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**CDC HEALTH ADVISORY**

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## **Variant Influenza Virus (H3N2v) Infections**

**Summary:** *This Health Alert Network Health Advisory provides an update on H3N2 variant virus (or “H3N2v”) activity and summarizes CDC’s updated H3N2v case definitions and recommendations for H3N2v surveillance for the summer and fall of 2013. It supersedes the last H3N2v-related HAN Health Advisory, HAN 325, which was issued August 3, 2012.*

### **Background**

The first cases of influenza A (H3N2) variant<sup>1</sup> (H3N2v) virus infection this year were reported in June 2013. These cases were associated with exposure to swine at an agricultural fair prior to illness onset.

H3N2v viruses with the matrix (M) gene from the 2009 H1N1 pandemic virus were first detected in people in 2011 and were responsible for a multi-state outbreak in the summer of 2012 that resulted in 306 cases, including 16 hospitalizations and 1 fatality. Genetic sequencing by CDC has confirmed that H3N2v viruses isolated in June 2013 are nearly identical to those detected during summer 2012. Most cases of H3N2v identified during 2012 were associated with exposure to pigs at agricultural fairs. Agricultural fairs take place across the United States every year, primarily during the summer months and into early fall. Many fairs have swine barns, where pigs from different places come in close contact with each other and with people. These venues may allow spread of influenza viruses both among pigs and between pigs and people. Data indicate that infected pigs may spread influenza viruses even if they are not symptomatic (e.g., coughing and/or sneezing). Although instances of limited person-to-person spread of this virus have been identified in the past, sustained or community-wide transmission of H3N2v has not occurred.

Clinical characteristics of the 2012 and 2013 H3N2v cases have been generally consistent with those of seasonal influenza, and have included fever, cough, pharyngitis, myalgia, and headache. Of the 16 H3N2v hospitalized patients, most were at increased risk for complications of influenza because of age or the presence of an underlying medical condition. None of the persons ill with 2013 H3N2v infection have been hospitalized, and no deaths have occurred among them.

Rapid detection and characterization of novel influenza viruses remain important components of national efforts to prevent further cases and evaluate clinical illness associated with these viruses. As a result, clinicians are reminded to consider influenza as a possible diagnosis when evaluating patients with acute respiratory illnesses, and clinicians should consider the possibility of H3N2v in persons presenting with respiratory illness and recent swine contact or attendance at an agricultural fair. The H3N2v case definitions for 2013 (<http://www.cdc.gov/flu/swineflu/case-definitions.htm>) include laboratory-confirmed cases and cases under investigation for H3N2v virus infection; the probable case definition used in 2012 has been deleted.

CDC anticipates that state health departments will identify more H3N2v cases in 2013 as agricultural fair season continues. The number of cases may exceed those identified last year, and CDC recommends a surveillance strategy for 2013 designed primarily to identify increases in person-to-person transmission or clinical severity. Testing for H3N2v should focus primarily on persons with exposures known to be associated with H3N2v virus infection (e.g., fair attendance) and in settings where person-to-person transmission has been identified previously (e.g., influenza-like illness outbreaks in child-care centers). For more information on 2013 testing recommendations, please see <http://www.cdc.gov/flu/swineflu/h3n2v-surveillance.htm>. Novel influenza A virus infections, which include

those caused by H3N2v, remain notifiable conditions in the United States, and all confirmed cases should be reported to CDC within 24 hours.

CDC continues to share information and guidance for local and state public health officials regarding the surveillance and investigation of human infections with H3N2v. This information is available at <http://www.cdc.gov/flu/swineflu/h3n2v-publichealth.htm>.

Recommendations for H3N2v for clinicians, public health practitioners, and the public for the summer and fall of 2013 are summarized below:

#### **Recommendations for Health Care Providers and Public Health Practitioners**

- Clinicians who suspect influenza in persons with recent exposure to swine should obtain a nasopharyngeal swab or aspirate from the patient, place the swab or aspirate in viral transport medium, and contact their state or local health department to arrange transport and request a timely diagnosis at a state public health laboratory.
- Commercially available rapid influenza diagnostic tests (RIDTs) may not detect H3N2v virus in respiratory specimens. Therefore, a negative rapid influenza diagnostic test result does not exclude infection with H3N2v or any influenza virus. In addition, a positive test result for influenza A cannot confirm H3N2v virus infection, because these tests cannot distinguish between influenza A virus subtypes (i.e., they do not differentiate between other human influenza A viruses and H3N2v virus). Therefore, respiratory specimens should be collected and sent for sub-type specific real-time polymerase chain reaction (RT-PCR) testing at a state public health laboratory.
- Enhanced surveillance for influenza during agricultural fair season is recommended to facilitate timely detection and investigation of H3N2v cases. Recommendations for influenza surveillance and testing can be found at <http://www.cdc.gov/flu/swineflu/h3n2v-surveillance.htm>.
- Clinicians should consider antiviral treatment with oral oseltamivir or inhaled zanamivir in patients with suspected or confirmed H3N2v virus infection. Antiviral treatment is most effective when started as soon as possible after influenza illness onset. For more information on antiviral treatment for H3N2v virus infections, please see <http://www.cdc.gov/flu/swineflu/h3n2v-treatment.htm>.

#### **Recommendations for the Public**

- Persons who are at high risk for influenza complications<sup>2</sup> should avoid exposure to pigs and swine barns at fairs this year.
- Persons engaging in activities that may involve swine contact at fairs should wash their hands frequently with soap and running water before and after exposure to animals; avoid eating or drinking in animal areas; and avoid close contact with animals that look or act ill. For additional information, please see <http://www.cdc.gov/flu/swineflu/h3n2v-fairs-factsheet.htm>.
- Patients with influenza-like illness who are at high risk for influenza complications<sup>2</sup> should see their health care provider promptly to determine if treatment with antiviral medications is warranted.
- Patients who experience influenza-like symptoms following direct or close contact with pigs and who seek medical care should inform their health care provider about the exposure.
- Influenza viruses have not been shown to be transmissible to people through eating properly handled and prepared pork or other products derived from pigs. For more information about the proper handling and preparation of pork, visit the USDA website fact sheet "Fresh Pork from Farm to Table" at [http://www.fsis.usda.gov/wps/wcm/connect/27f02652-e30e-4772-83af-23aaabba220b/Pork\\_from\\_Farm\\_to\\_Table.pdf?MOD=AJPERES](http://www.fsis.usda.gov/wps/wcm/connect/27f02652-e30e-4772-83af-23aaabba220b/Pork_from_Farm_to_Table.pdf?MOD=AJPERES).

#### **For more information:**

- "Interim Guidance on Case Definitions to be Used for Investigations of Influenza A (H3N2) Variant Virus Cases" for state and local health departments is available at <http://www.cdc.gov/flu/swineflu/case-definitions.htm>.
- "Prevention Strategies for Seasonal and Influenza A(H3N2)v in Health Care Settings" is available at <http://www.cdc.gov/flu/swineflu/prevention-strategies.htm>.

- “Interim Guidance on Specimen Collection, Processing and Testing for Patients with Suspected Influenza A (H3N2) Variant Virus Infection” for public health professionals is available at <http://www.cdc.gov/flu/swineflu/h3n2v-testing.htm>, and
- “Interim Guidance for Enhanced Influenza Surveillance: Additional Specimen Collection for Detection of Influenza A (H3N2) Variant Infections” for state and local health departments is available at <http://www.cdc.gov/flu/swineflu/h3n2v-surveillance.htm>.
- “Measures to Minimize Influenza Transmission at Swine Exhibitions, 2013” is available at <http://nasphv.org/Documents/NASAHO-NASPHV-InfluenzaTransmissionAtSwineExhibitions2013.pdf>
- “Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2011” is available at <http://nasphv.org/documentsCompendiumAnimals.html>

<sup>1</sup>Influenza viruses that circulate in swine are called swine influenza viruses when isolated from swine, but are called variant viruses when isolated from humans.

<sup>2</sup>This includes persons with certain underlying chronic medical conditions such as asthma, diabetes, heart disease, or neurological conditions, pregnant women, and persons younger than 5 years, older than 65 years of age, or who have weakened immune systems. For additional information on persons at increased risk for influenza complications, please see [http://www.cdc.gov/flu/about/disease/high\\_risk.htm](http://www.cdc.gov/flu/about/disease/high_risk.htm).

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