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Washoe County Influenza Update

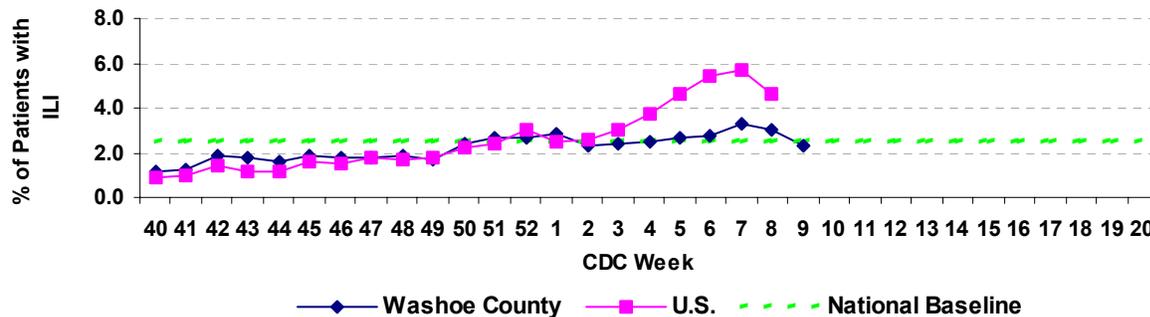
Since October 3, 2004, a total of 83 laboratory-confirmed cases of influenza have been reported this season in Washoe County. **Twenty-four (29%) of the 83 cases were identified as influenza type A** (16 cultures, 8 rapid antigen tests). Fourteen of the 16 influenza type A cultures have been subtyped as H3N2. **Nine (11%) of the 83 cases were identified as influenza type B** (5 cultures, 4 rapid antigen tests). The remaining 50 cases (60%) were laboratory-confirmed by a type of rapid test which does not differentiate between influenza type A and B.

The District Health Department conducts year-round influenza surveillance, with "enhanced surveillance" from October through June. We are currently in the enhanced surveillance period, with all six sentinel providers reporting on a weekly basis. Three emergency departments, one family practice, one adult internal medicine practice, and

one student health service are the much appreciated sentinel health care providers.

The influenza surveillance program consists of four major components: **1) Weekly reports of influenza-like illness (ILI) by sentinel healthcare providers.** Each site sends weekly reports tallying the numbers of patients who meet the case definition of ILI and the total number of patients seen at that site for any reason. A proportion is then calculated. **The case definition for ILI is fever ($\geq 100^{\circ}\text{F}$ [37.8°C], oral or equivalent) AND cough and/or sore throat (in the absence of a KNOWN cause other than influenza).** Patients who meet the case definition but have diagnostic tests to confirm another cause (e.g., a positive *Strep* or RSV test) are not counted as ILI. From October 3, 2004, through March 5, 2005, the range for ILI has been 1.1% to 3.5%.

Proportion of Patients Seen with ILI by Sentinel Physicians, Washoe County Influenza Surveillance, 2004 – 2005.



2) The collection of a limited number of throat cultures by sentinel health care providers from persons with ILI. The purpose of the laboratory confirmation is to verify which type of influenza virus is in the community.

Sentinel providers have submitted 47 specimens to the Nevada State Public Health Laboratory since October 3, 2004. Twenty (42%) specimens have yielded influenza isolates, 27 specimens were negative. The following table shows a break down of results.

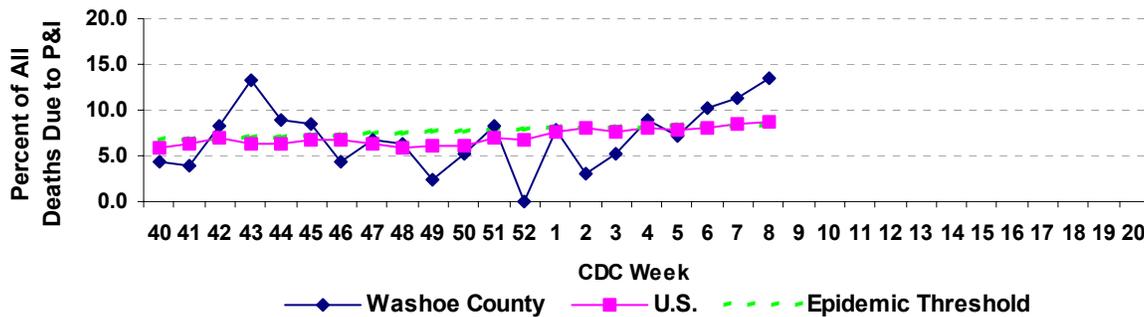
Influenza Isolates, Washoe County Influenza Surveillance, 2004-2005.

Type	# of isolates	Subtype	Antigenic characterization
A	15	H3N2	pending
B	5	N/A	B/Shanghai/361/2002-like

3) Monitoring of influenza and pneumonia mortality through death certificates. Deaths due to pneumonia and influenza (P&I deaths) are reported weekly as a proportion of all deaths recorded in Washoe County. The number of P&I deaths each week are compared to

national levels, and to the number that would be expected in the absence of an influenza epidemic. Since October 3, 2004 the P&I range for Washoe County has been 0.0% to 13.4%. The P&I ratio exceeded the epidemic threshold in weeks 42-45, 51, 4, and 6-8.

Pneumonia and Influenza Mortality, Washoe County Influenza Surveillance, 2004 – 2005.



4) Health care providers, school nurses, and extended care facilities who see an unusually high incidence of ILI in their setting are encouraged to report to the District Health Department by calling (775) 328-2447.

The information collected is compiled in a weekly report and can be accessed at the following website: <http://www.washoecounty.us/health>. For questions regarding influenza surveillance in Washoe County, please contact Denise Stokich at (775) 328-2487.

Global Influenza Update

The overall level of influenza activity remains mild to moderate in most parts of the world. The northeastern part of Europe is still experiencing increasing influenza activity. The majority of viruses reported in Europe are influenza A (H3).

In Canada, widespread influenza activity continues to be reported in several provinces. The Canadian National Microbiology Laboratory has characterized antigenically 568 influenza viruses: 517 influenza A (H3N2) and 51 influenza B viruses. Of the 517 influenza A (H3N2) isolates, 433 (86%) were A/Fujian/411/02(H3N2)-like and 74(14%) were A/California/7/04-like viruses. Of the 51 influenza B isolates, 50 were identified as B/Shanghai/361/02-like and one was identified as B/HongKong/330/2001-like virus.

In the United States, influenza activity declined during week 8 (February 20-26, 2005). The proportion of patient visits to sentinel providers for ILI has been above the national baseline for seven consecutive weeks. The proportion of deaths attributed to pneumonia and influenza is at 8.8% which is above the epidemic threshold (8.2%). The CDC laboratory has characterized antigenically 378 influenza viruses: four influenza A (H1), 284 influenza A (H3N2) viruses, and 90 influenza B viruses. Of the 284 influenza A (H3N2) isolates, 134 (47%) were A/Wyoming/3/2003 (which is the A/Fujian/411/2002-like (H3N2) component of the 2004-05 influenza vaccine), and 150 (53%) were A/California/7/2004 (H3N2). Of the 90 influenza B isolates, 66 were B/Shanghai/361/2002-like (which is the influenza B component of the 2004-05 influenza vaccine), and 19 influenza B viruses belong to the B/Victoria lineage. Five influenza B isolates are being further characterized.

Diagnosis of Influenza

Influenza can be difficult to diagnose based on clinical symptoms alone because the initial symptoms of influenza may be similar to those caused by other infectious agents such as *Mycoplasma pneumoniae*, adenovirus, respiratory syncytial virus, rhinovirus, parainfluenza viruses, and *Legionella* spp.

A number of tests can help in the diagnosis of influenza. Appropriate samples for influenza testing include nasopharyngeal or throat swabs, nasal washings, or nasal aspirates, depending on which type of test is used. Samples should be collected within the first 4 days of illness. Virus can be isolated from throat and nasopharyngeal swabs. Results generally take 4-5 days. If no virus is isolated, a negative result may take 2 weeks. Rapid influenza tests provide results within 24 hours. Most of the rapid tests available for point-of-care testing are approximately >70% sensitive for detecting influenza and approximately >90% specific. **As many as 30% of samples that would be positive for influenza by viral culture may give a negative rapid test result.** False-positive rapid test results are also possible.

Serologic confirmation of influenza requires demonstration of a significant rise in influenza IgG. **Two serum samples should be collected: an acute specimen should be taken less than 5 days from symptom onset, and a convalescent specimen should be taken 10-21 days, preferably 21 days, following onset.** Because of the length of time needed for a diagnosis of influenza by serologic testing, other diagnostic testing should be used if a more rapid diagnosis is needed.

When influenza is suspected in an outbreak of respiratory illness, samples should be tested by both rapid tests and by viral culture. Rapid tests can provide information to assist with treatment and control measures, however viral cultures also provide useful information. Viral cultures are essential in determining influenza subtypes and strains causing illness, as well as for surveillance of new strains that may need to be included in the next year's influenza vaccine. During outbreaks of influenza-like illness, viral culture can also help identify other causes of illness when influenza is not the cause.

Avian Influenza



Outbreaks of avian influenza A (H5N1) among poultry are ongoing in several countries in Asia, including Thailand, Vietnam, and Cambodia. Reports of sporadically occurring human cases of influenza A (H5N1) have continued in 2005. The first human case of influenza H5 infection in Cambodia was confirmed in a woman who was hospitalized in Vietnam and died. A joint mission between the Cambodian Ministries of Health and

Agriculture and WHO is in Cambodia investigating the circumstances surrounding this case.

According to WHO, the cumulative number of confirmed human cases of influenza A (H5N1) reported in Asia since January 28, 2004, is 55 cases (with 42 deaths). For more information on H5N1 infections in humans, visit the WHO website at <http://www.who.int/en/>.

One instance of probable limited human-to-human transmission of influenza A (H5N1) virus was reported in Thailand between a child and her mother and aunt in September 2004. Health authorities in Vietnam are investigating two possible instances of limited human-to-human transmission in family clusters. One instance involves two brothers in Vietnam with confirmed influenza A (H5N1) infections; a third brother was hospitalized for observation only and did not become ill. In the second instance, a daughter developed symptoms within 6 days of her mother's onset of illness, which was confirmed as influenza A (H5N1). Investigations are exploring possible sources of exposure and looking for other signs of illness in family members, other close contacts, and the general community.

The avian influenza A (H5N1) epizootic in Asia poses an important public health threat. According to CDC, the epizootic in Asia is not expected to diminish substantially in the short term. It is likely that influenza A (H5N1) infection among birds has become endemic to the region and that human infections will continue to occur. So far, no sustained human-to-human transmission of the influenza A (H5N1) virus has been identified, and no influenza A (H5N1) viruses containing both human and avian influenza virus genes, indicative of gene reassortment, have been detected.

Influenza A (H5N1) samples from human cases in Vietnam and Thailand have shown resistance to two of the antiviral medications commonly used for influenza, amantadine and rimantidine. Two other antiviral medications, oseltamavir and zanamavir, should still be effective against currently circulating strains of H5N1.

There is currently no human vaccine available to protect against the H5N1 virus. However, vaccine development

efforts are under way. Research studies are expected to begin in April 2005 to test a human H5N1 vaccine. For more information about the H5N1 vaccine development process, visit the [National Institutes of Health](http://www2.niaid.nih.gov/Newsroom/Releases/flucontract_s.htm) website at http://www2.niaid.nih.gov/Newsroom/Releases/flucontract_s.htm.

The current risk to Americans from the H5N1 Avian influenza outbreak in Asia is low. The strain of H5N1 virus found in Asia has not been found in the United States. There have been no human cases of H5N1 flu in the United States. It is possible that travelers returning from affected countries in Asia could be infected. Since February 2004, medical and public health personnel have been watching closely to find any such cases.

CDC recommends maintaining enhanced surveillance efforts to identify patients at increased risk for avian influenza A (H5N1) as described in the Health Alert Network (HAN) notices that were issued on [February 3, 2004](http://www.cdc.gov/flu/avian/professional/han020302.htm) (available at <http://www.cdc.gov/flu/avian/professional/han020302.htm>) and again on [August 12, 2004](http://www.cdc.gov/flu/avian/professional/han081304.htm) (available at <http://www.cdc.gov/flu/avian/professional/han081304.htm>).

Identification of possible imported cases of avian influenza A (H5N1) in the U.S. clinical setting depends on the vigilance of health care providers to consistently obtain information on recent international travel and other potential exposures from persons with clinical presentations as described below.

Testing for avian influenza A (H5N1) is indicated for hospitalized patients with:

- radiographically confirmed pneumonia, acute respiratory distress syndrome (ARDS), or other severe respiratory illness for which an alternate diagnosis has not been established, AND
- history of travel within 10 days of symptom onset to a country with documented H5N1 avian influenza in poultry and/or humans (for a regularly updated listing of H5N1-affected countries, see the [OIE website](http://www.oie.int/eng/en_index.htm) at http://www.oie.int/eng/en_index.htm and the [WHO website](http://www.who.int/en/) at <http://www.who.int/en/>).

Testing for avian influenza A (H5N1) should be considered on a case-by-case basis in consultation with the District Health Department for hospitalized or ambulatory patients with:

- documented temperature of $>38^{\circ}\text{C}$ ($>100.4^{\circ}\text{F}$), AND
- one or more of the following: cough, sore throat, shortness of breath, AND
- history of contact with poultry (e.g., visited a poultry farm, a household raising poultry, or a bird market) or a known or suspected human case of influenza A (H5N1) in an H5N1-affected country within 10 days of symptom onset.

For further questions, please contact the Communicable Disease Program at (775) 328-2447.