

# Veterinary advisory: avian metapneumovirus (July 3, 2024)

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## Current situation

Avian metapneumovirus is not considered a zoonotic disease. There are no human health or food safety concerns with this virus.

On May 7, 2024, the Canadian Food Inspection Agency (CFIA) confirmed avian metapneumovirus (aMPV) subtype B in an Ontario commercial turkey operation. Subsequently, throughout May and June, additional cases were confirmed of aMPV subtype B in 18 broiler or broiler breeder chicken premises, 4 layer flocks, and 18 turkey flocks across 8 counties in Southwestern Ontario. Of these operations, 1 premises is also affected with subtype A. This is the first instance of subtype A or B being detected in Canada. Subtypes A and B appear to result in more clinical illness, depending on the species and age of the birds.

Avian metapneumovirus (aMPV) is in the Paramyxoviridae family, genus *Metapneumovirus*, with 4 distinct subtypes named A, B, C and D, based on glycoprotein (G) sequence. Common names are based on clinical signs, such as turkey rhinotracheitis, swollen head syndrome in broilers and egg drop syndromes in layers and ducks, although the clinical picture may be more complex or may cross over between types.

Susceptible species include:

- chickens
- turkeys
- pheasants
- guinea fowl
- Muscovy ducks

Other domestic ducks and geese, and potentially pigeons are considered refractory to infection. Many wild bird species are natural reservoirs of this virus, including waterfowl like:

- mallards
- black ducks
- gulls
- sparrows
- wild turkeys

Canada has had subtype C present for many years without significant problems, although aMPV is frequently complicated by secondary infections that may cause high mortality. In 2023, subtypes A and B have emerged in the United States as highly virulent infections, and Ontario has seen outbreaks of AMPV-B and mixed A+B since May 2024. So far, the only other province affected is Manitoba with a few outbreaks of aMPV-A. To date, this virus has primarily been detected in large commercial premises.

## Clinical signs

aMPV may present with a range of upper and lower respiratory disease with an incubation period of 3 to 7 days.

In turkeys, infections with aMPV-B have been showing morbidity between 14 to 40%; clinical signs include:

- Increased mortality (3 to 34%)
- decreased egg production (older birds)
- lethargy/huddling
- decreased water consumption
- sinusitis (younger birds)
- wet cough (younger birds)

In broiler-breeders and broilers, clinical signs include:

- swollen heads
- nasal discharge
- torticollis/opisthotonos
- depression/lethargy
- reduced egg production (up to 10%)
- lower mortality (about 1 to 1.2% higher than expected)

In layers, clinical signs include reduced egg production (up to 70%).

Clinical signs in both species may be more severe with increased mortality in the face of concurrent infection with *E. coli*, *Ornithobacterium rhinotracheale*, *Pasteurella multocida*, *Mycoplasma* spp., infectious bronchitis virus, and infectious laryngotracheitis.

## Diagnosis

aMPV is immediately notifiable to both the CFIA under the *Health of Animals Act*, and the Ministry of Agriculture, Food and Agribusiness (OMAFRA) under the *Animal Health Act*. Currently the Animal Health Laboratory offers a triplex PCR to differentiate between subtypes A, B and C. Other laboratories outside of Ontario may offer testing but it is the responsibility of the submitting veterinarian to notify the CFIA and OMAFRA of positive tests.

## Treatment

While a vaccine is licensed in Europe, none are approved for commercial use in either the United States or Canada. Being a viral disease, there is no specific treatment for aMPV but treatment for secondary infections and supportive care will help reduce mortality.

## Prevention

As there is no commercial vaccine available, the best defense is strong biosecurity. Spread between premises is linked to poultry density, hygiene and biosecurity standards. The virus is extremely contagious via aerosols and direct contact, as well as by contaminated material such as:

- bedding
- feeders and waterers
- employee clothing, footwear and equipment

aMPV-C has been isolated from eggs from SPF-infected turkeys in experimental conditions, but the vertical route has been suggested to be less important than horizontal transmission.

While birds may shed for only a few days, experimental evidence shows there is very little latency and birds do not have a carrier status. There is some evidence the virus may persist on farms and convalescent flocks can be infected multiple times in the same production cycle.

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## Additional information

Canadian Food Inspection Agency: [avian metapneumovirus](#)

Ontario Animal Health Network: [poultry network](#)