5N1 virus. The virus was killed after 5 minutes by soap at 0.1% dilution, detergent at 0.2% dilution, and alkali (caustic soda) at 0.3% dilution; by commercially available disinfectants when used as recommended; and after 30 minutes at 56°C (132.8°F). The virus was not killed by one hour of UV light, and survived for more than 100 days when at 4°C (39.2°F). Abstract is at <http://www.virologyj.com/content/6/1/38> and provisional full text is at <http://www.virologyj.com/content/pdf/1743-422x-6-38.pdf>.
- **Low-pathogenic avian influenza detected in Kentucky chickens.** Exposure to flu A/H7N9 has been confirmed through routine testing for chickens at a commercial hatching-egg production farm in Grayson County, Kentucky. The chickens had no increase in symptoms or mortality, but did have a modest decrease in egg production. Twenty-thousand chickens were culled as a precaution. Additional surveillance is being performed in a 6.2-mile (10K) radius around the farm. See: [http://www.oie.int/wahis/reports/en\\_imm\\_0000007979\\_20090406\\_163231.pdf](http://www.oie.int/wahis/reports/en_imm_0000007979_20090406_163231.pdf).
- **Federal stimulus money made available for immunization programs, including childhood flu immunization.** \$300 million has been allocated to the Immunization Grant Program (aka Section 317 programs). \$250 million will go to states and selected cities to purchase, produce, and distribute vaccines and operate programs. California will receive \$23 million in this area. \$18 million will be available through grant application ([www.grants.gov](http://www.grants.gov)) to support innovative approaches to increase the number of children who complete the childhood vaccination schedule, which includes annual influenza vaccination. \$32 million will be used for healthcare provider education, research on the impact and safety of vaccines, and increasing public knowledge of vaccination risks and benefits. For details, see <http://www.cdc.gov/vaccines/about/recovery-act-funds.htm>.

### Orange County\*\*, California, and U.S. to date

- 394 influenza reports have been received in OC: 57% flu A (of which 46% were H1, 9% H3, 45% not subtyped), 17% flu B, and 26% flu A/B unspecified. 36% of reports in the past four weeks have been flu B.
- Overall flu activity continues to decline in the U.S., while the relative proportion of flu B continues to increase. CA flu activity has been downgraded to “regional”.
- 71% of B strains characterized in the U.S. this season were of the Victoria lineage, which is not the flu B component in the 2008-09 vaccine, but will be in the 2009-10 vaccine. Circulating A/H1 and H3 strains appear to match this season and will not be changed for 2009-10.

\*\*Note: The number of reported cases does NOT correspond to the total number of cases occurring in OC as not all hospitals/labs participate, the surveillance programs are not population based, and testing may be influenced by many factors such as public interest. However, the trends in influenza activity are likely to be reflected accurately.

Reported Influenza Cases, by Week and Type, Orange County, CA 2008-2009



### Avian Influenza Update

Six new human H5N1 cases have been reported since the last update: Egypt (5) and Vietnam (1). For the latest WHO avian influenza updates: [http://www.who.int/csr/disease/avian\\_influenza/en/](http://www.who.int/csr/disease/avian_influenza/en/).

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## Swine Influenza

*This situation is evolving rapidly; for the most up-to-date information about the investigation; see <http://www.cdc.gov/flu/swine/investigation.htm>.*

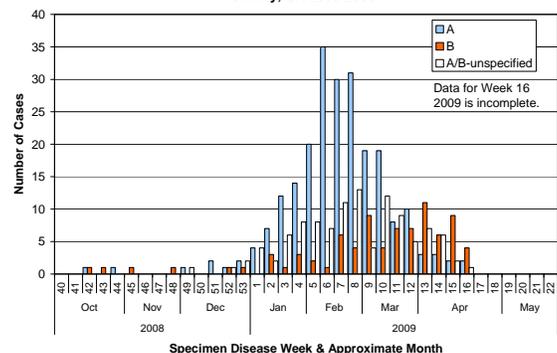
- **Unique swine influenza virus detected in Southern California, Texas, and Mexico raises concern for human-to-human transmission.** As of 4/24/09, eight human cases of novel swine influenza A (H1N1) have been confirmed in San Diego and Imperial Counties in California (6) and Guadalupe County near San Antonio, Texas (2), as well as in an unknown number in Mexico. All cases in the U.S. have been mild and have recovered but severe respiratory illness and deaths have been reported in Mexico. No cases in the U.S. reported recent exposure to pigs. The viruses from the first two cases are resistant to the antivirals amantadine and rimantadine, but susceptible to oseltamivir (Tamiflu®) and zanamivir (Relenza®); susceptibility testing on the other cases' viruses is pending but is expected to be the same. For a summary of the first two cases, see <http://www.cdc.gov/mmwr/> (4/24/09 issue).
- **Enhanced surveillance for human swine influenza infections is critical to determine the extent of human-human transmission.** Recommendations for enhanced surveillance for influenza-like illness (ILI) and the appropriate testing is being distributed to all hospitals, emergency departments, and outpatient sentinel providers participating in ILI surveillance in Orange County, and is posted at <http://www.ochealthinfo.com/epi/swine/index.htm>.
- **CDC interim guidance on infection control, treatment, and chemoprophylaxis for swine influenza is available at <http://www.cdc.gov/swineflu/investigation.htm#guidancedocs>.**
- **Key facts about swine influenza in general** (see [http://www.cdc.gov/flu/swine/key\\_facts.htm](http://www.cdc.gov/flu/swine/key_facts.htm) for more) :
  - Swine influenza (swine flu) is a respiratory disease of pigs caused by type A influenza viruses, typically H1N1 and H3N2 strains.
  - Swine flu viruses do not normally infect humans. However, sporadic human infections with swine flu do occur. Between December 2005 and February 2009, 12 human cases of swine flu were reported in the U.S. This does not include the recent cases in CA and TX.
  - Most commonly, human swine flu cases occur in persons with direct exposure to pigs (e.g., workers in the swine industry). Although it has been documented, human-to-human transmission is rare.
  - Symptoms of swine flu in humans are similar to those of seasonal influenza – fever, cough, malaise, and sometimes runny nose, sore throat, nausea, vomiting, and/or diarrhea.
  - Although most swine flu viruses have been susceptible to all four antivirals available for the treatment of influenza, the most recent two viruses isolated from humans have been resistant to amantadine and rimantidine. Therefore, CDC currently is recommending the use of oseltamivir or zanamivir for the treatment and/or prevention of infection with swine influenza viruses.
  - Seasonal influenza vaccine for humans may provide protection against swine H3N2, but not swine H1N1 viruses. Swine H1N1 viruses are very different from human H1N1 ones.
  - Healthy habits can help prevent infection: (1) Cover your mouth and nose when you cough or sneeze; (2) Wash your hands frequently; (3) Avoid sick people; (4) Stay home when you are sick; and (5) Avoid touching your eyes, mouth and nose.

### Seasonal Influenza in Orange County\*\*, California, and the U.S. to date

- No increases in confirmed influenza or influenza-like illness have been reported in Orange County. Over the past 6 weeks, there has been an increase in the relative proportion of reports for influenza B similar to what is being seen elsewhere in the U.S. CA flu activity remains “regional”.

**\*\*Note:** The number of reported cases does NOT correspond to the total number of cases occurring in OC as not all hospitals/labs participate, the surveillance programs are not population based, and testing may be influenced by many factors such as public interest. However, the trends in influenza activity are likely to be reflected accurately.

Reported Seasonal Influenza Cases, by Week and Type, Orange County, CA 2008-2009



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## Novel H1N1 Flu (“Swine Flu”)

*This situation continues to evolve daily. For new and updated guidance, see [www.cdc.gov/H1N1flu/](http://www.cdc.gov/H1N1flu/).*

- **Orange County (OC) update:** As of May 7, 2009, 20 confirmed or probable novel H1N1 flu cases were reported in Orange County. None of these cases were hospitalized and there have been no deaths. Based on the federal and state guidance at the time, one school with a probable case and evidence of increased absenteeism and influenza-like illness was closed on 5/4/09 but was reopened on 5/6/09 with the new guidance from the Centers for Disease Control and Prevention (CDC). Based on this new guidance, schools with probable or confirmed cases will NOT be closed unless there is a magnitude of absenteeism such that it interferes with the school’s ability to function. To view the CDC guidance for schools, childcare facilities, colleges and universities, see <http://www.cdc.gov/h1n1flu/guidance/>.
- **National and global update:** As of May 7, 2009, 896 confirmed cases and two (0.3%) deaths have been reported from 41 states in the U.S. Cases have also been reported in 23 other countries, with Mexico reporting the most (1112) cases and 42 (3.8%) deaths. No other countries have reported deaths.
- **Summary of U.S. cases:** From the initial 642 confirmed cases reported, 35 (5.5%) were hospitalized and there were 2 (0.3%) deaths, both in patients with underlying medical conditions. Age distribution ranged from 3 months to 81 years, with most cases (73%) being within the age of 5-29 years. Among confirmed cases for whom symptom data were available, 90% reported fever, 84% cough, 61% sore throat, 26% diarrhea, and 24% vomiting. The age distribution and hospitalization rate is similar to what is being reported from Mexico. See 5/8/09 MMWR, “Update: Novel Influenza A (H1N1) Virus Infections – Worldwide, May 6, 2009”, available at [www.cdc.gov/mmwr](http://www.cdc.gov/mmwr). Although overall the H1N1 infections seem to be self-limited, uncomplicated, and similar to seasonal influenza, the percentage of patients requiring hospitalization appears to be higher than would be expected during a typical flu season and the age distribution for hospitalized patients (particularly high among 30-44 year olds) is different than that expected for seasonal influenza. Additional investigation into the epidemiology of and risk factors for disease is ongoing.
- **Priorities for surveillance:** Priorities for surveillance have shifted from detecting all cases to focusing on (1) severe illness to detect any changes in the virulence or epidemiology of the viruses, (2) outbreaks to assist with mitigation in the particular outbreak setting and (3) high risk groups (such as health care workers, pregnant women, or institutionalized persons). Please see the latest criteria for testing (last updated 5/4/09), available at [www.ochca.com/epi/swine/providers](http://www.ochca.com/epi/swine/providers).
  - As of 5/6/09, over 450 suspect H1N1 reports have been evaluated by OC Public Health from Orange County providers. Over 1400 phone calls about H1N1 flu from providers and the public have been responded to through Epidemiology and the Health Referral Line.
  - Over 300 specimens have been received and tested by the OC Public Health Laboratory. 13% of specimens tested have been positive for influenza A by polymerase chain reaction (PCR), and about 60% of those have been non-subtypable for H1 and H3 using human primers and are considered probable novel H1N1 flu. Based on national experience, probable cases are likely (>99%) to be confirmed.
- **Sentinel providers – Please report weekly on your influenza-like illness (ILI) visits! We count on your reports to help us monitor the level of ILI in the community.**
- **New or updated info on H1N1 from the CDC, available at <http://www.cdc.gov/h1n1flu/guidance/>:**
  - Schools: School (K-12) and Childcare Facilities (5/7/09), Colleges & Universities (5/6/09)
  - Clinicians: Antiviral recommendations (5/7/09), Identifying and caring for patients (5/4/09)
  - Public: Things you can do to stay away from flu — *podcast for kids* (5/7/09), What to do if you get flu-like symptoms (5/6/09)
  - Other: Cruise ships (5/4/09)
- **Help promote healthy habits to prevent infection: <http://www.cdc.gov/flu/protect/habits.htm>**
  - **Cover Your Cough flyers: <http://www.cdc.gov/flu/protect/covercough.htm>.**
- ***New England Journal of Medicine* series of articles on novel H1N1flu: just released on-line 5/7/09 <http://h1n1.nejm.org/>.**



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## Novel H1N1 Flu (“Swine Flu”)

*This situation continues to evolve daily. For new and updated guidance, see [www.cdc.gov/H1N1flu/](http://www.cdc.gov/H1N1flu/).*

- **Orange County (OC) update:** As of May 14, 2009, 34 confirmed or probable novel H1N1 flu cases were reported in Orange County. One case was hospitalized and has since been discharged to home; there have been no deaths.
- **National and global update:** As of May 14, 2009, 4,298 confirmed or probable cases and three (0.1%) deaths have been reported from 47 states in the U.S. Cases have also been reported in 32 other countries, with Mexico reporting 2,446 cases and 60 (2.5%) deaths, Canada 389 cases with one death, and Costa Rica 8 cases with one death. No other countries have reported deaths.
- **Pregnant women and novel H1N1 flu.** As of May 10, 2009, 20 confirmed or probable cases of novel H1N1 flu have been reported in pregnant women in the U.S. Among the 13 women for whom data was available, three were hospitalized, of whom one died. Although data are insufficient to know who is at increased risk for complications of novel H1N1 flu, experience from annual seasonal influenza epidemics and previous pandemics has indicated that pregnant women generally are at higher risk for flu-associated morbidity and mortality when compared to non-pregnant women.

### CDC Recommendations:

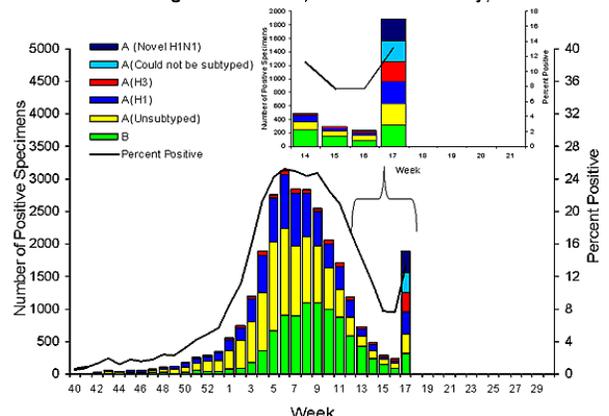
- **Pregnant women with confirmed, probable, or suspected novel H1N1 flu should receive antiviral treatment for 5 days.**
  - Treatment should be initiated within 48 hours of symptom onset, if possible.
  - Oseltamivir (Tamiflu®) is the preferred treatment for pregnant women.
- **Pregnant women who are in close contact with a person with confirmed, probable, or suspected H1N1 flu infection should receive a 10-day course of chemoprophylaxis with zanamivir (Relenza®) or oseltamivir (Tamiflu®).**

See “Novel Influenza A (H1N1) Virus Infections in Three Pregnant Women – United States, April-May 2009”, 5/12/09 *MMWR* Dispatch or 5/14/09 issue of *MMWR Weekly*, available at [www.cdc.gov/mmwr/](http://www.cdc.gov/mmwr/), and CDC Interim Guidance on Antiviral Recommendations for Novel H1N1 (section for Pregnant Women) at <http://www.cdc.gov/h1n1flu/recommendations.htm>.

- **Additional novel H1N1 information for pregnant women** available at [www.cdc.gov/h1n1flu/guidance/](http://www.cdc.gov/h1n1flu/guidance/):
  - Pregnant Women and Novel Influenza A H1N1 – Considerations for Clinicians
  - What Pregnant Women Should Know about H1N1 Virus
  - Info for Pregnant Women in Education, Child Care, and Health Care
- **Surveillance:** Priorities for surveillance continue to focus on (1) severe illness, (2) outbreaks, and (3) high risk groups (such as health care workers, pregnant women, or institutionalized persons) in order to detect changes in the virulence or epidemiology of the virus and identify outbreaks. Please see the latest criteria for testing (last updated 5/4/09), available at [www.ochealthinfo.com/epi/swine/providers](http://www.ochealthinfo.com/epi/swine/providers). Sentinel providers should continue to submit specimens on patients with influenza-like illness (ILI).
  - **Sentinel providers – Please report weekly on your influenza-like illness visits! We count on your reports to help us monitor the level of ILI in the community.**
  - Free access video available to demonstrate how to take a nasopharyngeal specimen. See <http://content.nejm.org/cgi/content/full/NEJM0903992/DC1>.

*\*Graph depicts reports from national influenza surveillance through week ending 5/2/09. Note: A (Novel H1N1) indicates confirmed novel H1N1 reports; A (could not be subtyped) indicate “probable” reports; and A (H1) are seasonal human H1 influenza.*

Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2008-09\*





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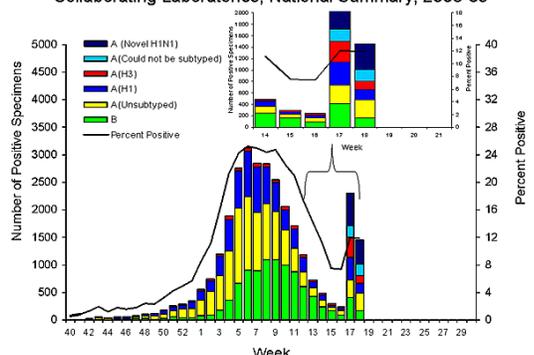
## Novel H1N1 Flu (“Swine Flu”) Update

*This situation continues to evolve. For new and updated guidance, see [www.cdc.gov/H1N1flu/](http://www.cdc.gov/H1N1flu/).*

- **Orange County (OC) update:** As of May 21, 2009, 54 confirmed or probable novel H1N1 flu cases were reported in Orange County. Four were hospitalized; all have been discharged to home. There have been no deaths. Note: Since testing is being limited to patients who are hospitalized or meet other priority groups, it is expected that more of the cases being reported are likely to be hospitalized.
- **National & global update:** [www.cdc.gov/h1n1flu](http://www.cdc.gov/h1n1flu), <http://www.who.int/csr/disease/swineflu/en/index.html>.
- **Cross-reactive antibody response to novel influenza A H1N1.** In this week’s *Morbidity and Mortality Weekly Report (MMWR)*, CDC summarizes serum studies looking at cross-reactive antibody to novel flu A H1N1 before and after recent seasonal influenza vaccination. Results suggest that recent vaccination against seasonal flu is unlikely to provide protection against novel flu A H1N1. In addition, results among adults suggest that some degree of preexisting immunity to novel H1N1 exists, especially in adults > 60 years of age, possibly through previous exposure either by infection or vaccination to an influenza A H1N1 strain more similar to the novel H1N1 virus than recently circulating seasonal strains. See 5/22/09 issue of *MMWR*, available at [www.cdc.gov/mmwr](http://www.cdc.gov/mmwr).
- **Summary of 30 hospitalized patients with novel H1N1 flu in California.** In California, 30 (5.4%) of 553 novel flu A (H1N1) cases reported through 5/17/09 were hospitalized for at least 24 hours. Although the majority of patients were discharged after short hospital stays, a few experienced severe disease and required prolonged hospital care. For the patients for whom information was available:
  - 65% were Hispanic. Median age was 27.5 years (range 27 days to 89 years).
  - 64% had underlying medical conditions.
  - 60% of the 25 who had chest X-rays done had abnormalities suggestive of pneumonia.
  - 6 (20%) were admitted to the intensive care unit; 4 required mechanical ventilation. Three continue to require prolonged intensive care as of 5/17/09.
  - 5 (17%) were pregnant; 2 developed complications including spontaneous abortion and premature rupture of membranes, respectively.
  - None had microbiologic evidence of secondary bacterial infection.
  - Median length of stay (LOS) for the 23 discharged by 5/17/09 was 4 days (range 1-10).
  - 7 patients remained in the hospital at time of summary; range for LOS was 4-167 days.
- **World Health Organization working group makes recommendations about novel H1N1 vaccine:** See [http://www.who.int/csr/resources/publications/swineflu/SAGEH1N1vaccinerecommendation2009\\_05\\_19.pdf](http://www.who.int/csr/resources/publications/swineflu/SAGEH1N1vaccinerecommendation2009_05_19.pdf). At this point, the working group considers it premature to recommend that commercial-scale production of influenza A (H1N1) vaccine should start immediately. Further information about candidate vaccine viruses, their growth potentials, clinical trials with novel H1N1 vaccines, and target groups for vaccination is needed. Seasonal vaccine production should continue as planned.
- **Center for Infectious Disease Research & Policy (CIDRAP) overview of novel H1N1 influenza.** See <http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/biofacts/swinefluoverview.html>.
- **Podcast for businesses: “Novel H1N1 Flu – Creating a Safe and Healthy Workplace”.** <http://www2a.cdc.gov/podcasts/player.asp?f=11549>.
- **Surveillance:** Priorities for surveillance have not changed since 5/4/09 and continue to focus on (1) severe illness, (2) outbreaks, and (3) high risk groups (such as health care workers, pregnant women, or institutionalized persons). See [www.ochealthinfo.com/epi/swine/providers](http://www.ochealthinfo.com/epi/swine/providers).

*\*Graph depicts reports from national influenza surveillance through week ending 5/9/09. Note: A (Novel H1N1) indicates confirmed novel H1N1 reports; A (could not be subtyped) indicate “probable” reports; and A (H1) are seasonal human H1 influenza.*

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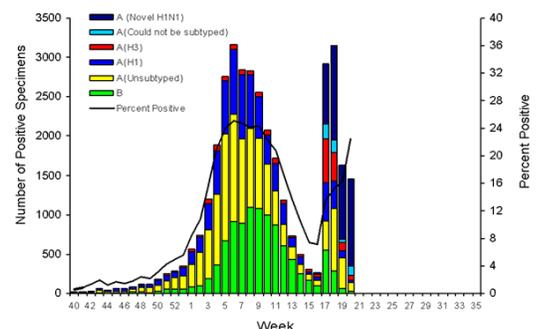
## Novel H1N1 Flu (“Swine Flu”) Update

*This situation continues to evolve. For new and updated guidance, see [www.cdc.gov/H1N1flu/](http://www.cdc.gov/H1N1flu/).*

- **Orange County (OC) update:** As of June 2, 2009, 67 confirmed or probable novel H1N1 flu cases were reported in Orange County. *Note: Surveillance is not population-based and underestimates the true number of cases. Since testing is being limited to patients who are hospitalized or meet other priority criteria, it is expected that more of the cases being reported are likely to be hospitalized.*
  - Median age is 14 years (range 7 months-62 years).
    - Thirty-nine (58%) are children (under age 18 years).
  - Onsets range from 4/20/09-5/21/09.
  - Five were hospitalized; all have been discharged to home. Four (80%) had underlying risk factors for severe disease including asthma (3; 2 also had age <5 years) and pregnancy (1).
  - There have been no deaths.
  - Six cases have been healthcare workers.
- **California update:** The first two deaths from novel H1N1 flu in California were announced today in San Bernardino and Los Angeles County residents. Statewide, there have been 802 cases of novel H1N1 reported with 47 hospitalizations. See [www.cdph.ca.gov](http://www.cdph.ca.gov).
- **National & global update:** [www.cdc.gov/h1n1flu](http://www.cdc.gov/h1n1flu), [www.who.int/csr/disease/swineflu/en/index.html](http://www.who.int/csr/disease/swineflu/en/index.html).
- **CDC recommends that influenza antiviral treatment be given to:**
  - All hospitalized patients with confirmed, probable, or suspected novel flu A (H1N1), and
  - Any patient with confirmed, probable, or suspected novel flu A (H1N1) who is at higher risk for seasonal influenza complications.
- Influenza antiviral medications should be started as soon as possible after onset.
- Antivirals are also recommended for prevention of novel H1N1 flu in household/close contacts of confirmed, probable or suspect cases of novel H1N1, if the contact is at high risk for complications of influenza.
- The recommended antivirals for novel H1N1 are oseltamivir (Tamiflu®) or zanamivir (Relenza®).
- See [www.cdc.gov/h1n1flu/recommendations.htm](http://www.cdc.gov/h1n1flu/recommendations.htm).
- **CDC releases candidate novel H1N1 vaccine strains to vaccine manufacturers for vaccine development.** See [www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/may2709strain.html](http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/may2709strain.html).
- **CDC updates guidance on mask and respirator use for public.** See [www.cdc.gov/h1n1flu/masks.htm](http://www.cdc.gov/h1n1flu/masks.htm).
  - The use of facemasks and respirators is generally not recommended in community (non-healthcare) and home settings.
  - However, in certain circumstances, facemasks/respirators can be considered especially for persons at high risk for severe complications from influenza infection if close (< 6 feet) contact with persons with influenza-like illness cannot be avoided.
- **Additional new CDC guidance available at [www.cdc.gov/h1n1/flu/guidance](http://www.cdc.gov/h1n1/flu/guidance):**
  - General Business and Workplace Guidance for Prevention in Workers
  - Interim Guidance for Correctional and Detention Facilities on Novel Influenza A (H1N1)
  - Post-mortem Care and Safe Autopsy Procedures for Novel H1N1 Influenza
- **Surveillance:** Priorities for surveillance have not changed since 5/4/09 and continue to focus on (1) severe illness, (2) outbreaks, and (3) high risk groups (such as health care workers, pregnant women, or institutionalized persons). See [www.ochealthinfo.com/epi/swine/providers](http://www.ochealthinfo.com/epi/swine/providers).

*\*Graph depicts reports from national influenza surveillance through week ending 5/23/09. Note: A (Novel H1N1) indicates confirmed novel H1N1 reports; A (could not be subtyped) indicate “probable” reports; and A (H1) are seasonal human H1 influenza.*

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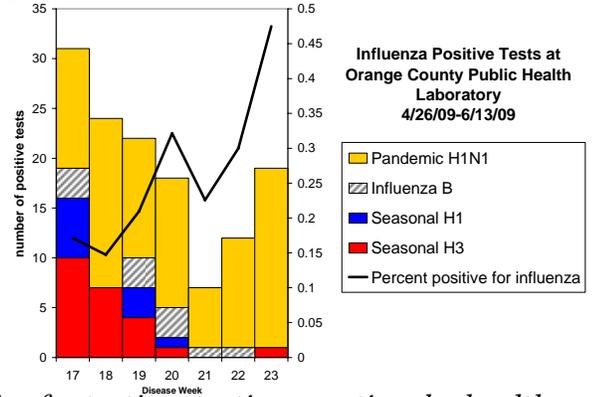
## Pandemic H1N1 Flu Update

**Current WHO pandemic alert level: Phase 6 (Pandemic).**

**Current CDC pandemic severity index (PSI): Category 2 (of 5)**

(see <http://www.pandemicflu.gov/plan/community/commitigation.html> for definitions of PSI)

- **Orange County (OC) update:** As of June 19, 2009, 153 confirmed or probable cases of novel H1N1 flu have been reported in Orange County residents. Since May 26, 2009, only 3 respiratory specimens tested at the Orange County Public Health Laboratory have been positive for human/seasonal influenza A (all were H3) while 2 were positive for influenza B. **This suggests that almost all of the currently circulating influenza in Orange County since late May has been novel H1N1.** *Note: Surveillance is not population-based and underestimates the true number of cases. The change in percent positive and number of specimens received may be influenced by changes in priorities for testing, testing practices by health care providers, an increase in the number of specimens collected from outbreaks, and other factors. A similar trend is also being seen at the national level.*



- **Clinicians:** See attached “Information for MDs of Patients with Novel H1N1 Flu” and review instructions with your patients with suspect, probable, or confirmed novel H1N1 flu. Attachment will also be posted at <http://www.ochealthinfo.com/epi/swine/providers/index.htm>.
- **Rapid testing for influenza:** The sensitivity and specificity of influenza rapid tests and direct and indirect fluorescent antibody (DFA, IFA) tests for novel H1N1 influenza A is unknown. Cases have been reported in which a rapid test was negative for influenza A but the patient subsequently tested positive for novel H1N1 by PCR. **A negative rapid test for influenza A does not rule out infection with novel H1N1 influenza.**

**Antiviral treatment:** Novel H1N1 influenza A continues to be susceptible to the neuraminidase inhibitors (oseltamivir (Tamiflu®) or zanamivir (Relenza®)). See attached “Information for MDs of Patients with Novel H1N1 flu for recommendations or [www.cdc.gov/h1n1flu/recommendations](http://www.cdc.gov/h1n1flu/recommendations).

- **Infection control measures in healthcare settings:**
  - **Article on novel H1N1 flu in healthcare workers emphasizes need for use of infection control strategies to prevent transmission in healthcare settings:** See [www.cdc.gov/mmwr](http://www.cdc.gov/mmwr), 6/19/09 issue. Patients presenting to a healthcare facility with symptoms of influenza-like illness should be masked and put promptly into a room with the door closed, or at least separated from others in the waiting room by at least 3 feet.
  - At the beginning of the novel H1N1 influenza outbreak, before any information on transmission was available, the CDC recommended using airborne precautions (in addition to standard and contact precautions with eye protection). However, transmission patterns observed so far appear to be similar to those of seasonal influenza. Other organizations, including the WHO, the Society for Healthcare Epidemiology of America (SHEA), 4 states and 4 local jurisdictions in the US have subsequently recommended droplet and standard precautions except when performing aerosol-generating procedures, for which airborne precautions should be used. Orange County’s Epidemiology and Assessment program concurs with these recommendations. The SHEA position statement, which has been endorsed by the Infectious Diseases Society of America (IDSA) and the Association for Professionals in Infection Control and Epidemiology (APIC), is available at [http://www.shea-online.org/Assets/files/policy/061209\\_H1N1\\_Statement.pdf](http://www.shea-online.org/Assets/files/policy/061209_H1N1_Statement.pdf). Recommendations may change as the situation evolves.
- **Novel H1N1 outbreaks in summer camps have occurred.** See <http://www.cdc.gov/h1n1flu/camp.htm> for guidance on reducing transmission in camps.



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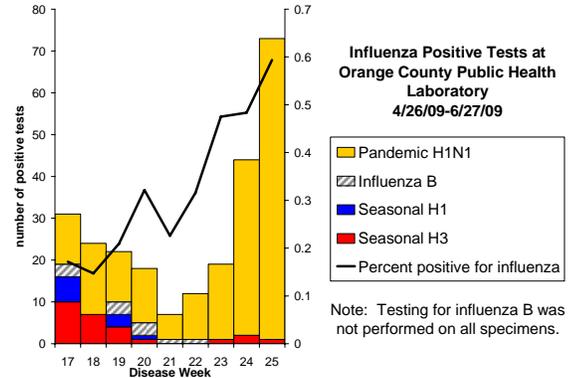
## Pandemic H1N1 Flu Update

Current WHO pandemic alert level: Phase 6 (Pandemic).

Current CDC pandemic severity index (PSI): Category 2 (of 5)

(see <http://www.pandemicflu.gov/plan/community/committigation.html> for definitions of PSI)

- **Orange County (OC) update:** As of July 2, 2009, 322 confirmed or probable cases of novel H1N1 flu have been reported in Orange County residents. **Almost all of the currently circulating influenza in Orange County since late May has been novel H1N1.** Note: Surveillance is not population-based and underestimates the true number of cases. The change in percent positive and number of specimens received may be influenced by changes in priorities for testing, testing practices by health care providers, multiple specimens from outbreaks or clusters, and other factors.



### Testing recommendations

- **Priorities for testing for novel H1N1 have not changed since early May.** Specimens for novel H1N1 will be accepted for testing through Orange County Public Health on patients with influenza-like illness (ILI) who are (1) hospitalized, (2) health care workers, (3) pregnant, (4) part of a cluster or outbreak, and/or (5) residents in an institutional setting. **We are especially interested in patients hospitalized in intensive care units to better characterize risk factors for severe illness. We no longer need to receive specimens on patients (even if flu A positive) who do not meet criteria,** as all flu A is assumed to be novel H1N1 at this time. Criteria for specimen submission may change as the situation evolves. For the latest criteria, see <http://www.ochealthinfo.com/epi/swine/providers/index.htm>. Sentinel providers can continue to send specimens on outpatients with influenza-like illness.
- **Preliminary data from Naval Health Research Center suggest sensitivity and specificity of rapid tests for flu vary for different strains.** Sensitivity of rapid test was 51% for novel H1N1 influenza at this center. See *New England Journal of Medicine* 6/29/09 Correspondence available at [www.nejm.org](http://www.nejm.org).

### Antiviral recommendations

- **CDC and CDPH continue to emphasize empiric antiviral treatment as soon as possible for:**
  - All hospitalized patients with suspect, probable, or confirmed novel influenza A H1N1.
  - All outpatients with suspect novel influenza A H1N1 infection who are at higher risk\* for influenza complications. *\*High risk groups include: children younger than 5 years old; adults 65 years of age and older; persons with chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, hematological (including sickle cell disease), neurologic, neuromuscular, or metabolic disorders (including diabetes mellitus), immunosuppression (including that caused by medications or by HIV); pregnant women; persons younger than 19 years of age who are receiving long-term aspirin therapy; and residents of nursing homes and other chronic-care facilities.*
- **American Medical Association (AMA) provides additional information on antiviral treatment of severely ill patients.** See <http://www.ama-assn.org/ama/pub/physician-resources/medical-science/infectious-diseases/topics-interest/swine-flu/swine-flu-treatment.shtml>. Based on limited data (no comparative studies), the following regimens could be considered for **severely ill patients:**
  - **Longer duration of treatment** for severe illness that persists at the end of the usual 5 day course.
  - **Higher treatment doses** (e.g., 150 mg oseltamivir twice per day), based on concerns about the potential for lower oseltamivir absorption, higher viral loads, and reduced delivery of oseltamivir to damaged tissue among severely ill patients.
- **Resistance to antiviral likely in some pandemic flu cases.** A patient in Denmark has been reported with a novel H1N1 virus that is resistant to oseltamivir (Tamiflu®). Thus far surveillance in the U.S. has not revealed resistance in the 202 novel H1N1 isolates tested to date. However, the development of resistance is not uncommon during flu outbreaks, and is expected eventually in the U.S. as well. See <http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/jun3009tamiflu-ms.html>.

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## **Pandemic H1N1 Flu Update**

*Current WHO pandemic alert level: Phase 6 (Pandemic).*

*Current CDC pandemic severity index (PSI): Category 2 (of 5)*

(see <http://www.pandemicflu.gov/plan/community/commitigation.html> for definitions of PSI)

- **Orange County (OC) update:** As of July 9, 2009, 426 confirmed or probable cases of novel H1N1 flu have been reported in Orange County residents. There have been five deaths. **Almost all of the currently circulating influenza in Orange County since late May has been novel H1N1.** *Note: Surveillance is not population-based and underestimates the true number of cases. Certain groups may be over-represented given current priorities for testing, which includes patients with influenza-like illness who are hospitalized, health care workers, pregnant, part of a cluster/outbreak, or residing in an institutional setting.*
- **Summary of OC cases:** Median age of all cases is 16 years (range, <1 year to 69 years). 72 cases have been hospitalized with 29 in intensive care. Median age of hospitalized cases is 15 years (range, <1 year – 69 years). Median length of hospital stay is 4 days (range, 1-22 days) for the 47 discharged patients. For the 25 patients still hospitalized, length of stay to date ranges from 3 to 42 days.
- **Severe illnesses among pregnant women and infants have been a feature of the current H1N1 pandemic.** CDC has issued interim recommendations for obstetric settings to focus on prevention of novel H1N1 infection in these high risk groups. In Orange County as of 7/9/09, 16 of the novel H1N1 cases have been in pregnant women, of whom nine were hospitalized. Six of the pregnant women were in the intensive care unit; four were intubated, of whom three remain intubated and one died. See the attached “Novel Influenza H1N1 (swine flu) and Pregnant Women” which will be distributed to obstetricians through hospitals and to labor & delivery units, and will be posted at <http://www.ochealthinfo.com/epi/swine/providers/index.htm>.
- **Oseltamivir (Tamiflu ®)-resistant novel H1N1 strains found in Denmark, Japan, and Hong Kong.** All three strains had the same mutation resulting in resistance although the patient in Hong Kong (who had just arrived from San Francisco) had not previously taken the antiviral. All three patients had uncomplicated illnesses and have recovered. The WHO has not seen evidence so far of other infections with the strains even in testing close contacts and there has been no evidence of reassortment with seasonal influenza strains. Recommendations for antiviral use have not changed (see [www.cdc.gov/h1n1flu/recommendations.htm](http://www.cdc.gov/h1n1flu/recommendations.htm)) and focus on treatment of persons with suspected novel H1N1 influenza who are 1) hospitalized or 2) at higher risk of complications due to influenza, even if hospitalization is not required. Use of antiviral agents for prophylaxis can be considered for persons at higher risk for complications due to influenza, and for healthcare workers (HCW) with an exposure to suspect influenza due to inadequate use of personal protective equipment (PPE). Healthcare facilities should develop administrative controls to appropriately identify potentially infectious patients promptly and utilize appropriate infection control precautions and PPE to reduce the need for post-exposure prophylaxis among HCW.
- **CDC issues pandemic vaccine guidance to assist state and local health officials in planning.** Target groups include schoolchildren and staff, children in daycare and staff, pregnant women and contacts of newborns, those with medical underlying conditions, and health workers. See <http://www.cdc.gov/h1n1flu/vaccination/statelocal/planning.htm>. A CDC Update for Clinicians on H1N1 vaccine will be available by conference call on Wednesday, July 15<sup>th</sup>, 12 noon-1 pm Pacific time. Call-in number: 888-283-2960, Passcode: 2822773. See <http://emergency.cdc.gov/coca/callinfo.asp> for more information. CME is available.
- **Flu activity in Southern hemisphere varies by country.** Heavy activity has been reported from Australia and South America, but activity is just starting in Africa. In Australia both pandemic and seasonal H3N2 strains are circulating, while in South America, seasonal H1N1 is predominant. See <http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/jul0709influenza.html>.
- **WHO provides official name to novel H1N1 virus:** Pandemic A (H1N1) 2009.
- **HHS to fund \$350 million for state preparedness.** \$260 million will go to state health departments for general and vaccine efforts and \$90 million will go to hospitals for surge capacity.

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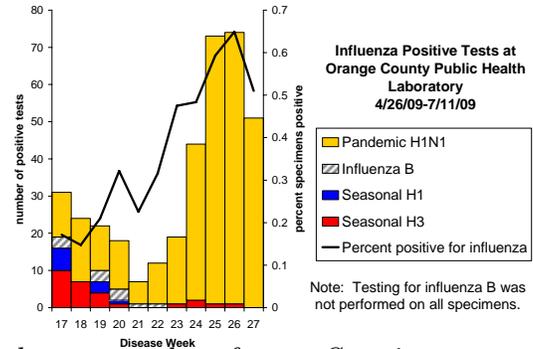
## Pandemic H1N1 (2009) Influenza Update

*Current WHO pandemic alert level: Phase 6 (Pandemic).*

*Current CDC pandemic severity index (PSI): Category 2 (of 5)*

(see <http://www.pandemicflu.gov/plan/community/commitigation.html> for definitions of PSI)

- **Orange County (OC) update:** As of July 17, 2009, 531 confirmed or probable cases of pandemic H1N1 flu have been reported in Orange County residents. There have been nine deaths. Based on CDPH recommendations, HCA will no longer be tracking outpatient cases and reporting will focus on hospitalized cases and deaths. Therefore, HCA will no longer be posting total cases on the website. **Almost all (98%) of the influenza subtyped at OC Public Health since late May has been pandemic H1N1.**



*Note: Surveillance is not population-based and underestimates the true number of cases. Certain groups may be over-represented given current priorities for testing, which includes patients with influenza-like illness who are hospitalized, health care workers, pregnant, part of a cluster/outbreak, or residing in an institutional setting.*

- **Surveillance Clarification:** OC Public Health Laboratory will continue to test specimens from patients who meet the surveillance criteria (see <http://www.ochealthinfo.com/epi/swine/providers/index.htm>) for pandemic H1N1 influenza. Outpatient sentinel providers who report weekly on influenza-like illness (ILI) patients seen in their office can also submit specimens from patients with ILI as part of the CDC/CDPH/OCHCA sentinel ILI surveillance. Specimens not meeting criteria and not from an outpatient sentinel ILI provider will not be tested by OC Public Health.
- **CDPH summarizes “Lessons learned: Guidance for clinicians” on Pandemic H1N1.** See attached document which will also be posted at <http://www.ochealthinfo.com/epi/swine/index.htm>.
- **CDC offers pandemic advice for outpatient facilities.** Recommendations include planning for high staff absenteeism, asking sick employees to stay home, providing staff with personal protective equipment, preparing business continuity plans, screening patients for febrile respiratory illnesses upon entry to facility and providing separate waiting and exam rooms for possible H1N1 flu patients. See <http://www.cdc.gov/h1n1flu/10steps.htm>. For reliable, up-to-date information on influenza and planning in Orange County, bookmark [www.ochealthinfo.com/epi](http://www.ochealthinfo.com/epi) and [www.healthdisasteroc.org/flu](http://www.healthdisasteroc.org/flu). If you did not receive this *Eye on Influenza* by email, sign up at [epi@ochca.com](mailto:epi@ochca.com).
- **Michigan reports on 10 intensive-care patients with severe novel H1N1 infection.** Nine of the 10 were obese, with seven being extremely obese (BMI≥40). Three cases died. Also of note in this case series was the predominance of males, frequency of clinically significant pulmonary emboli and multiorgan dysfunction syndrome. See [www.cdc.gov/mmwr](http://www.cdc.gov/mmwr), July 17, 2009 issue. The role of obesity as a risk factor for severe influenza has not been well-characterized and is currently under investigation.
- **Six in 10 Americans believe serious H1N1 outbreak likely in fall/winter.** See Harvard School of Public Health 7/16/09 press release at <http://www.hsph.harvard.edu/>.
- **CDC Clinician conference call provides summary of pandemic H1N1 epidemiology and update on vaccine situation.** Powerpoint presentation available at <http://www.bt.cdc.gov/coca/callinfo.asp>.
- **American Academy of Pediatrics (AAP) “Recommendations for Prevention and Control of Influenza in Children, 2009-2010”** available at <http://aapredbook.aappublications.org/news/FluPolicy2009-10.pdf>.

- **Next Health & Emergency Preparedness Planning Council (HEPPC) meeting focuses on pandemic H1N1 response in Orange County and current planning initiatives.** Tuesday, July 28<sup>th</sup>, 2-4 pm. For more information and to register, see <http://healthdisasteroc.org/registration/HEPPC/7-28-09/>.
- **H1N1 Regional Tabletop Exercises:** Anaheim (7/22/09), Mission Viejo (8/5/09), Garden Grove (8/25/09), Brea (9/8/09). For more information, see [www.healthdisasteroc.org](http://www.healthdisasteroc.org).
- **Save the Date – Pandemic H1N1 Countywide Summit – 10/28/09.**



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## Pandemic H1N1 (2009) Influenza Update

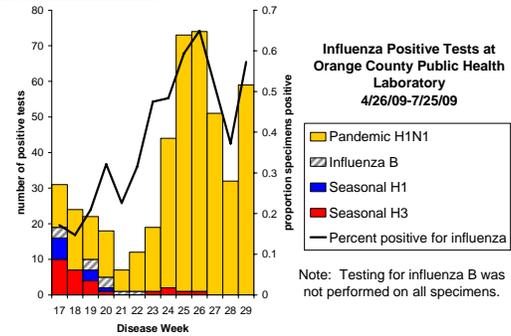
*Current WHO pandemic alert level: Phase 6 (Pandemic).*

*Current CDC pandemic severity index (PSI): Category 2 (of 5)*

(see <http://www.pandemicflu.gov/plan/community/commitigation.html> for definitions of PSI)

- **Orange County (OC) update:** As of July 31, 2009, 151 hospitalized cases of pandemic H1N1 influenza and 13 fatalities have been reported in Orange County residents. **Almost all (98%) of the influenza subtyped at OC Public Health since late May has been pandemic H1N1.**

*Note: Surveillance is not population-based and underestimates the true number of cases. Certain groups may be over-represented given current priorities for testing, which includes patients with influenza-like illness who are hospitalized, health care workers, pregnant, part of a cluster/outbreak, or residing in an institutional setting.*



- **CDC Advisory Committee on Immunization Practices (ACIP) recommends five target groups for initial vaccination against pandemic H1N1.** Initial target groups include:

- Pregnant women
- People who live with or care for children younger than 6 months of age
- Healthcare and emergency services personnel
- Persons between the ages of 6 months through 24 years, and
- People from 25 through 64 years of age who are at higher risk for novel H1N1 because of chronic health disorders or compromised immune systems.

If vaccine supply is initially inadequate to vaccinate the approximately 159 million people in the U.S. in the above groups, the following groups would be prioritized:

- Pregnant women
- People who live with or care for children younger than 6 months of age
- Healthcare and emergency services personnel with direct patient contact
- Children 6 months through 4 years of age, and
- Children 5 through 18 years of age who have chronic medical conditions.

See CDC press release: <http://www.cdc.gov/media/pressrel/2009/r090729b.htm>.

- **Study emphasizes need to treat pregnant women promptly with antivirals if influenza is suspected.** Of the 45 deaths from novel H1N1 in the U.S. through 6/16/09, six (13%) were in pregnant women. All of the pregnant women who died had primary viral pneumonia and required mechanical ventilation. None had been treated with oseltamivir within 48 hours of symptom onset, the time when treatment is thought to provide the most benefit. See *Lancet* (<http://www.thelancet.com/>) on-line 7/29 edition or <http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/jul2909pregnancy.html>.
- **WHO issues list of danger signs for severe H1N1 disease.** As progression can be very rapid, medical attention should be sought when any of the following danger signs appear in a person with confirmed or suspected H1N1 infection:

- |   |  |
|---|--|
| • shortness of breath, either during physical activity or while resting | • turning blue                           |
| • difficulty in breathing   | • chest pain                             |
| • bloody or colored sputum  | • high fever that persists beyond 3 days |
| • altered mental status   |  |
| • low blood pressure.   |  |



In children, danger signs include fast or difficult breathing, lack of alertness, difficulty in waking up, and little or no desire to play. See:

[http://www.who.int/csr/disease/swineflu/notes/h1n1\\_pregnancy\\_20090731/en/index.html](http://www.who.int/csr/disease/swineflu/notes/h1n1_pregnancy_20090731/en/index.html).

- **ACIP publishes recommendations on “Prevention and Control of Seasonal Influenza with Vaccines”.** See [www.cdc.gov/mmwr](http://www.cdc.gov/mmwr).

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## Pandemic H1N1 (2009) Influenza Update

*Current WHO pandemic alert level: Phase 6 (Pandemic).*

*Current CDC pandemic severity index (PSI): Category 2 (of 5)*

(see <http://www.pandemicflu.gov/plan/community/commitigation.html> for definitions of PSI)

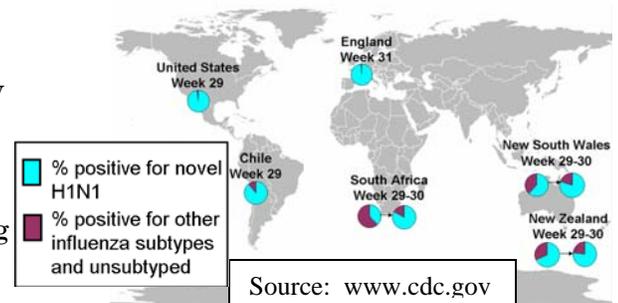
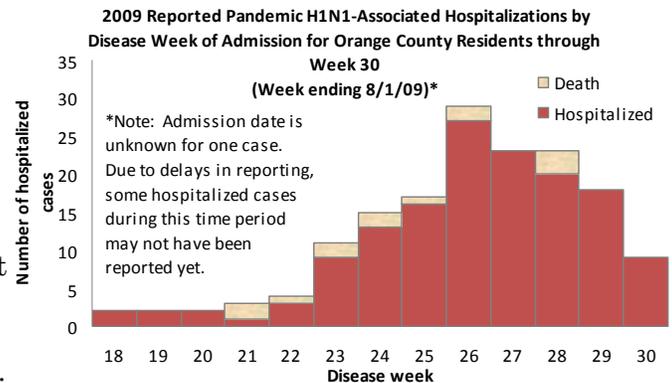
- **Orange County (OC) update:** As of August 7, 2009, 160 hospitalized cases of pandemic H1N1 influenza and 13 fatalities have been reported in OC residents. **99% of the influenza subtyped at OC Public Health since late May has been pandemic H1N1.**

- **CDC updates guidance on how long persons with influenza-like illness (ILI) should stay home.** Persons with influenza-like illness should stay home for at least 24 hours after fever resolves and temperature remains normal without the use of fever-reducing medications, and regardless of whether antivirals have been started.

The updated guidance applies to camps, schools, businesses, mass gatherings and other community settings in which the majority of persons are not at increased risk of complications from influenza. The updated guidance does not apply to health care settings in which the exclusion period remains 7 days or at least 24 hours after symptom resolution, whichever is longer. For the full guidance, see [www.cdc.gov/h1n1flu/guidance/exclusion.htm](http://www.cdc.gov/h1n1flu/guidance/exclusion.htm).

- **CDC issues new guidance for school (K-12) responses to influenza during the 2009-2010 school year.** Available documents include guidance, technical report, and toolkit. See [www.cdc.gov/h1n1flu/schools/](http://www.cdc.gov/h1n1flu/schools/).
- **Guidance on infection control measures for novel H1N1 is in flux.** A new CalOSHA standard on airborne transmissible diseases (ATD) went into effect on 8/5/09. Healthcare facilities should be aware of this standard. HCA is seeking written clarification from CDPH and Cal-OSHA on the application of the standard to novel H1N1 influenza in a health care setting. To review the ATD standard, see <http://www.dir.ca.gov/oshsb/atd0.html>.
- **Commercially available rapid (<15 minutes) influenza tests have low sensitivity (40-69%) to detect novel H1N1.** Sensitivity of rapid tests was higher in specimens with higher viral titers, and for seasonal influenza H1N1 or H3N2 as compared with novel H1N1, although the number of specimens tested was low. **A negative rapid test result does not exclude influenza infection and treatment decisions in a patient with influenza-like illness should rely on clinical suspicion (signs & symptoms), severity of illness, underlying medical conditions and risk for complications of influenza.** See August 7, 2009 issue of *MMWR* at [www.cdc.gov/mmwr](http://www.cdc.gov/mmwr). Prompt antiviral treatment is recommended for patients with ILI who are hospitalized and/or have risk factors for complications of influenza infection.
- **Medical care for patients with suspect novel H1N1 influenza.** Patients with severe illness and those at high risk for complications from influenza should contact their medical provider or seek medical care. Patients with mild illness and no risk factors for complications can be managed at home ([http://www.cdc.gov/h1n1flu/guidance\\_homecare.htm](http://www.cdc.gov/h1n1flu/guidance_homecare.htm)). Testing priorities for novel H1N1 through Public Health continue to focus on hospitalized patients, pregnant women, health care workers, residents in institutional settings and outbreaks. Testing for H1N1 is available commercially for those patients not meeting public health criteria.

However, at this time when the majority of influenza circulating is novel H1N1, testing of others is not necessary and treatment and infection control decisions should not rely on or be delayed pending testing results. Referral of patients to the emergency room or urgent cares solely for testing purposes (i.e., patients with mild illness not needing medical care) should be avoided to reduce burden and potential infectious exposures in health care settings.



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## Pandemic H1N1 (2009) Influenza Update

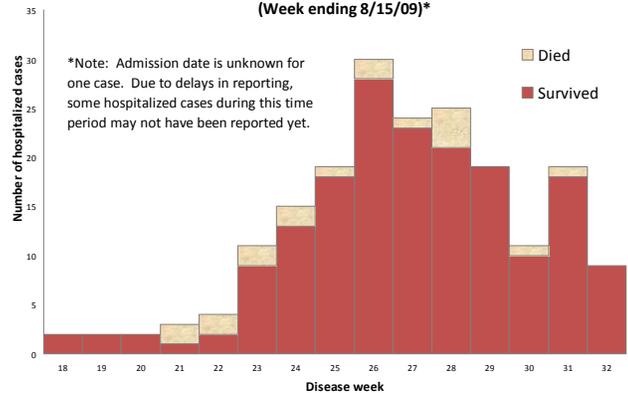
- **Orange County (OC) update:** As of August 18, 2009, 193 hospitalized cases of pandemic H1N1 influenza and 16 fatalities have been reported in OC residents. **99% of the influenza subtyped at OC Public Health since late May has been pandemic H1N1.**
- **CDC updates guidance for businesses and employers for the 2009-2010 influenza season.** See [www.cdc.gov/h1n1flu/business/guidance](http://www.cdc.gov/h1n1flu/business/guidance) for the full guidance. Key messages include:

### Actions to take now

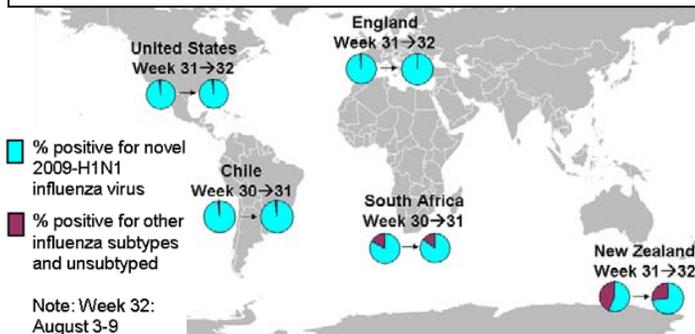
- All persons with influenza-like illness should stay home and away from the workplace for at least 24 hours after fever resolves and temperature remains normal without the use of fever-reducing medications, and regardless of whether antivirals have been started.
  - Ensure that sick leave policies are flexible and consistent with public health guidance.
  - Do not require a doctor's note for workers ill with influenza-like illness to validate illness as these requests may overwhelm medical facilities.
- Encourage respiratory etiquette and handwashing.
- Ensure that routine cleaning of commonly touched surfaces is performed regularly.
- Prepare for school dismissal or temporary closure of child care programs.



2009 Reported Pandemic H1N1-Associated Hospitalizations by Disease Week of Admission for Orange County Residents through Week 32 (Week ending 8/15/09)\*



### International Co-circulation of Novel and Seasonal Influenza, as of 8/14/09. Source: CDC



### Actions to consider if severity increases

- Screen employees for illness when they report to work.
- Evaluate alternate work environments for employees at higher risk of complications of influenza.
- Implement social distancing in the workplace (goal  $\geq 6$  feet of distance between people).
  - Avoid crowded work settings and space workers farther apart.
  - Cancel non-essential face-to-face meetings.
  - Allow teleworking and/or staggered shifts
  - Cancel non-essential business travel.

- **CDPH recommends promoting use of alcohol-based hand sanitizers by students in California schools.** Hand sanitizers should contain at least 60% alcohol and can be used safely in the classroom if a few simple precautions are in place. See [www.ochealthinfo.com/epi/swine/index.htm](http://www.ochealthinfo.com/epi/swine/index.htm) (Additional Resources).
- **Oseltamivir-resistant novel influenza A (H1N1).** Two severely immunosuppressed patients with novel H1N1 infection in Seattle, WA, developed resistance to oseltamivir (Tamiflu<sup>®</sup>) while on treatment. Prolonged viral shedding has been reported in immunosuppressed patients with influenza and strict adherence to recommended infection control measures is advised until serial respiratory specimens remain negative by culture and polymerase chain reaction testing. Additional sporadic cases of oseltamivir-resistant novel H1N1 have been reported; all resistant viruses have been susceptible to zanamivir and no ongoing transmission has been noted. See [www.cdc.gov/mmwr](http://www.cdc.gov/mmwr), August 21, 2009 issue.
- **Cal/OSHA Aerosol Transmissible Diseases (ATD) Standard, effective 8/5/09, requires that all health care settings, when providing care to a patient identified as a confirmed or suspect pandemic (H1N1) 2009 influenza case, use respiratory protection that is at least effective as an N95 filtering facepiece respirator.** Questions about the application of the standard should be directed to Cal/OSHA. Federal guidance is in flux and updates are expected after the Institute of Medicine recommendations 9/1/09.

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## Pandemic H1N1 (2009) Influenza Update

- **Orange County (OC) update:** As of August 25, 2009, 217 hospitalized cases of pandemic H1N1 influenza and 19 fatalities have been reported in OC residents. Median age of hospitalized cases is 24 years (range, <1-81 years). 41% of hospitalized cases have been children. Of the 49 hospitalized female cases of childbearing age, 20 (41%) were pregnant. Novel H1N1 influenza activity appears to be decreasing locally and nationally, but influenza activity is expected to increase again shortly with K-12 schools resuming and seasonal influenza coming.

- **CDC issues guidance and toolkit for response to influenza for institutions of higher education for the 2009-2010 academic year:**

<http://www.cdc.gov/h1n1flu/schools/>.

- **CDPH endorses the CDC's recommendations for school (K-12) responses to influenza during the 2009-2010 school year.** See <http://www.cdph.ca.gov/HealthInfo/discond/Pages/SwineInfluenza.aspx>.

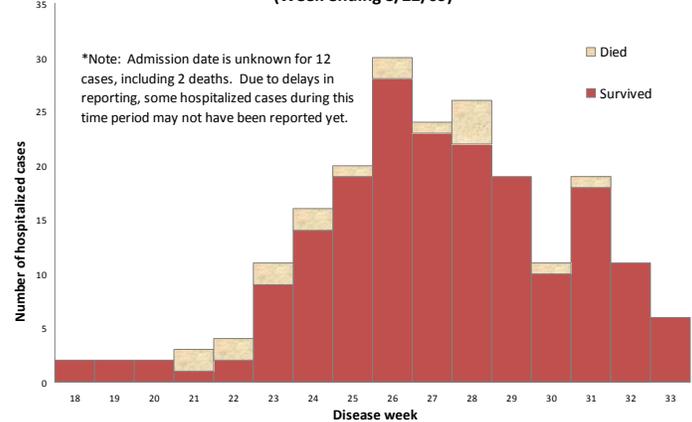
- **Pandemic H1N1 2009 virus rapidly overtook seasonal influenza strains in New Zealand (NZ).** Pandemic H1N1 was first identified in the southern hemisphere on April 25, 2009, in NZ following the return of a group of high school students from Mexico. NZ entered its winter season (*summer months here*) with cocirculation of both seasonal and pandemic H1N1 2009 influenza strains. By the week ending 7/5/09, 80% of influenza identified through sentinel surveillance in NZ was 2009 H1N1 and 87% in neighboring Australia was 2009 H1N1 by 7/12/09. General practitioner influenza-like illness consultation rates in NZ were three times that seen in 2008 and the highest seen since 1997. See *MMWR* 8/28/2009 issue, available at [www.cdc.gov/mmwr](http://www.cdc.gov/mmwr).

- **CDC Advisory Committee of Immunization Practices (ACIP) publishes recommendations for use of influenza A (H1N1) 2009 monovalent vaccine.** See *MMWR Recommendations and Reports* (8/28/09) at [www.cdc.gov/mmwr](http://www.cdc.gov/mmwr). Initial target groups have not changed since the 7/31/09 *Eye on Influenza*:

- Pregnant women
- People who live with or care for children younger than 6 months of age
- Healthcare and emergency services personnel
- Persons between the ages of 6 months through 24 years, and
- People from 25 through 64 years of age who are at higher risk for novel H1N1 because of chronic health disorders or compromised immune systems.

The document also addresses sub-prioritization within these groups if necessary initially and use of vaccine in other adult population groups once vaccine availability increases.

2009 Reported Pandemic H1N1-Associated Hospitalizations by Disease Week of Admission for Orange County Residents through Week 33 (Week ending 8/22/09)\*



### Pandemic influenza H1N1 vaccine is coming soon!

Calling all groups interested in providing this vaccine:

- Hospitals
- Physicians
- Employee health programs
- Pharmacies (chain and independent)
- Other vaccinators
- Clinics (public and private)
- Community health centers
- Community vaccinators
- Health plans

Starting September 1, 2009, go to [www.CalPanFlu.org](http://www.CalPanFlu.org) to pre-register for vaccine, order vaccine, and receive information and updates.

For more information and for local details, see <http://ochealthinfo.com/h1n1/>.

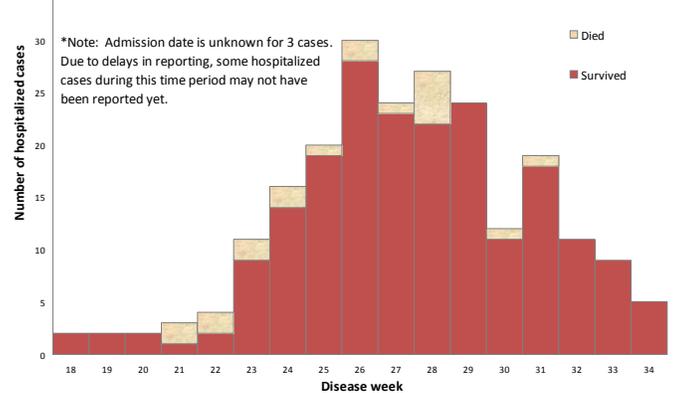


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## Pandemic H1N1 (2009) Influenza Update

- Orange County (OC) update:** As of September 1, 2009, 223 hospitalized cases of pandemic H1N1 influenza and 19 fatalities have been reported in OC residents. All (100%) influenza tested at OC Public Health since early July has been pandemic H1N1.
- Institute of Medicine (IOM) committee recommends fit-tested N-95 respirators for healthcare workers in close contact with patients with novel H1N1 infection or influenza-like illnesses.** The committee endorses the current CDC guidelines but also recommends further research to resolve the unanswered questions on influenza transmission (in particular the potential contribution of airborne transmission) and effectiveness of personal respiratory protection in clinical settings. See <http://www.iom.edu/CMS/3740/71769/72967.aspx> for IOM report and [http://www.cdc.gov/h1n1flu/guidelines\\_infection\\_control.htm](http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm) for CDC infection control guidance for novel H1N1 in healthcare settings. Updated guidance is expected from CDC addressing recommendations in the context of shortages (supply was not considered in the IOM report) and from CalOSHA regarding use of airborne isolation rooms and prioritizing respirator use.
- CDC summarizes 36 novel H1N1-associated pediatric deaths through 8/8/09.** 67% of the 36 children had at least one underlying medical condition putting them at increased risk for complications from influenza, with 92% of the high-risk children having neurodevelopmental conditions (e.g., cerebral palsy, developmental delay, muscular dystrophy). Bacterial co-infections were present in 10 (43%) of the children for whom lab results were provided, eight of whom were previously healthy (although one was obese). 61% of the children for whom treatment information was available received antivirals, but only 2 (11%) of these were treated within 2 days after illness onset, the time period when antivirals are thought to be most effective. Clinicians should be aware of:
  - the potential for severe influenza illness, including death, in children with neurodevelopmental conditions and/or comorbid pulmonary conditions;
  - the potential for severe bacterial infections (e.g., *S. aureus* including MRSA, *S. pneumoniae*, and *S. pyogenes*) in children with influenza; and
  - the need for prompt initiation of antiviral treatment in persons at risk for severe complications of influenza (including healthy children <5 years, especially those <2 years of age) and any person with influenza who requires hospitalization. See <http://www.cdc.gov/mmwr> 9/4/09 issue.
- HHS reports on pandemic H1N1 activity during the Southern Hemisphere influenza season.** Circulating strains, affected populations and severity have been similar to that in the U.S. A high proportion of cases (47-60%) had known risk factors for severe complications. Increased risk for complications in pregnant women and some indigenous populations was seen. See <http://www.flu.gov>.
- CDC updates guidance for child care programs/providers for responding to influenza in the 2009-2010 season.** Strategies for now include getting vaccinated against influenza, staying home when sick (until at least 24 hours after fever resolves without use of fever-reducing medications), conducting daily health checks, encouraging hand hygiene and respiratory etiquette at all times, and performing routine environmental cleaning. See [http://www.flu.gov/professional/school/childcare\\_guidance.pdf](http://www.flu.gov/professional/school/childcare_guidance.pdf).

2009 Reported Pandemic H1N1-Associated Hospitalizations by Disease Week of Admission for Orange County Residents through Week 34 (Week ending 8/29/09)\*



### Pandemic influenza H1N1 vaccine update

- State pandemic H1N1 vaccine pre-registration and ordering website now live:** see [www.calpanflu.org](http://www.calpanflu.org). For questions, call 888-865-0564.
- For OC pandemic H1N1 vaccine questions, call 714-834-8560 or see [www.ochealthinfo.com/h1n1](http://www.ochealthinfo.com/h1n1).

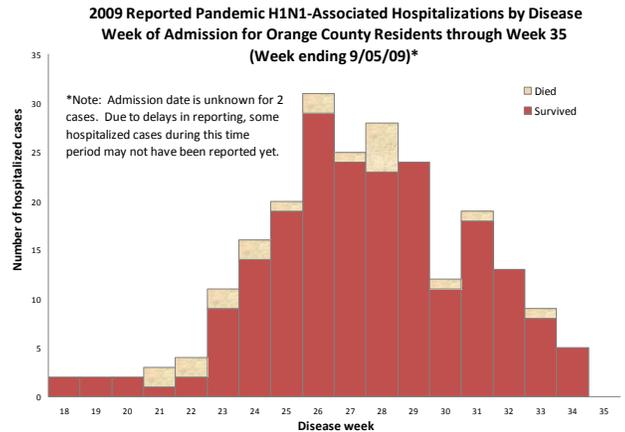
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## Influenza Update

- **Seasonal influenza vaccine available in the community.** Vaccination efforts should start now! Seasonal influenza vaccine will not prevent pandemic H1N1 infection but will help protect against circulating seasonal strains expected this fall. For retail locations, see [www.findaflushot.com](http://www.findaflushot.com). Information about HCA Public Health seasonal flu shot clinics will be posted at [www.ochealthinfo.com](http://www.ochealthinfo.com) when available.
- **Orange County (OC) Pandemic H1N1 update:** As of September 8, 2009, 228 hospitalized cases of pandemic H1N1 influenza and 20 fatalities have been reported in OC residents. Median age of deaths is 42.5 years (range, <1-77 years). All (100%) influenza tested at OC Public Health since early July has been pandemic H1N1.
- **Influenza activity increasing in certain areas of U.S., including the Southeast.** See [www.cdc.gov/flu](http://www.cdc.gov/flu).
- **CDC updates antiviral guidance for the 2009-2010 season.** Antivirals should be prioritized for the severely ill (hospitalized) and for those with symptoms of influenza who are at high risk of influenza related complications. Focus of the updated document is to reinforce need for prompt initiation of therapy in those for whom it is indicated as treatment is most beneficial if started within 48 hours of onset. Treatment should not be delayed for laboratory confirmation of influenza. Strategies for timely treatment for high risk patients include patient education of influenza symptoms and rapid telephone access if these symptoms occur. To prevent further spread of antiviral resistance, prophylaxis should be reserved for high risk persons who have had close recent contact with a likely influenza case. As an alternative to prophylaxis, watchful waiting and early treatment once symptoms develop can reduce antiviral use and the opportunities for development of resistance. Based on the susceptibility of circulating viruses (pandemic H1N1), oseltamivir (Tamiflu®) or zanamivir (Relenza®) are currently recommended. See <http://www.cdc.gov/h1n1flu/recommendations.htm>.
- **Epi-linked oseltamivir-resistant 2009 H1N1 reported in two previously healthy summer campers receiving prophylaxis.** Campers and staff were given oseltamivir as part of a mass chemoprophylaxis program during a camp outbreak in North Carolina. Sporadic cases of resistance had previously been reported worldwide, including 9 cases in the US (as of September 4, 2009), but no transmission of resistant pandemic H1N1 viruses had been documented before. See [www.cdc.gov/mmwr](http://www.cdc.gov/mmwr) 9/11/09 issue. Prudent use of antivirals can reduce the opportunities for development of resistance as outlined in the 9/8/09 CDC recommendations listed above.
- **Cal/OSHA issues interim enforcement policy on H1N1 in light of respirator shortages.** See [http://www.dir.ca.gov/dosh/SwineFlu/Interim\\_enforcement\\_H1N1.pdf](http://www.dir.ca.gov/dosh/SwineFlu/Interim_enforcement_H1N1.pdf).



### Pandemic influenza H1N1 vaccine update

- **Preliminary data suggests a single 15 µg dose of unadjuvanted pandemic H1N1 monovalent vaccine can induce a strong immune response in most healthy adults and is well-tolerated.** Reports of the interim analysis of two randomized-controlled trials (Australia and UK) are available at [www.nejm.org](http://www.nejm.org). Statement from the National Institutes of Health: <http://www.hhs.gov/news/press/2009pres/09/20090911a.html>. Final recommendations on dosing of pandemic H1N1 vaccine are pending further information from additional studies, including those in children and pregnant women.
- **To pre-register and order pandemic H1N1 vaccine:** [www.calpanflu.org](http://www.calpanflu.org).
- **For OC pandemic H1N1 vaccine questions:** 714-834-8560 or [www.ochealthinfo.com/h1n1](http://www.ochealthinfo.com/h1n1).

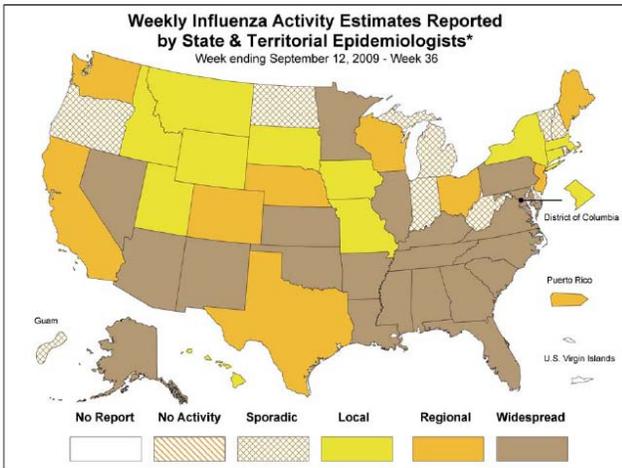
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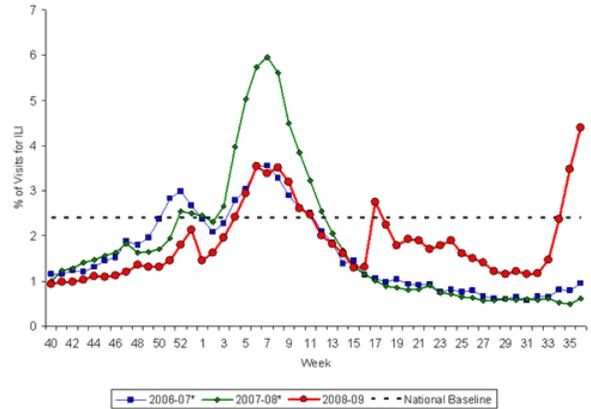
## Influenza Update

- Influenza activity continues to increase nationally.** Outpatient visits to sentinel providers for influenza-like illness (ILI) have increased dramatically (right graph) and 21 states are now reporting widespread activity (below), mainly in the Southeast but also including neighboring Arizona and Nevada. California continues to report regional activity. Nearly 100% of influenza typed and subtyped has been pandemic H1N1 (pH1N1). See [www.cdc.gov/flu](http://www.cdc.gov/flu).



\* This map indicates geographic spread & does not measure the severity of influenza activity

Percentage of Visits for Influenza-like Illness (ILI) Reported by the US Outpatient Influenza-like Illness Surveillance Network (ILINet), National Summary 2008-09 and Previous Two Seasons



\*There was no week 53 during the 2006-07 and 2007-08 seasons, therefore the week 53 data point for those seasons is an average of weeks 52 and 1.

- Seasonal influenza vaccine available.** Vaccination efforts should start now! Seasonal influenza vaccine will not prevent pH1N1 infection but will help protect against circulating seasonal strains expected this fall. For retail locations, see [www.findaflushot.com](http://www.findaflushot.com). Information about HCA Public Health seasonal flu shot clinics will be posted soon at [www.ochealthinfo.com](http://www.ochealthinfo.com).
- Orange County (OC) influenza update:** As of September 12, 2009, 235 hospitalized cases of pH1N1 influenza and 20 fatalities have been reported in OC residents. Nearly 100% of influenza tested at the OC Public Health Laboratory in the past 3 months has been pH1N1, but two seasonal H3 isolates were confirmed this past week. For influenza prevention posters: <http://ochealthinfo.com/h1n1/print/> and <http://ochealthinfo.com/h1n1/providers/poster/index.htm>.
- HCA updates pH1N1 information for schools.** New webpage [www.ochealthinfo.com/h1n1/schools](http://www.ochealthinfo.com/h1n1/schools) includes updated FAQs for schools and criteria for reporting increases in absenteeism and clusters.
- Study reports N95 respirators outperform surgical masks in protecting hospital workers in China from influenza and respiratory illness in general.** See [www.cidrap.umn.edu](http://www.cidrap.umn.edu) (9/17/09 news). Updated CDC guidance on mask/respirator use for pH1N1 is expected soon. For Cal/OSHA H1N1 interim enforcement policy: [http://www.dir.ca.gov/dosh/SwineFlu/Interim\\_enforcement\\_H1N1.pdf](http://www.dir.ca.gov/dosh/SwineFlu/Interim_enforcement_H1N1.pdf).

### Pandemic influenza H1N1 vaccine update

- FDA approves four pH1N1 vaccines:** Current approvals recommend a single dose for older children and adults and two doses for children younger than age 8 or 9 years, depending on the manufacturer; dosing recommendations may change based on results of pending clinical trials. The four approved pH1N1 vaccines do not use adjuvants and are being manufactured using the same processes as seasonal influenza vaccines. See [www.cidrap.umn.edu](http://www.cidrap.umn.edu) (9/15/09 news).
- CDC releases Q&As regarding vaccine safety.** Documents include Q&As on 2009 H1N1 influenza A vaccine safety, thimerosal, and Guillain-Barre syndrome. 2009 H1N1 influenza vaccine is expected to have a similar safety profile to seasonal influenza vaccine. See <http://www.cdc.gov/h1n1flu/vaccination/>.
- To pre-register and order pandemic H1N1 vaccine:** [www.calpanflu.org](http://www.calpanflu.org).
- For OC pandemic H1N1 vaccine questions:** 714-834-8560 or [www.ochealthinfo.com/h1n1](http://www.ochealthinfo.com/h1n1).

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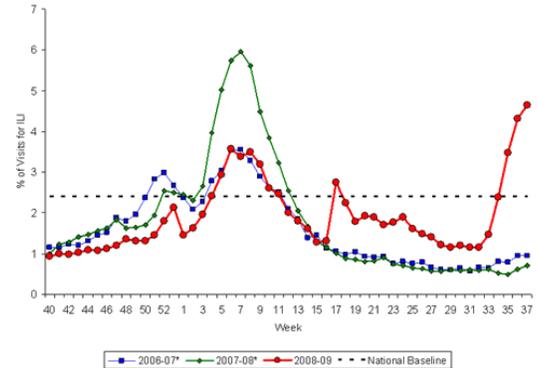


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## Influenza Update

- **Influenza activity widespread in California.** Outpatient visits to sentinel providers for influenza-like illness (ILI) continue to increase (right graph) and 26 states including California are reporting widespread activity. See [www.cdc.gov/flu/](http://www.cdc.gov/flu/).
  - **Now is the time to start vaccinating for seasonal influenza.** See [www.ochealthinfo.com/public/flu/](http://www.ochealthinfo.com/public/flu/).
  - **Orange County (OC) influenza update:** See [www.ochealthinfo.com/h1n1](http://www.ochealthinfo.com/h1n1) for the latest report on hospitalized cases and fatalities. Nearly 100% of influenza tested at the OC Public Health Laboratory in the past 3 months has been pH1N1. Reports of influenza-like illness in the community are increasing.
  - **CDC updates antiviral recommendations for influenza.** Priority for antiviral use continues to be in people with suspect or confirmed influenza who are hospitalized or at increased risk for complications, and emphasis is on early treatment. Additional guidance is provided on:
    - The risk of complications of influenza and treatment considerations for children under the age of 5 years, with focus on those younger than age 2 years who have the highest risk for hospitalization;
    - Neurologic or neuromuscular conditions that increase the risk of influenza complications;
      - High risk conditions include cognitive dysfunction, spinal cord injuries, seizure disorders or other neuromuscular disorders that can compromise respiratory function or the handling or respiratory secretions, or that can increase the risk of aspiration.
    - The use of the oral dosing dispenser included with the Tamiflu® (oseltamivir) oral suspension.
      - Since the oral dosing dispenser included in the suspension packaging is marked in milligrams, there is serious potential for dosing errors in children prescribed dosing in teaspoons (tsp) or milliliters (mL). Pharmacists should:
        - Remove the oral dosing dispenser included in the packaging for children < 1 year of age and children for whom the dosing instructions specify tsp or mL;
        - Replace the dispenser with an appropriate measuring device to match the dosing instructions.
- See [www.cdc.gov/h1n1flu/recommendations](http://www.cdc.gov/h1n1flu/recommendations) and <http://www.cdc.gov/H1N1flu/pharmacist/>.
- **WHO reports on situations in which risk of antiviral resistance may be increased.** Clinicians should watch for resistance in 1) persons with severely compromised or suppressed immune systems who have prolonged illness and have received oseltamivir (especially for a long time) but still have evidence of viral replication; and 2) people who receive post-exposure prophylaxis with oseltamivir and still develop illness. See <http://www.who.int/csr/disease/swineflu/en/>.
  - **WHO recommends changes for H1N1 and H3N2 components of Southern Hemisphere 2010 influenza vaccine.** Based on predominant strains circulating this past summer in the Southern Hemisphere, WHO has recommended including pandemic H1N1 and A/Perth/16/2009-like (H3N2) in next season's vaccine. The majority of recent H3N2 viruses (A/Perth) also do not match the H3N2 component of this season's Northern Hemisphere vaccine. See <http://www.who.int/csr/disease/influenza/en/>.

Percentage of Visits for Influenza-like Illness (ILI) Reported by the US Outpatient Influenza-like Illness Surveillance Network (ILINet), National Summary 2008-09 and Previous Two Seasons



\*There was no week 53 during the 2006-07 and 2007-08 seasons, therefore the week 53 data point for those seasons is an average of weeks 52 and 1.

### Pandemic influenza H1N1 vaccine update

- **Preliminary data from trials in children suggest older children may need just one dose but those under age 10 will likely need two.** See [www.cidrap.umn.edu](http://www.cidrap.umn.edu) (9/21/09 news).
- **First available pandemic H1N1 vaccine doses likely to be nasal-spray product (live, attenuated) in early October,** with additional doses available by mid-October and weekly thereafter. **For local H1N1 vaccine questions:** 714-834-8560 or [www.ochealthinfo.com/h1n1](http://www.ochealthinfo.com/h1n1).
- **To pre-register and order pandemic H1N1 vaccine:** [www.calpanflu.org](http://www.calpanflu.org).

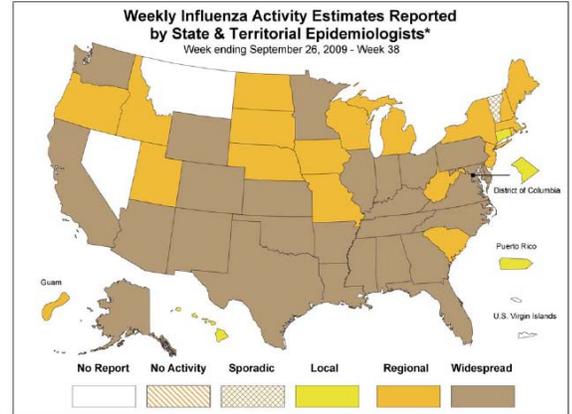
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## Influenza Update

- **Influenza activity widespread in 27 states, including California.** Outpatient visits to sentinel providers for influenza-like illness (ILI) continue to be well above baseline. See [www.cdc.gov/flu](http://www.cdc.gov/flu).
- **Orange County (OC) influenza update:** Priorities for surveillance are focused on severe illness to detect any changes in the virulence or epidemiology of the pandemic H1N1 virus and to assess the relative contributions of seasonal and pandemic strains in severe respiratory illness in the community. **Effective 10/4/09, case testing through Public Health will be limited to severe ICU/fatal cases with influenza-like illness, pneumonia, severe febrile respiratory illness, or any positive influenza test.** For the latest criteria and case history form, see [www.ochealthinfo.com/h1n1/providers](http://www.ochealthinfo.com/h1n1/providers). Sentinel providers and hospital laboratories can continue to submit specimens for testing as part of our virologic surveillance.
- **CDC updates recommendations for clinical use of influenza diagnostic testing for 2009-10 influenza season.** See [www.cdc.gov/h1n1flu/guidance/diagnostic\\_tests.htm](http://www.cdc.gov/h1n1flu/guidance/diagnostic_tests.htm). Key points include:
  - Most patients with clinical illness consistent with uncomplicated influenza do NOT require diagnostic influenza testing for clinical management.
  - Consider influenza diagnostic testing in patients:
    - Who are hospitalized with suspected influenza (*Note: testing is available commercially; Orange County Public Health will only be testing those hospitalized in ICU or who died; see above*);
    - Who died of an acute illness in which influenza was suspected;
    - For whom a diagnosis of influenza will inform clinical or infection control decisions or management of close contacts. (*Note: decisions should not be delayed pending testing results*).
  - Sensitivities of rapid influenza tests and immunofluorescence assays (FA) are lower than polymerase chain reaction (PCR) tests and viral culture; a negative rapid or FA test does not rule out influenza.
- **CDC summarizes bacterial coinfections in fatal influenza 2009 (H1N1) cases.** Almost half of the bacterial copathogens identified were *Streptococcus pneumoniae*, emphasizing the importance of encouraging use of pneumococcal vaccine in those at increased risk (all children age < 5 years, persons aged 2-64 years with certain health conditions, and all persons aged ≥ 65 years). Other common pathogens included group A streptococcus and *Staphylococcus aureus*. Clinicians should consider empiric treatment of patients hospitalized with community-acquired pneumonia with influenza antiviral agents and appropriate antibiotics. See [www.cdc.gov/mmwr](http://www.cdc.gov/mmwr) (10/2/09 issue).
- **Surgical masks noninferior to N95 respirators in preventing laboratory-confirmed influenza among nurses in Ontario (Canada) hospitals.** 446 nurses were randomly assigned to use masks (225) or N95 respirators (221) during this past influenza season (study stopped 4/23/09 because of recommendations for use of N95s for care of suspect 2009 H1N1 cases). Influenza infection occurred in 50 (24%) of the mask group and 48 (23%) of the N95 group. See *JAMA* 10/1/09 on-line issue. Additional clinical studies are needed to assess the relative contribution of aerosols in influenza transmission and the effectiveness of PPE in preventing infection in healthcare workers.



### Pandemic influenza H1N1 vaccine update

- Multiple new or updated documents are available from the CDC addressing vaccination in pregnant women, vaccine financing, vaccine for seniors, and more. See [www.cdc.gov/h1n1flu](http://www.cdc.gov/h1n1flu).
- **First pandemic H1N1 vaccine doses (live attenuated nasal spray) expected next week.** For local H1N1 vaccine questions: 714-834-8560 or [www.ochealthinfo.com/h1n1](http://www.ochealthinfo.com/h1n1). **To order vaccine:** [www.calpanflu.org](http://www.calpanflu.org).

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