AGRICULTURE VICTORIA

Avian Influenza (AI)

Avian Influenza (AI), also known as bird flu, is a highly infectious disease. It affects many species of birds, including domestic poultry and can result in significant outbreaks of illness and death. However, the transmission of AI virus from birds to humans is a rare event.

WHAT IS AVIAN INFLUENZA?

Avian Influenza (AI) is a highly contagious viral infection of birds. The disease is caused by either highly pathogenic or low pathogenic strains. Pathogenicity refers to the ability of the virus to cause disease in birds. Some highly pathogenic avian influenza viruses (HPAI) can cause severe clinical signs and high mortality (up to 100%) in domestic poultry (chickens) and turkeys. Low pathogenic avian influenza viruses (LPAI) can result in some mortality, but often presents with few or no symptoms.

Avian influenza viruses are complex and are classified into subtypes based on two surface proteins, the haemagglutinin (HA) and neuraminidase (NA). For example, a virus that has HA 3 protein and NA 2 protein is designated as subtype H3N2. At least 16 haemagglutinins (H1 to H16), and 9 neuraminidases (N1 to N9) subtypes have been found in viruses from birds.

Influenza viruses can mutate or change readily. Disease outbreaks have demonstrated the ability of LPAI strains to mutate to more highly pathogenic forms of the virus, HPAI.

Influenza viruses can also change and become more pathogenic through genetic reassortment. There is a small chance that if an animal or person is infected with more than one type of influenza virus at the same time, then the viruses could combine (genetic reassortment) to produce a new virus that is more pathogenic or that is able to spread more easily between people.

Although the risk that AI viruses pose to the wider community is low, the potential threat to humans is one of the main reasons we control AI virus infections in poultry.

HPAI H5N1:

Since 2021, the subtype H5N1 has spread rapidly across several continents, causing mass mortalities in wild birds and poultry. It has also caused death in some mammal populations, especially those which scavenge on birds infected with AI, such as sea lions and seals. The severity of illness, and high death rates affecting such a wide range of species is unusual compared to previous outbreaks of AI.
These new strains have never been detected in Australia but are now established in many countries worldwide. Different subtypes of AI are more common in certain regions than in others.

HOW IS THE VIRUS SPREAD?

Wild birds are considered the natural host for AI. Certain water birds act as reservoirs of influenza viruses by carrying the virus in their intestines. Infected birds shed the virus in saliva, nasal secretions and faeces. Avian influenza viruses spread among susceptible birds through contact with contaminated nasal, respiratory, and faecal material from infected birds.

HPAI H5N1:

With the emergence of HPAI H5N1 internationally, many animal species have become infected following close contact with infected birds or contaminated environments. Consumption of infected birds has resulted in transmission of H5N1 to some predatory and scavenger species.

WHAT SPECIES ARE AFFECTED?

AI in pet birds such as budgies, canaries and other caged birds has not been a feature of previous outbreaks.

LPAI viruses occur naturally in many wild birds (especially waterbirds or shorebirds) but they usually show no sign of disease.

LPAI and HPAI can affect many species of birds, including domestic poultry, ducks, geese, turkeys, guinea fowl, quail, pheasants, emus and ostriches.

HPAI H5N1:

Since 2021, HPAI H5N1 has infected a wide range of animals, including hundreds of species of birds, and over 50 species of mammals.

CAN THE VIRUS SPREAD TO HUMANS?

The spread of avian influenza from birds to people is rare, but may occur with some strains of the virus if

there is close contact with infected birds or their droppings, or with heavily contaminated environments.

People cannot get infected by eating eggs or cooked chicken meat.

WHAT ARE THE HUMAN SYMPTOMS OF AVIAN INFLUENZA?

The reported symptoms of avian influenza in humans range from very mild symptoms to typical influenza-like symptoms (e.g. cough, fever, sore throat and muscle aches) to eye infections, pneumonia, acute respiratory distress and in rare cases death. The most common sign is conjunctivitis. Overall, there have been few human mortalities as a result of AI.

I THINK I HAVE AVIAN INFLUENZA - WHAT SHOULD I DO?

Medical advice should be sought immediately if you or anyone you have been in close contact with, or experience the symptoms noted above after coming into contact with infected or suspect birds. This also applies if you think you have been exposed to other infected materials.

WHAT ARE THE CLINICAL SIGNS OF AI IN BIRDS?

Most strains of avian Influenza virus are usually asymptomatic in wild birds but can cause severe illness in domestic bird species. Infected birds will experience fever and respiratory problems leading to death in a matter of hours or days.

Low Pathogenic Avian Influenza (LPAI)

The clinical signs of AI infection are variable and influenced greatly by the virulence of the viruses involved, the species affected, age, concurrent disease and the environment.

Clinical signs range from no apparent symptoms to mild or severe symptoms and may include:

- respiratory distress (can be confused with infectious laryngotracheitis)
- coughing, sneezing, or rasping respiration
- rapid drop in feed intake, water intake and egg production
- typical "sick bird" signs – ruffled feathers, depression, closed eyes
- death of small proportions of the chicken flocks ranging from 3-15%.

Highly Pathogenic Avian Influenza (HPAI)

HPAI should be considered as a possible cause if a high proportion of a flock or group of birds become ill very quickly – progressing from normal to severe illness or death within 24 to 48 hours.

Clinical signs may include:

- sudden death
- respiratory distress/breathing difficulties
- swelling and purple discoloration of the head, comb, wattles and neck
- coughing, sneezing, or rasping respiration
- rapid drop in feed intake, water intake and egg production
- typical "sick bird" signs – ruffled feathers, depression, closed eyes
- diarrhoea
- nervous signs (occasionally seen).

HPAI H5N1:

Highly Pathogenic H5N1 has caused mass mortalities in many wild bird populations overseas, endangering some species. It has also devastated the poultry industries in affected countries. If a flock of birds is noticed to show a sudden increase in illness and deaths, then H5N1 must be considered.

WHAT DO I DO IF I SUSPECT AI?

Avian Influenza is a notifiable exotic disease and any suspected or confirmed cases must be reported immediately to Agriculture Victoria on the Emergency Animal Disease Hotline on 1800 675 888 (24/7) or to your local Agriculture Victoria Animal Health and Welfare staff.

Poultry owners should be vigilant for signs of disease especially where multiple mortalities occur in poultry, or many birds are sick. Care should be taken to maintain poultry in isolation from wild birds.

WHAT IS THE RISK OF SPREADING THE VIRUS?

Sound biosecurity practices are essential to prevent wild bird exposure to domestic poultry. Vigilance and reporting of suspect disease is vital to enable rapid response should an outbreak of LPAI or HPAI occur.

Non- H5N1 AI:

AI viruses are common in wild waterfowl throughout the world, for the most part cycling harmlessly in these well-adapted hosts.

Occasionally, exposure of wild water birds to domestic birds, especially poultry, or to their feed or water supply, can lead to the emergence of HPAI viruses, which quickly and rapidly kill the exposed domestic birds.

Nine outbreaks of HPAI have occurred on poultry farms in Australia between 1976 and 2021: in Victoria in 1976, 1985, 1992 and 2020; in Queensland in 1994; and in NSW in 1997, 2012 and 2013. On each occasion, the outbreaks were quickly detected and eradicated, and only a small number of farms were affected. Effective eradication measures ensured that Australia has remained free of HPAI.

Annual migration of wild birds has the potential to continually introduce new subtypes of avian influenza to Australia's wild and free-living waterfowl.

HPAI H5N1:

Due to the global HPAI AI endemic, there is an increased level of risk of the entry and establishment of HPAI H5N1 into Australia via migratory wild birds. Consequently, there is also an increase in the risk of outbreaks occurring in poultry and local wild birds in Australia.

To date, HPAI H5N1 has not been detected in Australia.

HOW CAN I REDUCE THE RISK OF EXPOSURE?

Appropriate use of Personal Protective Equipment (PPE) has proven to be highly effective against contracting illness.

Practice good hygiene principles when wearing PPE;

- Avoid touching your mouth, eyes, and nose,
- Cover any cuts or grazes with a water-resistant dressing under PPE (i.e. band-aid),
- Do not eat or drink whilst wearing PPE,
- Ensure PPE is removed safely and in the correct sequence (seek guidance from Agriculture Victoria staff),
- thoroughly wash hands and face after removing PPE & shower at the end of the shift before handling other animals.

PPE requirements will vary depending upon the level of risk associated with the task you have been assigned.

When working on properties and in-contact with potentially infected animals or materials;

- Waterproof footwear, i.e. gumboots
- Disposable overalls and gloves
- P2 facemask (minimum)
- Protective eyewear

When working on properties without contact with potentially infected animals or materials;

- Waterproof footwear, i.e. gumboots
- Disposable overalls and gloves

People working with poultry and/or responding to avian influenza outbreaks should have a **current seasonal influenza vaccine** at least two weeks prior to coming in contact with infected birds. This will not prevent infection with avian influenza but will reduce the risk of co-infection with human influenza ('flu') and genetic reassortment to produce new influenza viruses that may pose a threat to the wider community.

People who are ill should be discouraged from entering a poultry house, a response location or processing facility.

Any additional recommendations or requirements will be provided by Agriculture Victoria, in conjunction with the Department of Health, based on a case-by-case assessment of the risk.

HOW CAN I REDUCE THE RISK OF SPREAD?

AI viruses can survive for long periods in the environment and they can be easily transmitted from farm to farm by the movement of infected birds, as well as contaminated boots, vehicles and equipment if adequate biosecurity measures are not implemented.

Using good biosecurity practices between and within properties will lower the risk of spread. Preventing contact between local water birds and poultry, including keeping food and water sources under cover is a recommended practice, especially during a disease outbreak.

Good hygiene, appropriate use of PPE and thoroughly washing/disinfecting yourself and any materials/vehicles before leaving an infected property will protect you from spreading the virus to other people or animals.

The usual sequence for decontaminating vehicles/equipment (including boots) is to remove all visible gross contamination (mud, dirt), clean with a

neutral pH detergent followed by disinfecting with 3% citric acid, observing a 15-minute contact time and then rinsing with water.

Refer to APVMA Permit No. 89609 https://portal.apvma.gov.au/permits for alternative options.

Skin can be washed with soap and water for at least 20 seconds. Dry with a towel and then apply an alcohol-based hand sanitiser (60-80% alcohol) and rub between hands/forearms for 15 seconds.

All persons should limit their contact with birds for 48-72 hours and monitor their health for symptoms for 7 days after your last possible exposure.

It is recommended to shower and launder all clothing worn during your time on the infected property before engaging with other people or handling your own animals. Any additional recommendations will be provided by Agriculture Victoria on a case-by-case basis.

WHAT IS THE GOVERNMENT'S RESPONSE TO AI?

AI outbreaks require a rapid and effective emergency response to eradicate the disease and minimize the risk to other birds and people. Government agencies work closely with industry and poultry owners during this process. Compensation arrangements are available in declared emergencies to alleviate the financial burden of response activities, e.g. payment for birds or property that is destroyed as part of an eradication program.

Procedures generally include depopulation of infected and in-contact poultry, decontamination, strict quarantine and movement controls to prevent the spread of infection and tracing and surveillance to locate the extent of infection.

FURTHER INFORMATION

- AUSVETPLAN – Avian Influenza Response Strategy https://animalhealthaustralia.com.au/ausvetplan/
- Department of Health Victoria 'Avian Influenza (bird flu) https://www.health.vic.gov.au/infectious-diseases/avian-influenza-bird-flu
- Agriculture Victoria – Avian Influenza (bird flu) https://agriculture.vic.gov.au/biosecurity/animal-diseases/poultry-diseases/avian-influenza-bird-flu
- Wildlife Health Australia-High Pathogenicity Avian Influenza information https://wildlifehealthaustralia.com.au/Incidents/Incident-Information/category/high-pathogenicity-avian-influenza

ACCESSIBILITY

If you would like to receive this information/publication in an accessible format (such as large print or audio) please call the Customer Service Centre on 136 186, TTY 1800 122 969, or email customer.service@ecodev.vic.gov.au.

Department of Health has an information service for queries on human health issues relating to Hendra virus 1300 651 160.

This document is also available in (PDF and/or Word) format at http://agriculture.vic.gov.au/