CDC Key Points: First U.S. human infection with H3N2v virus in 2014.

- Today CDC reported the first human infection with an influenza A (H3N2) variant virus (H3N2v) in the United States in 2014. Flu viruses that normally circulate in pigs are called "variant" viruses when they are found in people. (For more information on H3N2v, see "Background" section below.)
- The reported case was a child from Ohio who had exposure to pigs at a county agricultural fair. The child was hospitalized, but has since recovered.
- No evidence of human-to-human transmission of H3N2v or any increases in flu-like illness in the community have been reported.
- Confirmatory PCR testing and genetic sequencing of the virus was conducted by CDC.
- Genetic sequencing showed this virus has a slightly different combination of internal genes than has been observed previously in people: this H3N2v virus has the nucleoprotein (NP) and the matrix (M) gene from the 2009 H1N1 virus. (For more information on the internal genes of previous human infections with H3N2v viruses, see "Background" section below.)
- This virus is has the same genetic composition as viruses previously isolated from pigs in the U.S. this summer.
- Further laboratory testing to fully characterize this virus is ongoing.
- CDC has developed guidance for the public to protect against H3N2v, and guidance for public health and health care workers.
- CDC recommends that people at high risk of serious flu complications due to age or health factors avoid pigs at fairs (and their environments, i.e. swine barns).
- High risk people include children younger than 5 years, people 65 and older, people with underlying health conditions like asthma, diabetes and heart disease and pregnant women. A full list of high risk conditions is available at http://www.cdc.gov/flu/about/disease/high_risk.htm.
- In addition, people at high risk of flu complications who develop flu symptoms should contact their health care professional.
    - If you are at high risk of flu complications, have developed flu symptoms after exposure to pigs at a fair or had other possible contact with pigs, tell your health care professional about your exposure.
- People who go to a doctor for flu symptoms following direct or close contact with swine (pigs) should tell their doctor about this exposure. CDC recommends that people at high risk of flu complications get influenza antiviral treatment as quickly as possible if they have confirmed or suspected influenza, including H3N2v.

Background

- H3N2v viruses with the matrix (M) gene from the 2009 H1N1 pandemic virus were first detected in people in July 2011, and these viruses were first identified in U.S. pigs in 2010.
    - Since then, 341 human cases of H3N2v virus infection have been detected in the United States. The genetic characterization of these viruses has varied, but their antigenic properties have been similar.
    - Prior to this Ohio case, previous human infections with H3N2v viruses since 2011 have had one of the following three combinations of genes from the 2009 H1N1 virus: the "M" gene by itself; both the "M" and "PA" genes; or the "M," "PA" and "NP" genes" together.
- These infections have mostly been associated with prolonged exposure to pigs at agricultural fairs.
- Limited human-to-human spread of this virus has been detected in the past, but no sustained or community spread of H3N2v has ever been identified.
- It's possible that sporadic infections and even localized outbreaks among people with this virus will continue to occur.
- Fair settings can magnify the risk of flu spreading among pigs and between pigs and people. Pigs from many farms come in close contact with each other and with people at fairs, increasing the risk of exposure to pigs that may be infected with swine influenza viruses.
- While some pigs show signs when they are infected with swine influenza (like coughing and sneezing), it is possible that a pig may be infected and not show any signs (the pig may appear well).There is evidence, however, that asymptomatic pigs (no signs of illness) may still spread swine flu viruses.
- Influenza viruses are thought to spread from a pig to a person in the same way that human flu viruses spread—mainly through droplets produced by coughing and sneezing.
- CDC continues to monitor H3N2v closely and will provide updates on H3N2v cases and other variant flu viruses weekly in FluView (http://www.cdc.gov/flu/weekly/fluactivitysurv.htm) and on its H3N2v page at http://www.cdc.gov/flu/swineflu/h3n2v-cases.htm
    - H3N2v case counts by state and year are available at http://www.cdc.gov/flu/swineflu/h3n2v-case-count.htm

Guidance

- CDC has developed guidance for the public to protect against H3N2v virus infection. It is available at http://www.cdc.gov/flu/swineflu/h3n2v-factsheet.htm .
- CDC H3N2v guidance for public health is available at http://www.cdc.gov/flu/swineflu/h3n2v-publichealth.htm.
- CDC H3N2v guidance for health care workers is available at http://www.cdc.gov/flu/swineflu/h3n2v-healthcare.htm