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Eye on Influenza

November 2, 2007
Volume 4, Issue 1

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

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

- **Influenza vaccine:** The County of Orange Health Care Agency is offering free influenza vaccination to persons meeting eligibility criteria; see ochealthinfo.com/public/flu/index.htm for more information. For available retail flu vaccine clinics, see www.flucliniclocator.org.
- **Reminder:** California law prohibits administering mercury-containing vaccines to pregnant women or to children under age three. For more information about the law, see www.dhs.ca.gov/ps/dcdc/izgroup/shared/mercury_law.htm. For a list of available influenza vaccine formulations and their mercury content, see www.cdc.gov/flu/about/ga/vaxsupply.htm.
- **FluMist endorsed by CDC Advisory Committee on Immunization Practices (ACIP) for healthy 2-4 year olds.** Influenza vaccination is recommended for all children aged 6 months to 5 years. FluMist, which is delivered by nasal spray, was FDA approved for healthy 2-4 year olds in September 2007; prior to that it was only approved for healthy 5-49 year olds. Children with asthma should not receive FluMist but instead should receive the standard flu shot. For more information, see www.cidrap.umn.edu/cidrap/content/influenza/general/news/oct2507acip.html.
- **"Pandemic Influenza: Warning, Children at-risk",** a report issued by the American Academy of Pediatrics and Trust for America's Health, highlights the importance of considering children in pandemic flu planning efforts. The five sections cover background and introduction of influenza, strategies to contain the spread of pandemic influenza among children, medication interventions, diagnostics, and policy recommendations. See healthyamericans.org/reports/fluchildren/.
- **The Pandemic Vaccine Puzzle,** a seven part series investigating the prospects for development of pandemic vaccines, puts advances in vaccine technology in perspective by illuminating the formidable barriers to producing an effective and widely usable vaccine in a short time frame. See www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/index.html.
- **HHS draft guidance on allocating and targeting pandemic flu vaccine – open for public comment.** For more information, see pandemicflu.gov/vaccine/prioritization.html.

Avian Influenza Update (as of October 31st)

- 333 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (25), Djibouti (1), Egypt (38), Indonesia (111), Iraq (3), Lao People's Democratic Republic (2), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (100), and have resulted in 204 (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: 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.

Recommended Resources

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

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

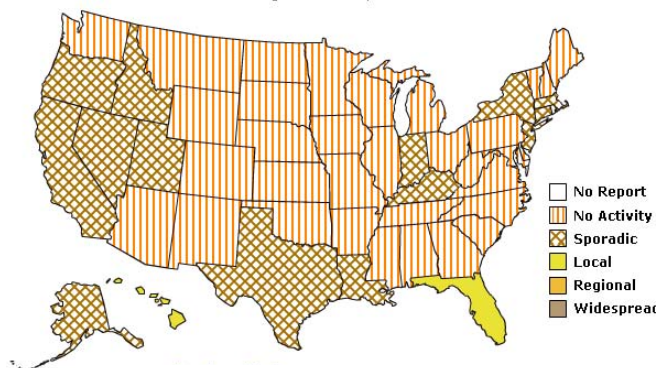
CA: <http://www.dhs.ca.gov/ps/dcdc/VRDL/html/FLU/Fluintro.htm>;

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

National Flu Update (Week Ending October 27th)

- A low level of influenza activity has been reported in the United States. Most states reported no or sporadic activity. Florida and Hawaii reported local activity.
- California reported sporadic influenza activity.

Weekly Influenza Activity Estimates Reported by State and Territorial Epidemiologists*
Week Ending October 27, 2007 - Week 43



*This map indicates geographic spread and does not measure the severity of influenza activity.



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



Eye on Influenza

November 16, 2007
Volume 4, Issue 2

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

The Orange County Health Care Agency has confirmed its first two influenza cases (one influenza A & one influenza B) of the 2007-08 season. Consider influenza in your patients with fever and/or respiratory symptoms. All patients with respiratory infections should be handled using Respiratory Hygiene/Cough Etiquette (<http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm>).

- **National Influenza Vaccination Week is scheduled for the week after Thanksgiving, November 27 to December 2**, and is designed to highlight the importance of continuing influenza vaccination and promote greater use of the vaccine through November, December, and beyond. In addition, November 27, 2007, has been reserved as **Children's Flu Vaccination Day** and is intended to raise awareness about the value of vaccinating children, especially high-risk children and their close contacts. For more information on this event including resources, visit the CDC website at <http://www.cdc.gov/flu/nivw/index.htm>.
- **All-time high supply of flu vaccine.** Although influenza activity remains low compared to last season, health officials are encouraging the public to take advantage of the current vaccine supply (103 million doses distributed so far) and get vaccinated now and through December or later. For more info, see <http://www.cdc.gov/od/oc/media/pressrel/2007/r071109.htm>.
- **Study concludes that treatment with antivirals is associated with a significant reduction in mortality in adults hospitalized with laboratory confirmed influenza.** This was a prospective study where the main outcome evaluated was death within 15 days after symptom onset. The median age of the 327 enrolled adults was 77 years (range, 15-98 years), 75% of whom had underlying chronic illness. Antiviral treatment reduced the risk of death by 79%, but did not reduce the length of hospital stay. The majority of these patients who received antivirals had treatment initiated more than 48 hours after the flu symptoms began. In healthy adults, previous studies reported beneficial effects only when given within the first 48 hours after symptom onset. Researchers concluded that the use of antiviral drugs in hospitalized confirmed influenza cases can be beneficial. For more info, visit <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/nov1407antiviralrev.html>

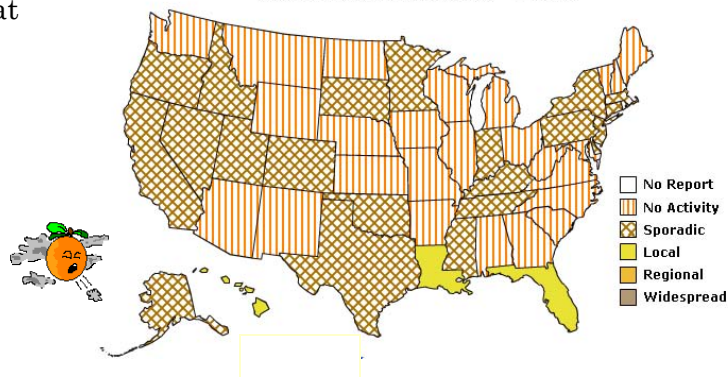
Avian Influenza Update (as of November 12th)

- 335 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (25), Djibouti (1), Egypt (38), Indonesia (113), Iraq (3), Lao People's Democratic Republic (2), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (100), and have resulted in 206 (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: 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.

National Flu Update (Week Ending November 10th)

- Influenza activity remains low in the United States. Florida, Hawaii, and Louisiana reported local activity. Twenty-one states (including California) and the District of Columbia reported sporadic influenza activity. Twenty-six states reported no activity.

Weekly Influenza Activity Estimates Reported by State and Territorial Epidemiologists*
Week Ending November 10, 2007 - Week 45



Recommended Resources

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

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

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

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

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Eye on Influenza

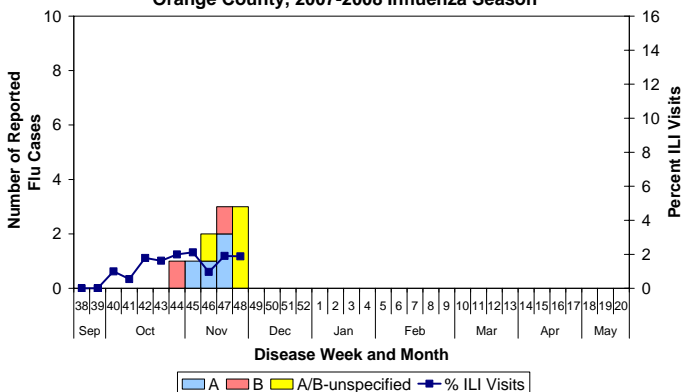
December 3, 2007
Volume 4, Issue 3

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

Influenza activity remains low in Orange County. Now is the time to continue to vaccinate!

- **Breaking from your Comfort Zone - Extending the Influenza Vaccination Season.** The CDC and the National Influenza Vaccine Summit is co-hosting this conference call on Thursday, 12/6 at 9 am Pacific Standard Time, for healthcare providers and immunization partners to explain why it is important to extend the influenza vaccination season through March. For more information, see <http://www.cdc.gov/vaccines/ed/ciinc/calls/flucall.htm>.
- **Healthcare providers: Need to purchase influenza vaccine for your patients?** See <http://www.preventinfluenza.org/ivats> and click on the Microsoft Excel spreadsheet.
- **FDA Pediatric Advisory Committee recommends stronger warning labels for oseltamivir (Tamiflu) and zanamivir (Relenza).** The recommendations were prompted by continued reports of neuropsychiatric adverse events in children and teens in Japan who have taken these medications. Although it is unclear if the two drugs played a role in these neuropsychiatric events, the labeling changes are being recommended by the committee to increase awareness among healthcare providers and encourage them to monitor children closely during medication use. See <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/nov2707tamiflu2.html>.
- **Systemic review of published literature suggests that simple public health measures could be useful in reducing the transmission of respiratory viruses.** Of the studies reviewed, the highest quality cluster randomised controlled studies suggested that spread of respiratory viruses in the community could be prevented by implementing hygiene measures aimed at younger children. In addition, meta-analysis of six case-control studies suggested that physical measures were effective in preventing the spread of SARS; these measures included handwashing more than 10 times per day, wearing masks, and/or gloves, and the combination of handwashing, masks, gloves and gowns. See *BMJ* online publication: <http://www.bmj.com/cgi/reprint/bmj.39393.510347.BEv1>.
- **Public invited to participate in a web dialogue on vaccination prioritization for pandemic influenza.** This internet-based discussion will involve citizens, experts, policy makers, and public agencies and will take place from 12/4 through 12/6. For more information and to register, see <http://www.webdialogues.net/cs/panflu-engage-home/view/di/104?x-t=home.view>.

Reported Influenza Cases by Type & Percent of Visits Due to Influenza-Like Illness (ILI)
Orange County, 2007-2008 Influenza Season



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

- To date, there have been 10 total reported flu cases in OC; 4 flu A (3 A/H1), 2 flu B, & 4 A/B unspecified.
- Last week, an OC severe pediatric influenza case (hospitalized in the PICU) was confirmed.
- Influenza activity in CA remains sporadic.
- Overall influenza activity remains low in the U.S. with no states reporting regional or widespread activity.



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

Avian Influenza Update

- No additional human H5N1 cases have been confirmed since the last update. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. For an up-to-date list of H5N1-affected countries: www.ochalthinfo.com/epi/af/index.htm.

Recommended Resources

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

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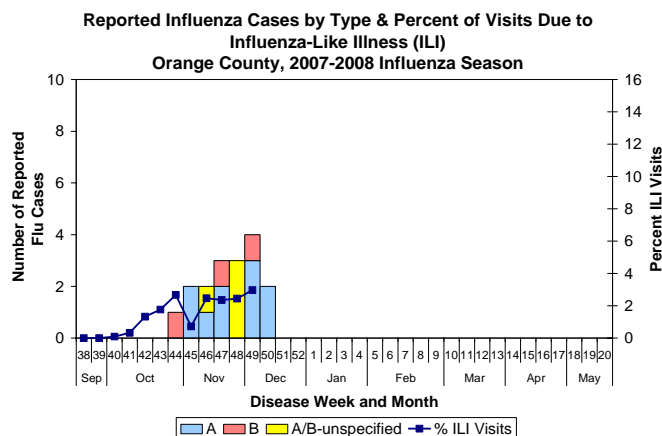
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Influenza activity remains low in Orange County. Keep the holidays healthy: vaccinate!

- **CDC and the National Influenza Vaccine Summit urge healthcare providers to extend influenza vaccination efforts through March 2008.** During a teleconference held on 12/6, experts emphasized that vaccination should not end in December as flu season continues into early spring. In addition, experts noted that physicians have the ability to educate patients that refuse vaccine and to ensure that clinic staff are vaccinated, not only to protect themselves and patients but also to help debunk myths regarding the vaccine. For more information and to obtain a copy of the presentation, visit <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/dec0607vaccination.html>.
- **U.S. Department of Health and Human Services releases toolkit to promote local pandemic preparedness.** The toolkit materials were developed based on input received from community leaders and the CDC during a 5-week blog series and leadership forum held earlier this year. These materials are intended for community groups such as churches and businesses, healthcare and civic organizations, and can be adapted to meet the needs of each entity. The toolkit includes templates for publicizing campaigns to stockpile food, checklists, fact sheets, sample e-mails, and sample newsletter articles and provides ideas about incentives for attending pandemic planning meetings and related activities. To access the toolkit, see <http://www.pandemicflu.gov/takethelead/index.html>.
- **Public offers ideas to revise draft pandemic vaccine allocation plan.** During a three-day web dialogue with pandemic experts and federal and county public health partners, public participants offered suggestions to fine-tune the plan, including prioritization of families of first responders and key healthcare workers, and elevating the priority of critical infrastructure workers, such as those that maintain the electric power grid. For more information, see <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/dec1207priority.html>.



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

- To date, there have been 17 total reported influenza cases in OC; ten A, three B, & four A/B unspecified.
- Of the ten influenza A, five have been subtyped; four A/H1 and one A/H3.
- A low level of influenza activity has been reported in the United States. Most states reported no or sporadic activity.
- California reported sporadic influenza activity while Arizona, Colorado, Florida, Hawaii, Massachusetts, and Virginia reported local activity and Texas reported regional activity.

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

Avian Influenza Update (as of Dec. 14th)

- Myanmar has confirmed its first human H5N1 case, bringing the total of countries with confirmed human cases to 13.
- 340 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (27), Djibouti (1), Egypt (38), Indonesia (115), Iraq (3), Lao People's Democratic Republic (2), Myanmar (1), Nigeria (1), Thailand (25), Turkey (12), and Vietnam (100), and have resulted in 208 (61%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe. See www.ochealthinfo.com/epi/af/index.htm.

Recommended Resources

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



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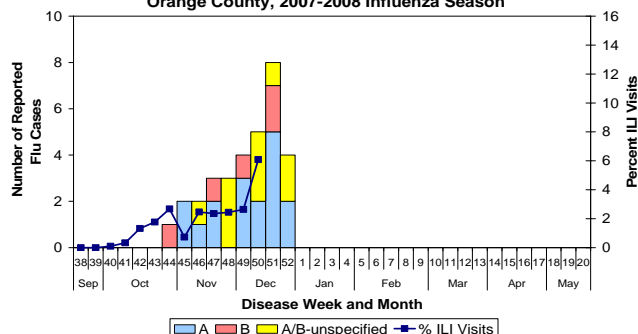


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Influenza activity remains low in Orange County. Stay healthy to welcome 2008 and get vaccinated!

- **Faces of Influenza**, the American Lung Association's Influenza Prevention Program, is an educational website designed to put a face on influenza in the U.S., show firsthand how serious this infectious disease can be, and encourage vaccination. Tools for healthcare providers and educators are included, as well as a link to find the nearest flu clinic (www.flucliniclocator.org).
- **Pandemic Influenza and Pregnant Women.** This article in *Emerging Infectious Diseases* emphasizes that pandemic influenza planning should include considerations specific to pregnant women. Pregnant women are at increased risk for severe influenza-associated complications and death. Maternal influenza infection, associated fever, and therapeutic and/or prophylactic agents may have effects on the fetus, and concerns about adverse effects may influence compliance with public health recommendations during a pandemic. See www.cdc.gov/eid/content/14/1/95.htm.
- **Promising Practices for Pandemic Planning: Organization incorporates spiritual support into emergency response.** The current article focuses on the National Voluntary Organizations Active in Disaster's (NVOAD) emotional and spiritual care committee that was founded in 2001, in response to members' experiences in providing spiritual support after September 11. The committee developed a handbook, *Light Our Way*, on spiritual health tools to guide disaster relief workers as they assist victims and as they themselves recover from difficult response efforts. For more info, see www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/dec1707spiritualpp.html. To view the Promising Practices: Pandemic Preparedness Tools website: www.pandemicpractices.org/practices/.
- **WHO releases report on Ethical Considerations in Developing a Public Health Response to Pandemic Influenza** www.who.int/csr/resources/publications/WHO_CDS_EPR_GIP_2007_2c.pdf.

Reported Influenza Cases by Type & Percent of Visits Due to Influenza-Like Illness (ILI)
Orange County, 2007-2008 Influenza Season



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

- To date, there have been 32 total reported influenza cases in OC; 17 A, five B, & ten A/B unspecified.
- Of the 17 influenza A, eight have been subtyped: six A/H1 and two A/H3.
- To date, there have been three laboratory confirmed severe pediatric influenza (PICU) cases in OC.
- Influenza activity is increasing in the U.S. with only eight states reporting no activity in week 51 (week ending 12/22/07). California reported sporadic influenza activity.

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

Avian Influenza Update (as of Dec. 28th)

- Pakistan has confirmed its first human H5N1 case, bringing the total of countries with confirmed human cases to 14. Additional human cases have been reported in Egypt, Vietnam, and Indonesia since our last update 12/14/07.
- 346 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (27), Djibouti (1), Egypt (41), Indonesia (116), Iraq (3), Lao People's Democratic Republic (2), Myanmar (1), Nigeria (1), Pakistan (1), Thailand (25), Turkey (12), and Vietnam (101), and have resulted in 213 (62%) deaths. H5N1-infected birds have been reported in multiple areas in Asia, Africa and Europe.

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



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Eye on Influenza

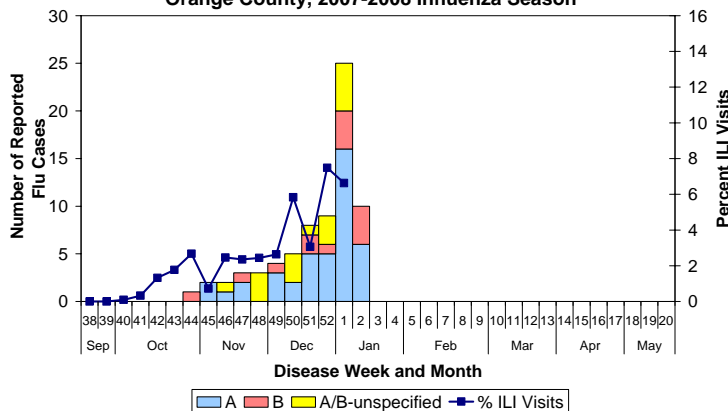
January 11, 2008
Volume 4, Issue 6

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

Influenza activity is increasing in Orange County. Consider influenza in your patients presenting with fever and/or respiratory symptoms. For information on safety precautions for those traveling to Asia for the upcoming Lunar New Year (February 7), see <http://wwwn.cdc.gov/travel/contentAvianFluAsia.aspx>.

- **FDA approves test that can detect 12 different respiratory viruses, including influenza, from a single sample.** The xTAG Respiratory Viral Panel (RVP) can detect influenza A (and distinguish between H1 and H3 subtypes); influenza B; human metapneumovirus (HMPV); respiratory syncytial virus (RSV) A and B; parainfluenza 1, 2, and 3; rhinovirus, and adenovirus. The test uses polymerase chain reaction (PCR) to amplify viral material in respiratory specimens and color-coded beads tagged with specific viral sequences to identify the viruses. For additional info, see <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/jan0708test.html>.
- **Update on Acambis' universal influenza A vaccine (ACAM-FLU-A):** Results from a randomized, double-blind, placebo-controlled phase 1 clinical trial involving 79 volunteers who received two doses of one of the following: ACAM-FLU-A alone, the vaccine plus one of two adjuvants, or placebo, revealed that 90% of all subjects seroconverted and the vaccine was well tolerated. ACAM-FLU-A is a recombinant vaccine that targets M2e, a conserved region of all influenza A strains. See <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/jan0408vaccine.html>.
- **Promising Practices for Pandemic Planning: Stay at Home Toolkit for Influenza.** The current article focuses on a home care kit that provides the public with practical guidelines on how to care for ill household members. See http://www.pandemicpractices.org/files/234/234_toolkit.pdf for the toolkit and <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/index.html> for a summary.

Reported Influenza Cases by Type & Percent of Visits Due to Influenza-Like Illness (ILI)
Orange County, 2007-2008 Influenza Season



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

- To date, there have been 72 total reported influenza cases in OC; 42 A, 14 B, & 16 A/B unspecified.
- Of the 42 influenza A, 18 have been subtyped: 11 A/H1 and seven A/H3.
- Influenza activity was increasing in the U.S. in week 1 (ending 1/5/08) with Colorado reporting widespread activity and 10 states including CA reporting regional activity. Although a number of influenza A H3 and B strains typed thus far have not matched the 2007-2008 vaccine, it is too early in the season to determine which influenza viruses will predominate or how well the vaccine and circulating strains will match overall.

****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 (as of Jan. 11th)

- 349 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (27), Djibouti (1), Egypt (43), Indonesia (117), Iraq (3), Lao People's Democratic Republic (2), Myanmar (1), Nigeria (1), Pakistan (1), Thailand (25), Turkey (12), and Vietnam (101), and have resulted in 216 (62%) deaths. Infected birds have been reported in multiple areas in Asia, Africa and Europe.
- Consider avian influenza in travelers with fever and respiratory symptoms returning from endemic areas and report suspect cases to Epidemiology.

Recommended Resources

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

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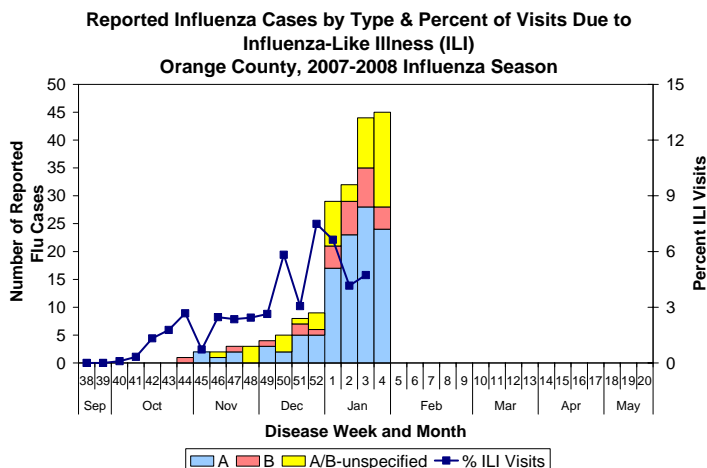
Eye on Influenza

January 25, 2008
Volume 4, Issue 7

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

Influenza activity is increasing in Orange County. Consider influenza in your patients presenting with fever and/or respiratory symptoms. For information on safety precautions for those traveling to Asia for the upcoming Lunar New Year (February 7), see <http://wwwn.cdc.gov/travel/contentAvianFluAsia.aspx>.

- **CDC surveys primary care physicians (PCPs) from four U.S. states on influenza testing and antiviral prescribing.** 69% of 730 PCPs administered influenza tests, mainly rapid antigen tests, to patients with influenza-like illness in the 2006-07 influenza season and 53.8% prescribed antiviral medications, including 26.4% who prescribed amantadine or rimantidine which are no longer recommended for influenza in the U.S. because of resistance in circulating influenza A strains. CDC recommends more education efforts to make PCPs aware of current treatment recommendations and that PCPs use clinical judgment and information about recent influenza activity to guide clinical decisions as rapid antigen tests for influenza have low sensitivities. For more information, see <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5703a1.htm>.
- **WHO Committee publishes “Update on Avian Influenza A (H5N1) Virus Infection in Humans”.** For the free full text version, see <http://content.nejm.org/cgi/content/full/358/3/261>. Key points include:
 - Highly pathogenic avian influenza A H5N1 viruses remain in poultry in Asia, Africa, and the Middle East. Influenza A H5N1 disease in humans remains very rare despite widespread poultry exposures.
 - The median age of H5N1 infected cases is approximately 18 years with 90% < age 40 years.
 - Overall case fatality rate is 61%; it is highest in the 10-19-year-old age group.
 - Increases in human cases have occurred during cooler months in association with increases in poultry outbreaks. However, cases have occurred year-round.
 - The viruses infecting humans have been entirely avian and transmission has mainly occurred directly from birds to humans. Small clusters of human H5N1 illness have been identified in 10 countries. In $\geq 25\%$ of human cases, the source of exposure is unclear.
 - The incubation period generally is < 7 days (most 2-5 days) after exposure to infected poultry.
 - Most illness has manifested as a severe pneumonia that often progresses rapidly to acute respiratory distress syndrome. Median time from onset of illness to presentation was 4 days, and from onset of illness to death was 9-10 days. Lymphopenia and increased lactate dehydrogenase (LDH) at presentation have been associated with poor prognosis.
 - Detection of viral RNA by polymerase chain reaction (PCR) remains the best method for initial diagnosis of H5N1 infection. Diagnostic yield for H5N1 has been higher with throat swabs, but both throat and nasal swabs are recommended because the latter are more useful for detection of human influenza (H3 & H1) viruses. A single negative specimen does not rule out H5N1 and repeated collection is recommended. Commercially available rapid assays for influenza antigen detection have poor sensitivity for H5N1.
 - Early treatment with oseltamivir is recommended although the optimal dose and duration of therapy are uncertain and a higher dose with longer duration (10 days) may be reasonable. Corticosteroids should not be used routinely.
- **WHO launches H5N1 Influenza Virus Tracking System:** www.who.int/fluvirus_tracker/searchsample.



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

- To date, there have been 188 total reported influenza cases in OC; 113 A, 27 B, & 48 A/B unspecified. Of the 113 influenza A, 52 have been subtyped: 31 A/H1 and 21 A/H3.
- To date, there have been six laboratory confirmed severe pediatric influenza (PICU) cases in OC; 3 A/H1, 2 A/H3 and 1 B.
- Influenza activity continued to increase in the U.S. in week 3 (ending 1/19/08) with six states reporting widespread activity and 17 states including CA reporting regional activity.

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Influenza activity continues to increase in Orange County and in the U.S. It's not too late to vaccinate!

- **CDC releases Health Advisory about Influenza-Associated Pediatric Mortality and *Staphylococcus aureus* co-infection.** To access, see www2a.cdc.gov/HAN/ArchiveSys/. Key points include:
 - 73 influenza-associated deaths in children were reported to CDC between 10/1/06-9/30/07.
 - Of the 30 children that had a documented bacterial co-infection recorded, 22 (73%) were infected with *Staphylococcus aureus*. This is an increase from the 2005-2006 season when 3 (6.5%) *S. aureus* co-infections among 46 pediatric influenza-associated deaths were identified, and from the 2004-2005 season when one (2.1%) among 47 deaths was identified.
 - Fifteen (65%) of the 22 pediatric influenza-associated deaths with *S. aureus* co-infections had methicillin-resistant *S. aureus* (MRSA).

Recommendations:

- Healthcare providers should test persons hospitalized with respiratory illness, including those with community-acquired pneumonia, for influenza.
- Healthcare providers should consider the possibility of bacterial co-infection among patients with influenza and request bacterial cultures on those who are severely ill or who have community-acquired pneumonia.
- Healthcare providers should consider the prevalence of MRSA in their communities when choosing empiric therapy for patients with suspected influenza-related pneumonia.
- **Resistance to oseltamivir (Tamiflu) reported in seasonal influenza A H1N1.** Thirteen percent of 148 H1N1 viruses tested in Europe from November and December were resistant to Tamiflu. In the U.S., 5.5% of the 109 H1N1 viruses tested by the CDC so far this season were resistant. The CDC is continuing to monitor resistance patterns and at this time, there are no changes in recommendations for the treatment of seasonal influenza. Current recommendations are available at www.cdc.gov/flu/professionals/antivirals/index.htm.

Physicians, nurse practitioners, and physician assistants are needed to be sentinel providers for influenza surveillance. It takes just a few minutes a week and viral testing on respiratory specimens and rapid test kits are provided. For more information, email mcheung@ochca.com.

Orange County, California, & U.S.

- To date, there have been 277 total reported influenza cases in OC: 170 A, 35 B, & 72 A/B unspecified. Of the 170 influenza A, 70 have been subtyped: 41 A/H1 and 29 A/H3.
- **Please report any severe pediatric influenza cases (hospitalized in the ICU) or deaths to Epidemiology at 714-834-8180.**
- Influenza activity during week 4 (ending 1/26/08) was reported as widespread in 11 states (AK, CO, HI, KS, MA, MI, NM, NY, PA, TX, VA) and regional in 26 states including California.



Avian Influenza Update (as of Feb. 1st)

- 357 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (27), Djibouti (1), Egypt (43), Indonesia (124), Iraq (3), Lao People's Democratic Republic (2), Myanmar (1), Nigeria (1), Pakistan (1), Thailand (25), Turkey (12), and Vietnam (102), and have resulted in 225 (63%) deaths. Infected birds have been reported in multiple areas in Asia, Africa and Europe.
- Consider avian influenza in travelers with fever and respiratory symptoms returning from endemic areas and report suspect cases to Epidemiology at 714-834-8180.

Recommended Resources

CDC: www.cdc.gov/flu/weekly/;
OC: www.ochcahealthinfo.com/epi/flu/surveillance.htm;
CA: www.dhs.ca.gov/ps/dcdcd/VRDL/html/FLU/Fluintro.htm;
HHS: www.pandemicflu.gov/; General: www.cdc.gov/flu

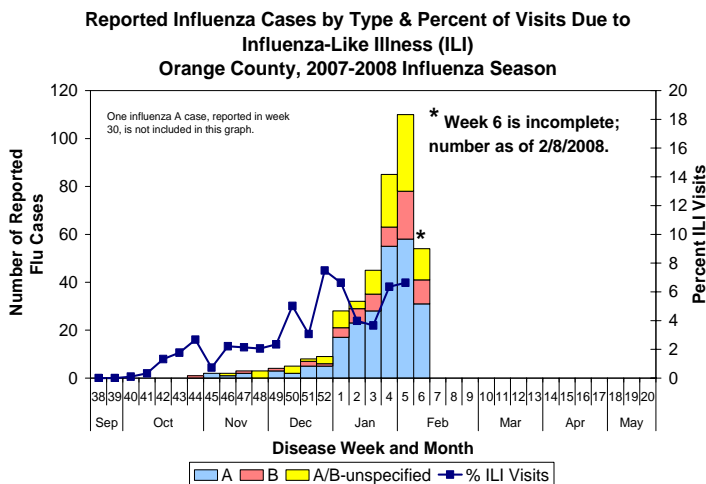
For information on safety precautions for those traveling to Asia for the upcoming Lunar New Year (February 7), see wwwn.cdc.gov/travel/contentAvianFluAsia.aspx



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

Influenza activity is increasing in Orange County. 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 activity continues in Orange County and influenza viruses can still be circulating as late as May. Although some of the viruses characterized by the CDC thus far this season do not match the 2007-2008 influenza vaccine strains, **vaccination still may provide cross-protection against the drifted strains, and many of the circulating viruses are a good match for the other components of the vaccine.**
 - Of the 197 influenza viruses characterized this season, the majority (n=101, 51%) have been influenza A (H1N1). Of which, 97 (96%) were characterized as A/Solomon Islands/3/2006, the influenza A (H1N1) component of the 2007-08 influenza vaccine.
 - Fifty-three (27%) of the 197 influenza viruses characterized thus far this season have been influenza A (H3N2). The A/Brisbane/10/2007 (H3N2)-like strain made up 87% (n=46) of the 53 type A (H3N2) isolates characterized. A/Brisbane/10/2007-like strain is a recent antigenic variant that emerged from the A/Wisconsin/67/2005-like strain, which is the H3N2 component of this season's vaccine. The A/Brisbane strain emerged at the end of Australia's flu season, too late to be included in the flu vaccine for the Northern Hemisphere. According to the WHO, the A/Brisbane-like strain is recommended for the 2008 Southern Hemisphere vaccine.
 - Forty-three (22%) of the 197 influenza viruses characterized this season have been influenza B. The B/Yamagata/16/88 lineage of viruses made up 93% (n=40) of the influenza B isolates characterized. B/Yamagata lineage viruses are not a component of the 2007-08 influenza vaccine. For more info, visit <http://www.cdc.gov/flu/weekly/>.



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

- To date, there have been 392 total reported influenza cases in OC; 233 A, 61 B, & 98 A/B unspecified. Of the 233 influenza A, 93 have been subtyped: 46 A/H1 and 47 A/H3.
- To date, there have been 11 reported severe pediatric influenza (PICU) cases in OC, 9A and 2 B.
- Influenza activity continues to increase in the U.S. in week 5 (ending 2/2/08) with 31 states reporting widespread activity and 11 states including CA reporting regional activity. Deaths for pneumonia and influenza and outpatient visits for influenza-like illness are above baseline levels. Oseltamivir (Tamiflu) resistance has been reported in 8.1% of H1N1 isolates tested.

****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 (as of Feb. 5th)

- 359 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (27), Djibouti (1), Egypt (43), Indonesia (126), Iraq (3), Lao People's Democratic Republic (2), Myanmar (1), Nigeria (1), Pakistan (1), Thailand (25), Turkey (12), and Vietnam (102), and have resulted in 226 (63%) deaths. Infected birds have been reported in multiple areas in Asia, Africa and Europe.

Recommended Resources

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

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

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Eye on Influenza

February 22, 2008
Volume 4, Issue 10

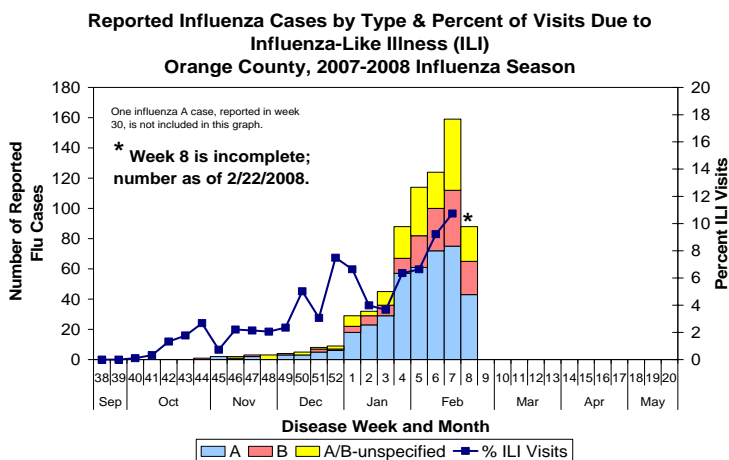
Orange County Health Care Agency, Epidemiology & Assessment, 1719 W. 17th St. Santa Ana, CA 92706, (714) 834-8180

Influenza activity is reported as widespread in CA and increasing in Orange County. Consider influenza in your patients presenting with fever and/or respiratory symptoms.

- **FDA advisory panel votes unanimously to adopt WHO recommendations for 2008-09 Northern Hemisphere influenza vaccine.** Last week U.S. health officials reported mismatches between the influenza A/H3N2 and B components of the 2007-08 influenza vaccine and circulating strains. Although the CDC has not reported a mismatch yet with the A/H1N1 vaccine component in the U.S., WHO has reported that the majority of recent A/H1N1 isolates globally have not matched well with the vaccine. WHO recommends replacing all three components of the 2008-09 Northern Hemisphere influenza vaccine with the following:
 - An H1N1 strain similar to A/Brisbane/59/2007 (replacing A/Solomon Islands/3/2006).
 - An H3N2 strain similar to A/Brisbane/10/2007 (replacing A/Wisconsin/67/2005).
 - A B strain similar to B/Florida/4/2006 (replacing B/Malaysia 2506/2004).

See <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/feb2208vaccine.html>.

- **HHS advisor contributes to Flu Wiki conversation forum.** Dr. William Raub, science advisor to HHS Secretary Mike Leavitt, provided answers to questions about shared responsibility, vaccine allocation, new vaccine technologies, antiviral technologies, community mitigation, and international cooperation from the Flu Wiki community, an online resource and community forum. For more information, visit <http://www.newfluwiki2.com/showDiary.do?diaryId=2179>.
- **The Great Pandemic: The United States in 1918-1919.** Learn more about life during the pandemic at this US Department of Health and Human Services website: <http://1918.pandemicflu.gov/index.htm>.



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

- To date, there have been 717 total reported influenza cases in OC; 401 A, 141 B, & 175 A/B unspecified. Of the 401 influenza A, 116 have been subtyped: 51 A/H1 and 65 A/H3.
- To date, there have been 16 reported severe pediatric influenza (PICU) cases, including one death in OC; 11 tested positive for flu A and 5 B.
- Influenza activity continues to increase in the U.S. in week 7 (ending 2/16/08) with 49 states reporting widespread activity, including CA. Approximately 50% of influenza isolates characterized in the U.S. do not match components of this season's vaccine, although some cross-protection is still expected for some strains. Deaths for pneumonia and influenza and outpatient visits for influenza-like illness continue above baseline levels.

****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 (as of Feb. 21st)

- 365 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (28), Djibouti (1), Egypt (43), Indonesia (129), Iraq (3), Lao People's Democratic Republic (2), Myanmar (1), Nigeria (1), Pakistan (1), Thailand (25), Turkey (12), and Vietnam (104), and have resulted in 231 (63%) deaths. Infected birds have been reported in multiple areas in Asia, Africa and Europe.
- Report any suspect avian influenza cases to OC Epidemiology at 714-834-8180.

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

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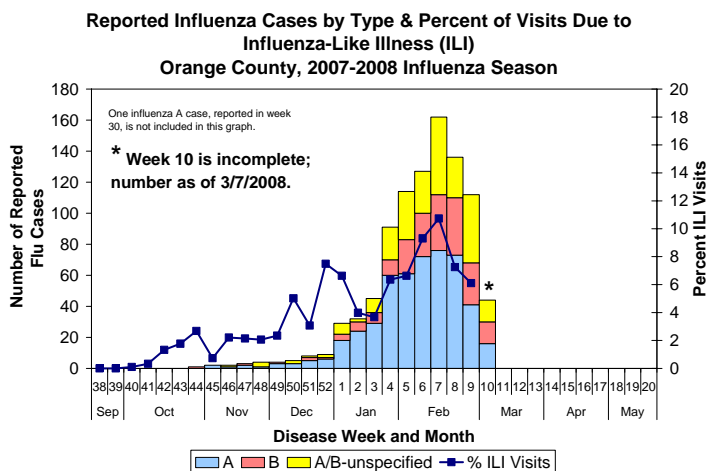




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Influenza reports in Orange County appear to have peaked during week 7 (week ending 2/16/08) and are decreasing. However, second peaks late in the season are not uncommon, especially with influenza B.

- **The Advisory Committee on Immunization Practices (ACIP) recommends influenza vaccination for all school-aged children.** This action adds children from 5 to 18 years of age to the list of persons for whom annual vaccination is recommended. As a result of the recommendation, the CDC predicts that an additional seven million children will be vaccinated. To allow time for planning, the agency states that immunization providers should prepare for implementation of the recommendation by fall of 2009. There is evidence that reducing flu transmission in children will limit the spread among their household contacts and in the community. In addition, coverage should reduce the burden of illness thus reducing school absenteeism and the need for flu-related medical care. For more info, see <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/feb2707acip.html>.
- **An official CDC Health Advisory was released last week** re-emphasizing the importance of influenza antiviral medications for use in persons at high risk for influenza complications or who have severe influenza illness. Because recent surveillance data indicated that many communities were reporting substantially increased influenza activity, CDC alerted clinicians to be fully aware of the potential benefits of antiviral medications during this influenza season. The two prescription antiviral medications recommended for treatment or prevention of influenza include oseltamivir (Tamiflu®) or zanamivir (Relenza®). For more information on treatment and/or prevention, see <http://www2a.cdc.gov/HAN/ArchiveSys/ViewMsgV.asp?AlertNum=00271>.
- **Researchers evaluated the use and impact of a mandatory declination form for an influenza vaccination program for healthcare workers:** To learn more, see *Infect Control Hosp Epidemiol* 2008;29:302-308.



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

- To date, there have been 939 total reported influenza cases in OC; 499 A, 198 B, & 242 A/B unspecified. Of the 499 influenza A, 147 have been subtyped: 60 A/H1 and 87 A/H3.
- To date, there have been 20 reported severe pediatric influenza (PICU) cases in OC, including one death; 14 tested positive for flu A and 6 B.
- National influenza activity appeared to peak during week 6 (week ending 2/9/08) and decreased thereafter. However, 47 states are still reporting widespread activity, including CA. Approximately 50% of influenza isolates characterized in the U.S. do not match components of this season's vaccine, although some cross-protection is still expected for some strains.

****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 (as of Mar. 5th)

- 371 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (30), Djibouti (1), Egypt (46), Indonesia (129), Iraq (3), Lao People's Democratic Republic (2), Myanmar (1), Nigeria (1), Pakistan (1), Thailand (25), Turkey (12), and Vietnam (105), and have resulted in 235 (63%) deaths. Infected birds have been reported in multiple areas in Asia, Africa and Europe.
- Report any suspect avian influenza cases to OC Epidemiology at 714-834-8180.

Recommended Resources

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

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Eye on Influenza

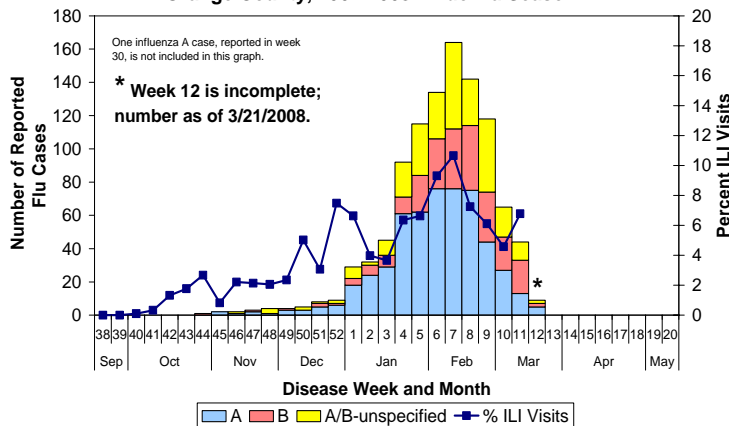
March 21, 2008
Volume 4, Issue 12

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 7 (week ending 2/16/08) and are decreasing. However, influenza is still circulating and second peaks late in the season are not uncommon, especially with influenza B.

- **Hong Kong school officials close all primary schools for two weeks to curb seasonal influenza epidemic.** There have been no signs that the circulating influenza strains are any more virulent than usual, but outbreaks affecting hundreds of people at several schools had already been reported and at least three deaths in children had occurred. The school closure affects nearly 560,000 children and will be in effect until March 28th. This closure is unrelated to avian influenza H5N1. For more information: <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/mar1308hongkong.html>.
- **Indonesia's avian influenza situation remains a critical concern,** the Food and Agricultural Organization of the United Nations said. Spread of avian influenza continues, with 31 of 33 provinces affected. <http://www.fao.org/newsroom/en/news/2008/1000813/index.html>.
- **HHS Pandemic Update V released.** Since the last update, milestones included stakeholder collaboration on issues such as vaccine allocation and stockpiling of medical countermeasures including vaccines. For more information, visit <http://www.pandemicflu.gov/plan/panflureport5.html>.
- **Federal guidance issued to assist State governments in improving and maintaining their pandemic influenza operating plans:** <http://www.pandemicflu.gov/news/guidance031108.pdf>.
- **HHS Secretary Michael Leavitt blogs about pandemic influenza communication exercise.** His comments underline the importance of the blog world in the management of information during a crisis: http://secretarysblog.hhs.gov/my_weblog/2008/03/pandemic-exerci.html.

Reported Influenza Cases by Type & Percent of Visits Due to Influenza-Like Illness (ILI)
Orange County, 2007-2008 Influenza Season



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

- To date, there have been 1,028 total reported influenza cases in OC; 534 A, 232 B, & 262 A/B unspecified. Of the 534 influenza A, 160 have been subtyped: 61 A/H1 and 99 A/H3.
- To date, there have been 22 reported severe pediatric influenza cases in OC, including one death; 15 tested positive for flu A and 7 B.
- National influenza activity continues to decrease since week 8 (week ending 2/23/08). However, 32 states are still reporting widespread activity, including CA.

****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 (as of Mar. 18th)

- 373 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (30), Djibouti (1), Egypt (47), Indonesia (129), Iraq (3), Lao People's Democratic Republic (2), Myanmar (1), Nigeria (1), Pakistan (1), Thailand (25), Turkey (12), and Vietnam (106), and have resulted in 236 (63%) deaths. Infected birds have been reported in multiple areas in Asia, Africa and Europe.
- Report any suspect avian influenza cases to OC Epidemiology at 714-834-8180.

Recommended Resources

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

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

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

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



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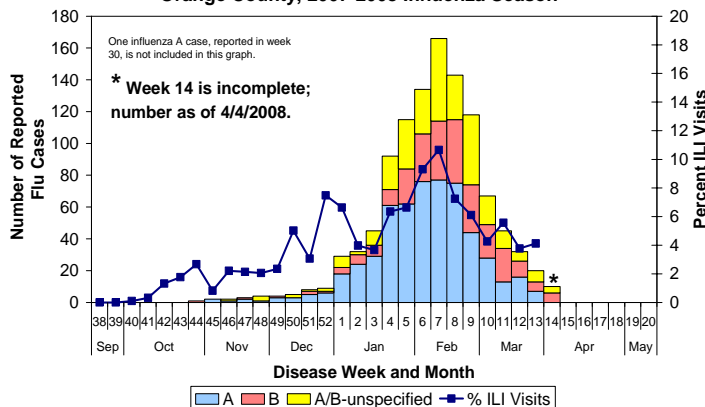


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Influenza activity continues to decrease in Orange County.

- **Study finds high concentrations of ducks, rice fields, and human populations to be predictors of H5N1 outbreaks.** Researchers affiliated with the United Nations Food and Agriculture Organization (FAO) collected data from avian flu outbreaks in Vietnam and Thailand in 2004 and 2005, and then conducted statistical analyses to determine what factors (altitude, human population, chicken, ducks, and mean rice cropping intensity) most contributed to infection and spread of disease. Human population, duck numbers, and rice cropping intensity were significantly associated with virus presence in both countries. Interestingly, chicken numbers were not consistently statistically significant. According to the researchers, they now have more knowledge as to when and where outbreaks will occur, and this helps to target prevention and control. To read more, visit <http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/mar2608h5n1study.html>.
- **American Academy of Pediatrics updates current recommendations for routine use of influenza vaccine in children** to highlight two main points; children younger than 9 years should receive two doses of vaccine in their second season of immunization if they only received one dose in the previous season, and additional detail on the recommended storage, dosage, and administration of live-attenuated influenza vaccine (LAIV), including recent approval of LAIV use in children as young as 2 years. See *Pediatrics* 2008;121:e1016-e1031.
- **U.S. officials launch the first of three H5N1 supply stockpiles located in Asia:** <http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/mar2508usaid-jw.html>.
- **National survey results regarding public's response to community mitigation measures for pandemic influenza:** <http://www.cdc.gov/eid/content/14/5/pdfs/07-1437.pdf>.

Reported Influenza Cases by Type & Percent of Visits Due to Influenza-Like Illness (ILI)
Orange County, 2007-2008 Influenza Season



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

- To date, there have been 1,087 total reported influenza cases in OC; 554 A, 256 B, & 277 A/B unspecified. Of the 554 influenza A, 180 have been subtyped: 64 A/H1 and 116 A/H3.
- To date, there have been 22 reported severe pediatric influenza cases in OC, including one death; 15 tested positive for flu A and 7 B.
- National influenza activity continues to decrease since week 8 (week ending 2/23/08). Widespread activity was reported by seven states, while regional activity was reported by 27 states, including CA.

Avian Influenza Update (as of Apr. 3rd)

- 378 human H5N1 cases have been confirmed in Azerbaijan (8), Cambodia (7), China (30), Djibouti (1), Egypt (47), Indonesia (132), Iraq (3), Lao People's Democratic Republic (2), Myanmar (1), Nigeria (1), Pakistan (3), Thailand (25), Turkey (12), and Vietnam (106), and have resulted in 238 (63%) deaths. Infected birds have been reported in multiple areas in Asia, Africa and Europe.
- Report any suspect avian influenza cases to OC Epidemiology at 714-834-8180.

****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.

Recommended Resources

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



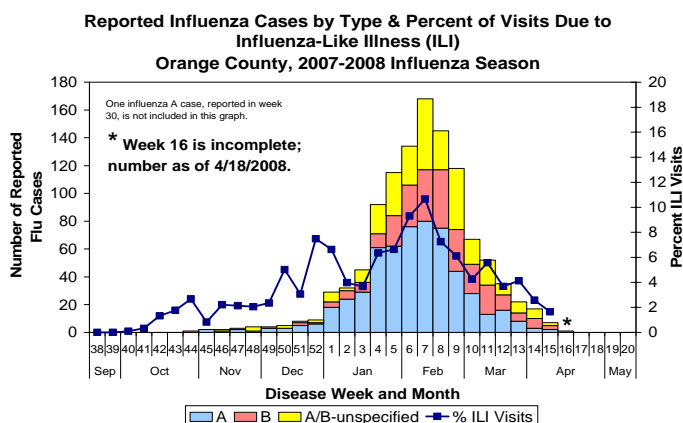
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Although influenza activity continues to decrease in Orange County, influenza viruses are still circulating.

- **Interim '07-'08 season estimate of inactivated influenza vaccine efficacy (VE) against medically attended influenza A infection was 58%.** All patients visiting a clinic facility in Marshfield, Wisconsin, between 1/21-2/8/08 were screened for study eligibility and 619 patients with acute respiratory or febrile illness were included in this interim analysis. All patients were tested for influenza using reverse-transcriptase polymerase chain reaction (RT-PCR) and flu was detected in 191 (31%). Approximately 19% of those with influenza had been vaccinated versus 39% of the influenza-negative, giving a VE of 44% for prevention of medically attended influenza overall (A and B combined). No VE was observed against influenza B. This interim analysis suggests that even in a season without optimal match to circulating strains, vaccination still provided some protection against medically attended flu infection in this population (<http://www.cdc.gov/mmwr/PDF/wk/mm5715.pdf>).
- **WHO study finds Asian countries as source for new seasonal influenza strains.** WHO researchers analyzed 13,000 samples of influenza A/H3N2 virus collected across six continents from 2002 to 2007. Results revealed that newly emerging strains of H3N2 appeared in East and Southeast Asian countries about 6 to 9 months earlier than anywhere else. Identifying the source of the viruses could allow global health officials to better predict which viruses are most likely to cause the most disease and include them in the annual seasonal influenza vaccine. To read more, visit <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/apr1608influenza.html>.
- **Flu vaccination myths still a challenge in healthcare institutions.** Reports from four institutions at the 18th annual Scientific Meeting of the Society for Healthcare Epidemiology of America indicate that large proportions of hospital staff believe that the flu vaccine causes influenza or triggers side effects. Others believe that previous flu infections have made them immune. According to CDC, on average, only 40% of healthcare workers receive the vaccine each year. For more info, see <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/apr0908shea.html>.
- **WHO laboratory test results support epidemiologic findings that suggest limited human to human transmission of H5N1 among some close family members but no evidence of sustained or community transmission in Pakistan outbreak.** See http://www.who.int/csr/don/2008_04_03/en/index.html.
- **Draft guidance for protecting vulnerable groups in flu pandemic:** <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/apr1608atrisk.html>.



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

- To date, there have been 1,118 total reported influenza cases in OC; 563 A, 264 B, & 291 A/B unspecified. Of the 563 influenza A, 208 have been subtyped: 69 A/H1 and 139 A/H3.
- National and state influenza activity continues to decrease.

****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 (as of Apr. 17th)

- Additional H5N1 cases have been confirmed in Egypt, with a total of 381 human cases reported from 14 countries, including 240 (63%) deaths. Infected birds have been reported in multiple areas in Asia, Africa and Europe.

Recommended Resources

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

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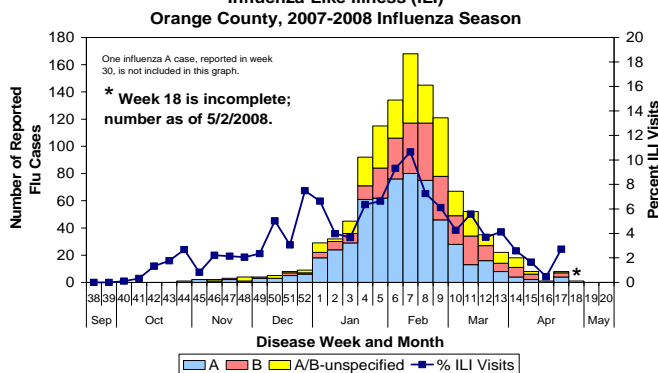


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Although influenza activity continues to decrease in Orange County, influenza viruses are still circulating.

- **HHS webcast series on pandemic planning – third webinar addresses school closures during an influenza pandemic.** Many public health experts, including at the CDC, believe that school closures (preferred term is “school dismissal”) may reduce the impact of a pandemic. HHS recommendations for school dismissal are available at <http://www.pandemicflu.gov/plan/community/commitigation.html>. The webinar discussed the need for school officials to become actively involved in their community pandemic planning, continuity of education using distance learning, alternate ways to provide care to children at home, and work absenteeism due to parents needing to care for children at home. Regarding children who depend on school food programs for breakfast and lunch, the USDA stated that during a pandemic it would likely replace the programs with a disaster food stamp program. Use of schools as healthcare sites or morgues was also discussed. See <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/may0108schools.html>. **HHS's next pandemic planning webinar (June 4) will address workforce preparedness.** See http://www.pandemicflu.gov/news/panflu_webinar.html for more information.
- **HHS adds variant H5N1 vaccine to stockpile.** A vaccine for the variant H5N1 clade 2.2, which resulted in outbreaks in more than 60 countries in Asia, Europe, and Africa, has been added to the Strategic National Stockpile, which already contains supplies of vaccine based on three other H5N1 variants (clades 1, 2.1, and 2.3). Currently, the stockpile contains enough H5N1 vaccine to cover about 12 to 13 million people, assuming two 90-microgram doses per person. HHS expects to reach its goal of enough vaccine for 20 million people by fall 2008. For more info, see <http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/apr2908sanofi.html>.
- **Institute of Medicine makes recommendations to the U.S. government regarding antiviral use during an influenza pandemic.** Key recommendations include the need for clarification of goals for antiviral use (e.g., treatment and/or prophylaxis) during a pandemic, expansion of stockpile based on these goals, development of a prioritization plan for antiviral use, and development of agreements between public and private sectors to coordinate use of antivirals. See <http://www.iom.edu/CMS/2955.aspx>.

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



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

- To date, there have been 1,132 total reported influenza cases in OC; 570 A, 270 B, & 292 A/B unspecified. Of the 570 influenza A, 227 have been subtyped: 73 A/H1 and 154 A/H3. Of the nine strain-typed isolates, three were A/Solomon Islands/3/2006-like (H1N1) and six were of the B/Yamagata lineage.***
- National influenza activity continues to decrease since February.

****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 (as of Apr. 30th)

- 382 human H5N1 cases have been confirmed in 14 countries and have resulted in 241 (63%) deaths. Infected birds have been reported in multiple areas in Asia, Africa and Europe.
- Report any suspect avian influenza cases to OC Epidemiology at 714-834-8180.

***Note: 2007-2008 influenza vaccine components included A/Solomon/3/2006-like (H1N1), A/Wisconsin/67/2005-like (H3N2), and B/Malaysia/2506/2004-like (B/Victoria lineage). FDA has recommended that all three components be changed for 2008-2009, to A/Brisbane/59/2007-like (H1N1), A/Brisbane/10/2007-like (H3N2) and B/Florida/04/2006-like (B/Yamagata lineage).

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



Recommended Resources

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

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

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

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



Eye on Influenza

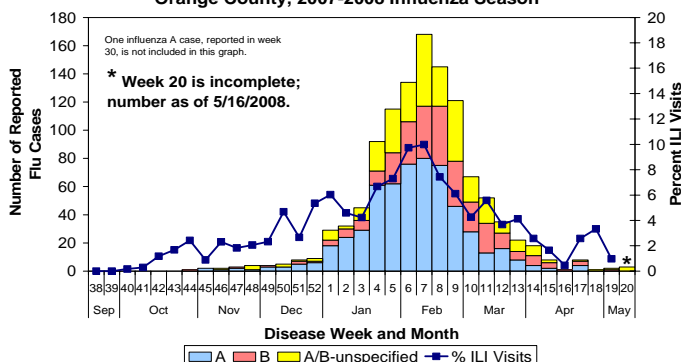
May 16, 2008
Volume 4, Issue 16

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

Although flu season is coming to an end, influenza viruses are still circulating. We are especially interested in specimens from patients with influenza-like illness late in the season to look for changes in the circulating viruses.

- **Influenza vaccine manufacturers expect record quantities of vaccine for the 2008-2009 season.** Representatives from 5 companies selling flu vaccine collectively expect to deliver 143 to 146 million doses of vaccine next season. Discussions at the National Influenza Vaccine Summit this week explored the challenges of leftover unused vaccine each year and providing better population coverage. See <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/may1308fluvax.html>.
- **OSHA releases proposed workplace guidance on stockpiling respirators and facemasks for an influenza pandemic for public comment.** This guidance will serve as an appendix to the Department of Labor and HHS jointly issued *Guidance on Preparing Workplaces for an Influenza Pandemic* (February 2007), and encourages employers in the public and private sector to purchase and stockpile facemasks and respirators in advance of a pandemic, depending on risk of exposure of their employees. The guidance describes the levels of risk, advantages and disadvantages of facemasks and different types of respirators, along with cost, estimated usage and stockpiling estimates for different occupational settings. See <http://www.osha.gov/dsg/guidance/stockpiling-facemasks-respirators.html>.
- **Critical care task force publishes series of 5 articles in *Chest* journal on current capabilities, surge capacity and allocation of resources in a mass critical care setting.** The assessment of current US and Canadian capabilities for critical care during a disaster suggest that there will be shortages in many areas, including equipment, oxygen, supplies, staff and space. One article attempted to define a level of essential but limited critical care, or "emergency mass critical care", during an overwhelming disaster. Another article suggests a plan to assist in rationing critical care resources during a disaster. To access the articles: http://www.chestjournal.org/content/vol133/5_suppl/. For a summary: <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/may1308chest.html>.
- **WHO officials meet to begin revisions on pandemic guidance.** The new guidance will reflect important advances since the last guidance in 2005 and will incorporate new information on human H5N1 vaccines, treatment of H5N1 infected patients, and International Health Regulations regarding responses to influenza pandemic threats, disease control, surveillance and communications. See <http://www.who.int/mediacentre/events/meetings/influenza/en/index.html>.

Reported Influenza Cases by Type & Percent of Visits Due to Influenza-Like Illness (ILI)
Orange County, 2007-2008 Influenza Season



Avian Influenza Update (as of Apr. 30th)

- 382 human H5N1 cases have been confirmed in 14 countries and have resulted in 241 (63%) deaths. Infected birds have been reported in multiple areas in Asia, Africa and Europe.
- Report any suspect avian influenza cases to OC Epidemiology at 714-834-8180.

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

- To date, there have been 1,137 total reported influenza cases in OC; 570 A, 271 B, & 296 A/B unspecified. Of the 570 influenza A, 229 have been subtyped: 73 A/H1 and 156 A/H3.
- National influenza activity continues to decrease. Outpatient visits for influenza-like illness and acute respiratory illness are below the national baseline, although deaths for pneumonia and influenza remain above the epidemic threshold.

****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.

Recommended Resources

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

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

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



Eye on Influenza

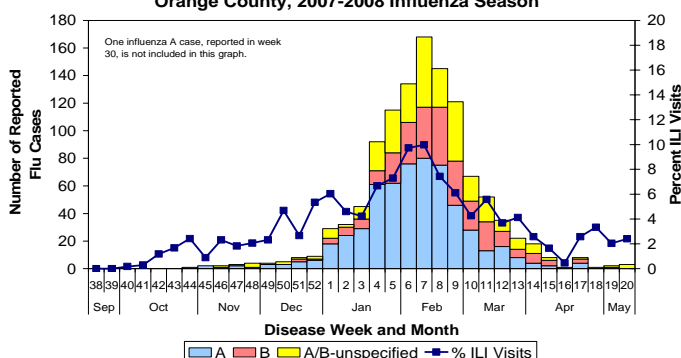
June 2, 2008
Volume 4, Issue 17

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

Although official influenza season has ended, influenza viruses may still be circulating. Surveillance for influenza-like illness (ILI) continues year-round to monitor for novel strains of influenza and other respiratory viruses in the community.

- **Response to school closures during influenza B outbreak, North Carolina (NC).** Ninety-one (91) percent of 220 households with school-age children in a small rural NC county surveyed during an influenza B outbreak considered school closure appropriate. No adults missed work solely to provide childcare during the 10 day school closure and only 10% of households required special childcare arrangements. However, 89% of children visited at least one public location during the closure despite public health recommendations to avoid large gatherings. Although the response to school closure may vary in different populations and settings, or during an actual pandemic, planning for a pandemic should incorporate issues learned from seasonal influenza and address the potential for transmission in public areas during school closure. For more information, visit <http://www.cdc.gov/eid/content/14/7/pdfs/08-0096.pdf>.
- **WHO confirms first human case of H5N1 avian influenza in Bangladesh.** Bangladesh is now the 15th country to report a confirmed human case of H5N1. The case was identified retrospectively as part of seasonal surveillance activities in Bangladesh and had exposure to live and slaughtered chickens in his home. See http://www.who.int/csr/don/2008_05_28/en/index.html.
- **Some North American avian influenza H7 viruses may be improving their capacity to infect humans.** Scientists have found that certain H7 avian influenza viruses are becoming more like human flu viruses in their preference in binding human-type receptors. These findings reinforce that influenza viruses are constantly changing and that potential pandemic viruses other than H5N1 may be emerging. See <http://www.pnas.org/cgi/content/full/105/21/7558>.

Reported Influenza Cases by Type & Percent of Visits Due to Influenza-Like Illness (ILI)
Orange County, 2007-2008 Influenza Season



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

- To date, there have been 1,141 total reported influenza cases in OC; 570 A, 273 B, & 298 A/B unspecified. Of the 570 influenza A, 237 have been subtyped: 74 A/H1 and 163 A/H3.
- National influenza activity continues to decrease. Twenty-three states, including California, reported only sporadic influenza activity, while 26 states and the District of Columbia reported no influenza activity in week 20 (week ending 5/20/08).

****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 (as of May 28th)

- 383 human H5N1 cases have been confirmed in 15 countries (Azerbaijan, Bangladesh, Cambodia, China, Djibouti, Egypt, Indonesia, Iraq, Lao People's Democratic Republic, Myanmar, Nigeria, Pakistan, Thailand, Turkey, and Vietnam) and have resulted in 241 (63%) deaths. Infected birds have been reported in multiple areas in Asia, Africa and Europe.
- Please report to OC Epidemiology (714-834-8180) any persons with fever and respiratory symptoms who traveled to H5N1-endemic areas within the 10 days prior to onset.

Recommended Resources

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

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Eye on Influenza

June 13, 2008
Volume 4, Issue 18

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

This issue focuses on pandemic planning and avian influenza updates.

- **HHS releases draft influenza pandemic guidance on masks and antivirals for public comment until July 3, 2008.** The proposed guidance addresses the controversial topics of face mask and respirator use by individuals and families, antiviral use during a pandemic, and employer stockpiling of antivirals. To access documents, see <http://aspe.hhs.gov/panflu/antiviral-n-masks.shtml>.

Facemasks and respirators

The most important steps to protect against pandemic influenza are to limit close contact with others and practice good hygiene. These steps should be taken even if face masks and respirators are used.

- If entry into a crowded setting is unavoidable, a face mask should be used.
- If close contact (<6 feet) with someone who is ill with pandemic influenza is unavoidable, an N-95 respirator should be used.
- Ill persons should use a facemask if they must be in contact with others.
- HHS suggests that households each stockpile 20 respirators and that people who commute on public transit stockpile an additional 100 face masks; the estimated cost is \$35 to \$70 per household.

Antiviral use

Guidance on antiviral use during a pandemic will depend on the epidemiology of the pandemic and the antiviral supply at the time. Antiviral usage is currently recommended for the following settings:

- Containment of initial pandemic outbreaks overseas and in the U.S.
- Reduction of risk of introduction of infection into U.S. early in the pandemic through screening and prophylaxis of selected persons at U.S. borders.
- Treatment of persons with pandemic illness who would benefit from such treatment.
- Prophylaxis of high-risk healthcare and emergency services personnel for duration of pandemic.
- Post-exposure prophylaxis of low-risk healthcare and emergency services personnel, immunocompromised, and persons in residential group settings when an outbreak occurs.

Antiviral stockpiling by businesses

Nonpharmaceutical interventions such as isolation of ill persons and social distancing will be the first line of defense for employers during a pandemic.

- Employers are responsible for protection of their workforce and should not rely on government stockpiles.
- HHS recommends that critical infrastructure employers consider stockpiling antivirals to protect frontline healthcare and emergency workers, workers who are needed to maintain essential community services, and overseas employees and operations in areas where federal pandemic response activities will not reach, and to provide early treatment for workers who fall ill.
- **Hawaii begins voluntary illness screening program for international air travelers.** While in flight, passengers are asked to complete questionnaires about illness symptoms and travel history. Persons with influenza-like symptoms are asked to submit a rapid flu test. If symptoms and travel history suggest the possibility of avian flu or other serious communicable disease, the CDC Quarantine Station in Hawaii would be alerted and ultimately determine the next steps. In the pilot, 149 passengers were screened in roughly 10.5 minutes. See <http://healthuser.hawaii.gov/health/about/pr/2008/08-50.pdf>.
- **First clinical trial results for H5N1 whole-virus vaccine produced from cell culture published.** Cell culture technology potentially allows for more rapid mass production of vaccine after identification of a pandemic threat than does traditional egg-based technology. See *N Engl J Med* 2008;358:2573-2584 or <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/jun1208vaccine-jw.html>.
- **Indonesia announces decision to stop sharing timely reports of human H5N1 cases and deaths.** See <http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/jun0508indonesia-br.html>.

Recommended Resources

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



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Eye on Influenza

July 1, 2008
Volume 4, Issue 19

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

This newsletter includes information from the national flu summary. Although official influenza season has ended, influenza viruses may still be circulating. Surveillance sites: Please continue to report influenza-like illnesses and flu cases to OC Epidemiology.

- **CDC reports 83 children died of influenza during the 2007-08 season.** The number of pediatric deaths is greater than in 2006-07 (68) and in 2005-06 (35). Overall the flu season was worse than the previous two years but similar to 2004-05. Of the children >6 months of age for whom vaccination status was known, 92% had not received influenza vaccine. Influenza vaccination of all children (6 months-18 years) is recommended for the 2008-09 season. See www.cdc.gov/mmwr (June 27, 2008 ed).
- **CDC study reveals flu vaccination coverage low among persons with asthma.** National Health Interview Survey data on flu vaccination among all persons with asthma aged ≥ 2 years during the 2004-05 and 2005-06 flu seasons revealed that 36.2% of persons aged ≥ 2 years with asthma received flu vaccine during the 2005-06 season. Among persons with asthma in 2005-06, those aged 50-64 and ≥ 65 years (for whom flu vaccination is recommended regardless of health status) had the highest flu vaccination rates of 48.6% and 75.7%, respectively. Vaccination coverage among persons with asthma is still well below *Healthy People 2010* targets of 60% of persons aged 18-64 years with high-risk conditions and 90% of all persons aged ≥ 65 years. See www.cdc.gov/mmwr (June 20, 2008 ed).
- **CDC funds faster diagnostic tests to distinguish between seasonal and avian influenza.** A total of \$12.9 million in contracts were awarded to two companies for initial phase development of tests that will distinguish seasonal from avian influenza viruses in three hours; current tests for H5N1 can take up to 24 hours. See www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/jun1708tests.html.
- **Roche announces program to facilitate business stockpiling of antivirals.** Under the new plan, Roche will store and rotate the stockpile (to avoid expiration) of the oseltamivir (Tamiflu®) for an annual fee of \$6 per 10 tablet treatment course. If and when the stockpile is needed and requested, the business would pay the prevailing wholesale price to purchase their dedicated doses. See www.cidrap.umn.edu/cidrap/content/influenza/biz-plan/news/jun2608tamiflu.html.
- **Study finds an adjuvanted, low-dose H5N1 vaccine candidate to be safe, immunogenic, and induce cross-reactive immune responses.** This multicenter, randomized, blind-observer phase 1 trial compared groups of 50 healthy young adults who received two doses, spaced 21 days apart, of an influenza A/Vietnam (H5N1) vaccine in specified doses with or without adjuvant. Even with the lowest adjuvanted vaccine dose (1.9 micrograms) tested to date, an immune response was induced in 72% of subjects after two doses. In addition, adjuvanted vaccine induced cross-neutralizing antibodies to an A/Indonesia (H5N1) strain in 39%-65% of samples, versus 7% without adjuvant. No serious vaccine-related adverse events occurred. See www.journals.uchicago.edu/doi/abs/10.1086/590913.

Orange County** and National Summary

- To date, there have been 1,142 total reported influenza cases in OC; 570 A, 274 B, & 298 A/B unspecified. Of the 570 influenza A, 237 have been subtyped: 74 A/H1 and 163 A/H3.
- Nationally, influenza A viruses predominated overall. Of the antigenically characterized flu viruses (N=1,161), the majority of A/H1 (n=407), A/H3 (n=404), and B (n=350) viruses were as follows: A/Solomon Islands/3/2006-like (n=270; 66%), A/Brisbane/10/2007-like (n=243; 60%), and B/Yamagata lineage (n=342; 98%, of which 304 (89%) were B/Florida/04/2006-like), respectively. Note: A/Solomon Islands/3/2006 was the H1N1 component of the 2007-08 vaccine but will be replaced by A/Brisbane/59/2007 in the 2008-09 vaccine; A/Brisbane/10/2007 (H3N2) and B/Florida/04/2006 were not in this past season's vaccine but will be included in 2008-09.

Recommended Resources

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

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

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

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

****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.



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Eye on Influenza

July 11, 2008
Volume 4, Issue 20

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

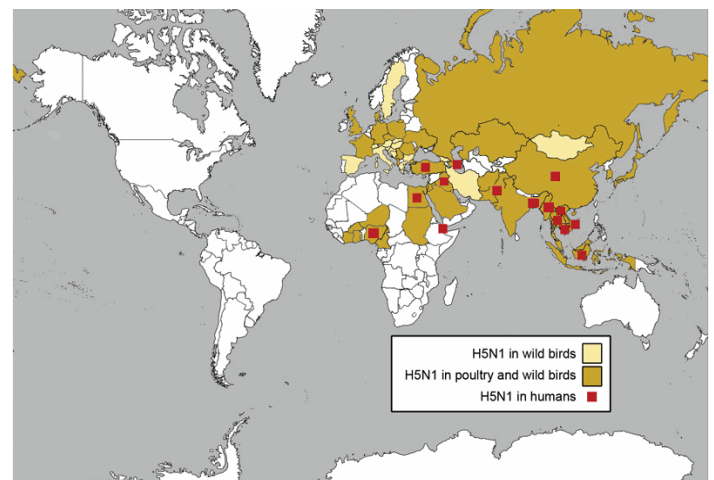
Although official influenza season has ended, influenza viruses may still be circulating. Surveillance sites: Please continue to report influenza-like illnesses and flu cases to OC Epidemiology.

- **Home Health Care During an Influenza Pandemic: Issues and Resources.** This HHS Agency for Healthcare Research and Quality (AHRQ) report identifies home health care as a critical component in providing care during a pandemic, explores key issues and challenges, and offers resources to planners. The report summarized findings of an expert panel meeting on July 12 & 13, 2007, which included representatives from home health care, emergency and disaster planning, key federal and state agencies, and professional organizations. Issues and strategies addressed in the report include: collaboration with community partners; exploring the use of technology to monitor patients; legal and ethical considerations of providing care under emergency conditions; and workforce issues, including training. See <http://www.pandemicflu.gov/plan/healthcare/homehealth.html>.
- **Checklist of key legal issues for healthcare providers during an influenza pandemic.** Co-sponsored by the American Health Lawyers Association, the CDC, and the Office of Inspector General of HHS, this document discusses legal issues that may arise in the event of a pandemic or large-scale disaster such as consent to treatment, altered standards of care and avoiding malpractice liability, a health care provider's relationship with the emergency management system and public health, and the privacy and security of protected health information. See <http://www.healthlawyers.org/panfluchecklist>.
- **Indiana study reveals county-level pandemic planning problems.** Interviews of public health, emergency preparedness, and hospital officials in 11 counties found misperceptions about the threat of a pandemic; vagueness regarding the roles and responsibilities of each group and a mismatch between political and healthcare market boundaries; rivalry between hospital systems that impaired coordination; and unrealistic expectations for outside assistance. To read more, visit <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/jul0908counties.html>.
- **Effectiveness of Hong Kong's H5 poultry vaccine waning.** A Hong Kong microbiology expert reports that the vaccine, based on the Fujian strain of avian influenza, has lost effectiveness over the past seven years as the virus changes; tests on birds in 2005 suggested that the vaccine generated only a quarter of the antibody response when compared to 2001 test results. In June, animal health workers detected H5 virus in poultry feces at several market stalls. As a result, officials banned poultry from overnight stays in the market and have proposed a total ban on live poultry in Hong Kong markets. See <http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/jul1008avian-br.html>.

Avian Influenza Update (as of Jun. 19th)

- 385 human H5N1 cases have been confirmed in Azerbaijan (8), Bangladesh (1), Cambodia (7), China (30), Djibouti (1), Egypt (50), Indonesia (135), Iraq (3), Lao People's Democratic Republic (2), Myanmar (1), Nigeria (1), Pakistan (3), Thailand (25), Turkey (12), and Vietnam (106), and have resulted in 243 (63%) deaths. Infected birds have been reported in multiple areas in Asia, Africa and Europe.
- Report any suspect avian influenza cases to OC Epidemiology at 714-834-8180.

Nations with Confirmed H5N1 Avian Influenza Cases (as of July, 2008)



Recommended Resources

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

OC: <http://www.ochca.org/epi/flu/surveillance.htm>;

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

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

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Eye on Influenza

July 28, 2008
Volume 4, Issue 21

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

Although traditional influenza season is over in the U.S., consider influenza in returning travelers with fever and respiratory symptoms and report any suspect avian influenza to OC Epidemiology at 714-834-8180.

- **2008 Advisory Committee on Immunization Practices (ACIP) recommendations for the prevention and control of influenza** includes new and updated information for the 2008-09 influenza season:
 - new recommendation that all children aged 5-18 years, receive annual influenza vaccination;
 - recommendation that annual vaccination of all children aged 6 months through 4 years (59 months) continue to be a primary focus of vaccination efforts because these children are at higher risk for influenza complications compared with older children;
 - new recommendation that either trivalent inactivated influenza vaccine or live, attenuated influenza vaccine (LAIV) be used when vaccinating healthy persons aged 2-49 years (recommendation expanded for LAIV from 5-49 years);
 - recommendation that vaccines containing the 2008-09 trivalent vaccine virus strains A/Brisbane/59/2007 (H1N1)-like, A/Brisbane/10/2007 (H3N2)-like, and B/Florida/4/2006-like antigens be used;
 - new information on antiviral resistance among influenza viruses in the United States.



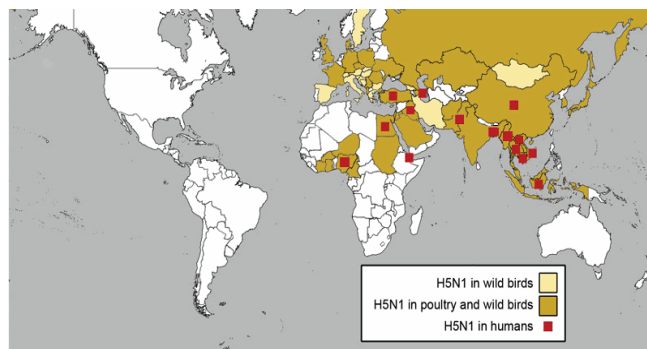
See CDC *MMWR* Jul 17, 2008:57;1-60 available at www.cdc.gov/mmwr.

- **HHS releases *Guidance on Allocating and Targeting Pandemic Influenza Vaccine*.** This guidance may be modified based on the characteristics of pandemic illness, risk groups for severe disease, and the status of vaccine technology, but the overall objectives will likely remain the same, to: 1) protect those who are essential to the pandemic response and provide care for persons who are ill; 2) protect those who maintain essential community services; 3) protect children; and 4) protect workers who are at greater risk of infection due to their job. Non-pharmaceutical public health measures, the use of antivirals, facemasks, and respirators in appropriate settings, and hand and respiratory hygiene will be important throughout the pandemic, and will be the mainstay of response early in the pandemic before vaccine is available. See www.pandemicflu.gov/vaccine/allocationguidance.pdf.
- **Japanese study including 10,000 children/adolescents finds no neuropsychiatric events related to the use of the antiviral Tamiflu.** In 2007, Japan reported self-injury and delirium in young people who had taken oseltamivir (Tamiflu) and in March 2007, the Japanese government issued a warning against prescribing the drug for people between ages 10-19 years. Three rounds of review by the U.S. FDA found no evidence that oseltamivir contributed to neuropsychiatric events; however, the FDA, Roche, and Glaxo added warnings to the drug labels (oseltamivir and zanamivir) earlier this year. The new study findings will be presented to the Japanese government in the near future. For more information, see www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/jul1108tamiflu-br.html.
- **Two-state (Michigan and Nebraska) survey reveals fewer than half of nursing homes have pandemic plans.** See *JAMA* 2008:300(4):392-4 (subscription required) for original letter describing complete survey or see www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/jul2508nursing-jw.html.

Avian Influenza Update (as of Jun. 19th)

- No new cases have been reported by the WHO since June 19th. 385 human H5N1 cases have been confirmed in 15 countries, resulting in 243 (63%) deaths. Infected birds have been reported in multiple areas in Asia, Africa and Europe.

Nations with Confirmed H5N1 Avian Influenza Cases (as of July, 2008)



Recommended Resources

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

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

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

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

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Eye on Influenza

August 11, 2008
Volume 4, Issue 22

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

Although traditional influenza season is over in the U.S., consider influenza in returning travelers with fever and respiratory symptoms and report any suspect avian influenza to OC Epidemiology at 714-834-8180.

- **FDA approves flu vaccines from six manufacturers for the upcoming 2008-09 season.** This will be the first year in which all three flu strains used in the previous season's vaccine have been replaced. In most recent years, only one to two vaccine strains have been changed. The decision to change all three strains for this upcoming season has generated some concerns regarding production delays or low yields as viruses are grown in eggs. However, the six vaccine manufacturers reported no major production problems and at least three have already begun shipment of the vaccine to distributors and healthcare providers. Manufacturers estimate that 143-146 million doses of flu vaccine will be produced for the U.S. market this year (140 million doses were produced last year). This year, an additional 30 million people (school-aged children) have been added to the list of persons for whom vaccine is recommended by the CDC, making the total number of those targeted roughly 258 million (approximately 84% of the U.S. population). To read more, visit <http://www.cidrap.umn.edu/cidrap/content/influenza/general/news/aug0608fluvax.html>.
- **New second-generation antiviral drug may be as effective at treating influenza as oseltamivir (Tamiflu).** The Australian pharmaceutical company Biota, in a joint partnership with Japan-based Daiichi-Sankyo, is developing a second-generation version of the inhaled neuraminidase inhibitor zanamivir (Relenza). A potential benefit of the new drug, named CS-8958, is its long-acting nature which might allow for less frequent dosing which could reduce the storage space needed to stockpile antivirals for a pandemic. In a double-blind phase 2 trial, inhaled CS-8958 administered once was as effective as a course of oseltamivir (75 mg given twice a day for five days). Biota stated that in preclinical studies, CS-8958 demonstrated efficacy against H5N1 avian influenza, as well as influenza A and B. See <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/aug0108antiviral-ms.html>.

*Orange County Influenza Summary**

- Last season (2007-2008), there were 1,142 total reported influenza cases in OC; 570 A, 274 B, & 298 A/B unspecified. Of the 570 influenza A, 237 were subtyped: 75 A/H1 and 165 A/H3.
- Fifteen isolates were sent to the State Viral and Rickettsial Disease Lab for strain-typing. The results are as follows:
 - Four A/Solomon Islands/03/06 (H1)-like (H1 component of 2007-08 vaccine),
 - Two A/Brisbane/10/07 (H3)-like,
 - Seven B/Florida/04/07 (Yamagata lineage), and
 - Two B/Yamagata lineage
- Influenza A/Brisbane/59/2007 (H1)-like, A/Brisbane/10/07 (H3)-like, and B/Florida/04/07 (Yamagata lineage) are the recommended strains to be included in the flu vaccine for the upcoming influenza season (2008-09).

Avian Influenza Update (as of Jun. 19th)

- No new cases have been reported by the WHO since June 19th. 385 human H5N1 cases have been confirmed in 15 countries, resulting in 243 (63%) deaths. Infected birds have been reported in multiple areas in Asia, Africa and Europe.

*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.

Recommended Resources

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

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Although traditional influenza season is over in the U.S., consider influenza in returning travelers with fever and respiratory symptoms and report any suspect avian influenza to OC Epidemiology at 714-834-8180.

- **Case series describes factors associated with case fatality of human H5N1 infections in Indonesia.** Public health officials in Indonesia have analyzed clinical and epidemiological data from confirmed human H5N1 cases from June 2005 to February 2008. During this time period, Indonesia had the most confirmed human H5N1 cases (127) and one of the highest case-fatality rates (81%) worldwide. The median time to hospitalization was six days (range 1–16 days) and of the 122 hospitalized patients for whom data were available, 121 (99%) had fever, 107 (88%) cough, and 103 (84%) dyspnea. Median time from onset to oseltamivir treatment was seven days (range 0–21 days); initiation of antivirals within two days was associated with significantly lower mortality than was initiation after five days. Secondary cases were more likely to survive and received antiviral treatment about three days sooner than the primary cases in a cluster. Investigators concluded that development of better diagnostic methods and improved case management could allow for prompt identification of patients with H5N1, which could decrease mortality through earlier treatment with oseltamivir. See August 15, 2008 issue of *Lancet* or summary at www.cidrap.umn.edu/cidrap/content/influenza/avianflu/.
- **Evidence suggests that the majority of deaths during 1918-1919 influenza pandemic were a direct result of secondary bacterial pneumonia.** Researchers from the National Institutes of Health (NIH) examined lung tissue from 58 autopsies and reviewed published findings from 8,398 individual autopsy investigations during the 1918-1919 influenza pandemic (prior to the use of antibiotics). Both postmortem samples and bacteriologic and histopathologic results from published autopsy series on people who died of influenza during 1918–1919 suggest most influenza fatalities resulted from secondary bacterial pneumonia caused by common upper respiratory tract bacteria. Scientists suggest that infection with influenza virus damages bronchial and bronchiolar epithelium, allowing invasion and spread of respiratory tract bacteria. The researchers note that if the next pandemic virus behaves similar to the 1918 virus, pandemic planning needs to address prevention, diagnosis and treatment of bacterial pneumonia, including stockpiling of antibiotics and bacterial vaccines, in addition to the current focus on influenza vaccines and antiviral drugs. To read more, see *JID* October 1, 2008, available at www.journals.uchicago.edu/doi/full/10.1086/591708.
- **Study finds long-lived immunity to 1918 pandemic influenza virus.** Blood from 32 pandemic survivors (born in or before 1915) was found to have antibodies to the 1918 virus and B lymphocytes taken from a subset of the donors were able to be cultivated to generate antibodies that could neutralize the virus. This is the longest immunological memory that has been demonstrated. Monoclonal antibodies developed from these B cells were able to protect infected mice from death and could serve as a potential therapy against a 1918-like virus. See August 17, 2008 issue of *Nature* or summary at www.cidrap.umn.edu/cidrap/content/influenza/avianflu/
- **CDC releases 1918 pandemic influenza internet storybook** containing stories, videos and photos from survivors, families, and friends who lived through the 1918 and 1957 pandemics. See www.pandemicflu.gov/storybook/index.html.

Avian Influenza Update (as of Jun. 19th)

- No new cases have been reported by the WHO since June 19th. For the latest WHO updates, see www.who.int/csr/disease/avian_influenza/en/.

Recommended Resources

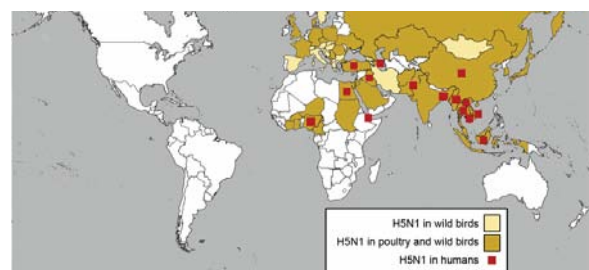
CDC: <http://www.cdc.gov/flu/weekly/>;

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

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

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

Nations with Confirmed H5N1 Avian Influenza Cases (as of August, 2008)



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

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Eye on Influenza

September 8, 2008
Volume 4, Issue 24

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

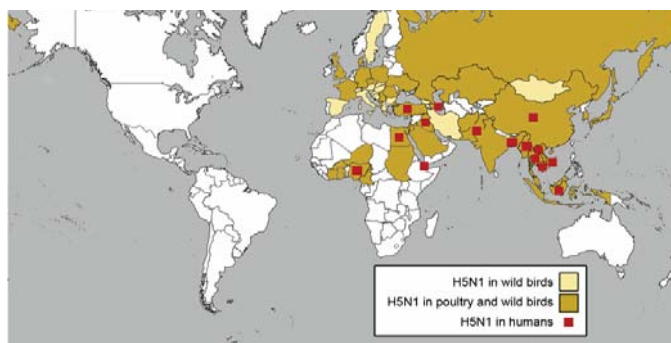
Although traditional influenza season has not yet started in the U.S., consider influenza in returning travelers with fever and respiratory symptoms. Please report any suspect avian influenza to OC Epidemiology at 714-834-8180.

- **Seasonal influenza H1N1 with increasing resistance to Tamiflu.** The World Health Organization (WHO) reported that 31% (242 of 788) of A/H1N1 isolates from 16 countries that were tested in recent months carried a mutation associated with oseltamivir (Tamiflu) resistance. The resistant strain has been found in 35 countries worldwide, mostly in the northern hemisphere, including in 12% of tested U.S. isolates and 26% of tested Canadian isolates. There have been no reports of resistance to Tamiflu in A/H3N2 and B isolates, and no reports of resistance to zanamivir (Relenza), another neuraminidase inhibitor. Recently a death in an immunocompromised Dutch patient with oseltamivir-resistant H1N1 influenza was reported, suggesting that these resistant strains may be able to cause disease at least in a compromised host. See www.cidrap.umn.edu/ 8/25/08 and 9/5/08 news articles.
- **Nonprofit health groups and local health agencies organize immunization clinics at or near polling locations.** The Vote and Vax program is a collaboration between the Robert Wood Johnson Foundation (RWJF) and Sickness Prevention Achieved through Regional Collaboration (SPARC) which provides health agencies with technical expertise to set up and market flu-vaccination clinics. According to the organizers, offering flu vaccinations on Election Day is a way to target seniors, who typically vote in large numbers, and may attract other vulnerable populations who might otherwise be difficult to reach. Survey results from the 2006 Election Day immunization clinics revealed that more than 80% of the adults who were vaccinated were in the CDC's flu-immunization priority groups. See www.cidrap.umn.edu/cidrap/content/influenza/general/news/aug2208votevax.html.
- **GlaxoSmithKline (GSK) joins Roche in offering program to facilitate business stockpiling of antivirals for pandemic preparedness.** The GSK program allows two options: (1) a preferred pricing plan to buy zanamivir (Relenza) at discounted prices that include free storage, and (2) a reservation plan to reserve and store drug for the life of the contract for an annual fee of \$6 per treatment course, which is similar to the Roche plan for stockpiling Tamiflu. HHS' preliminary guidance on antiviral use and stockpiling recommends essential services consider prophylaxis for critical workers. Experts recommend that stockpiles not rely on one drug alone because of the possibility of resistance developing. See www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/sep0308relenza.html.
- **Promising Practices for Pandemic Planning:** UC Berkeley students teach young children good hand hygiene habits through a 15-minute classroom skit. See www.pandemicpractices.org/practices/.

Avian Influenza Update

- No new human H5N1 cases have been reported by the WHO since June 19th. For the latest WHO H5N1 updates, see www.who.int/csr/disease/avian_influenza/en/.
- **Low pathogenic avian influenza H5N8 outbreak in Idaho game farm.** Birds from that farm that were shipped to California for a bird dog event were quarantined and culled, and the farm is currently quarantined. However, it is not unusual to find low pathogenic avian influenza viruses in the U.S. See www.cidrap.edu/cidrap/content/influenza/avianflu/news/sep0508idaho.html.

Nations with Confirmed H5N1 Avian Influenza Cases (as of September, 2008)



Recommended Resources

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



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Eye on Influenza

September 22, 2008
Volume 4, Issue 25

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

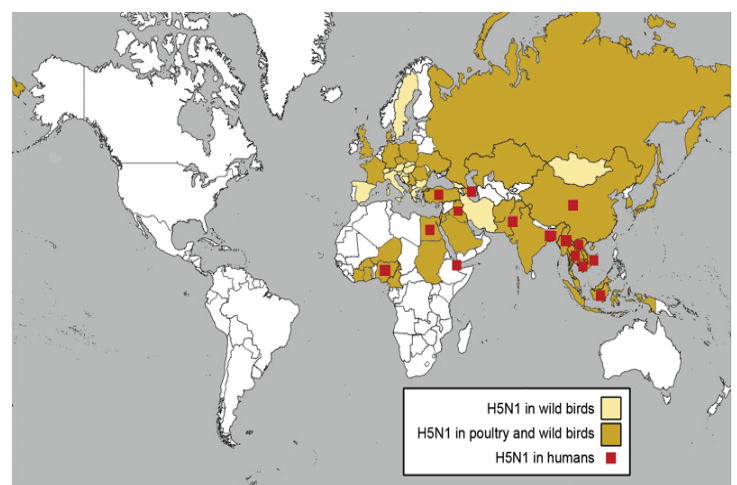
Official influenza surveillance season in the U.S. begins September 28th. Influenza vaccine distribution has started already. For persons who are unable to get vaccinated through their own physician, available retail flu vaccine clinics can be found at www.flucliniclocator.org or www.findaflushot.com.

- **CDC updates on-line seasonal influenza resources for 2008-2009.** For the 2008-2009 influenza prevention and control recommendations, updates on antiviral agents, and free flu materials for download, see <http://www.cdc.gov/flu/professionals>.
- **Study reveals that maternal influenza immunization reduces influenza illness in infants.** Influenza infection can lead to serious illness and hospitalization in infants and pregnant women. Because influenza vaccination is not licensed for infants younger than six months of age, researchers assessed the effectiveness of maternal vaccination during pregnancy on influenza illness in infants and mothers. The randomized, blinded study assigned 340 healthy unvaccinated mothers in Bangladesh to receive either inactivated influenza vaccine (influenza-vaccine group) or the 23-valent pneumococcal polysaccharide vaccine (control group) between August 2004 through May 2005; mothers and infants were observed until the infants were 24 weeks of age. Maternal influenza immunization resulted in a 63% reduction in laboratory-confirmed influenza illness in infants up to 24 weeks of age and reductions of 29% and 36% in rates of respiratory illness with fever in infants and mothers, respectively. Although this study was done in a country with influenza circulating year-round, these results support the strategy of maternal immunization to prevent influenza infection in young infants and their mothers. See *N Engl J Med*, published online 9/17/08; free access to this article available at <http://content.nejm.org/cgi/content/full/NEJMoa0708630>. Recommendations for vaccination of women pregnant during influenza season have been in place in the U.S. since 1997, but only 13% of pregnant women were vaccinated in 2007.
- **Hong Kong school closures in winter of 2008 had little effect on community transmission of influenza.** Public health officials in Hong Kong had ordered schools closed for two weeks in March 2008 after the death of three children, apparently from seasonal influenza. However, retrospective review of surveillance data before, during and after the school closures suggest that influenza activity had already peaked and was on the decline before the closures, and thus the closures may have come too late in the season to have much effect on community transmission. In addition, the indirect effects of school closure may not be as evident in mild to moderate influenza seasons such as this one. Surveillance system improvements, particularly real-time or near real-time reporting, could help officials make more informed decisions during an epidemic. See *Emerging Infectious Diseases* Oct 2008, available at <http://www.cdc.gov/eid/content/14/10/pdfs/08-0646.pdf>.

Avian Influenza Update

- As of September 10, 2008, two new cases of human H5N1 in Indonesia have been confirmed by the WHO for a total of 387 cases and 245 deaths (63%) in 15 countries. For the latest WHO H5N1 updates, see www.who.int/csr/disease/avian_influenza/en/.
- Report any suspect avian influenza cases to OC Epidemiology at 714-834-8180.

Nations with Confirmed H5N1 Avian Influenza Cases (as of September, 2008)



Recommended Resources

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

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

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

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

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Eye on Influenza

October 6, 2008
Volume 4, Issue 26

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

Influenza season has officially started and vaccine is available at many sites in the County. OC Health Care Agency will be offering free flu shots at numerous locations throughout the County beginning the week of October 27th. See <http://www.ochealthinfo.com/Public/flu/index.htm> for the locations and groups eligible for free shots. Available retail flu vaccine clinics can be found at www.flucliniclocator.org.

- **The American Academy of Pediatrics, Committee on Infectious Diseases, releases policy statement updating the current flu immunization recommendations in children, 2008-2009.** Recommendations for annual influenza immunization have been expanded this year to include **all children, both healthy and with high-risk conditions, 6 months through 18 years of age.** This will target all school-aged children, the population that bears the greatest disease burden, including an increased need for influenza-related medical care. In addition, reduction of transmission among school-aged children is projected to reduce transmission of influenza to household contacts and community members. **Household contacts and out-of-home care providers of healthy children younger than 5 years of age and of children with high risk-conditions should also be vaccinated annually.** See <http://pediatrics.aappublications.org/cgi/content/full/peds.2008-2449v2>.
- **Influenza vaccination coverage of children 6-23 months of age remains low in 2006-2007.** CDC assessed flu immunization of 6- to 23-month-old children with the National Immunization Survey, an on-going telephone survey which includes a follow-up mail survey to the children's vaccination providers and covers all 50 states. Findings revealed that only 21% of children aged 6 to 23 months were fully vaccinated in the 2006-07 season, the third season after CDC formally recommended influenza immunization in this group. Prevention of influenza and its complications in this age group is a public health priority because they are at greater risk for influenza complications, compared with older children. Additional studies are needed to identify barriers to influenza vaccination in this age group. See the 9/26/08 *MMWR* at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5738a2.htm>.
- **Study finds an increase in *Staphylococcus aureus* coinfections among pediatric deaths.** During the 2004–2007 influenza seasons, 166 influenza-associated pediatric deaths were reported to the CDC. Of the 90 children who fell into a group recommended for influenza vaccination, only 18 (20%) were at least partially vaccinated. Bacterial co-infection increased over the three years and was reported in 6%, 15%, and 34% of the deaths from 2004–2005 to the 2006–2007 seasons. *S. aureus* was the most common co-infection and increased five-fold, from one case in 2004–2005, three in 2005–2006, and 22 in 2006–2007; 64% were methicillin-resistant (MRSA). To read more, see *Pediatrics* 122(4); 805–811.
- **WHO recommends no change in flu vaccine components for the Southern Hemisphere 2009-2010 season.** Flu season in the southern hemisphere typically runs from May through October. Each September the WHO analyzes the circulating flu strains before selecting the ones to include in the following season's vaccine. The current flu vaccine includes strains similar to A/Brisbane/59/2007 (H1N1), to A/Brisbane/10/2007 (H3N2), and to B/Florida/4/2006. See <http://www.who.int/csr/disease/influenza/recommendations2009south/en/index.html>.
- **FDA approves new rapid diagnostic test that distinguishes seasonal influenza from novel strains.** The Human Influenza Virus Real-Time RT-PCR Detection and Characterization Panel was developed by the CDC and uses the reverse-transcriptase polymerase chain reaction process to amplify the viral genetic material which is then labeled with fluorescent molecules and analyzed. The results are generated in four hours. This rapid turn-around will allow for faster detection of seasonal influenza in the community each year, and for a quicker response in a pandemic potential situation. For more information, see <http://www.hhs.gov/news/press/2008pres/09/20080930a.html>.

Avian Influenza Update

- No new human H5N1 cases have been reported by the WHO since Sept. 10th. For the latest WHO H5N1 updates, see www.who.int/csr/disease/avian_influenza/en/.

Recommended Resources

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

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