## Agent
- Type A influenza virus: RNA virus in family Orthomyxoviridae.
  - Hemagglutinating antigen (HA) and neuraminidase antigen (NA), are the basis for the serologic identity of the influenza viruses.
  - To date, 16 hemagglutinins (H1 to H16), and 9 neuraminidases (N1 to N9) have been found in viruses from birds.
- Classified as low pathogenic avian influenza (LPAI) and highly pathogenic avian influenza (HPAI) based upon specific diagnostic and/or sequence criteria. Since 1955, all HPAI outbreaks have been attributed to subtypes H5 and H7.

## Susceptible species
- Domestic and wild birds. Wild aquatic birds considered reservoir.
- Mammals including humans, horses, pigs, mink, seals, cats, leopards, tigers, civets, dogs.

## Occurrence in BC and the world
- Occurs worldwide; different strains are more prevalent in certain areas.
- The virus was likely introduced from infected wild birds.
- Two human cases of conjunctivitis detected in the 2004 H7N3 outbreak.

## Transmission
- Within farm: transmission occurs via direct and indirect routes:
  - Direct: via secretions/excretions from infected birds, such as feces.
  - Indirect: via contaminated items such as feed, water, equipment, clothing.
- Between farms: movement of live birds (domestic & wild), people, equipment and vehicular traffic.

## Diagnosis
### Clinical
- Incubation period in birds: 2-7 days.
- LPAI: Subclinical or mild infection. Decreased egg production and quality, respiratory signs, lethargy, decreased feed and water consumption, or somewhat increased flock mortality rates may be seen in chickens and turkeys.
- HPAI: High mortality with non specific systemic, respiratory and/or neurological signs, sudden death in chickens and turkeys. Variable severity in other birds.

### Laboratory
- Differential diagnoses for HPAI: Newcastle disease, infectious laryngotracheitis, duck plague, acute poisonings, sudden death associated with husbandry issues (eg ventilation, temperature etc).
- Virus isolation from oropharyngeal, tracheal and/or cloacal swabs or organ samples. Detection from real-time RT-PCR.

## Prevention in poultry
- Enforcing strict biosecurity measures on poultry farms, preventing contact with wild birds.
- CFIA surveillance program for H5 and H7 strains of avian influenza.

## Zoonotic implications
- Human infection is rare, and should be avoided to minimize the risk of viral reassortment leading to emergence of a new pandemic strain.
- Most cases have direct contact with infected poultry.

## Reporting
- H5 and H7 avian influenza are reportable diseases to the Chief Veterinary Officer (CVO) in BC.
  - All suspect or confirmed cases should be reported within 24 hours (604-556-3013).
  - Veterinarians may be contacted by public health authorities for follow-up.
- H5 and H7 avian influenza is a reportable disease to the CFIA.
  - Veterinarians must immediately report suspect and confirmed cases to a CFIA district veterinarian.