Guidance to Wildlife Rehabilitation Facilities Regarding the Intake of Birds during a Highly Pathogenic Avian Influenza Outbreak

Intent

This document provides guidance for the intake of birds to wildlife rehabilitation facilities in a province/territory with an active Highly Pathogenic Avian Influenza (HPAI) outbreak. An active HPAI outbreak for the purpose of this guidance begins with the confirmation of a HPAI positive in any wild or domestic bird within a given province/territory. The outbreak status will remain for 90 days following the last confirmed case. In provinces/territories without an active HPAI outbreak, rehabilitators should be vigilant in monitoring for HPAI and should consider adopting this guidance as a precaution in addition to their established biosecurity protocols.

Scope

The Canadian Wildlife Service (ECCC-CWS hereafter) has the lead responsibility for implementing the Migratory Birds Convention Act, 1994 (MBCA) and associated regulations. The purpose of the MBCA is to conserve and protect Migratory Birds as populations and individuals. Many wildlife rehabilitation facilities are authorized by ECCC-CWS under the Migratory Bird Regulations (Section 19) to possess Migratory Birds. Wildlife rehabilitation facilities may also require authorization from provincial authorities as well.

This guidance pertains to all facilities that are authorized by ECCC-CWS to hold Migratory Birds, but it is relevant to any facilities that take in wild birds of any species.

Occurrence of avian influenza in poultry and other domestic animals falls under the mandate of the Canadian Food Inspection Agency (CFIA). Public Health Agency of Canada (PHAC) addresses human health considerations. Contingencies for such events are discussed in this plan only as far as they relate to reduction of risk factors associated with disease transmission to or by wild birds.

Definitions

Avian Influenza: Avian influenza is a contagious type A influenza virus that affects domestic and wild birds. Type A influenza viruses are present in a wide variety of birds and mammals. Type A influenza viruses are classified based on the severity of disease (pathogenicity) they cause to infected chickens and are categorized as being either low pathogenicity (LPAI; mild symptoms) or high pathogenicity (HPAI; severe symptoms and death). It is important to note that wild birds may be infected with HPAI and remain asymptomatic or they may also experience symptoms or death.

Migratory Bird: As defined in the Migratory Birds Convention Act, 1994, a Migratory Bird referred to in the Convention, and includes the sperm, eggs, embryos, tissue cultures and parts of the bird of species listed under Article 1 of the Convention.

Quarantine: Physical separation between new intakes and a facilities general animal population. See **Appendix 1** for guiding principles for quarantine.

Rationale

HPAI is highly transmissible and poses a threat to domestic poultry, wild bird health, and potentially human health. There is concern that wild birds may play a key role in the epidemiology and spread of HPAI (both over long distances and locally).

Avian influenza viruses can infect all avian species, although infections are particularly common among the avian orders Anseriformes (e.g., ducks, geese, swans) and Charadriiformes (e.g., gulls and shorebirds). Among wild bird species, the severity of disease can be extremely variable. It is important to note that some species of birds may be infected with HPAI and remain asymptomatic.

As a result, any wildlife rehabilitation facility serving to hold, rehabilitate or house birds should be aware of the confirmed detections of HPAI in wild birds in Europe, the Middle East, Africa, the United States and Canada. Furthermore, any rehabilitation facility looking to continue to intake birds during a HPAI outbreak in their province/territory, must be made aware of the potential health risk to staff and volunteers, the existing flock at their facility, and the risk of potential amplification and spread of HPAI to other wild or domestic animal populations, facilitated by wild birds (see Relevant Resources section below).

Individuals should be cautious when in close contact with wild birds or a contaminated environment and adhere to public health guidance regarding appropriate personal protective equipment (PPE) and additional personal safety measures. General information about avian influenza in wild birds can be found at Highly pathogenic avian influenza - Canada.ca. For more details on PPE, please refer to FAO manual (Wild bird highly pathogenic avian influenza surveillance, Chapter 12), in addition to consultation with Public Health guidance on precautions with wild birds and avian influenza for your region.

Intake Guidance

ECCC-CWS is making the following recommendations to rehabilitation facilities authorized under the MBR (S.19) to possess Migratory Birds for rehabilitation purposes in a province/territory with confirmed HPAI (**Figure 1** provides a chart outlining the intake guidance below).

- Unless initial diagnostic tests suggest toxicity or trauma as the cause of clinical symptoms, any bird that has clinical signs suggestive of HPAI (**Figure 2**) must be euthanized immediately, without being admitted to the facility. Quarantine guiding principles provided in **Appendix 1** must be followed during any initial assessment. Birds suffering from trauma or toxicity can still carrying HPAI.
- Guiding principles for quarantine should be followed and any wild bird admitted should begin a 30-day quarantine period.
- Any facility that cannot adhere to quarantine guiding principles should recommend alternative facilities, consider suspending new intakes of birds, and/or euthanize individuals that cannot be cared for until the threat of HPAI is reduced.
- If any bird dies or is euthanized due to clinical signs suggestive of HPAI, CWHC must be contacted immediately for further guidance.
- Individuals quarantined in isolation (alone) can be released once rehabilitation is complete without the need to complete a 30-day quarantine. Any individual(s) quarantined as part of a cohort of two or more birds must complete the 30-day quarantine, starting on the date the last bird is admitted to the cohort, before they can be released. Individuals requiring further rehabilitation upon completion of the 30-day quarantine may be moved into the general animal population at the facility's discretion.

Updates on HPAI in your province/territory can be found here (Wild Birds and Domestic Poultry).

It is important to note that due to the high-risk of transmission and threat that HPAI poses to domestic poultry and other wild birds, confirmed cases of HPAI within rehabilitation facilities will require euthanasia of the affected animal(s) under the Health of Animals Act. Furthermore, decontamination, in consultation with CFIA and provincial veterinary authorities, will be required following a confirmed case. De-population of the entire facility, including susceptible non-avian species, may be required pending investigation by CFIA, provincial veterinary authorities, ECCC-CWS and the Canadian Wildlife Health Cooperative (CWHC). Decisions regarding de-population will be made on a case by case basis in consultation with the facility. Criteria include, but are not limited to, adherence to guiding principles for quarantine and established biosecurity protocols as well as risks to nearby commercial poultry operations and the conservation status of the birds involved.

HPAI Updates

HPAI Update for Wild Birds in your Region – http://www.cwhc-rcsf.ca/avian_influenza_biweekly_reports.php. You can also receive automatic updates via email by sending a request to info@cwhc-rcsf.ca

HPAI Updates for Domestic Poultry in your Region - https://inspection.canada.ca/animal-health/terrestrial-animals/diseases/reportable/avian-influenza/eng/1323990856863/1323991018946

Contact Information

Canadian Wildlife Health Cooperative (CWHC) – Reporting Website and Regional Contacts
http://www.cwhc-rcsf.ca/report_and_submit.php

Public Health Agency of Canada (PHAC) - Avian influenza Information and Contact Information
https://www.canada.ca/en/health-canada/services/healthy-living/your-health/diseases/avian-influenza-bird-flu.html#how

Environment and Climate Change Canada, Canadian Wildlife Service (ECCC-CWS) - Regional Permit Contacts https://www.canada.ca/en/environment-climate-change/services/migratory-bird-permits/application-forms.html#toc1

Canadian Food Inspection Agency (CFIA) – Contacts Information
https://inspection.canada.ca/about-cfia/contact-us/eng/1546627816321/1546627838025

Relevant Resources

Public Health Agency of Canada (PHAC) – Wild birds and avian influenza – Handling guidelines
https://www.canada.ca/en/public-health/services/flu-influenza/fact-sheet-guidance-on-precautions-handling-wild-birds.html

Food and Agriculture Organization of the United Nations (FAO) – Wild bird highly pathogenic avian influenza surveillance https://www.fao.org/3/a0960e/a0960e.pdf

Canadian Food Inspection Agency (CFIA)- How to prevent and detect disease in backyard flocks and pet birds
https://inspection.canada.ca/animal-health/terrestrial-animals/diseases/backyard-flocks-and-pet-birds/eng/1323643634523/1323644740109

Canadian Food Inspection Agency (CFIA) – National Biosecurity Standards and Biosecurity Principles
https://inspection.canada.ca/animal-health/terrestrial-animals/biosecurity/standards-and-principles/eng/1344707905203/1344707981478

Canadian Wildlife Health Cooperative- Shipping and Handling Instructions
http://www.cwhc-rcsf.ca/docs/CWHC%20Shipping%20and%20Handling%20Instructions.pdf

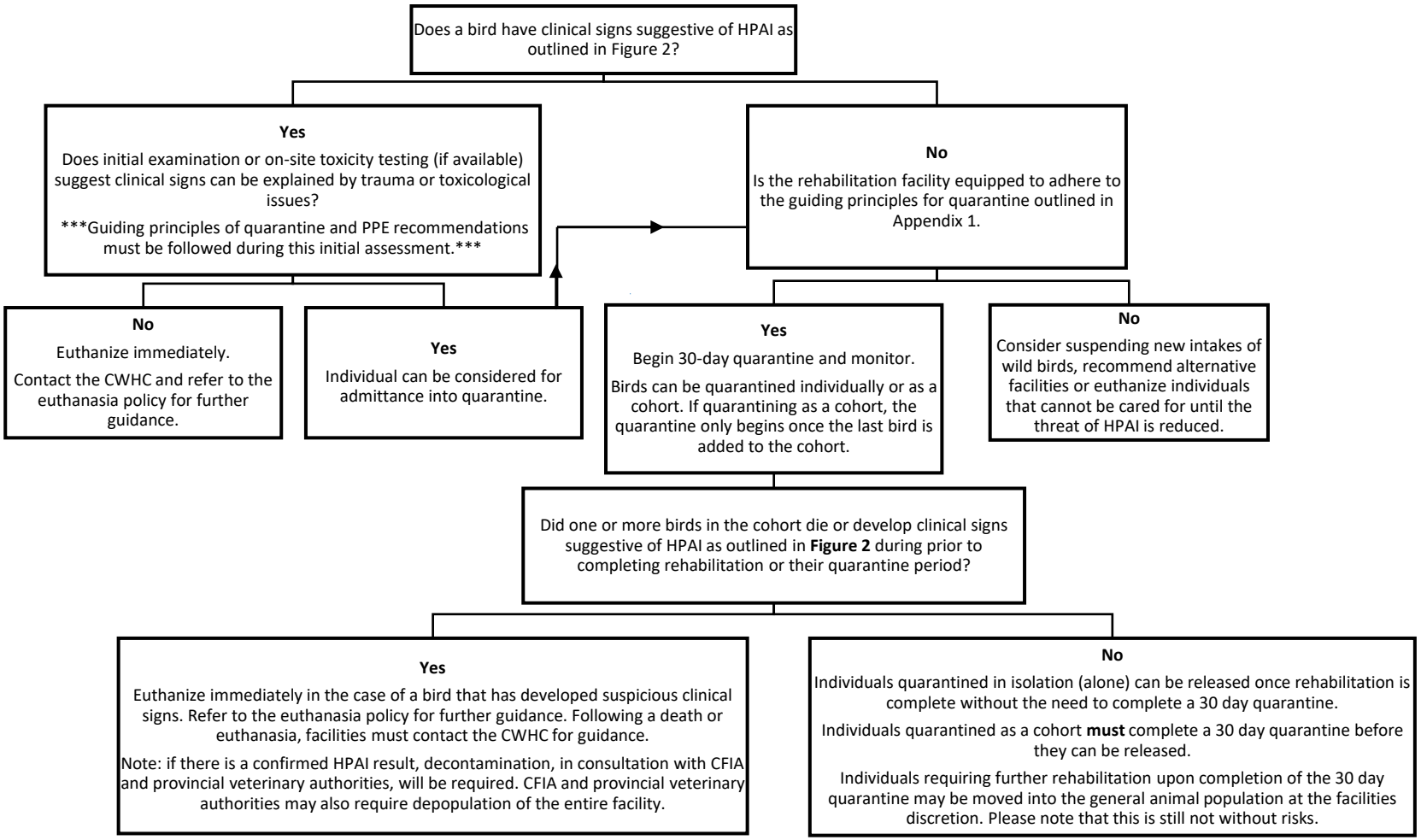

Figure 1. Decision tree for intake and treatment of wild birds at rehabilitation facilities during a HPAI outbreak.

For many avian diseases, including H5N1 AI, clinical signs of illness can include:

- Sudden death
- Diarrhoea
- Regurgitation
- Sneezing
- Unexplained emaciation
- Open sores
- Discharge (clear or cloudy) from the mouth, nose, ears or vent
- Extensive swelling and/or purple discolouration of the tissues of the head (including the conjunctiva)
- Abnormal feathers: annular constrictions of the shaft, shaft haemorrhages or retained waxy sheaths
- Behavioural abnormalities - falling over, head tilt, head and neck twisting, circling, paralysis, seizures
- Locomotion abnormalities - unable to stand or flap wings properly, yet with no traumatic injuries
- Mass mortality or clusters of wild bird mortality (mortality unexpected considering the natural history of the species)

Figure 2. Clinical signs of AIV infection in Wild birds (from FAO 2006 - Wild bird highly pathogenic avian influenza surveillance pg. 3). **It is important to note that some species of birds may be infected with HPAI and remain asymptomatic.**

Table 1: Contact information to report birds showing clinical signs of HPAI

Region	Phone Number	E-mail address
Atlantic (PE, NB, NL, NS)	902.628.4314	atlantic@cwhc-rcsf.ca
Quebec	1.877.346.6763	quebec@cwhc-rcsf.ca
Ontario/ Nunavut	866.673.4781	on-nu@cwhc-rcsf.ca
Western/Northern (SK, MB, YK, NT)	306.966.5815	westernnorthern@cwhc-rcsf.ca
Alberta	403.210.6678	alberta@cwhc-rcsf.ca
British Columbia	1.866.431.2473	bc@cwhc-rcsf.ca

Appendix 1. Guiding principles for quarantine of wild birds during a HPAI outbreak.
Requirements for euthanasia and de-population will be determined on a case-by-case basis following investigation by CFIA, provincial veterinary authorities, public health authorities, ECCC-CWS and Canadian Wildlife Health Cooperative. As a result, adherence to these guiding principles may not prevent euthanasia and de-population in all cases.

1. Quarantine all new intakes for a minimum of 30 days to prevent potential spread of HPAI into the general animal population of the facility.

2. Intake birds can be quarantined as a cohort as required. The quarantine period for a cohort begins only once the last individual is added.

3. Quarantined birds should not share an airspace with the general animal population at the facility. Separate feeding, handling equipment and preferably a separate building whenever possible. Tools and supplies should also separate between quarantined animals and the general animal population. Complete individual/cohort isolation should be the goal.

4. Facility staff/volunteers must use separate clothing, footwear and equipment when handling quarantined birds. Guidance for PPE is found on the PHAC website (here). For additional details on PPE refer to the FAO manual (here). All staff and volunteers should also be vaccinated for influenza.

5. Wash your hands and change footwear between handling the two groups. Whenever possible, clean and disinfect clothing and equipment before and after handling.

6. Birds in quarantine should be cared for after feeding and handling all other species in the facility.

7. Adequate storage of waste material for 30 days or disposal should also be considered.

8. A rodent control program should be in place to prevent movement of rodents between the quarantine area and the general animal population.

Appendix 2. Cleaning and Disinfection Principles (provided by CFIA).
Use appropriate PPE during any cleaning and disinfectant process. Contact you regional CFIA office for appropriate PPE during cleaning and disinfection
The most important cleaning step is the thorough removal of all organic debris. Disinfectants will not work in the presence of organic material.

Before starting cleaning and disinfection, examine all areas and structures where birds were housed, and equipment and materials used for their care were kept. Determine what structures, equipment, tools and materials are of suitable condition to clean and disinfect and those that may be difficult due to poor condition or composed of materials such as old and pitted wood which are more difficult to clean and disinfect. Determine what can be saved, what may need to be disposed of and what may need additional effort to effectively clean and disinfect.

Ensure rodents and other pest problems are addressed prior to cleaning and disinfecting the areas as they can result in barns/pens being re-contaminated by some bacteria and viruses.

- Before applying disinfectant, "dry clean" surfaces by brushing and scrubbing ground, floors, ramps, and walls after removing or dismantling of equipment or installations that would impair effective cleaning and disinfection. Carry out wet cleaning of all exposed surfaces (barn, equipment) to remove all organic material. (The use of a detergent will loosen the organic material and facilitate this step.)

When temperatures are below freezing, additional heat will be required inside structures to enable suitable cleaning and disinfection processes. If this is not feasible, these areas may need to be cleaned and disinfected when ambient outside temperatures are above 5°C.

- Avoid recontamination of previously cleaned areas, particularly with high-pressure hoses.

Use cleaners and disinfectants according to label directions for concentration and contact time. Consider organic load (the amount of contamination), and ambient temperatures. It is also important to carefully read the label directions in regard to the compatibility of certain disinfectants with certain detergents.

- Use degreasing agents (such as soap or detergents) and disinfectants under conditions where their effectiveness is not reduced (appropriate temperatures, pH, organic load, etc. referring to manufacturer's directions).
- Use degreasing or detergent agents to remove the virus and to expose any remaining virus to the disinfectant (repeating as necessary, since the virus is protected by animal protein, such as eggs and feces, and thus in situations where a high volume of proteinaceous material is present, degreasing and application of detergent may have to be repeated until clean); and
- Check the disinfectant activity and scope before use and during application. (For example, it is preferable to use disinfectants with a label claim for effectiveness against Avian Influenza virus or similar virus, and to use them according to the effective dilution and contact time required.)
- Consider the nature of the premises, vehicles, and objects to be treated when choosing disinfectant.
- After washing and cleaning, allow time to dry
- Spray disinfectant on all areas where animals were present, all equipment and materials that had been in contact with birds or their feces and litter using sufficient quantity to meet the contact time specified by the manufacturer.
- Most disinfectants will destroy bacteria and viruses and the Avian Influenza virus is quite easy to destroy. Prevail or Virkon are suggestions for disinfectants for destroying the Avian Influenza virus.

Disinfectants are tested at a specific concentration. Higher concentrations of disinfectants may be more hazardous to personnel, and the environment and damage materials and equipment

Follow the manufacturer's recommended contact time

General considerations:

1. Read the MSDSs for the products before using to understand the chemical handling and use hazards.

2. Always make and use fresh solutions.
3. Label spray bottles and buckets with the date of making and the expiry date or time.

Prevail prevention concentrate mixing directions:

1. Wear goggles and gloves while mixing.
2. Hydrogen peroxide will work in the presence of some organic material, but ideally items are clean before disinfection. Increase concentration for activity against spores
3. A 2.5% solution is prepared by adding 25 ml (1oz) of Prevail Prevention Concentrate to 1 L of water. Contact time is 5 minutes.
4. Prevail, kept clean, in a sealed container is good for 30 days, but should probably be used up within 7 days.
5. Freeze protect agents can be added.

Virkon mixing for disinfecting solution:

1. Maintain a current disinfectant log
2. Wear appropriate personal protective equipment when mixing
3. Add warm or cold water and then Virkon to containers when mixing.
4. One pouch of commercial Virkon contains 50 g of Virkon:
    a. For a 1% Virkon solution: mix 50 g (1 pouch) of Virkon into 5 L of water.
    b. For a 2% Virkon solution: mix 100 g (2 pouches) of Virkon into 5 L of water
5. Stir, then let sit a few minutes.
6. Contact time is 10 minutes.
7. Virkon is corrosive should it be rinsed after the contact time is complete.
8. Use up mixture within 7 days.
9. Freeze protect agents can be added.

Bleach – handy guidelines for using bleach with 5-6% sodium hypochlorite:

1. Use mask, rubber gloves, and waterproof apron. Goggles are also recommended to protect the eyes from splashes. Mix and use bleach solutions in well-ventilated areas.
2. **Chlorine is inactivated in the presence of organic material.**
3. Viruses and Bacteria: 1 part bleach + 9 parts water (10 min contact time).
4. Mix bleach with cold water because hot water decomposes the sodium hypochlorite and renders it ineffective. Protect mixture from heat and light.
5. Use mixture up in 24 hours.

Additional Considerations and Guidance:

- Ensure all feeders and waters are rinsed well after cleaning and disinfection.
- Allow all surfaces to dry thoroughly after disinfecting surfaces. Heaters may be needed to ensure surfaces dry.
- Avoid placing birds back into the areas that have been cleaned and disinfected for as long as possible.
- Additional information on cleaning and disinfection can be found here: External Links - Canadian Food Inspection Agency

Wildlife Rehabilitation Facility Specific

In regard to being ready to restock a facility and return to intaking birds, an added suggestion would be that the rescues could tarp around some of the outside pen and containment structures and use appropriate supplemental heat to raise the temperatures sufficient enough for cleaning and decontamination (above 5°C).
The top inch of soil should be removed, if possible, in pens where birds have access to the soil. A lime solution can then be used to treat the soil and alter the pH. Calcium hydroxide (1%) solution will be sufficient to inactivate the virus in soil. Alternatively, if fecal material is removed from the cages/pens, then using a calcium hydroxide solution will be sufficient. It can be corrosive to some surfaces so care should be taken around metal.