

H7N9 Bird Flu in China

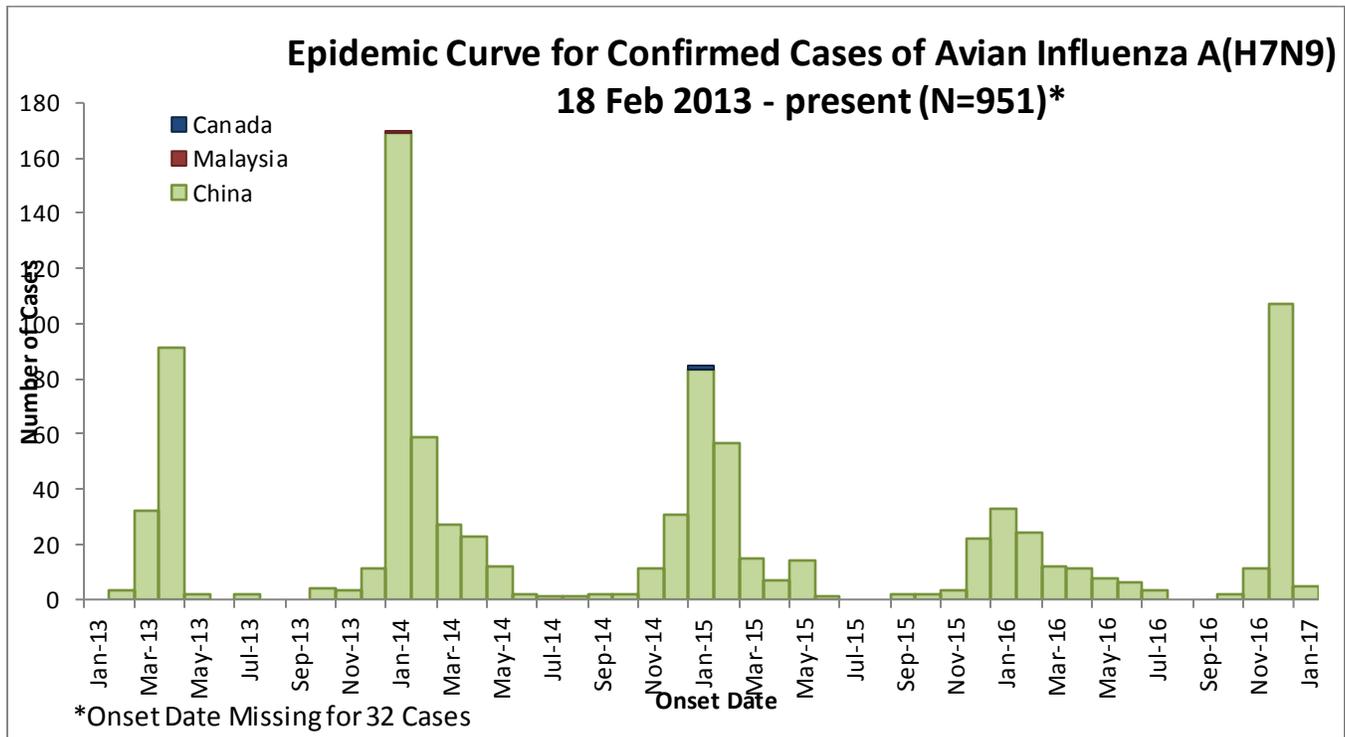
Key Points

February 3, 2017

SITUATION SUMMARY:

- Human infections with a new avian influenza A (H7N9) virus (“H7N9”) were first reported in China in March 2013.
- Annual increases in the number of human infections with H7N9 viruses in China have occurred each winter since 2013. (Overall, most human infections have occurred between December and March.).
- Each annual increase is called an “epidemic”; thus China is currently experiencing its 5th epidemic of human infections with H7N9.
- Since September 2016, 120 human infections with H7N9 have been reported by the World Health Organization. Most of these cases occurred during December.
- This brings the total number of publicly reported human H7N9 infections since 2013 to 924 as of January 16, 2017. About 40% of have died.
- The recent increase in cases is part of the annual winter increase in cases that has been observed since 2013 when this virus emerged to infect people.
- Previous numbers of reported cases by epidemic are: 1st epidemic: 135 cases; 2nd epidemic: 320 cases; 3rd epidemic: 226 cases; 4th epidemic: 123 cases. (See epidemic curve below.)
- CDC routinely examines the genetic sequences of H7N9 viruses as they become available.
 - Sequences of H7N9 viruses isolated during the 4th epidemic in China during 2016 showed few genetic and/or antigenic changes from viruses from earlier epidemics. (A report in CDC’s MMWR published in December describes H7N9 activity through the 4th epidemics and is available at: https://wwwdev.cdc.gov/mmwr/volumes/65/wr/mm6549a2.htm?s_cid=mm6549a2_w .)
 - Genetic and antigenic analysis of viruses from the 5th epidemic is ongoing at CDC.
- The epidemiology of H7N9 infections does not appear to have changed significantly at this time.
 - H7N9 viruses continue to circulate in poultry in China.
 - Most human infections with H7N9 continue to occur after exposure to poultry.
 - Most reported patients have had severe respiratory illness.
 - Rare, limited person-to-person spread of this virus has been identified in China, but there is no evidence of sustained person-to-person spread of H7N9.
 - A few cases of H7N9 have been reported outside of mainland China but most of these infections have occurred among people who had traveled to China before becoming ill.
 - These H7N9 viruses have not been detected in people or birds in the United States.

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CDC RISK ASSESSMENT:

- While the current risk to the public’s health from this virus is low, H7N9 is among the non-human influenza viruses that are most concerning to public health officials because of their pandemic potential.
- Among the influenza viruses rated by the Influenza Risk Assessment Tool (IRAT), H7N9 is ranked as having the greatest potential to cause a pandemic, as well as potentially posing the greatest risk to severely impact public health.
- The potential emergence risk is “moderate.” The potential impact risk is “high-moderate.” (IRAT summary scores are available at: <https://www.cdc.gov/flu/pandemic-resources/monitoring/irat-virus-summaries.htm>)
- Influenza viruses constantly change and it is possible that this virus could gain the ability to spread easily and sustainably among people, triggering pandemic.
- However, there is no evidence of sustained human-to-human spread of this virus at this time. Sustained human-to-human spread is necessary for a pandemic to occur.

WHAT TO EXPECT:

- It’s likely that sporadic human infections with H7N9 associated with poultry exposure will continue to occur in China.
- It’s also possible that H7N9 may spread to poultry in neighboring countries and that human cases associated with poultry exposure may be detected in neighboring countries.

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- It's also possible that H7N9 cases may continue to be detected among travelers returning from H7N9-affected countries, even possibly in the United States.
- However, as long as there is no evidence of ongoing, sustained person-to-person spread of H7N9, the public health risk assessment would not change substantially.

WHAT CDC IS DOING:

- The U.S. Government supports international surveillance for H7N9 and other influenza viruses with pandemic potential.
- CDC collaborates closely with CDC China through the World Health Organization's Global Influenza Surveillance and Response System (GISRS). CDC staff in China and globally are following the H7N9 situation closely and coordinating with domestic and international partners.
- CDC routinely reviews new data as it becomes available and updates IRAT scores as appropriate. The last IRAT scoring of H7N9 was conducted in April of 2016. An update of the 2016 IRAT score is in process at this time.
- CDC has developed 3 H7N9 candidate vaccine viruses (CVVs) to use for vaccine production if needed. These CVVs were antigenically "like" viruses circulating during the 4th epidemic.
- CDC is looking at viruses from the current 5th epidemic to consider whether an updated CVV might be needed.
- CDC also will look at viruses from the 5th epidemic to see whether they remain susceptible to the antiviral drugs classified as neuraminidase inhibitors.
- CDC has had H7N9 guidance for clinicians and public health authorities in the United States since 2013. This guidance is available at <https://www.cdc.gov/flu/avianflu/healthprofessionals.htm>.
- CDC supports all U.S. state health departments with diagnostic test reagents that can detect H7N9 and other novel influenza viruses. CDC also provides these reagents to other countries to assist them with detection.
- Last week CDC posted [updated information about H7N9 for travelers to China](#) since large numbers of people typically travel to and from China around the Chinese Lunar New Year, which took place on January 28, 2017. This was a "Watch Level – 1 Practice Usual Precautions" travel notice.
- CDC will provide updated information as it becomes available.

MORE INFORMATION:

- In December 2016, a Morbidity and Mortality Weekly Report (MMWR) was published titled: ["Assessing Change in Avian Influenza A\(H7N9\) Virus Infections During the Fourth Epidemic — China, September 2015–August 2016"](#) (Report available at https://wwwdev.cdc.gov/mmwr/volumes/65/wr/mm6549a2.htm?s_cid=mm6549a2_w).
- The report concluded that the "Epidemiology and virology data from the most recent (fourth) epidemic, September 2015–August 2016, suggest no evidence of increased transmissibility of A(H7N9) virus from poultry or environmental exposures to humans or of sustained human-to-human transmission."
- The World Health Organization published an H7N9 update on January 16, 2017 at: http://www.who.int/influenza/human_animal_interface/Influenza_Summary_IRA_HA_interface_01_16_2017_FINAL.pdf?ua=1