Avian Influenza A (H7N9) Key Points
January 24, 2013

In This Document:

Situation Summary

- Since October 1, 2013, China has reported 102 new cases of human infection with avian influenza A H7N9. This includes 11 new cases reported from January 21 through January 24, 2014. Thirteen deaths have occurred among these 102 cases.
- These cases bring the total number of reported H7N9 human infections to 237, including 58 deaths (the total case fatality proportion is 24%), since the first cases of H7N9 infection were reported by China at the end of March 2013.
- During the spring outbreak of 2013, 133 cases of H7N9 were reported and two cases were reported in July, according to WHO.
- The recent increases in H7N9 activity in China (following the decline over the summer months) may be associated with cooler weather.
- Avian flu viruses have a seasonal pattern, like seasonal flu, and circulate at higher levels in colder weather.
- Most human infections with H7N9 are believed to have occurred after exposure to infected poultry or contaminated environments.
- No sustained human-to-human spread of this virus has been detected.
- Chinese health authorities have reported that there are no changes in the epidemiology of H7N9. (For more information, see http://www.who.int/influenza/human_animal_interface/RiskAssessment_H7N9_21Jan14.pdf)
- Since the epidemiology has not changed, the risk assessment and CDC's recommendations surrounding H7N9 remain the same. (see recommendations section)
    - The latest WHO risk assessment of human infection with avian influenza A (H7N9) virus is available online at http://www.who.int/influenza/human_animal_interface/influenza_h7n9/Risk_Assessment/en/index.html.
- It's likely that H7N9 cases will continue to be detected this winter in China; however, it's not possible to predict how many cases there will be.
- No cases of H7N9 outside of China have been reported, and the H7N9 virus has not been detected in people or birds in the United States.
- However, it is possible that H7N9 in birds and people will be detected in China's neighboring countries during the fall and winter.
- It's also possible that H7N9 may be detected in the United States at some point, possibly in a traveler returning from an affected area.

Background

Avian Influenza A (H7N9) Key Points
January 24, 2013

- The first human cases of H7N9 virus infection were internationally reported by WHO on March 31, 2013.
- From April through May 2013, the World Health Organization reported 132 human infections with a new avian influenza A (H7N9) virus in China, and 44 deaths. Most cases had illness onset during the month of April. In May, new reports of H7N9 infections in China became less frequent. (No H7N9 infections have been detected outside of China.)
- From June to the end of September 2013, WHO reported three new H7N9 infections in China (July 4 [1], July 20 [1], August 11 [1]), of which one had illness onset in April (July 4), and one death.
    - WHO reports new H7N9 infections in China on its Global Alert and Response (GAR) page at http://www.who.int/csr/don/en/index.html. The archive of Disease Outbreak News (DONs) is available at http://www.who.int/csr/don/archive/year/2014/en/index.html.
- While some mild illnesses in human H7N9 cases have been seen, most patients have had severe respiratory illness, about one-third leading to death.
- Close contacts of confirmed H7N9 patients have been followed to determine whether any human-to-human spread of H7N9 has occurred.
- No evidence of sustained person-to-person spread of H7N9 has been found, though some evidence points to limited person-to-person spread in rare circumstances.
- Limited person-to-person spread of bird flu is thought to have occurred rarely in the past, most notably with avian influenza A (H5N1), and so would not be surprising with H7N9.
- In the majority of these instances, spread occurred after prolonged and close contact between the sick person and someone caring for them (most often a family member). See "Background on Human Infections with other Avian Influenza Viruses" at http://www.cdc.gov/flu/avianflu/h5n1-human-infections.htm for more information.
- The H7N9 situation remains an international public health concern because it is possible that the virus could change to more easily and sustainably spread among people. If this occurred, a global outbreak of disease (pandemic) could result.
- CDC is working with domestic and international public health partners, including China CDC and the World Health Organization, to respond effectively to developments regarding H7N9.

Recommendations

- CDC is following this situation closely and coordinating with domestic and international partners, including China CDC and World Health Organization.
- CDC has issued H7N9 guidance, available at http://www.cdc.gov/flu/avianflu/h7n9-virus.htm.
- Clinicians should consider the possibility of H7N9 infection in persons presenting with respiratory illness requiring hospitalization and appropriate travel or exposure history.
- Confirmed and probable cases of human infection with H7N9 in the United States should be reported to CDC within 24 hours of initial detection. However, state health departments are encouraged to investigate all potential cases of H7N9 infection in order to determine case status.
- H7N9 testing recommendations and case definitions, along with other resources for clinicians and health professionals, are available on the CDC H7N9 web site at http://www.cdc.gov/flu/avianflu/h7n9-healthprofessionals.htm.

Avian Influenza A (H7N9) Key Points
January 24, 2013

- At this time, no cases of human infection with avian influenza A (H7N9) viruses have been detected in the United States and the virus does not seem to be spreading from person to person.
- Apart from advice for travelers/ill persons (summarized below), CDC is not making any additional recommendations for public action specific to H7N9.
    - Travelers should visit http://www.cdc.gov/travel or follow @CDCtravel on Twitter for up-to-date information about CDC's travel recommendations.
    - On January 22, 2014, CDC posted an updated avian flu (H7N9) in China travel notice. It is available online at http://wwwnc.cdc.gov/travel/notices/watch/avian-flu-h7n9-china.
    - CDC does not recommend restricting travel to China at this time.
    - Travelers to China should practice hand hygiene, follow food safety practices, and avoid contact with animals.
- Travelers should wash their hands often or use hand sanitizer. They should try not to touch their eyes, nose, or mouth, except with very clean hands.
- Travelers should eat meats and poultry products, including eggs, only if they have been cooked thoroughly.
- Travelers should avoid touching animals, alive or dead, and should stay away from farms, poultry markets, or other markets where there are live or dead animals.
    - Symptoms of H7N9 flu include fever, cough, and shortness of breath. If travelers get sick after returning from China, they should tell their doctors about their recent travel.

Avian Influenza Background

- The H7N9 viruses reported in spring 2013 in China are the first found to be associated with human cases of H7N9 influenza infection.
- Different avian influenza A (H7N9) viruses have been identified in birds in North America. Wild waterfowl and shore birds may carry the virus during migrations and may introduce it to domestic poultry. The North American lineage of H7N9 is different from the Eurasian lineage of H7N9 viruses that are currently circulating in China.
- The threat to humans from the North American lineage of H7N9 influenza viruses is low.
- Avian flu viruses do not normally infect humans. However, sporadic human infections with avian flu do occasionally occur.
- Most commonly, human cases of avian influenza happen in people with direct exposure to infected poultry.
- Infected birds can shed a lot of flu virus, for example, in their droppings or their mucus. If someone touches an infected bird or an environment contaminated with virus and then touches their eyes, nose or mouth, they may be infected with bird flu virus.
- There is some evidence that infection may also occur if the flu virus becomes airborne, such as when an infected bird flaps it wings. If someone were to breathe in airborne virus, it's possible they could get infected.
- While most instances of human infection with animal influenza viruses do not result in human-to-human transmission, each case should be fully investigated to be sure that such viruses are not spreading among humans and to limit further exposure of humans to infected animals, if infected animals are identified.

Avian Influenza A (H7N9) Key Points
January 24, 2013

- Poultry, poultry products (eggs) and pork can be safely consumed provided they are properly cooked and properly handled during food preparation.
- Surveillance for avian influenza viruses in North American birds is under the purview of the United States Department of Agriculture (USDA) and the Department of the Interior (DOI). Questions regarding avian influenza infections in U.S. birds should be referred to these agencies.
- International cases of novel influenza A are reportable to the World Health Organization under the International Health Regulations (IHR 2005).
- In 2007, human infection with a novel influenza A virus became a nationally notifiable condition in the United States. Novel influenza A virus infections include all human infections with influenza A viruses that are different from currently circulating human influenza H1 and H3 viruses. Novel viruses include those that are subtyped as non-human in origin and those that are unsubtypable with standard methods and reagents.
- For more information about avian influenza, visit the CDC website at http://www.cdc.gov/flu/avianflu/index.htm.

What is Known about Spread of Other Avian Influenza Viruses, Summary

- Person-to-person spread of other avian influenza viruses is thought to have occurred rarely in the past, most notably with H5N1 viruses.
- In the majority of these instances, spread occurred after prolonged and close contact between the sick person and someone caring for them (most often a family member).
- See "Background on Human Infections with other Avian Influenza Viruses" at http://www.cdc.gov/flu/avianflu/h5n1-human-infections.htm for more information.

Human-to-Human Spread, Background

- It's important to remember that human-to-human transmission ranges along a continuum; from occasional, "dead-end" human-to-human transmission, to efficient and sustained human-to-human transmission.
- "Dead end" transmission usually refers to when a virus from an animal host infects a person and then there is some subsequent transmission that eventually burns out.
- For example, when a host infects one person who then subsequently infects someone else that is called "first generation spread." If that second person then infects someone else that is called "second generation spread," and so forth.
- Previously, third generation transmission of H5N1 viruses has been documented in one instance at least (Pakistan). (WHO, Weekly Epidemiological Record. "Human cases of avian influenza A(H5N1) in North-West Frontier Province, Pakistan, October–November 2007.")
- However, efficient and sustained (ongoing) transmission in the community is needed for an influenza pandemic to begin.

CDC and China, Background

- U.S. CDC Influenza Division began working with the China National Influenza Center (CNIC), part of the China CDC, in the late 1980s.
- CDC helped China to establish the Chinese National Influenza Surveillance Network and laboratory capability in order to capture more of the influenza viruses circulating in China.

Avian Influenza A (H7N9) Key Points
January 24, 2013

- Since 2004, CDC and China CDC have participated in a series of cooperative agreements that have further improved and sustained China's surveillance network and supported genetic, antigenic and drug resistance surveillance (in part to inform vaccine recommendations), and also strengthened influenza response capacity at all levels.
- In October 2010, CNIC was designated as a World Health Organization Collaborating Center for Reference and Research on Influenza.
- CNIC is one of a handful of WHO Collaborating Centers for Reference and Research on Influenza in the world (U.S. CDC in Atlanta, Georgia also is a WHO Collaborating Center).
- Among other things, as a Collaborating Center CNIC regularly provides information from China's recently enhanced surveillance system to help inform decisions about the composition of the seasonal flu vaccine.
- Collaborating Centers also train researchers in specialized techniques, collect epidemiological information on influenza disease prevalence in China and surrounding countries, and assist in developing pandemic preparedness plans. They also receive, characterize, and preserve representative vaccine viruses sent from laboratories around the world, then share that information with other researchers.
- U.S. CDC has an office with an influenza program in China.