



AVIAN INFLUENZA VIRUS

Other names: Bird Flu, Avian Flu, AI, AIV



CAUSE

Avian influenza (AI) is typically caused by influenza virus A. Avian influenza is a zoonotic infection whose primary natural reservoir is water fowl, though it is also observed in multiple raptor species. AI strains are divided into two types, high pathogenicity (HPAI) and low pathogenicity (LPAI) and is further identified based on the specific proteins they contain (e.g. H5N1 contains HA protein 5 and NA protein 1).

SIGNIFICANCE / RISK TO HUMAN AND DOMESTIC ANIMAL HEALTH

AI poses a potential risk to public health and the health of domestic birds. AI can also impose significant economic burdens as a result of health care expenses and losses incurred by domestic poultry farms and through trade restrictions. Transmission to humans from birds is relatively rare and typically occurs with individuals working closely with domestic poultry and contaminated materials. Human to human transmission is very rare. The disease can cause serious illness in humans and has the potential to produce an influenza pandemic. Additionally, AI maintains a large silent reservoir in wild water fowl that typically exhibit no symptoms, the virus also remains viable in the environment and on equipment for prolonged periods. This means it is unlikely that the disease could be eradicated. The CWHC conducts year-round **targeted surveillance for AI** having tested an average 6300+ birds (live and dead) per year between 2005 and 2016, during this time an average of ~14 positives were identified per year.

TRANSMISSION

Transmission of AI among birds typically requires direct contact with fecal or respiratory secretions from infected birds, however, it may also be transmitted through exposure to contaminated materials. Transmission to domestic poultry can occur when captive birds come into contact with infected wild birds, however, infections are believed to most commonly occur through exposure to contaminated feed and equipment. Humans and other mammals can be potentially infected through direct contact with sick birds, contact with contaminated materials, consuming infected birds, and in rare instances by coming in direct contact with a sick person.

CLINICAL SIGNS

The primary reservoir of the avian influenza virus is wild water fowl, which typically exhibit no symptoms of disease. The effects of LPAI on domestic poultry ranges from a complete lack of illness to mild illness. Mild symptoms of LPAI in poultry may include ruffled feathers and reduced egg production, and may go unnoticed. Domestic ducks may exhibit no symptoms. HPAI can cause mass or complete mortality (90-100%) in a flock within 48 hours of infection.



Both HPAI and LPAI are capable of rapidly spreading through entire flocks of domestic poultry, thus culling is a common practice to mitigate the impacts of outbreaks.

MANAGEMENT AND PREVENTION

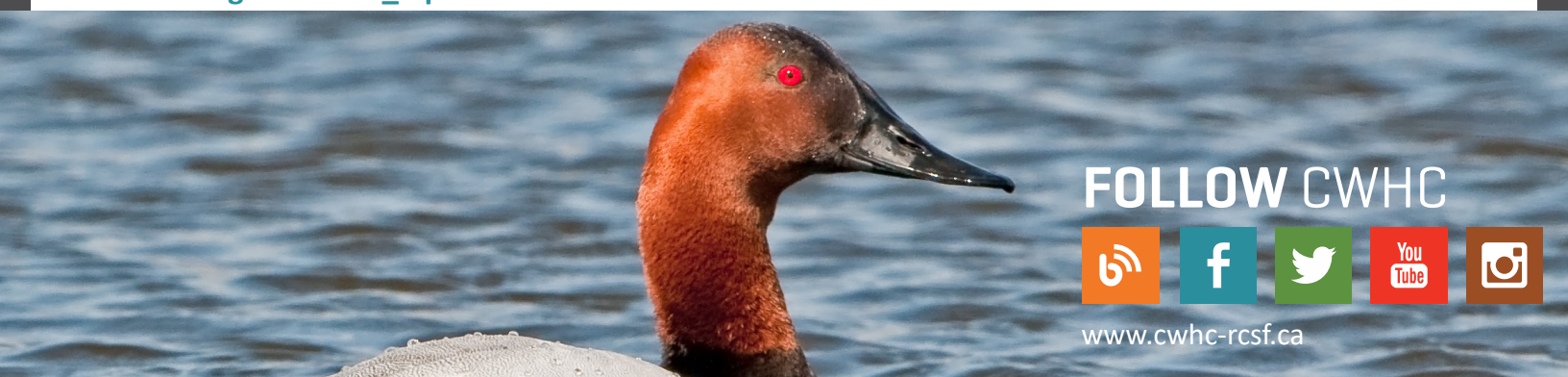
Surveillance is a major factor in preventing outbreaks of avian influenza. Early identification of the presence of avian influenza in wild birds informs biosecurity measures for agricultural agencies and poultry farms, as well as preventative measures for food safety and public health agencies.

Risk of human exposure is generally very low except for individuals working with sick or dead birds, hunters/researchers/veterinarians/bird banders handling infected birds, individuals involved in the decontamination of areas where sick/dead birds have been housed, individuals living with or treating infected people, and those working with the live influenza A virus. Those in elevated risk groups can reduce their risk of exposure by:

- Avoid sources of exposure to the virus.
- Wearing the appropriate personal protective equipment (PPE), follow proper biosecurity protocols and common hygiene practices (e.g. wash hands, don't touch your face) if/when exposed to potentially infected birds and/or contaminated materials.
- If working with poultry or other potential carrier species it is advisable to get the seasonal influenza vaccination. Although these vaccinations will not prevent infection by avian influenza, it can reduce the risk of co-infection with both human and avian influenza A viruses.
- Antiviral drugs exist and can be used to help treat infected individuals, therefore seeking immediate medical assistance if an individual believes they have been exposed to the virus.
- Report any sick or dead mammals to the Canadian Wildlife Health Cooperative. Find your closest regional centre at: <http://www.cwhc-rcsf.ca/contact.php>

SUGGESTED READING

- <http://blog.healthywildlife.ca/duck-duck-coot-testing-wild-birds-for-avian-influenza/>
- <http://blog.healthywildlife.ca/researchers-pool-expertise-get-poop-avian-influenza/>
- <http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/ai/fact-sheet/eng/1356193731667/1356193918453>
- https://www.canada.ca/content/dam/phac-aspc/migration/phac-aspc/publicat/daio-enia/pdf/nat-ai-guide-2006_e.pdf



FOLLOW CWHC

