

HPAI H7N8 VIRUS DETECTED IN U.S. POULTRY

January 15, 2016

SUMMARY KEY POINTS:

- On January 15, 2016, The United States Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) reported detection of highly pathogenic avian influenza (HPAI) A virus in a commercial turkey flock in Dubois County, Indiana.
- The virus detected in Indiana is a HPAI virus of North American lineage.
- Low pathogenic avian influenza (LPAI) A (H7N8) virus has been detected previously in wild bird surveillance in the United States, but this is the first instance of HPAI H7N8 virus detection. (For more information on LPAI and HPAI, see "background" section.)
- No cases of HPAI H7N8 virus infection have been reported in humans at this time, and no human infections associated with avian influenza A viruses of this particular subtype (i.e., H7N8) have ever been reported.
- Human infections with other avian influenza A H7 viruses have occurred sporadically in the past.
- HPAI H7 virus infections in people have been associated with a wide range of illness from conjunctivitis (i.e., inflammation of the tissue around the eyes) only, to upper respiratory tract illness, to severe respiratory illness (pneumonia, respiratory failure leading to death).
- Most previous human infections with avian influenza A H7 viruses have been associated with recent exposure to infected birds.
- The human health risk posed by this HPAI H7N8 virus is unknown at this time; however, it is possible that human infections with this virus could occur since other H7 viruses have resulted in human infections.
- CDC recommends the same protective measures for this HPAI H7 virus as is recommended for HPAI H5 outbreaks among domestic poultry. That guidance is available at <http://www.cdc.gov/flu/avianflu/h5/index.htm>.
- CDC, the United States Department of Agriculture's Animal and Plant Health Inspection Service (USDA/APHIS) and state and local public health departments have been working together to prepare for the possibility of more outbreaks in U.S. poultry this fall and winter and to minimize the human health risk posed by such outbreaks.
- This includes:
 - Protocols for responders for appropriate biosecurity, infection control and personal protective equipment (PPE).
 - A protocol for enhanced surveillance of responders while they are mobilized and after they have been demobilized to ensure that any potential infections in responders are quickly detected and those people can be promptly and appropriately treated.

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- This protocol will help state and local public health departments identify responders and monitor these persons for illness during response activities and for 10 days after their deployment ends.
- If a responder becomes ill, the new monitoring process will:
 - Support engagement of state and local public health departments (S/LPHDs) prior to that responder's health care visit so that appropriate infection control precautions can be implemented at the health care facility.
 - Facilitate prompt specimen collection, shipping, and testing for influenza at the state public health laboratory.

BACKGROUND

- Avian influenza (AI) is a disease of birds caused by influenza type A viruses that can infect poultry (such as chickens, turkeys, pheasant, quail, domestic ducks, geese and guinea fowl), and can be found in some free-flying waterfowl, such as ducks, geese and shorebirds.
- Avian influenza A viruses are endemic in wild birds (mostly waterfowl).
- Outbreaks of avian influenza, including HPAI, occur from time to time. For more information, see <http://www.cdc.gov/flu/avianflu/outbreaks.htm>.
- AI viruses are classified by a combination of two groups of virus proteins: hemagglutinin "HA" proteins and neuraminidase "NA" proteins. Many different combinations of "HA" and "NA" proteins are possible. Each combination is considered a different virus subtype.
- AI viruses are further classified by their genetic characteristics and by their pathogenicity (low or high), which refers to the ability of a particular virus to produce disease in experimentally infected chickens.
- Most avian influenza A viruses circulating among wild birds and poultry are classified as low pathogenic avian influenza (LPAI) A viruses and do not usually cause any illness in wild birds. LPAI viruses can cause asymptomatic infection to mild illness in poultry.
- Human infections with HPAI or LPAI viruses have resulted in a wide range of illness, from mild to fatal. HPAI designation does not necessarily mean that human infection with an HPAI virus will only cause severe disease, and LPAI designation does not necessarily mean that human infection with an LPAI virus will only cause mild disease.
- Outbreaks of some avian influenza A viruses among poultry have been associated with transmission to humans and have caused mild to severe illness and death in Asia, Africa, Europe, the Pacific, and the Near East. While very rare, avian influenza A viruses have also caused illness in humans in North America.
- Although avian influenza A viruses usually do not infect humans, rare cases of human infection with these viruses have been reported.

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- Infected birds shed avian influenza virus in their saliva, mucous and feces. Virus may be present in materials and surfaces that are contaminated with poultry feces from infected birds. Human infections with avian influenza A viruses can happen when enough virus gets into a person's eyes, nose or mouth, or is inhaled. This can happen when virus is in the air (in droplets or possibly dust) and a person breathes it in, or when a person touches something that has virus on it then touches their mouth, eyes or nose.
- Rare human infections with some avian influenza A viruses have occurred most often after unprotected contact with infected birds or surfaces contaminated with avian influenza A viruses. However, some infections have been identified where direct contact was not known to have occurred.

Previous Avian Influenza Outbreaks in North and South America

- Since 1924, there have been 11 previous HPAI epidemics in North and South America, which are described below:
 1. In 1924-1925, a fowl plague occurred in the United States.*
 2. In 1929, a fowl plague occurred in the United States.*
 3. In 1966, H5N9 HPAI was reported in Canada.
 4. In 1983-1984, H5N2 HPAI was reported in the United States.
 5. In 1994-1995, H5N2 HPAI was reported in Mexico.
 6. In 2002, H7N3 HPAI was reported in Chile.
 7. In 2004, H7N3 HPAI was reported in Canada.
 8. In 2004, H5N2 HPAI was reported in the United States.
 9. In 2007, H7N3 HPAI was reported in Canada.
 10. In 2012, H7N3 HPAI was reported in Mexico
 11. In 2014-2015, H5Nx HPAI was reported in Canada and the United States. More information about the 2014-15 outbreaks is available via CDC's website at <http://www.cdc.gov/flu/avianflu/h5/index.htm>.

* Note: In these instances, flu was suspected but not confirmed.

- For more information, see Avian Influenza A Virus Transmission to Humans in North America <http://www.cdc.gov/flu/avianflu/outbreaks.htm>