



Archived Document

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

Important Note: Effective July 1, 2006, in California, pregnant women or children younger than three years old may only receive vaccine doses that contain no mercury or only trace levels of mercury. For more information, go to: http://www.dhs.ca.gov/ps/dcdc/izgroup/shared/mercury_law.htm

- **Seventy-five million doses of vaccine are expected to arrive by the end of October.** A total of 115 million doses are expected to be produced. The influenza vaccine is 70 to 90% effective at preventing infection in the general population and 80% effective at preventing influenza related death among the elderly. **Annual influenza vaccine is now recommended for the following groups:**
 - Children aged 6-59 months (For poster: <http://www.dhs.ca.gov/ps/dcdc/izgroup/pdf/imm782.pdf>)
 - Women who will be pregnant during the influenza season (For poster: http://www.cdc.gov/flu/professionals/flugallery/images06_07/p_pregnant_pr.pdf)
 - Health care workers (For posters: <http://www.dhs.ca.gov/ps/dcdc/izgroup/pdf/imm801es.pdf>)
 - Persons 50 years and older (For poster: http://www.cdc.gov/flu/professionals/flugallery/images06_07/p_malephysician_aa_pr.pdf)
 - Nursing home residents
 - Individuals with certain chronic health conditions
 - Persons who live with or care for an adult 50 years or older, a child aged 0 to 59 months, or anyone with a chronic health condition

Detailed recommendations of the Advisory Committee on Immunization Practices (ACIP) on the Prevention and Control of Influenza are available at: <http://www.cdc.gov/mmwr/PDF/rr/rr5510.pdf>.
- **FluLaval has become the fifth influenza vaccine** licensed by the Food and Drug Administration for use during the upcoming flu season, see <http://www.fda.gov/bbs/topics/NEWS/2006/NEW01478.html>.
- **For updated information on the use of antivirals, visit** <http://www.cdc.gov/flu/professionals/treatment/>.
- **The current issue of *The Journal of Infectious Diseases* (Nov 2006;194:S65-S69) has several articles on influenza:** <http://www.journals.uchicago.edu/JID/journal/contents/v194nS2.html> (subscription required).
- **Orange County:** Two influenza cases have been reported. Both were of the subtype A/H1N1 and are related to A/New Caledonia/20/99-like, which is the H1 component in this year's vaccine. For more information about this year's vaccine, visit <http://www.cdc.gov/flu/about/qa/0607.htm>.



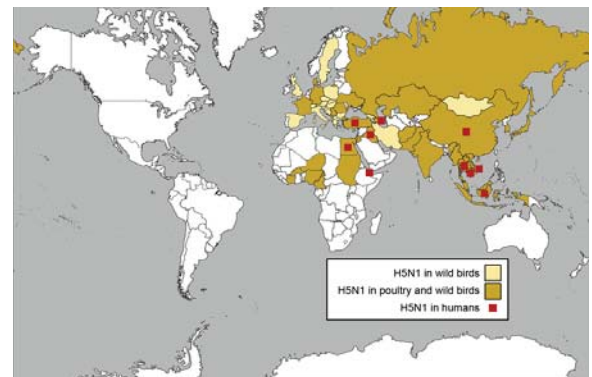
Recommended Resources

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

Avian Influenza Update

- 252 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (6), China (21), Djibouti (1), Egypt (14), Indonesia (69)*, Iraq (3), Thailand (25)*, Turkey (12), and Vietnam (93), and have resulted in 148 deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe.
*New reported cases since last update (September 22nd).
- For an up-to-date list of H5N1-affected countries, see <http://www.ochealthinfo.com/epi/af/index.htm>.
- Patients with fever and respiratory symptoms with history of travel to H5N1-affected countries within 10 days of illness onset should be reported immediately to OC Epidemiology at 714-834-8180.

Nations with Confirmed H5N1 Avian Influenza



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On average, 200,000 excess hospitalizations and 36,000 excess deaths occur annually in the United States due to influenza. Reduce the risk to yourself and others...get a flu vaccine.

• **First do no harm....Protect patients by making sure all staff receive yearly influenza vaccine.** Unvaccinated healthcare providers (HCP) contribute to flu outbreaks and staffing shortages in health-care facilities. JCAHO has included influenza vaccination of HCP in accreditation requirements beginning January 1, 2007. For more information, see www.jointcommission.org/newsroom/newsreleases/nr_06_13_06. The CDC recommendations for influenza vaccination of HCP include:

- **Educate HCP** regarding the benefits of influenza vaccination and the potential health consequences of influenza illness for themselves and their patients. For screening questionnaires: <http://www.immunize.org/catg.d/p4066.pdf> (injectable vaccine) & <http://www.immunize.org/catg.d/p4067.pdf> (intranasal vaccine).
- **Offer influenza vaccine annually** to all eligible HCP. Use of either inactivated (TIV) or live attenuated influenza vaccine (LAIV) is recommended for eligible persons.
- **Provide influenza vaccination to HCP at the work site and at no cost.** For posters encouraging HCW vaccination: <http://www.dhs.ca.gov/ps/dcdc/izgroup/pdf/imm801es.pdf>.
- **Obtain a signed declination from HCP who decline influenza vaccination.** For a sample declination form, see <http://www.immunize.org/catg.d/p4068.pdf>.
- **Monitor HCP influenza vaccination coverage and declination at regular intervals**
- **Use the level of HCP influenza vaccination coverage as one measure of a patient-safety quality program.**

For more information see Influenza Vaccination of Health-Care Personnel (2/24/06 MMWR Recommendations and Reports): at www.cdc.gov/mmwr/PDF/rr/rr5502.pdf.



- **Flu shots are now available** through the County's annual influenza vaccination program and through private physicians, pharmacies and other retail businesses. Call 1-800-564-8448 or visit <http://www.ochealthinfo.com/public/flu/> & <http://findaflushot.com> for more details.
- Interim Guidance on Planning for the **Use of Surgical Masks and Respirators in Health Care Settings** during an Influenza Pandemic can be found at: <http://pandemicflu.gov/plan/maskguidancehc.html>.

Avian Influenza Update

- 256 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (6), China (21), Djibouti (1), Egypt (15)*, Indonesia (72)*, Iraq (3), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 151 deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe.
**New reported case(s) since Oct. 10th.*
- For an up-to-date list of H5N1-affected countries, see <http://www.ochealthinfo.com/epi/af/index.htm>.
- Patients with fever and respiratory symptoms should be asked about travel to H5N1-affected countries within 10 days of symptom onset.

Influenza Update

- In the **United States** a low level of influenza activity was reported during week 41 (week ending 10/14). Two states reported local influenza activity; six states reported sporadic influenza activity.

Recommended Resources

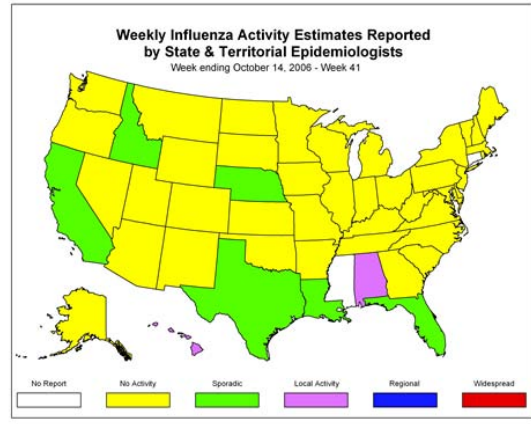
General: <http://www.cdc.gov/flu>

OC: <http://www.ochealthinfo.com/epi/flu/surveillance.htm>

CA: <http://www.dhs.ca.gov/ps/dcdc/VRDL/html/FLU/Fluintro.htm>

CDC: <http://www.cdc.gov/flu/weekly/>

HHS: <http://www.pandemicflu.gov/>



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The optimal time to vaccinate against influenza is October and November; however, vaccination should continue throughout influenza season. For a factsheet on immunization recommendations, see: <http://www.immunize.org/catg.d/2013flu.pdf>.

- The California Health and Human Services Agency secretary, Kim Belshé, has issued an exemption to law AB 2943 **allowing the use of influenza vaccine containing mercury for children under age 3 years for 6 weeks (until 12/14/06)**. The American Academy of Pediatrics (California), California Medical Association, California Academy of Family Physicians, and Kaiser Permanente requested this exemption last week due to the lack of adequate supply of thimerosal-free vaccine available in physician offices and the high risk of complications from influenza in children under age 3 years.
- Young children have the highest incidence of influenza and are at increased risk for influenza-related complications and hospitalization.
 - All children 6-59 months of age should be vaccinated annually against influenza. CDC recommends that providers without sufficient vaccine for all 6-59 month olds consider prioritizing 6-23 months olds.
 - All children (6 months or older) with chronic medical conditions, including asthma, or on chronic aspirin therapy should be vaccinated annually.
 - Two doses of vaccine, spaced at least one month apart, are recommended for children 6 months through 8 years of age who are being vaccinated for the first time.
 - Children under 6 months of age are the pediatric group at highest risk of influenza complications. Since this group cannot receive the vaccine, it is especially important to vaccinate all household contacts and other caregivers of children less than 6 months of age. Household contacts of children 6-59 months or of any high risk persons should also be vaccinated.
- **During a serious outbreak of pandemic flu, many Americans would be willing to restrict their activities and cooperate with public health recommendations**, according to a survey by Harvard School of Public Health. For more info: <http://www.hsph.harvard.edu/press/releases/press10262006.html>.
- **A new strain of H5N1 avian influenza has been identified in China.** This H5N1 strain has been present in China since 2005 and has also been found in Hong Kong, Laos, Malaysia, and Thailand. For details, see: <http://www.pnas.org/cgi/content/abstract/0608157103v1>.

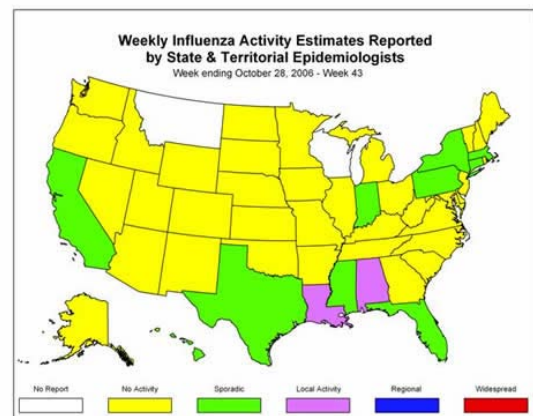


Avian Influenza Update

- 256 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (6), China (21), Djibouti (1), Egypt (15)*, Indonesia (72)*, Iraq (3), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 152 deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For a list of H5N1-affected countries, see <http://www.ochealthinfo.com/epi/af/index.htm>.
*New reported case(s) since Oct. 20th.
- Patients with fever and respiratory symptoms and a recent history of travel from H5N1-affected areas should be reported immediately to OC Epidemiology at 714-834-8180.

Influenza Update

- In the **United States** a low level of influenza activity was reported during week 43 (week ending 10/28). Two states reported local influenza activity and ten states, including **California**, reported sporadic influenza activity.



Recommended Resources

General: <http://www.cdc.gov/flu>

OC: <http://www.ochealthinfo.com/epi/flu/surveillance.htm>

CA: <http://www.dhs.ca.gov/ps/dcdc/VRDL/html/FLU/Fluintro.htm>

CDC: <http://www.cdc.gov/flu/weekly/>

HHS: <http://www.pandemicflu.gov/>

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National Influenza Vaccination Week is November 27th through December 3rd. Enjoy the holiday season free from influenza...get vaccinated. To find vaccine available for purchase, visit: <http://www.ama-assn.org/ama/pub/category/16919.html>. To add your clinic to the American Lung Association's Flu Clinic Locator, see: <http://www.lungusa2.org/embargo/flucliniclocator/>.

- **Oseltamivir (Tamiflu®) Warning:** The FDA has updated the oseltamivir label to include precautions about neuropsychiatric events. People with influenza, particularly children, may be at increased risk of self-injury and confusion shortly after taking Tamiflu® and should be closely monitored for signs of unusual behavior. For more info: http://www.fda.gov/medwatch/safety/2006/Tamiflu_dhcp_letter.pdf.
- **Influenza Testing:** Respiratory illnesses caused by influenza viruses are difficult to distinguish from illnesses caused by other respiratory pathogens on the basis of signs and symptoms alone. Positive influenza testing may prevent unnecessary antibiotic therapy or additional diagnostic testing.
 - **Preferred specimens:** for influenza testing are from the respiratory tract, in particular nasopharyngeal or nasal aspirates, washes, or swabs. Samples should be collected within the first 4 days of illness.
 - **Types of tests:** DFA (direct fluorescent antibody), EIA (enzyme immunoassay), viral culture, and rapid antigen testing (many types) are commonly available and vary in sensitivity and specificity depending on the type of specimen and test. PCR (polymerase chain reaction) is also available in some reference and public health labs. Viral cultures are helpful as rapid testing, DFA, and EIA are neither 100% sensitive nor specific, and for surveillance purposes to identify circulating influenza strains and plan for next season's vaccine. Serological testing for acute influenza infection is not recommended as results from a single serum specimen are not interpretable, acute and convalescent specimens are necessary, and results are not timely enough to help with clinical decision-making. For more info: <http://www.cdc.gov/flu/professionals/labdiagnosis.htm>.
- **Occupational Safety and Health Administration (OSHA) guidance to protect employees against avian influenza.** Information for specific groups, including poultry workers, animal handlers, laboratory personnel, healthcare workers, food handlers, airport personnel, travelers, and Americans living abroad: <http://www.osha.gov/dsg/guidance/avian-flu.html>.
- **HHS Pandemic Planning Update III:** <http://www.pandemicflu.gov/plan/pdf/panflureport3.pdf>.

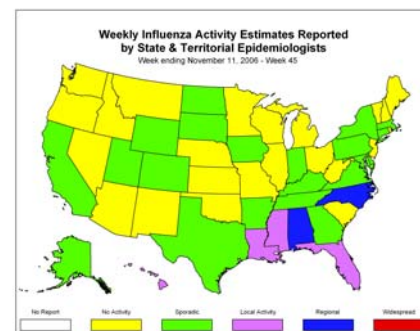


Avian Influenza Update

- 258 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (6), China (21), Djibouti (1), Egypt (15), Indonesia (74)*, Iraq (3), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 153 deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For a list of H5N1-affected countries, see <http://www.ochhealthinfo.com/epi/af/index.htm>.
*New reported case(s) since Nov. 3rd.
- The sensitivity of commercial flu antigen tests for detecting H5N1 has not been established. Please contact OC Epidemiology immediately at 714-834-8180 to report any suspect avian influenza cases and we can assist with the appropriate testing.

Influenza Update

- **Orange County** has reported 1 influenza case this week. A total of 3 cases have been reported this season (1 influenza B / 2 influenza A). A low level of influenza activity was reported in the **US** during week 45. Two states reported regional influenza activity; four states reported local influenza activity; 21 states, including **California**, and the District of Columbia reported sporadic influenza activity.



Recommended Resources

General: <http://www.cdc.gov/flu>

OC: <http://www.ochhealthinfo.com/epi/flu/surveillance.htm>

CA: <http://www.dhs.ca.gov/ps/dcdc/VRDI/html/FLU/Fluintro.htm>

CDC: <http://www.cdc.gov/flu/weekly/>; HHS: <http://www.pandemicflu.gov/>

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National Influenza Vaccination Week is November 27th through December 3rd. To find vaccine available for purchase, visit: <http://www.ama-assn.org/ama/pub/category/16919.html>. To add your clinic to the American Lung Association's Flu Clinic Locator, see: <http://www.lungusa2.org/embargo/flucliniclocator/>.

- **Help dispel common myths about the influenza vaccine. The following are common reasons (MYTHS!) why people don't get influenza vaccinations.**
 - *"Influenza isn't a very serious illness or disease."* On average, 36,000 excess deaths and 200,000 hospitalizations occur every year in the U.S. because of influenza. Getting vaccinated against influenza every year is the best protection against serious disease.
 - *"Influenza vaccination is for 'other' people"; "I wasn't aware I needed a flu vaccination"; or "My doctor didn't recommend one."* Influenza vaccine should be recommended to anyone who wants to reduce his/her risk of infection. Getting vaccinated helps to protect others as well.
 - *"I got the flu shot and I got sick thereafter."* Flu shots cannot cause influenza since the virus is completely inactivated. People who get ill with influenza-like symptoms shortly after receiving a flu shot were likely already infected prior to vaccination, or have another illness besides influenza.
 - *"The side effects are worse than the flu."* Most vaccines have some side effects, but they are usually minor. Usually, the worst side effect you can get from the flu shot is a sore arm. The risk of being harmed by the flu vaccine is much lower than the risks associated with influenza infection.
- **Flu Vaccine Facts and Myths flyer:** <http://www.cdc.gov/flu/professionals/flugallery/flyers.htm#ffact>. **Flu vaccine dosage chart:** <http://www.cdc.gov/flu/professionals/dosagechart.htm>.
- **NEJM (11/23/06 issue) articles about H5N1 human infections in Eastern Turkey (2006) and three Indonesian clusters (2005).** A wide range of clinical features and outcomes were seen. Initial diagnostic testing for H5N1, was negative in many of the cases and repeat testing was often needed to properly diagnose patients. Both studies found rapid antigen testing to have limited value in diagnosing H5N1 infection. For free access: <http://content.nejm.org/content/vol355/issue21/index.shtml>.
- **HHS buys additional vaccine for potential use in an influenza pandemic:** <http://www.nih.gov/news/pr/nov2006/niaid-14.htm>.

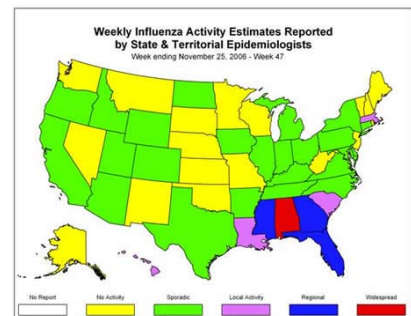


Avian Influenza Update

- South Korea has H5N1 in poultry after 3-year lull: <http://www.oie.int/Messages/061128KOR.htm>
- 258 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (6), China (21), Djibouti (1), Egypt (15), Indonesia (74), Iraq (3), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 154 deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For a list of H5N1-affected countries, see <http://www.ohealthinfo.com/epi/af/index.htm>.
**New reported case(s) since Nov. 17th.*
- WHO Guidelines for Investigation of Human Cases of H5N1: http://www.who.int/csr/resources/publications/influenza/WHO_CDS_EPR_GIP_2006_4/en/index.html

Influenza Update

- **OC** has no new reported flu cases this week. A total of 3 cases have been reported this season (1 flu B/2 flu A). In the **US**, a low level of flu activity was reported in week 47, with 1 state reporting widespread flu activity; 3 states reporting regional flu activity; 4 states reporting local flu activity; and 24 states (including **CA**), the District of Columbia, and NYC reporting sporadic flu activity.



Recommended Resources

General: <http://www.cdc.gov/flu>

OC: <http://www.ohealthinfo.com/epi/flu/surveillance.htm>

CA: <http://www.dhs.ca.gov/ps/dcdc/VRDL/html/FLU/Fluintro.htm>

CDC: <http://www.cdc.gov/flu/weekly/>; HHS: <http://www.pandemicflu.gov/>

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It's not too late to be vaccinated.... Physicians are encouraged to continue to offer influenza vaccine in December, January and beyond.

- **Free flu shots** are available. Restrictions on the use of Orange County publicly funded influenza vaccine have been lifted. Free flu shots are now available to adults of all ages and children 6 months of age and older through programs sponsored by the Orange County Health Care Agency. For more information on influenza vaccination locations and schedules, please call the Health Referral Line at (800) 564-8448 or visit www.ochealthinfo.com.
- **The use of rapid viral testing for influenza to evaluate febrile infants may lead to enhanced management.** Results of the study, presented in the December issue of *The Pediatric Infectious Disease Journal* (Vol 25, Issue 12), found that the inclusion of rapid influenza testing for the evaluation of febrile young infants without signs of focal infection during the influenza season reduces the length of stay in the emergency department, the use of antibiotic treatment and unnecessary hospitalizations. To access the article, visit <http://www.pidj.com> (subscription required).
- **Effectiveness of School-Based Influenza Vaccination.** The study suggests that the vaccination of school-aged children may reduce the spread of influenza to their households and to other students. The result are published in the *New England Journal of Medicine* (Vol 355, No 24). For free access: <http://content.nejm.org/cgi/content/full/355/24/2523?query=TOC>.
- **Efficacy of live attenuated influenza vaccine compared to inactivated vaccine during the 2004-2005 season, when most of the circulating viruses were dissimilar to those in the vaccine.** Results of a study published in the *New England Journal of Medicine* (Vol 355, No 24) found a higher absolute efficacy of inactivated vaccine as compared to live attenuated vaccine in preventing laboratory-confirmed symptomatic illnesses from influenza in healthy adults. The difference in efficacy was attributed to the reduced protection of the live attenuated vaccine against type B virus. For free access: <http://content.nejm.org/cgi/reprint/355/24/2513.pdf>.
 - **Please note:** The above NEJM study results contrast with previous reports that the live attenuated vaccine may have superior relative efficacy as compared with inactivated vaccine in preventing influenza illness in children. Two recent articles can be found in the October issue of *The Pediatric Infectious Disease Journal* at www.pidj.com. More information is needed on the efficacy of the live attenuated vaccine in different populations and different influenza seasons.



Avian Influenza Update

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- Patients with fever and respiratory symptoms and a recent history of travel from H5N1-affected areas should be reported immediately to OC Epidemiology at 714-834-8180.

Influenza Update

- OC reported 1 new flu cases this week. A total of 4 cases have been reported this season (1 flu B/3 flu A). During week 49, flu activity remained low overall in the US, but increased in the Southeast. One state reported widespread flu activity; three states reported regional flu activity; seven states reported local flu activity; 30 states, including **California**, and NYC reported sporadic flu activity.



Recommended Resources

General: <http://www.cdc.gov/flu>

OC: <http://www.ochealthinfo.com/epi/flu/surveillance.htm>

CA: <http://www.dhs.ca.gov/ps/dc/dc/VRDL/html/FLU/Fluintro.htm>

CDC: <http://www.cdc.gov/flu/weekly/>; HHS: <http://www.pandemicflu.gov/>

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Influenza activity is increasing in the United States. In December, there has been an increase in the reporting of regional or widespread influenza activity (from 4 states in week 49 to 17 states in week 51), mainly in the southern and southeastern states. For the second consecutive week, the percentage of outpatient influenza-like illness visits reported by sentinel providers was above baseline.

- **New Joint Commission on Accreditation of Healthcare Organizations (JCAHO) infection control standard effective January 1, 2007.** This new JCAHO standard requires accredited organizations to provide influenza vaccine to staff, including volunteers and independent practitioners with close patient contact, as part of an influenza vaccination program. In addition, a **new California hospital influenza law in effect as of July 1, 2007** will require general acute care facilities to offer influenza vaccine to employees at no cost, require employees to be vaccinated or sign a declination, institute respiratory hygiene/cough etiquette and isolation protocols, and develop a pandemic influenza plan. For more info: http://www.dhs.ca.gov/ps/dcdc/izgroup/shared/hospital_influenza_law.htm
- **Guidance for Prioritization for Pre-Pandemic and Pandemic Influenza Vaccine.** The Department of Health and Human Services is seeking input from the public on considerations for prioritization of limited supplies of influenza vaccine in the event of an influenza pandemic. For more info: <http://aspe.hhs.gov/PIV/RFI/>
- **Three new human cases of H5N1 infection.** The Egyptian Ministry of Health and Population has informed WHO of three new cases of H5N1 infection, all from one extended family in Gharbiyah province (80 kilometers northwest of Cairo). All three patients died; the most recent death occurred on December 27, 2006. The cases reportedly had contact with sick ducks. For more info: http://www.who.int/csr/don/2006_12_27a/en/index.html
- **New H5N1 outbreaks in poultry in Vietnam.** Vietnam reported major H5N1 outbreaks at two poultry farms in the southern Mekong Delta (Ca Mau and Bac Lieu provinces); these were the first major outbreaks reported since last year. The source of infection is unknown. For more info: <http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/dec2006vietnam.html>
- **CHDS surveillance guidelines for human cases of avian influenza in California:** <http://www.dhs.ca.gov/ps/dcdc/vrdl/html/flu/h5n1/surveillance%20guidelines.htm>
- **CDHS Immunization Branch: Protect Yourself Against Flu and Pandemic Flu Brochure:** <http://www.dhs.ca.gov/ps/dcdc/izgroup/pdf/IMM-853.pdf>

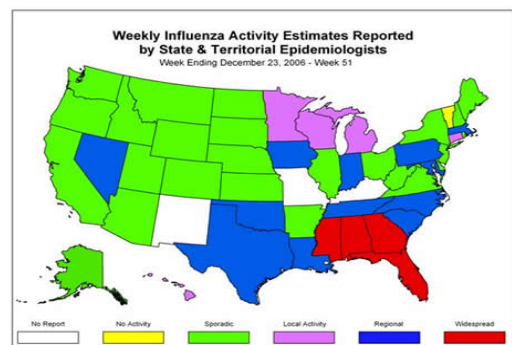


Avian Influenza Update

- 261 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (6), China (21), Djibouti (1), Egypt (18)*, Indonesia (74), Iraq (3), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 157 deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For a list of H5N1-affected countries, see <http://www.ochealthinfo.com/epi/af/index.htm>.
*New reported case(s) since Dec. 15th
- The sensitivity of commercial flu antigen tests for detecting H5N1 has not been established. Please contact OC Epidemiology immediately at 714-834-8180 to report any suspect avian influenza cases and we can assist with the appropriate testing.

Seasonal Influenza Update

- **Orange County** has reported 3 influenza cases (2 A & 1 B) in the last 2 weeks. A total of 7 cases have been reported this season (5 flu A / 2 flu B). In the **US**, four states reported widespread influenza activity, 12 regional and five local activity during week 51 (week ending 12/23/06). **CA** reported sporadic activity.



Recommended Resources

General: <http://www.cdc.gov/flu>

OC: <http://www.ochealthinfo.com/epi/flu/surveillance.htm>

CA: <http://www.dhs.ca.gov/ps/dcdc/vrdl/html/FLU/Fluintro.htm>

CDC: <http://www.cdc.gov/flu/weekly/>; HHS: <http://www.pandemicflu.gov/>

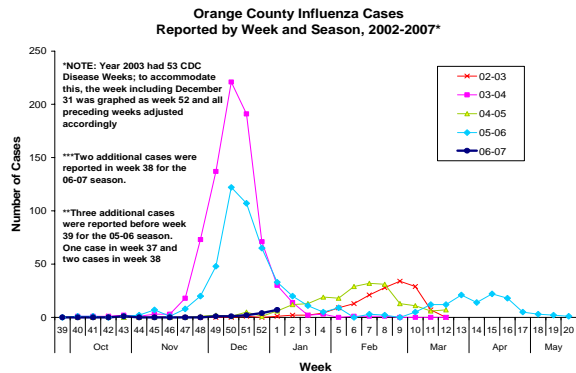
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Orange County Health Care Agency, Epidemiology & Assessment, 1719 W. 17th St. Santa Ana, CA 92706, (714) 834-8180

Orange County influenza reports have increased since the last newsletter (12/29/06).

- **US FDA approves new refrigerated form of FluMist®:** The new formulation of FluMist®, the live-attenuated seasonal influenza vaccine for use in children and adults from ages 5 to 49 years, can be stored in the refrigerator rather than in the freezer. The new formulation will be available for the 2007-2008 influenza season. For more info: <http://phx.corporate-ir.net/phoenix.zhtml?c=83037&p=irol-investornewsArticle&ID=947708&highlight=>.
- **Additional human H5N1 cases in Indonesia (3) and China (1):** See http://www.who.int/csr/disease/avian_influenza/en/ for the latest updates.
- **H5N1 positive wild bird found in Hong Kong:** This is the first positive bird reported in Hong Kong since February 2006. Hong Kong has not had any reported human cases since 1997. See <http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/jan0807birds.html>.
- **NIH (NIAID) begins human trial of DNA vaccine for H5N1:** DNA vaccines have been shown to be effective in preventing infection with influenza viruses in animal models. This new vaccine technology has the potential to improve production capacity for influenza vaccines. For more info: <http://www.nih.gov/news/pr/jan2007/niaid-02.htm>.
- **HHS awards contract to BioCryst Pharmaceuticals, Inc. for advanced development of new influenza antiviral drug, peramivir:** Peramivir is a neuraminidase inhibitor (similar drug class as oseltamivir and zanamivir) administered parenterally (IV or IM). For more information: <http://www.hhs.gov/news/press/2007pres/20070104.html>.

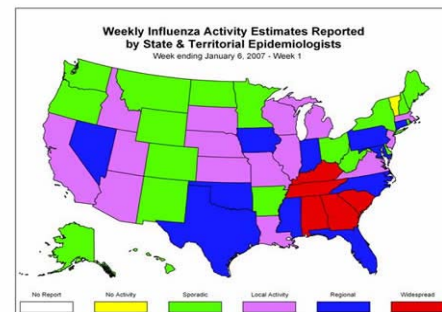


Orange County

- Since week 52 (week ending 12/29/06), 11 new influenza cases were reported in the last two weeks for a total of 18 cases this season. Fourteen (78%) cases were influenza A and four (22%) were influenza B.

California and USA

- California reported local influenza activity during week 1. Nationally, 81% of influenza detections were flu A and 19% were flu B. Of those subtyped, 96% were flu A (H1) and 4% were flu A (H3); 90% of the flu A (H1) viruses characterized were similar to A/New Caledonia/20/99-like and both A (H3) viruses were characterized as A/Wisconsin/67/2005-like. Of influenza B viruses characterized, 59% belong to the B/Victoria lineage and 41% to the B/Yamagata lineage.



Avian Influenza Update

- 265 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (6), China (22)*, Djibouti (1), Egypt (18), Indonesia (77)*, Iraq (3), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 159 (60%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For a list of H5N1-affected countries, see <http://www.ochealthinfo.com/epi/af/index.htm>.
*New reported case(s) since December 29th.
- Please contact OC Epidemiology immediately at 714-834-8180 to report any suspect avian influenza cases and we can assist with the appropriate testing.

Recommended Resources

General: <http://www.cdc.gov/flu>

OC: <http://www.ochealthinfo.com/epi/flu/surveillance.htm>

CA: <http://www.dhs.ca.gov/ps/dcdec/VRDI/html/FLU/Fluintro.htm>

CDC: <http://www.cdc.gov/flu/weekly/>; HHS: <http://www.pandemicflu.gov/>

If you have any comments about the flyer, contact Pamela Roa Hipp or Alina Burgi at (714) 834-8180.

To receive this newsletter by email, please contact us at epi@ochca.com.

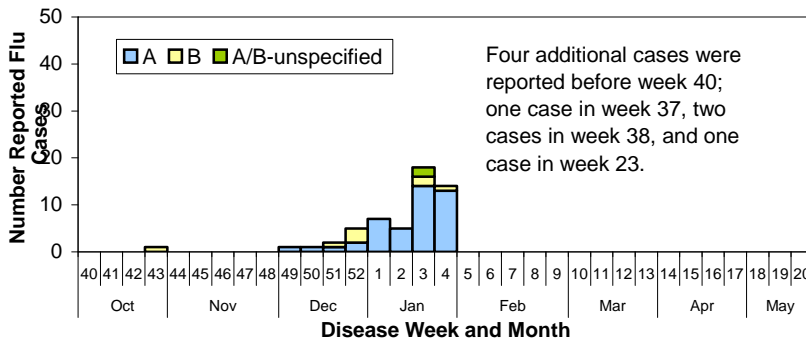


Orange County Health Care Agency, Epidemiology & Assessment, 1719 W. 17th St. Santa Ana, CA 92706, (714) 834-8180

Influenza activity has increased in Orange County. Consider influenza in your patients presenting with fever and/or respiratory symptoms. Several types of influenza testing are available; see <http://www.cdc.gov/flu/professionals/diagnosis/labprocedures.htm> for more information.

- **DHHS awards contracts totalling \$132.5 million to three companies to develop H5N1 vaccines using adjuvants:** Because adjuvants can be used to boost the immune system's response to a vaccine, the use of adjuvants may expand vaccine supplies during a pandemic. For more info, please visit: <http://www.hhs.gov/news/press/2007pres/20070117a.html>.
- **Reduced susceptibility to oseltamivir (Tamiflu) in 2 H5N1 cases in Egypt:** Two patients from the same household were infected with an H5N1 strain that had "moderately reduced susceptibility" to Tamiflu. Because there is no evidence that Tamiflu-resistant strains are spreading in Egypt or elsewhere, Tamiflu is still recommended as the first-line drug for treatment of H5N1 infection. For more info: <http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/jan1807tamiflu.html>. For WHO guidelines on treatment and prophylaxis of H5N1, see http://www.who.int/csr/disease/avian_influenza/guidelines/pharmamanagement/en/index.html.

**Reported Influenza Cases by Type
Orange County, 2006-2007 Influenza Season**



Orange County

- In the past 2 weeks, 38 new influenza cases (32 A, 4 B & 2 A/B unspecified) were reported. Of the 56 total this season; 46 (82%) were A, 8 (14%) B and 2 (4%) A/B unspecified. 41 (73%) were reported from hospitals and 15 (27%) were from ILI sentinel sites. Of the 24 subtyped flu A viruses, 16 were H1 and 8 were H3. Two influenza A viruses have been strain-typed as A/New Caledonia/20/99-like.**

Avian Influenza Update

- Additional H5N1 avian outbreaks have been reported in Hungary, Japan, Thailand, and Vietnam.
- 269 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (6), China (22), Djibouti (1), Egypt (19)*, Indonesia (80)*, Iraq (3), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 163 (61%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For a list of H5N1-affected countries, see <http://www.ochealthinfo.com/epi/af/index.htm>.
*New reported case(s) since January 12nd.
- Please contact OC Epidemiology immediately at 714-834-8180 to report any suspect avian influenza cases.

California and USA

- California reported regional influenza activity during week 3. Nationally, 81.5% of influenza detections were A; 18.5% were B. 92% of subtyped A viruses were A (H1); 8% were A (H3). 90% of the A (H1) viruses characterized were similar to A/New Caledonia/20/99-like.** Both A (H3) viruses characterized were A/Wisconsin/67/2005-like.** Of B viruses characterized, 67% were of the B/Victoria lineage and 33% B/Yamagata lineage. 52% of the B/Victoria lineage viruses were characterized as B/Ohio/01/2005-like.**

**Components of the 2006-2007 US flu vaccine:

- A (H1N1): A/New Caledonia/20/99-like
- A (H3N2): A/Wisconsin/67/2005-like
- B: B/Malaysia/2506/2004-like (equal to B/Ohio/01/2005-like).

Recommended Resources

General: <http://www.cdc.gov/flu>

OC: <http://www.ochealthinfo.com/epi/flu/surveillance.htm>

CA: <http://www.dhs.ca.gov/ps/dcdc/VRDL/html/FLU/Fluintro.htm>

CDC: <http://www.cdc.gov/flu/weeklv/>; HHS: <http://www.pandemicflu.gov/>

If you have any comments about the flyer, contact Pamela Roa Hipp or Alina Burgi at (714) 834-8180.

To receive this newsletter by email, please contact us at epi@ochca.com.



Eye on Influenza

February 2, 2007
Volume 3, Issue 10

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

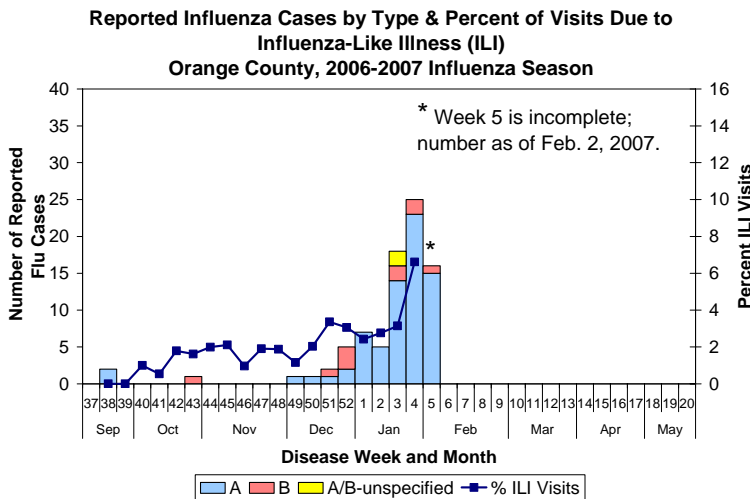
Due to increased influenza activity in Orange County, Eye on Influenza will now be issued weekly.

Consider influenza in your patients presenting with fever and/or respiratory symptoms.

Several types of influenza testing are available; see

<http://www.cdc.gov/flu/professionals/diagnosis/labprocedures.htm> for more information.

- **Interim pre-pandemic planning guidance** on community mitigation strategies has been released by the CDC and HHS. The focus is on early, targeted, layered use of non-pharmaceutical interventions. A five-category Pandemic Severity Index (PSI) has been created to assist in decision-making. The full guidelines are available at <http://www.pandemicflu.gov/plan/community/mitigation.html>.
- **Public service announcements (PSAs)** encouraging the public to learn about pandemic flu preparedness have been produced by HHS. The PSAs can be viewed online at <http://www.pandemicflu.gov/>
- **First human case of H5N1 in Nigeria** was reported this week and is pending confirmation by the WHO. If confirmed, this would bring the total number of countries with confirmed human H5N1 cases to 11. See: http://www.who.int/csr/disease/avian_influenza/updates/en/index.html.



Orange County

- Since the last newsletter, 26 new influenza cases (24 A and 2 B) have been reported.
- Of the 82 total cases to date: 86% were A, 12% B, and 2% A/B-unspecified.
- Of the 33 subtyped flu A specimens: 64% were H1 and 36% were H3. Two influenza A (H1) specimens have been strain-typed as A/New Caledonia/20/99-like.**
- Three new cases of severe pediatric influenza have been reported this week; total cases thus far this season is four. All 4 tested positive for flu A.
- Increases in influenza-like illness activity seen by sentinel providers and anecdotal reports of increased absenteeism in schools have been received in the past week as well.

California and USA

- Influenza activity in California remained regional during week 4.
- A total of 13 severe pediatric influenza cases have been reported thus far in CA this season.

**Components of the 2006-2007 US flu vaccine:

- A (H1N1): A/New Caledonia/20/99-like
- A (H3N2): A/Wisconsin/67/2005-like
- B: B/Malaysia/2506/2004-like (equal to B/Ohio/01/2005-like).

Avian Influenza Update

- 270 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (6), China (22), Djibouti (1), Egypt (19), Indonesia (81)*, Iraq (3), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 164 (61%) deaths. A suspect case from Nigeria is awaiting WHO confirmation. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For a list of H5N1-affected countries, see <http://www.ochealthinfo.com/epi/af/index.htm>.
*New reported case(s) since January 26th.
- Please contact OC Epidemiology immediately at 714-834-8180 to report any suspect avian influenza cases.

Recommended Resources

General: <http://www.cdc.gov/flu>

OC: <http://www.ochealthinfo.com/epi/flu/surveillance.htm>

CA: <http://www.dhs.ca.gov/ps/dcdc/VRDL/html/FLU/Fluintro.htm>

CDC: <http://www.cdc.gov/flu/weekly/>; HHS: <http://www.pandemicflu.gov/>

If you have any comments about the flyer, contact Pamela Roa Hipp or Alina Burgi at (714) 834-8180.

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Eye on Influenza

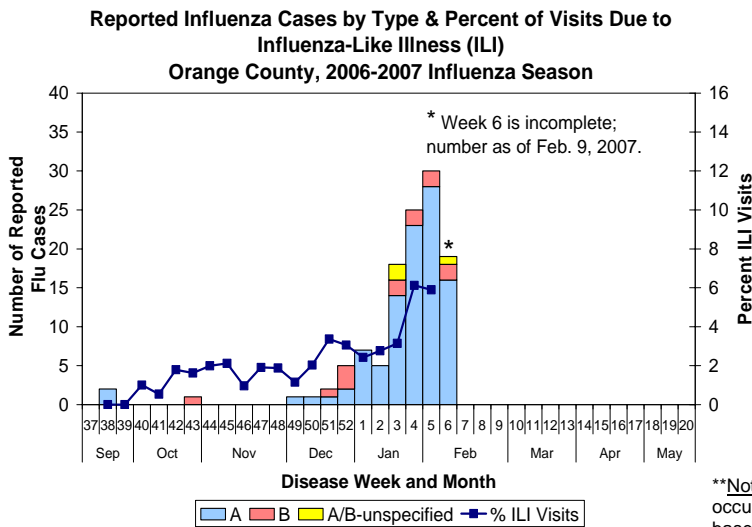
February 9, 2007
Volume 3, Issue 11

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

For information on safety precautions for those traveling to Asia for the upcoming Lunar New Year (February 18), see http://www.cdc.gov/travel/other/bird_flu_lunar_new_year_2007.htm.

Consider influenza in your patients presenting with fever and/or respiratory symptoms. Please inquire about recent travel (in the 10 days prior to symptom onset) to H5N1- affected countries and contact OC Epidemiology immediately at 714-834-8180 to report any suspect avian influenza cases.

- **WHO summary of confirmed human H5N1 cases between 11/03-11/06** is available at <http://www.who.int/entity/wer/2007/wer8206.pdf>. Median age of the 256 lab-confirmed case was 18 years; 52% of cases were < 20 years old. Median duration from onset of symptoms to hospitalization was 4 days. Overall case-fatality rate was 60%. Median number of days from onset until death was 9. Cases tended to peak in the cooler months of the northern hemisphere.
- **Human H5N1 case in Nigeria confirmed.** There are now 11 countries with human H5N1 cases. For the latest case count, see http://www.who.int/csr/disease/avian_influenza/country/en/.
- **H5N1 poultry outbreak in England:** The outbreak occurred on a turkey farm in Suffolk, England making this the country's first poultry outbreak and Europe's second in 2007. For more info, visit: <http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/feb0507england.html>.
- **New OSHA guidance on preparing workplaces for an influenza pandemic:** http://www.osha.gov/Publications/influenza_pandemic.html.



Orange County**

- Since the last newsletter, 34 new influenza cases (30 A, 3 B & 1 A/B unspecified) have been reported.
- Of the 116 total reported cases to date: 86% were A, 11% B, and 3% A/B-unspecified.
- Of the 47 subtyped flu A specimens: 68% were H1 and 32% were H3. Two influenza A (H1) specimens have been strain-typed as A/New Caledonia/20/99-like, which is a component of the 2006-07 influenza vaccine.
- To-date, four severe pediatric influenza cases (hospitalized in the ICU) have been reported.

**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.

Avian Influenza Update

- 272 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (6), China (22), Djibouti (1), Egypt (20)*, Indonesia (81), Iraq (3), Nigeria (1)*, Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 166 (61%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For a list of H5N1-affected countries, see <http://www.ochealthinfo.com/epi/af/index.htm>.

*New reported case(s) since February 2nd.

- Please report any suspect avian influenza cases immediately to OC Epidemiology at 714-834-8180.

California and USA

- Influenza activity was widespread in nine states (Arkansas, Delaware, Indiana, Iowa, Minnesota, Oklahoma, South Carolina, Tennessee, and Texas) during week 5, but remained regional in California.
- A total of 17 severe pediatric influenza cases have been reported thus far in CA this season.

Recommended Resources

General: <http://www.cdc.gov/flu>

OC: <http://www.ochealthinfo.com/epi/flu/surveillance.htm>

CA: <http://www.dhs.ca.gov/ps/dc/dc/VRDL/html/FLU/FluIntro.htm>

CDC: <http://www.cdc.gov/flu/weekly/>

HHS: <http://www.pandemicflu.gov/>

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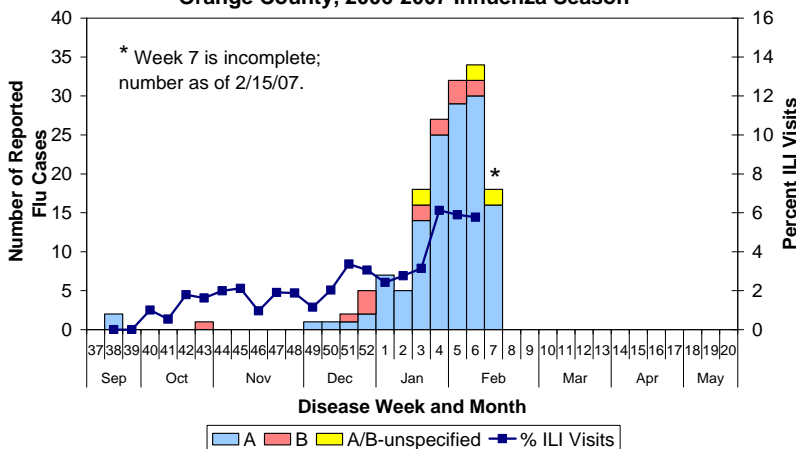
Orange County Health Care Agency, Epidemiology & Assessment, 1719 W. 17th St. Santa Ana, CA 92706, (714) 834-8180

For information on safety precautions for those traveling to Asia for the upcoming Lunar New Year (February 18), see http://www.cdc.gov/travel/other/bird_flu_lunar_new_year_2007.htm.

Consider influenza in your patients presenting with fever and/or respiratory symptoms. Please inquire about recent travel (in the 10 days prior to symptom onset) to H5N1-affected countries and contact OC Epidemiology immediately at 714-834-8180 to report any suspect avian influenza cases.

- **It's not too late to vaccinate!** Influenza viruses are expected to be circulating for at least the next several weeks. Influenza vaccine is available at no cost to patients at Orange County Public Health Clinics. For more information, see <http://www.ochealthinfo.com/> or call 1-800-564-8448.
- **Study comparing live attenuated versus inactivated influenza vaccine in infants and young children** showed live attenuated vaccine had significantly better efficacy than inactivated vaccine. For more information, see N Engl J Med 2007;356:685-96.
- **CDC updates seasonal influenza fact sheet:** "Influenza Symptoms, Protection, and What to Do If You Get Sick", available at <http://www.cdc.gov/flu/symptoms.htm>.

Reported Influenza Cases by Type & Percent of Visits Due to Influenza-Like Illness (ILI)
Orange County, 2006-2007 Influenza Season



Orange County**

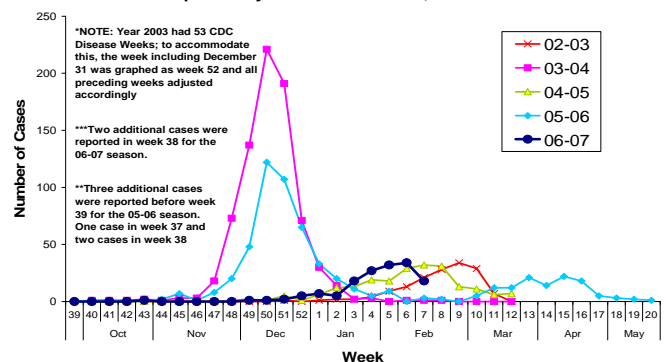
- Since the last newsletter, 37 new influenza cases (33 A, 1 B & 3 A/B unspecified) have been reported.
- Of the 153 total reported cases to date: 87% were A, 9% B, and 4% A/B-unspecified.
- Of the 53 subtyped flu A specimens: 68% were H1 and 32% were H3. Two influenza A (H1) specimens have been strain-typed as A/New Caledonia/20/99-like, which is a component of the 2006-07 influenza vaccine.
- One new case of severe pediatric influenza was reported this week for a total of 5 cases to-date (all positive for flu A).

**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.

Avian Influenza Update

- 273 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (6), China (22), Djibouti (1), Egypt (21)*, Indonesia (81), Iraq (3), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 166 (61%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For a list of H5N1-affected countries, see <http://www.ochealthinfo.com/epi/af/index.htm>.
*New reported case(s) since February 9th.
- Please report any suspect avian influenza cases immediately to OC Epi at 714-834-8180.

Orange County Influenza Cases Reported by Week and Season, 2002-2007*



Recommended Resources

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

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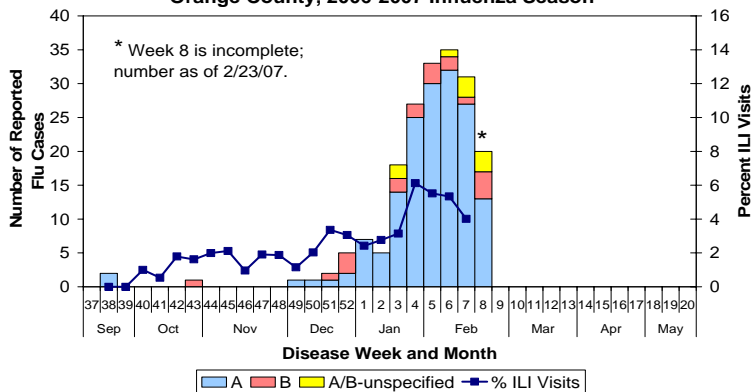
Orange County Health Care Agency, Epidemiology & Assessment, 1719 W. 17th St. Santa Ana, CA 92706, (714) 834-8180

Influenza reports in Orange County appear to have peaked during week 6 (week ending 2/10/07) and are decreasing. However, second peaks late in the season are not uncommon, especially with influenza B.

Please continue to consider influenza in your patients with fever and respiratory symptoms.

- **Recommendations for influenza virus vaccine composition for 2007-2008.** For the first time since 2000-01, WHO has recommended that the A/H1N1 component of the Northern Hemisphere vaccine be changed. Analysis of circulating H1N1 strains showed an increasing proportion were more closely related to the A/Solomon Islands/3/2006 strain than the previously recommended New Caledonia strain. The recommendations for the A/H3N2 and B components of the vaccine have not changed. The CDC and FDA usually issue their own recommendations following those from the WHO. See <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/feb2107vaccine.html>.
- **As Lunar New Year celebrations come to a close,** travelers returning from H5N1-affected areas should monitor their symptoms for 10 days. If fever and respiratory symptoms develop, contact OC Epidemiology immediately at 714-834-8180 to report any suspect avian influenza cases.
- **NIH genome mapping on over 2,000 human and avian influenza viruses complete.** The publicly accessible data will aid in the development of new flu vaccines, therapies and diagnostics. For additional information, see <http://www3.niaid.nih.gov/news/newsreleases/2007/flu2000.htm>.
- **H5N1 poultry outbreaks in Russia** have been confirmed about 1,000 miles south of Moscow. See <http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/feb1907russia.html>.
- **American Public Health Association (APHA) Prescription for Pandemic Flu** policy summary available at <http://www.apha.org/advocacy/policy/APHA+Prescription+for+Pandemic+Flu.htm>.

Reported Influenza Cases by Type & Percent of Visits Due to Influenza-Like Illness (ILI)
Orange County, 2006-2007 Influenza Season



Orange County**

- Since the last newsletter, 35 new influenza cases (27 A, 5 B & 3 A/B unspecified) have been reported.
- Of the 188 total reported cases to date: 85% were A, 10% B, and 5% A/B-unspecified.
- Of the 79 subtyped flu A specimens, 65% were H1 and 35% were H3.
- One new case of severe pediatric influenza was reported this week for a total of 6 cases to date (all positive for flu A).

**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.

Avian Influenza Update

- 274 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (6), China (22), Djibouti (1), Egypt (22)*, Indonesia (81), Iraq (3), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 167 (61%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For a list of H5N1-affected countries, see <http://www.ochealthinfo.com/epi/af/index.htm>.

*New reported case(s) since February 16th.

California and USA

- Influenza activity remains regional in CA although it is widespread in 24 other states.
- Nationally, 84% of influenza viruses tested this season have been A and 16% B. Of the subtyped flu A viruses, 87% were H1 and 13% were H3. For information on the specific strain types circulating, see <http://www.cdc.gov/flu/weekly/>.

Recommended Resources

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

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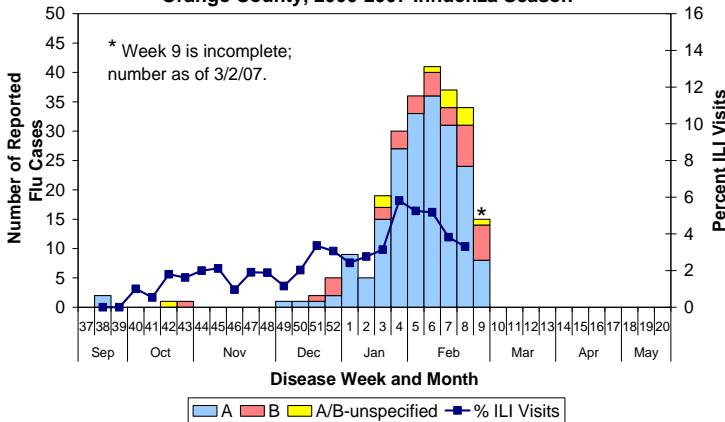


Orange County Health Care Agency, Epidemiology & Assessment, 1719 W. 17th St. Santa Ana, CA 92706, (714) 834-8180

Influenza reports in Orange County have decreased over the past three weeks; however, secondary peaks late in the season are not uncommon, especially with influenza B.

- **It is not too late to vaccinate against seasonal influenza.** Free flu shots are available for adults of all ages and children 6 months of age and older through programs sponsored by OC Health Care Agency. For more info, call the Health Referral Line at 800-564-8448 or visit www.ochealthinfo.com.
- **Study affirms that young children need to be fully vaccinated (2 doses) against influenza to obtain protective effects.** See *Pediatrics* 2007;119:E587-595 available at <http://pediatrics.aappublications.org>.
- **First human case of H5N1 in Lao People's Democratic Republic** was reported this week. The total number of countries with confirmed human H5N1 cases is now 12. For the latest case counts, see: http://www.who.int/csr/disease/avian_influenza/en.
- **Advisory panel recommends that FDA approve the nation's first H5N1 vaccine**, despite evidence that the vaccine is less protective than previously suggested. Two doses of the vaccine, given 28 days apart, generated an immune response in 45% of the recipients. According to the manufacturer, Sanofi Pasteur, there were no serious side effects of significant adverse events. See: <http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/feb2707vaccine.html>.
- The **Institute of Medicine (IOM)** has created a special **committee on PPE for healthcare workers during an influenza pandemic**. A report is expected in September. For more information, see <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/mar0107iom.html>.

Reported Influenza Cases by Type & Percent of Visits Due to Influenza-Like Illness (ILI)
Orange County, 2006-2007 Influenza Season



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.

Orange County

- Of the 239 total reported cases to date: 82% were A, 14% B, and 5% A/B-unspecified.
- Of the subtyped flu A specimens, 60% were H1 and 40% were H3.
- One new case of severe pediatric influenza was reported this week for a total of 7 cases to-date; all were positive for flu A.



Avian Influenza Update

277 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (6), China (23)*, Djibouti (1), Egypt (23)*, Indonesia (81), Iraq (3), Lao PDR (1)*, Nigeria (1), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 167 (60%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa, and Europe. For a list of H5N1-affected countries, see

<http://www.ochealthinfo.com/epi/af/index.htm>

*New reported case(s) since February 23rd.

California and USA

- Influenza activity remains regional in CA.
- Nationally, 84% of laboratory confirmed flu viruses were A and 16% were B.
- Of the subtyped flu A viruses nationally, 85% were H1 and 15% were H3. 95% of the flu A/H1 viruses characterized were similar to the flu A/H1 component of the 2006-07 flu vaccine.

Recommended Resources

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

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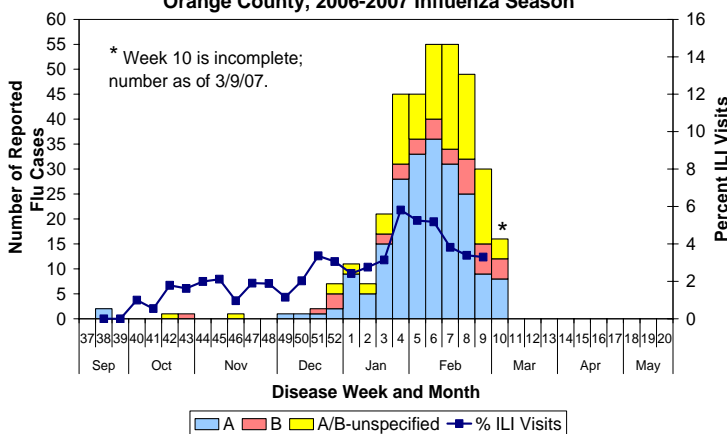


Orange County Health Care Agency, Epidemiology & Assessment, 1719 W. 17th St. Santa Ana, CA 92706, (714) 834-8180

Influenza activity continues to decrease in Orange County. After this issue, publication frequency of the Eye on Influenza newsletter will decrease to every other week.

- **CDC reports flu-shot coverage children with asthma was low (29%)** during the 2004-05 influenza season. This report is the first national estimate of vaccination coverage in children with current asthma. Annual flu vaccination has been recommended for children with asthma since 1964. These findings indicate that influenza vaccination coverage among children with asthma is inadequate and that opportunities for vaccination during health-care provider visits likely are being missed. See <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5609a2.htm> for more information.
- **It is not too late to vaccinate against seasonal influenza. Free flu shots are available** for adults of all ages and children 6 months of age and older through programs sponsored by OC Health Care Agency. For more info, call the Health Referral Line at 800-564-8448 or visit www.ochealthinfo.com.
- **Very low doses of an inactivated H5N1 vaccine using adjuvant may provide cross-protection against more than one H5N1 strain**, according to findings released by GlaxoSmithKline. Further trials are needed to confirm the findings. Vaccines that are effective against more than one strain could strengthen the case for building pre-pandemic vaccine stockpiles. For more information, see <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/mar0607vaccine.html>.
- **Review article, "1918 Influenza Pandemic: Insights for the 21st Century"**, addresses questions regarding the pandemic virus origin, unusual epidemiologic features, and the causes and demographic patterns of fatality. See *J Infect Dis* 2007;195:1018-1028.
- **First human H5N1 death in Lao People's Democratic Republic confirmed.** See http://www.who.int/csr/don/2007_03_08/en/index.html.

Reported Influenza Cases by Type & Percent of Visits Due to Influenza-Like Illness (ILI)
Orange County, 2006-2007 Influenza Season



Orange County**

- Since the last newsletter, there have been 16 new influenza cases (8 A, 4 B & 4 A/B unspecified).
- Of the 354 total reported cases to date: 58% were A, 10% B, and 32% A/B-unspecified.
- Of the 105 subtyped flu A specimens, 60% were H1 and 40% were H3.
- To date, a total of 8 severe pediatric influenza (all flu A) cases have been reported, including 2 deaths.

**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.

Avian Influenza Update

- 277 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (6), China (23), Djibouti (1), Egypt (23), Indonesia (81), Iraq (3), Lao People's Democratic Republic (1), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 168 (61%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For a list of H5N1-affected countries, see <http://www.ochealthinfo.com/epi/af/index.htm>.



Recommended Resources

General: <http://www.cdc.gov/flu/>

OC: <http://www.ochealthinfo.com/epi/flu/surveillance.htm>

CDC: <http://www.cdc.gov/flu/weekly/>

HHS: <http://www.pandemicflu.gov/>

CA: <http://www.dhs.ca.gov/ps/dcde/VRDL/html/FLU/Fluintro.htm>

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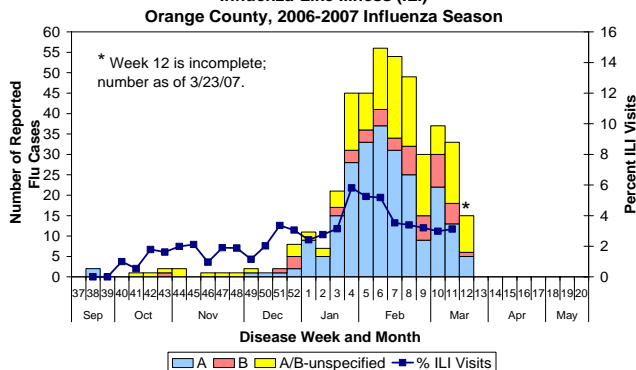
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Influenza activity continues to decrease in Orange County.

- **Japan warns against use of oseltamivir (Tamiflu) in teens.** Concerns about neuropsychiatric symptoms associated with Tamiflu continue after 2 teenagers in Japan fell from buildings to their death after taking Tamiflu. In November 2006, Roche released a warning that people who have influenza, particularly children, might be at increased risk for self-injury and confusion shortly after taking Tamiflu and should be monitored for signs of unusual behavior. The FDA reviewed reports of adverse neuropsychiatric events reported following the use of Tamiflu and concluded that it is unclear whether these adverse events were related to the use of Tamiflu only, influenza infection only, or both. See <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/mar2107tamiflu.html>.
- **Baby in Hong Kong infected with influenza A H9N2 strain.** This strain has caused mild human illnesses 3 times previously in Hong Kong and is also considered capable of evolving into a pandemic strain. H9N2 strains have been reported to be widespread in Eurasian poultry. The US National Institute of Allergy and Infectious Diseases (NIAID) contracted with Chiron in 2004 to make an H9N2 vaccine; phase I clinical trials last year showed good immune responses to the vaccine.
- **USDA to boost H5N1 prevention efforts in the U.S.** by increasing antismuggling efforts and monitoring of live bird markets, and focusing wild bird sampling on high-risk species and geographic locations. In addition, the USDA is collaborating with the United Nations Food and Agriculture Organization (FAO) on international efforts. For more information, please visit <http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/mar1507usda.html>.
- **Newly issued FDA Pandemic Influenza Preparedness Strategic Plan** addresses vaccines, antiviral medications, medical devices, food and feed safety, emergency preparedness and response, and enforcement actions against fraudulent or counterfeit products. For more info, see http://www.fda.gov/oc/op/pandemic/strategicplan03_07.html.
- **New Pandemic Planning Checklist for Health Insurers** released by HHS. See <http://www.pandemicflu.gov/plan/workplaceplanning/healthinsurer.html>.



Reported Influenza Cases by Type & Percent of Visits Due to Influenza-Like Illness (ILI)



Orange County**

- Since the last newsletter, there have been 74 new influenza cases (34 A, 10 B & 30 A/B unspecified).
- Of the 428 total reported cases to date: 56% were A, 11% B, and 33% A/B-unspecified.
- Of the 123 subtyped flu A specimens, 54% were H1 and 46% were H3.
- To date, a total of 8 severe pediatric influenza (all flu A) cases have been reported, including 2 deaths.

**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.

California

- Influenza activity has decreased in CA and went from regional to local last week.

Avian Influenza Update

- 281 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (6), China (23), Djibouti (1), Egypt (26), Indonesia (81), Iraq (3), Lao People's Democratic Republic (2), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 169 (60%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For a list of H5N1-affected countries, see <http://www.ochealthinfo.com/epi/af/index.htm>.

Recommended Resources

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

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Eye on Influenza

April 20, 2007
Volume 3, Issue 17

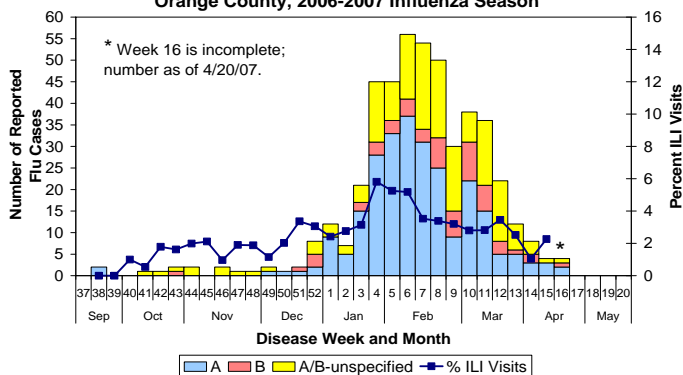
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Influenza activity continues to decrease in Orange County and in the United States.

- **Clinical trial shows that an influenza vaccine grown in insect cells instead of chicken eggs is safe and immunogenic.** Recombinant hemagglutinin, an influenza surface protein, is made in fall armyworm cells by cloning hemagglutinin genes from target flu viruses into baculoviruses and then infecting the insect cells with the baculovirus. Baculoviruses are harmless to humans as they do not grow in mammalian cells. Hemagglutinin is the sole active ingredient in this new vaccine. The advantages to using cell-culture technology are safety (no live viruses are used) and faster production of the vaccine. The manufacturer expects FDA approval before the 2008-09 flu season. See: <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/apr1207cell.html>.
- **International network of researchers to study effects of doubling the dose of oseltamivir (Tamiflu) on persons infected with H5N1 or severe seasonal flu.** Tamiflu is the first-line treatment for H5N1 patients and experts suggest that higher doses and/or longer treatment may improve survival. Results of this trial may affect quantities of Tamiflu stockpiled by governments for pandemic planning. See www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/mar2907tamiflu.html.
- **FDA announced the first approval of a human vaccine against H5N1 in the United States.** This inactivated vaccine may provide early limited protection in an H5N1 pandemic while a pandemic strain-specific vaccine is being developed and produced. The vaccine was prepared from a human strain of the virus and is intended for persons ages 18-64 years who could be at increased risk of exposure to the H5N1 virus. The vaccine will not be sold commercially. For more information: <http://www.fda.gov/bbs/topics/NEWS/2007/NEW01611.html>.
- **New informational “Keep Bird Flu Out of the U.S.” poster available at www.pandemicflu.gov.**



Reported Influenza Cases by Type & Percent of Visits Due to Influenza-Like Illness (ILI)
Orange County, 2006-2007 Influenza Season



****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.

Avian Influenza Update

- 291 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (24), Djibouti (1), Egypt (34), Indonesia (81), Iraq (3), Lao People’s Democratic Republic (2), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 172 (59%) deaths. For an up-to-date list of H5N1-affected countries, see <http://www.ochealthinfo.com/epi/af/index.htm>.

Orange County**

- Since the last newsletter, there have been 43 new influenza cases (16 A, 7 B & 20 A/B unspecified).
- Of the 471 total reported cases to date: 54% were A, 12% B, and 34% A/B-unspecified.
- Of the 127 subtyped flu A specimens, 54% were H1 and 46% were H3.
- To date, a total of 9 severe pediatric flu (8 flu A & 1 A/B unspecified) cases and 4 deaths (3 pediatric flu-associated) have been reported.
- **Sentinel providers: Please continue reporting year-round.** Tracking of ILI and flu case reports allows us to monitor for importation of new viruses, outbreaks, or other unusual illness activity. Thanks for your participation!

California & the U.S.

- Influenza activity is sporadic in CA but continues widespread in four states: Delaware, Montana, New Hampshire and New York.

Recommended Resources

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

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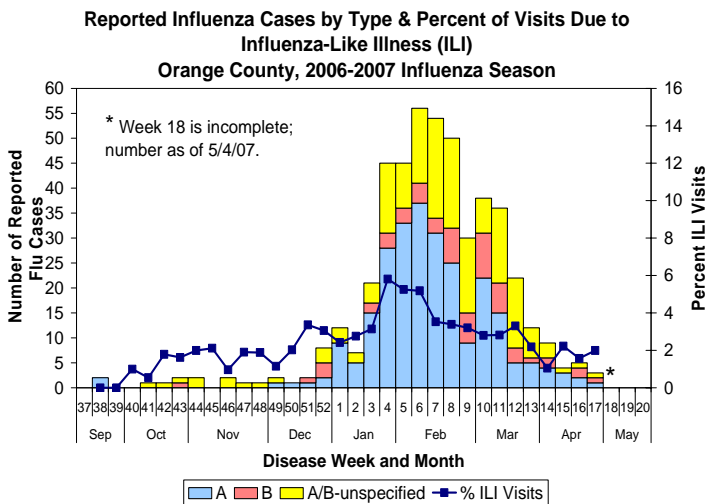
This issue includes a summary report of the 2006-07 OC influenza season to date. We will continue to send out *Eye on Influenza* every two weeks to provide avian influenza updates.

- **Roche decreases Tamiflu (oseltamivir) production** as a result of waning demand by consumers. The company will maintain stocks of the ingredients it uses to make Tamiflu throughout its supply chain and will maintain close contact with its manufacturing partners so that it can respond quickly to surges in demand. Production will return to full capacity level if inventories of key Tamiflu ingredients drop below target levels, or if the WHO raises the pandemic alert level from 3 to 4 (signaling increased human-to-human transmission). For additional information, please visit <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/apr2607tamiflu.html>
- **WHO updates clinical guidance on treatment of H5N1 patients.** Updated recommendations include modified regimens (including higher doses and/or longer duration) of oseltamivir for treatment and a warning against steroid use. For more information, see http://www.who.int/csr/disease/avian_influenza/meeting19_03_2007/en/index.html.
- **CDC issues interim guidance on the use of masks and respirators in non-occupational community settings during an influenza pandemic.** For more information, see <http://www.pandemicflu.gov/plan/community/maskguidancecommunity.html>.



Orange County**

- Influenza activity in Orange County during the 2006-2007 season was similar to that in California and the United States; the majority of influenza detections were flu A and the peak of influenza activity was in mid-February.



- To date this season, 476 cases of influenza (257 A, 57 B, 162 A/B unspecified) were reported by OC hospitals (87%), influenza-like illness (ILI) sentinel providers (12%) and other sources (1%).
- Of the 228 specimens submitted to the OC Public Health Laboratory for flu testing, 112 (49%) were from ILI sentinel providers, 110 (48%) were from hospitals and 6 were from other sources.
- Of the 128 subtyped flu A specimens, 69 (54%) were H1 and 59 (46%) were H3. Of the 7 strain-typed specimens, 5 were A/New Caledonia/20/99 (H1N1)-like, 1 was A/Wisconsin/65/2005(H3N2)-like and 1 was B/Victoria lineage.***
- Ten severe pediatric influenza (9 flu A & 1 A/B unspecified) cases have been reported, including 3 deaths.

**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.

United States

- Through 4/21/07: 79.6% of influenza viruses tested by collaborating laboratories were type A and 20.4% type B. 68.6% of subtyped flu A viruses were H1 and 31.4% H3. 93% of strain-typed H1 viruses were A/New Caledonia/20/99-like; 28% of strain-typed H3 viruses were A/Wisconsin/67/2005-like and 72% showed somewhat reduced titers against A/Wisconsin/67/2005; and 74% of B viruses were of the B/Victoria lineage.***

***Note: 2006-2007 influenza vaccine components included A/New Caledonia/20/99-like (H1N1), A/Wisconsin/67/2005-like (H3N2), and B/Malaysia/2506/2004-like (a B/Victoria lineage strain). WHO has recommended that the H1N1 component be changed to A/Solomon Islands/3/2006-like (H1N1) for 2007-2008.

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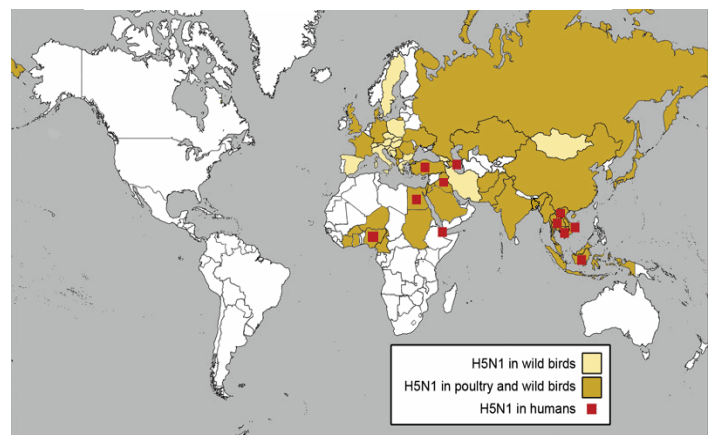
- **FDA advisory panel recommends FluMist approval for children ≥ 2 years of age.** The vote was unanimous in favor of expanding the use of the vaccine from healthy 5-49 year-olds to 2-49 year-olds. The FDA is expected to make a decision by the end of May. See <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/may1707flumist.html>.
- **CDC health advisory reports increase in pediatric influenza-associated deaths with *Staphylococcus aureus* co-infection.** Although the number of pediatric influenza-associated deaths is similar this season ('06-'07) to that reported in the previous two years, there has been an increase in the number of deaths with influenza and *S. aureus* co-infection from one in '04-'05, to 3 in '05-'06, and 16 in '06-'07 (through 5/7/07). Of the 16 with *S. aureus* this season, 11 (69%) had methicillin-resistant *S. aureus* (MRSA) isolated from a sterile site or sputum. 39% of the 55 total pediatric influenza-associated deaths reported this season have had bacterial co-infection. Healthcare providers should be alerted to the possibility of bacterial co-infection among children with influenza, and request bacterial cultures when bacterial co-infection is suspected. For more info, visit <http://www2a.cdc.gov/HAN/ArchiveSys/>. **All pediatric influenza-associated deaths or intensive care unit (PICU/NICU) hospitalizations should be reported promptly to Orange County Epidemiology at 714-834-8180.**
- **WHO reports low frequency of oseltamivir (Tamiflu) resistance in influenza isolates from 2003-2006.** This testing was done on community isolates in Japan, where there is the highest per capita use of oseltamivir in the world. For more info: <http://www.who.int/wer/2007/wer8217.pdf>.
- **FDA clears the first respirators for use by the public in a public health medical emergency.** These two cleared filtering facepiece respirators, the 3M Respirator 8612F and 8670F, will be made available to the general public without a prescription and may be used to help reduce the risk of exposure to airborne germs, such as the influenza virus, during a public health medical emergency such as a pandemic. See <http://www.fda.gov/bbs/topics/NEWS/2007/NEW01630.html>.
- **Business planning information on antiviral drugs.** First in a four-part series of articles examining business related stockpiling and use of antiviral medications. For more information, see <http://www.cidrap.umn.edu/cidrap/content/influenza/biz-plan/news/051107antivirals.html>.
- **Q&A on pandemic influenza vaccine available from WHO:** http://www.who.int/immunization/newsroom/PI_QAs/en/index.html.



Avian Influenza Update (as of May 16th)

- 15 additional human H5N1 cases, including 13 deaths, have been confirmed in Indonesia.
- 306 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (24), Djibouti (1), Egypt (34), Indonesia (96), Iraq (3), Lao People's Democratic Republic (2), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 185 (60%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For an up-to-date list of H5N1-affected countries, please visit: <http://www.ochealthinfo.com/epi/af/index.htm>.
- Please report immediately to OC Epidemiology at 714-834-8180 any patients with fever and respiratory symptoms with history of travel to H5N1-affected areas in the 10 days prior to symptom onset.

Nations with Confirmed Cases H5N1 Avian Influenza (May 2007)



Recommended Resources

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

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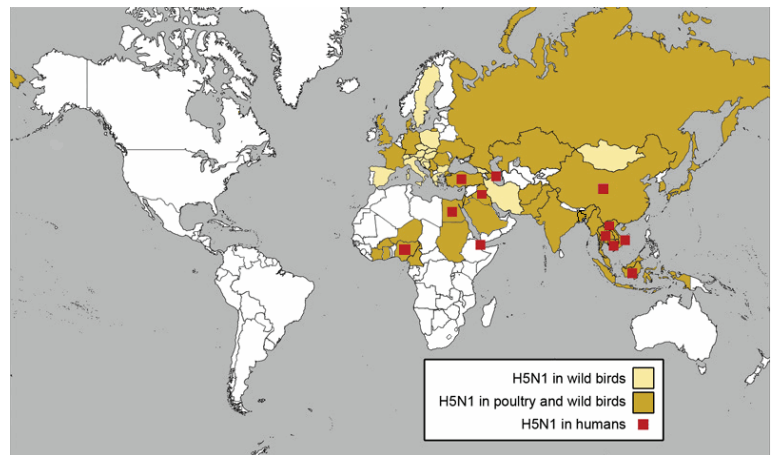
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- **Suspect human-to-human transmission of H7N2 avian influenza virus in Wales.** Four people in Wales tested positive for the H7N2 virus, a low pathogenic strain of avian influenza, days after veterinary officials confirmed an H7N2 outbreak in chickens on a nearby farm. Although there is no laboratory confirmation of human-human spread, it cannot be ruled out and some of the contacts who have conjunctivitis or flu-like illness did not have close contact with infected poultry. Contacts of ill persons are being offered prophylactic antiviral medication and the situation is being monitored closely because of the concern for mutation into a highly pathogenic form. See www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/may2907wales.html.
- **CDC issues guidelines for planning large-scale influenza vaccination clinics.** The document focuses on eight major areas including leadership, human resource needs, location, layout, crowd management, security and advertising, and is intended for both private and public vaccination groups. See www.cdc.gov/flu/professionals/vaccination/vax_clinic.htm?s_cid=ccu052907_flu1_r_e.
- **New OSHA Pandemic Influenza Preparedness and Response Guidelines for Healthcare Workers and Healthcare Employers:** see www.osha.gov/Publications/OSHA_pandemic_health.pdf.
- **Human antibodies protect mice against H5N1 avian influenza.** Monoclonal antibodies made from immune cells from recent human H5N1 survivors from Vietnam were used to successfully treat H5N1-infected mice and protect them from lethal doses of the virus, including a variant strain. Plans include scaling up production of these human antibodies and testing in other animals. See: <http://www.nih.gov/news/pr/may2007/niaid-28.htm>.
- **Pandemic Flu Leadership Blog:** The US Department of Health and Human Services launched a 5-week pandemic flu blog (running through June 27th) that will cover different topics of discussion weekly and is open to the public. The purpose of the blog is to expand discussions on pandemic influenza preparedness by inviting the business, healthcare, and community leaders to comment on specific pandemic issues in preparation for a June 13th leadership forum regarding pandemic preparedness. For details, see <http://blog.pandemicflu.gov/>.

Avian Influenza Update (as of May 31st)

- 309 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (25), Djibouti (1), Egypt (34), Indonesia (98), Iraq (3), Lao People's Democratic Republic (2), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 187 (61%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For an up-to-date list of H5N1-affected countries, please visit: <http://www.ochealthinfo.com/epi/af/index.htm>.
- Please report immediately to OC Epidemiology at 714-834-8180 any patients with fever and respiratory symptoms with history of travel to H5N1-affected areas in the 10 days prior to symptom onset.

Nations with Confirmed Cases
H5N1 Avian Influenza (June 2007)



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

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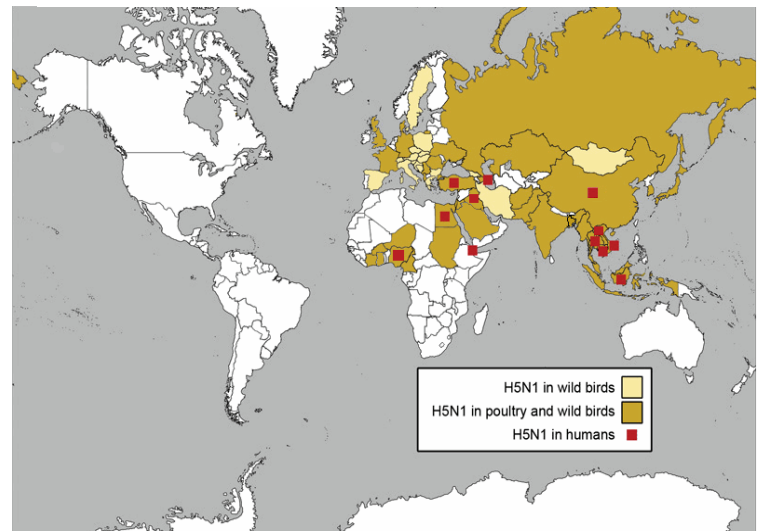
- **Cell-based seasonal influenza vaccine (Optaflu) approved for use in Europe.** This vaccine, made by Novartis, will be the first marketed flu vaccine grown in cell culture instead of eggs. Cell culture technology is thought to be faster and more flexible than egg-based production. The company plans to apply next year for US approval of Optaflu. For additional information, please see <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/jun1307novartis.html>.
- **Many Americans confused about avian influenza and food safety.** A nationwide survey revealed less than half of respondents understood that proper cooking of infected poultry would kill the virus. See <http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/jun1207poultry.html>
- **GlaxoSmithKline to donate 50 million doses of its H5N1 prepandemic flu vaccine to the World Health Organization for distribution to poor countries.** Several other vaccine producers have also promised to donate H5N1 vaccine to the global stockpile. See <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/jun1307gsk.html>.
- **HHS awards \$132.5 million in contracts for expansion of domestic vaccine manufacturing capacity.** The awards to sanofi pasteur and MedImmune will fund renovation of manufacturing facilities to allow for expansion of domestic vaccine manufacturing capacity by 16% and year-round production of pre-pandemic influenza vaccines for the national stockpile. See <http://www.hhs.gov/news/press/2007pres/06/pr20070614a.html>.
- **NIH awards \$6 million grant to develop DNA vaccine manufacturing process.** The award to Vical Inc. will allow for development of the company's RapidResponse system, which is designed for fast, large-scale production of DNA vaccines at low cost. See <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/jun1407vical.html>.
- **Recommendations from HHS Pandemic Leadership Forum,** a new national campaign sponsored by HHS that mobilizes influential community leaders to encourage the public to prepare for a possible pandemic: <http://www.hhs.gov/news/press/2007pres/06/pr20070613a.html>.



Avian Influenza Update (as of June 15th)

- 313 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (25), Djibouti (1), Egypt (36), Indonesia (100), Iraq (3), Lao People's Democratic Republic (2), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (93), and have resulted in 191 (61%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For an up-to-date list of H5N1-affected countries, please visit: <http://www.ochealthinfo.com/epi/af/index.htm>.
- Please report immediately to OC Epidemiology at 714-834-8180 any patients with fever and respiratory symptoms with history of travel to H5N1-affected areas in the 10 days prior to symptom onset.

Nations with Confirmed H5N1 Avian Influenza Cases (as of June 2007)



Recommended Resources

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

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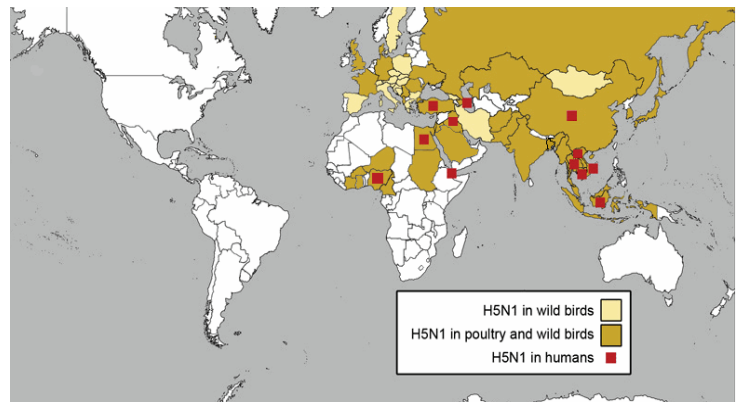
- Prevention and Control of Influenza: Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2007**, is now available at <http://www.cdc.gov/mmwr/>. Highlights:
 - All children aged 6 months – 8 years should receive two (2) doses of influenza vaccine if they have not been vaccinated previously at any time with either live attenuated influenza vaccine or trivalent inactivated vaccine. See ACIP Recommendations for dosing and timing information.
 - All children aged 6 months – 8 years who received only one (1) dose of influenza vaccine in their 1st year of vaccination should receive two (2) doses the following year.
 - All persons, including school-aged children, who want to reduce the risk of becoming ill with influenza or of transmitting influenza to others should be vaccinated.
 - Immunization providers should offer influenza vaccine and schedule immunization clinics throughout the influenza season.
 - Health-care administrators should consider the level of vaccination coverage among health-care personnel (HCP) to be one measure of a patient safety quality program and implement policies to encourage HCP vaccination (e.g., signed declinations).
 - A/Solomon Islands/3/2006 (H1N1)-like, A/Wisconsin/67/2005 (H3N2)-like, and B/Malaysia/2506/2004-like will be the influenza vaccine strains for 2007-2008.
- Researchers discover resistance in influenza viruses to antiviral drugs**. Mutations were uncovered in avian influenza H5N1 strains that appear to reduce the susceptibility to oseltamivir (Tamiflu). Since these mutations were found in bird isolates, it is difficult to draw conclusions about human treatment, but other research suggests higher doses of oseltamivir may overcome the mutations if administered early enough. The WHO is currently revising treatment recommendations for dosing and timing of oseltamivir in H5N1 patients. Mutations were also found in a seasonal H1N1 flu strain which could reduce the effectiveness of zanamivir (Relenza) and the not-yet-released antiviral, peramivir. These mutations appear to be naturally occurring and not the result of inappropriate drug use. For more info, see www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/jun2207resist.html.
- Japanese pharmaceutical company to study adverse events reported after oseltamivir use**. The studies, which will be undertaken by Chugai Pharmaceutical which markets oseltamivir in Japan, were prompted by reports of teenage deaths and other adverse psychiatric and neurologic events following oseltamivir use. A FDA report in 2006 concluded that it was unclear if the adverse neuropsychiatric events were related to the use of oseltamivir only, influenza infection only, or both. www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/jun2007drugs.html.



Avian Influenza Update (as of June 29th)

- 317 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (25), Djibouti (1), Egypt (37), Indonesia (101), Iraq (3), Lao People's Democratic Republic (2), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (95), and have resulted in 191 (60%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For an up-to-date list of H5N1-affected countries, please visit: <http://www.ochealthinfo.com/epi/af/index.htm>.
- Please report immediately to OC Epidemiology at 714-834-8180 any patients with fever and respiratory symptoms with history of travel to H5N1-affected areas in the 10 days prior to symptom onset.

Nations with Confirmed H5N1 Avian Influenza Cases (as of June 2007)



Recommended Resources

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

If you have any comments about the flyer, contact Alina Burgi or Pamela Roa Hipp at (714) 834-8180. To receive this newsletter by email, please contact us at epi@ochca.com.



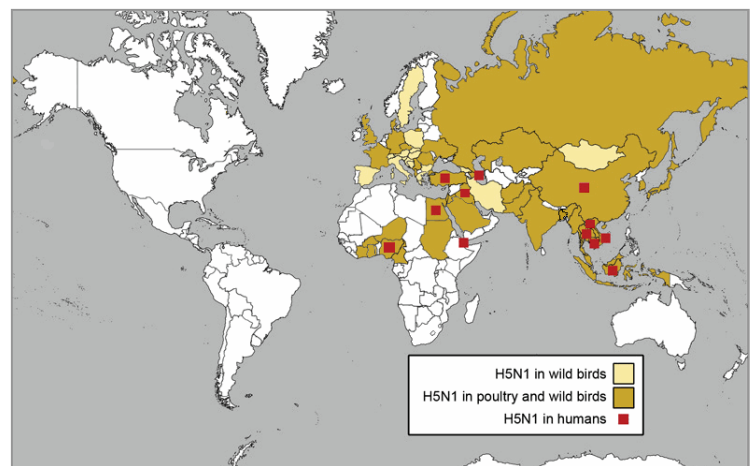
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- **CA hospital influenza law, effective July 1, 2007, requires all acute care hospital employees to be vaccinated annually for influenza or sign a declination.** For more info, see www.dhs.ca.gov/dcdc/izgroup/shared/hospital_influenza_law.htm. With the chaptering of Senate Bill (SB) 739, the California Health & Safety Code now also requires that acute care hospitals:
 - Offer annual onsite influenza vaccinations to all hospital employees at no cost to the employee;
 - Implement respiratory hygiene and cough etiquette protocols, influenza patient isolation procedures, and a seasonal influenza plan;
 - Have a disaster plan that addresses pandemic influenza.
- **Turkeys on a Virginia farm may have been exposed previously to H5N1.** Routine preslaughter testing at one Virginia farm revealed antibodies to H5N1 which have been confirmed by the USDA. The turkeys showed no sign of illness. So far, testing suggests that the antibodies correspond to the low-pathogenic Northern American strain of H5N1, not the highly pathogenic H5N1 strain currently causing outbreaks in birds in Asia, Europe, and Africa. Samples from other poultry operations near the farm have been negative. The positive test results do not indicate a health risk for the public.
- **Czech Republic and Togo report their first poultry outbreaks of highly-pathogenic H5N1.** For an up-to-date list of H5N1-affected countries, visit: www.ochealthinfo.com/epi/af/index.htm.
- **Air passengers arriving from H5N1-affected countries subject to health checks.** A number of countries have instituted health monitoring by various techniques, such as temperature screening, at ports of entry. Travelers should check with the embassy of their destination country. More info available at www.cdc.gov/travel/other/2007/passenger_checks_avian_flu.htm.
- **WHO timeline of major events in H5N1 updated.** Timeline covers 1996 – June 2007. See www.who.int/csr/disease/avian_influenza/timeline_07_07_2007.pdf.

Avian Influenza Update (as of July 11th)

- 318 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (25), Djibouti (1), Egypt (37), Indonesia (102), Iraq (3), Lao People's Democratic Republic (2), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (95), and have resulted in 192 (60%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For an up-to-date list of H5N1-affected countries, please visit: <http://www.ochealthinfo.com/epi/af/index.htm>.
- Please report immediately to OC Epidemiology at 714-834-8180 any patients with fever and respiratory symptoms with history of travel to H5N1-affected areas in the 10 days prior to symptom onset.

Nations with Confirmed H5N1 Avian Influenza Cases (as of July 2007)



Recommended Resources

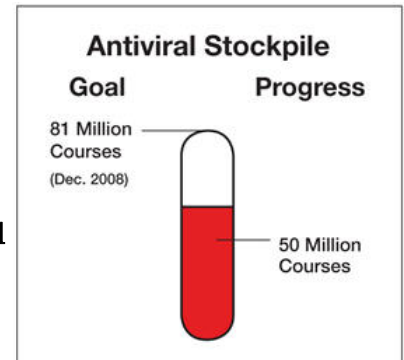
OC: <http://www.ochealthinfo.com/epi/flu/surveillance.htm>;
 CA: <http://www.dhs.ca.gov/ps/dcdc/VRDL/html/FLU/Fluintro.htm>;
 CDC: <http://www.cdc.gov/flu/weekly/>; HHS: <http://www.pandemicflu.gov/>; General: <http://www.cdc.gov/flu/>;

If you have any comments about this flyer, contact Pamela Roa Hipp or Rachaline Napier at (714) 834-8180. To receive this newsletter by email, please contact us at epi@ochca.com.



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- **HHS releases Pandemic Planning Update IV** with updates on monitoring and surveillance, vaccines and vaccine production capacity, antiviral drugs, state and local preparedness, and communications. Information about the status of national stockpiles of H5N1 vaccine and antivirals is included. For more info, see <http://www.pandemicflu.gov/plan/panflureport4.html>.



- **HHS allocates \$896.7 million to states for public health preparedness and emergency response efforts**, an increase from the \$766.4 million allocated in 2006. \$65.3 million has been allocated to California (not including LA County). \$175 million of the total national funds have been earmarked for pandemic influenza planning, a decrease from the \$325 million allocated in 2006. See <http://www.hhs.gov/news/press/2007pres/07/pr20070717c.html>.

- **Improving health system preparedness for terrorism and mass casualty events: Recommendations for action.** This report was developed through a series of leadership summits held by the American Medical Association (AMA) and the American Public Health Association (APHA), and serves as a national call for action from medicine, dentistry, nursing, emergency medical services, hospital systems and public health to strengthen health system preparedness, response and resilience to terrorism and other catastrophic events. Four main areas covered include funding, integration of services and systems, health professional training, and proficiency and legal protection for responders. For additional information, see http://www.ama-assn.org/ama1/pub/upload/mm/415/final_summit_report.pdf.

Orange County Public Health Preparedness News...

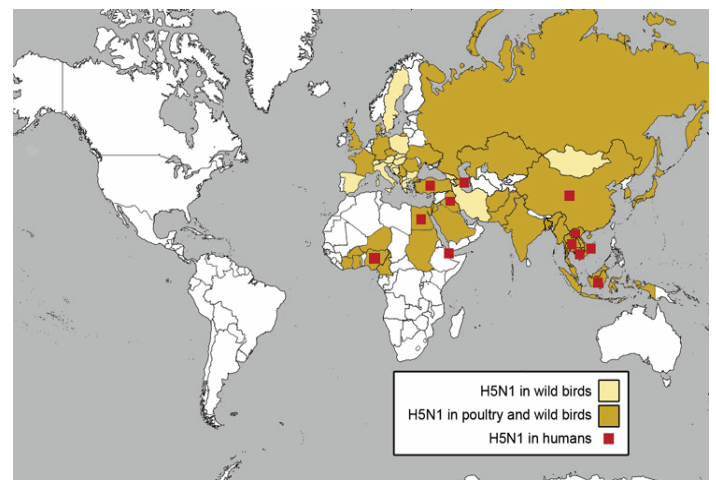
The Orange County Health Care Agency (OCHCA) Health & Emergency Preparedness Planning Council (HEPPC) met again on 7/17/07. This forum for sharing best practices among community stakeholders meets quarterly and has subcommittees for pandemic planning, special populations, businesses, and more! For additional information or to receive the monthly HEPPC newsletter, contact Keith Olenlager at kolenslager@ochca.com or 714-560-6189.



Avian Influenza Update (as of July 25th)

- 319 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (25), Djibouti (1), Egypt (38), Indonesia (102), Iraq (3), Lao People's Democratic Republic (2), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (95), and have resulted in 192 (60%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For an up-to-date list of H5N1-affected countries, please visit: <http://www.ochealthinfo.com/epi/af/index.htm>.
- Please report immediately to OC Epidemiology at 714-834-8180 any patients with fever and respiratory symptoms with history of travel to H5N1-affected areas in the 10 days prior to symptom onset.

Nations with Confirmed H5N1 Avian Influenza Cases (as of July 2007)



Recommended Resources

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

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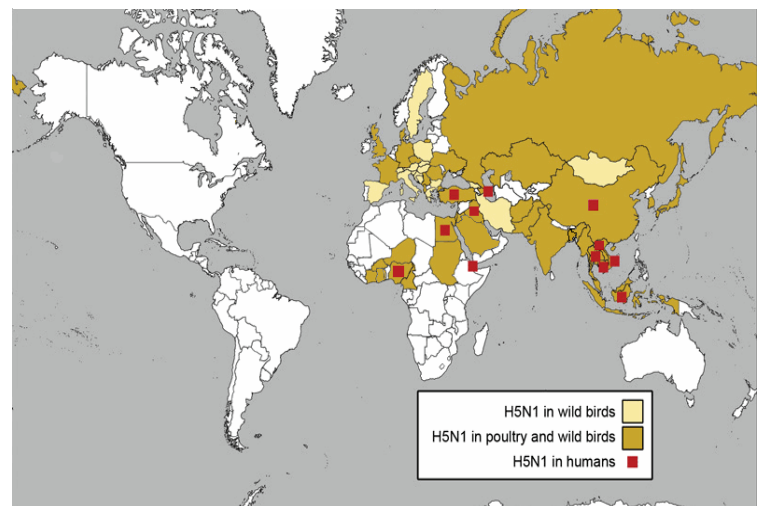
- **Study indicates shedding of influenza virus can occur for 7 days or longer after symptom onset.** A Mayo Clinic study found that 54% of study subjects tested positive for influenza via polymerase chain reaction (PCR) at or after 7 days of illness while 29% were still positive by culture. The longest period of shedding shown was 14 days. The majority of the patients were elderly and had chronic illnesses. Since other patients and hospital staff were not tested, it is not certain if the patients who had influenza genetic material detected by PCR were still capable of spreading the virus. Current CDC recommendations include standard and droplet isolation precautions for hospitalized flu patients for 5 days after symptom onset. See <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/aug0107shedding.html>.
- **British biotechnology company launches clinical trial of a universal influenza A vaccine** designed to target all influenza A viruses, including seasonal and pandemic strains. If successful, we would be one step closer to a universal influenza (A & B) vaccine which would eliminate the need for annual updates in circulating strains for the seasonal influenza vaccine and the delay in reengineering and production when seasonal or potential pandemic viruses mutate. See <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/jul3007acambis.html>
- **Study finds that community measures implemented early during the 1918 pandemic flu prevented deaths.** Scientists from the CDC and University of Michigan Medical School reviewed public records from 1918-1919 and evaluated the impact of public health measures such as school closures, cancellation of public events, and isolation and quarantine, implemented by 43 U.S. cities during the 1918 flu pandemic on the city's excess death rate (from pneumonia and influenza) during the pandemic. Cities that began the interventions earlier had a greater success at decreasing excess deaths. These types of strategies may help reduce the spread of disease until a vaccine matched to the pandemic strain is available. For more information, see <http://www.cdc.gov/od/oc/media/pressrel/2007/r070807.htm>.
- **NIH scientists research future H5N1 mutants as targets for vaccines and other therapeutic modalities.** Targeted mutations are those which improve the ability of the avian virus to bind to human receptors and spread more easily from person to person. For more information, see <http://www.nih.gov/news/pr/aug2007/niaid-09.htm>

Avian Influenza Update (as of July 25th)

- 319 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (25), Djibouti (1), Egypt (38), Indonesia (102), Iraq (3), Lao People's Democratic Republic (2), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (95), and have resulted in 192 (60%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For an up-to-date list of H5N1-affected countries, please visit: <http://www.ochealthinfo.com/epi/af/index.htm>.
- Please report immediately to OC Epidemiology at 714-834-8180 any patients with fever and respiratory symptoms with history of travel to H5N1-affected areas in the 10 days prior to symptom onset.



Nations with Confirmed H5N1 Avian Influenza Cases (as of August 2007)



Recommended Resources

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

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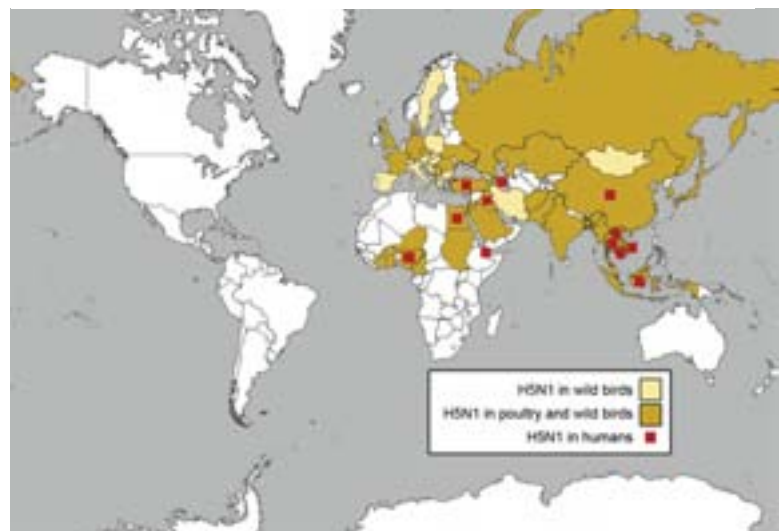
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- **WHO updates clinical management of human influenza A (H5N1) infection.** The document replaces the WHO interim guidelines on clinical management of humans infected with influenza A (H5N1), published in March 2004. These recommendations apply to the current situation of sporadic human H5N1 infection and will be modified as more data is collected or as a result of changes to disease patterns. Clinical management advice includes antiviral treatment with Oseltamivir (Tamiflu), including higher doses, longer duration and possibly combination therapy. See http://www.who.int/csr/disease/avian_influenza/guidelines/clinicalmanage07/en/index.html.
- **GlaxoSmithKline (GSK) announces that HHS orders more prepandemic human H5N1 influenza vaccine and a plan to launch a North American clinical trial of the vaccine.** The new order includes enough bulk vaccine to provide 22.5 million 15-microgram (mcg) doses and is in addition to the bulk equivalent of 5 million 15 mcg doses ordered in November 2006. Currently, HHS has enough vaccine in its H5N1 stockpile to provide 2.3 million doses of GSK vaccine, based on 90 mcg per dose. GSK is performing studies to reduce the dosage from 90 to 15 mcg. In addition, GSK announced the start of its first prepandemic H5N1 vaccine clinical trial that will compare the safety and immunogenicity of the H5N1 vaccine antigen alone and in combination with a GSK adjuvant system. Additional details can be found at the following website: <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/aug1607glaxo-jw.html>.
- **The North American Plan for Avian and Pandemic Influenza**, announced on August 21, 2007, outlines a collaborative effort between Mexico, Canada and the U.S. to prepare for and manage outbreaks of highly pathogenic avian and pandemic influenza. The plan will cover the four priority areas of emergency management including prevention, preparedness, response and recovery. In addition, the plan covers measures to maintain the flow of people, services and cargo across North American international borders. See http://www.spp.gov/pdf/nap_flu07.pdf.

Avian Influenza Update (as of August 23rd)

- 322 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (25), Djibouti (1), Egypt (38), Indonesia (105), Iraq (3), Lao People's Democratic Republic (2), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (95), and have resulted in 195 (61%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For an up-to-date list of H5N1-affected countries, please visit: <http://www.ochealthinfo.com/epi/af/index.htm>.
- Please report immediately to OC Epidemiology at 714-834-8180 any patients with fever and respiratory symptoms with history of travel to H5N1-affected areas in the 10 days prior to symptom onset.

Nations with Confirmed H5N1 Avian Influenza Cases (as of August 2007)



Recommended Resources

OC: <http://www.ochealthinfo.com/epi/flu/surveillance.htm>;
 CA: <http://www.dhs.ca.gov/ps/dcdc/VRDL/html/FLU/Fluintro.htm>;
 CDC: <http://www.cdc.gov/flu/weekly/>; HHS: <http://www.pandemicflu.gov/>;
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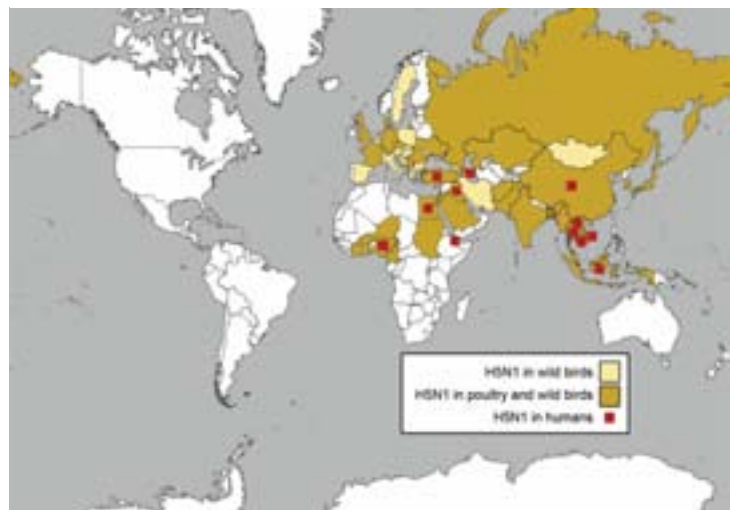
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- **H5N1 influenza vaccine clinical trial results from Glaxo Smith Kline** suggest that a low dose [3.8 micrograms (mcg)] of adjuvanted vaccine could elicit high levels of immunogenicity and cross-clade immunity against A/H5N1 viruses after two doses. By comparison, the first H5N1 vaccine licensed in the U.S. required two 90-mcg doses to induce a good immune response in half of volunteers and two 30-mcg doses of adjuvanted vaccine to induce a good immune response in two thirds of volunteers. Seasonal influenza vaccine contains 15 mcg of hemagglutinin from each strain. See www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/aug2707vaccine.html.
- **A simulation study of patient-staff interactions during evaluation of a suspect avian or pandemic influenza patient estimates need for PPE and antivirals.** The study assessed patient-staff interactions during the initial six hours of hospitalization of a suspect avian or pandemic influenza case who appeared for treatment at nine hospital emergency rooms in Australia. The average number of close contacts and exposures (within one meter of patient) for each suspect case were 12.3 and 19.3 respectively. PPE use was at its highest during the first hour of the simulation. The data suggest that in the initial six hours, HCWs managing the suspect case would require about 20-25 sets of PPE (masks, gowns and a pairs of gloves) and 8-41% of HCW close contacts were likely to require postexposure prophylaxis. Based on the findings, the researchers suggest that the quantity of PPE and antivirals needed to manage suspect avian or pandemic influenza cases, even in a pandemic with low attack rates, would likely be substantially higher than what is currently available in national stockpiles. The authors recommend more studies in other healthcare settings to assess resource needs. See www.cdc.gov/eid/content/13/10/pdfs/07-0033.pdf.
- **Study suggests free chlorine concentrations typically used in drinking water treatment are sufficient to inactivate avian influenza H5N1 virus.** Information about chlorine disinfection in this article may help address the role of water contaminated by H5N1-infected birds in the transmission of the virus to humans and poultry. For more information, see www.cdc.gov/eid/content/13/10/pdfs/07-0323.pdf.

Avian Influenza Update (as of September 10th)

- 328 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (25), Djibouti (1), Egypt (38), Indonesia (106), Iraq (3), Lao People's Democratic Republic (2), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (100), and have resulted in 200 (61%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For an up-to-date list of H5N1-affected countries, please visit: <http://www.ochealthinfo.com/epi/af/index.htm>.
- Please report immediately to OC Epidemiology at 714-834-8180 any patients with fever and respiratory symptoms with history of travel to H5N1-affected areas in the 10 days prior to symptom onset.

Nations with Confirmed H5N1 Avian Influenza Cases (as of September 2007)



Recommended Resources

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 CA: <http://www.dhs.ca.gov/ps/dcde/VRDL/html/FLU/Fluintro.htm>;
 CDC: <http://www.cdc.gov/flu/weekly/>; HHS: <http://www.pandemicflu.gov/>; General: <http://www.cdc.gov/flu>

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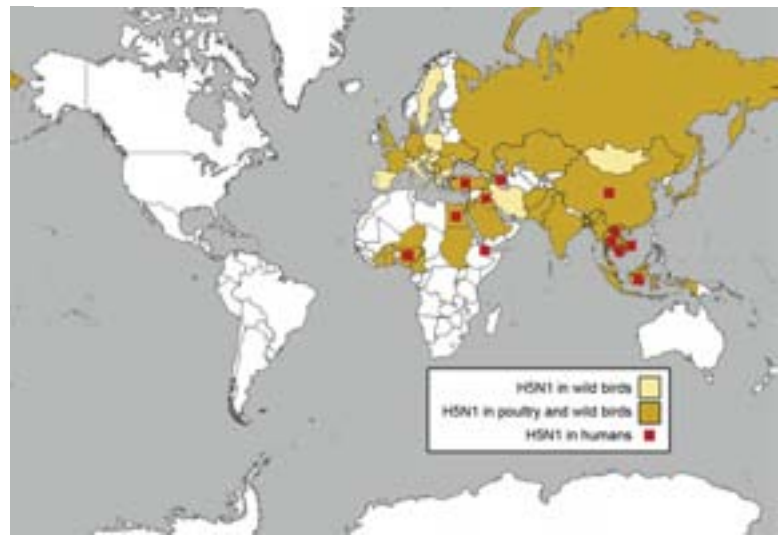
Influenza season is quickly approaching. Consider influenza in your patients with fever and/or respiratory symptoms. To find available retail clinics for influenza vaccine, see www.flucliniclocator.org.

- **Influenza Testing:** Respiratory illnesses caused by influenza viruses are difficult to distinguish from illnesses caused by other respiratory pathogens on the basis of signs and symptoms alone. Positive influenza testing may prevent unnecessary antibiotic therapy or additional diagnostic testing. **However, during times of low influenza activity (such as now, early in the season), false-positive rapid tests are more likely to occur than when influenza is more common, so viral culture is helpful for confirmation of influenza.** Viral isolation (culture) is also the only way that the circulating influenza subtypes and strains can be identified and is critical for influenza surveillance. See www.cdc.gov/flu/professionals/labdiagnosis.htm.
- **FDA approves the use of nasal live attenuated influenza vaccine (LAIV, FluMist) in children ages 2-5 years.** Previously, FluMist was limited to healthy children 5 years of age and older and adults up to 49 years of age. The CDC recommends that all children between the ages of 6 months and 5 years receive an influenza vaccine. The approval of FluMist increases vaccination options in children 2 to 5 years of age. FluMist should not be administered to anyone with asthma or to children under age 5 years with recurrent wheezing because of the potential for increased wheezing after receiving the vaccine. Persons allergic to any of FluMist's components, including eggs or egg products, should also not receive the vaccine. See www.fda.gov/bbs/topics/NEWS/2007/NEW01705.html.
- **CDC predicts this year's supply of influenza vaccine will be the largest ever.** Roughly 132 million doses are expected to be available this year, compared to the ~121 million doses last year, of which 18 million went unused. CDC officials state that vaccination coverage rates in the groups recommended to receive annual influenza vaccine have been persistently low; in 2005-06, only 18% of children aged 6 to 23 months were fully immunized (2 doses) against influenza, and the immunization rate for healthcare workers has remained at about 40% over the last decade. See www.cidrap.umn.edu/cidrap/content/influenza/general/news/sep1907vaccine.html.
- **CDC updates its influenza website (www.cdc.gov/flu)** which includes links to free flu materials.

Avian Influenza Update (as of September 10th)

- 328 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (25), Djibouti (1), Egypt (38), Indonesia (106), Iraq (3), Lao People's Democratic Republic (2), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (100), and have resulted in 200 (61%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For an up-to-date list of H5N1-affected countries, please visit: <http://www.ochealthinfo.com/epi/af/index.htm>.
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Nations with Confirmed H5N1 Avian Influenza Cases (as of September 2007)



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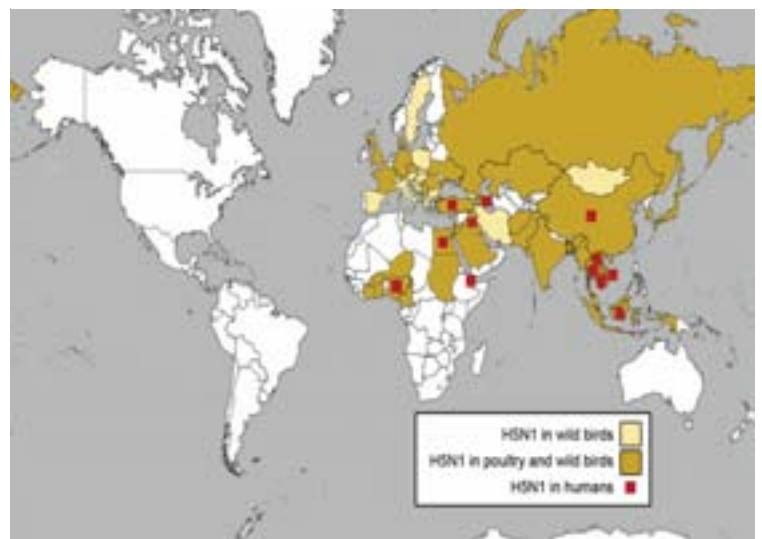
Influenza season is quickly approaching. Now is the time to start vaccinating! Consider influenza in your patients with fever and/or respiratory symptoms.

- **Influenza vaccine:** The County of Orange Health Care Agency (HCA) will be offering free influenza vaccinations to persons meeting eligibility guidelines (see ohealthinfo.com/public/flu/index.htm) beginning November 1st and continuing through the winter months. A calendar listing the dates and locations of all flu clinic sites should be available at this same website or by calling our Health Referral Line at (800) 564-8448 in mid-October. For retail clinics with available influenza vaccine, see www.flucliniclocator.org.
- **FDA approves sixth U.S.-licensed seasonal influenza vaccine.** This inactivated influenza vaccine, Afluria, is available for use in preservative-free syringes and in multiple-dose vials containing thimerosal for persons 18 years of age and older. Afluria is manufactured in Australia and was approved using the FDA's accelerated approval pathway for serious or life-threatening diseases, which reduces the time for needed medical products to become available to the public. With the approval of this vaccine, the CDC estimates that 132 million doses of flu vaccine will be available this season. See www.fda.gov/bbs/topics/NEWS/2007/NEW01714.html.
- **Video podcast explaining influenza vaccine production and distribution process available from the CDC.** This "vodcast" is intended for clinicians, public health partners, and other vaccinators and has a running time of approximately 11 minutes. It is available via video, audio only if you are unable to view the video, and downloadable transcript at www2a.cdc.gov/podcasts/player.asp?f=6678.
- **Highly pathogenic avian influenza H7N3 found in commercial poultry in Saskatchewan (Canada).** H7N3 is not normally associated with serious human illness and is NOT the same as the highly pathogenic H5N1 circulating in birds in Asia, Africa, and Europe. The Canadian Food Inspection Agency will be overseeing the slaughtering and removal of the birds, disinfection of the premises and equipment, and investigation into the source of the infection. In general, avian influenza viruses do not pose risks to food safety when poultry and poultry products are properly handled and cooked. See www.inspection.gc.ca/english/corpaffr/newcom/2007/20070927e.shtml.

Avian Influenza Update (as of October 2nd)

- 329 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (25), Djibouti (1), Egypt (38), Indonesia (107), Iraq (3), Lao People's Democratic Republic (2), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (100), and have resulted in 201 (61%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For an up-to-date list of H5N1-affected countries, please visit: <http://www.ohealthinfo.com/epi/af/index.htm>.
- Please report immediately to OC Epidemiology at 714-834-8180 any patients with fever and respiratory symptoms with history of travel to H5N1-affected areas in the 10 days prior to symptom onset.

Nations with Confirmed H5N1 Avian Influenza Cases (as of October 2007)



Recommended Resources

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

If you have any comments about this flyer, contact Alina Burgi or Pamela Roa Hipp at (714) 834-8180. To receive this newsletter by email, please contact us at epi@ochca.com.