



Guidance for Mississippi Wildlife Rehabilitators and Veterinary Personnel to Reduce the Risk of Highly Pathogenic Avian Influenza Transmission

Highly Pathogenic Avian Influenza (HPAI) virus (H5N1 Eurasian strain or EA H5) has been detected in wild birds in all waterfowl flyways in North America since December 2021 and the transmission in the US is ongoing. For the most current information, see the Mississippi Board of Animal Health's (MBAH) HPAI website at hpa.ms.gov.

Waterfowl and other aquatic birds, raptors, and scavengers are at elevated risk of infection. Avian influenza viruses naturally circulate in waterbirds (waterfowl and shorebirds), with or without clinical signs. Avian predators or scavengers (eagles, other raptors, crows, ravens, gulls, or vultures) may be exposed when feeding on infected waterbirds especially during mortality events. In poultry, HPAI H5N1 is highly contagious and causes significant mortality. Avian influenza viruses are shed in bodily fluids such as saliva, nasal secretions, and feces. They can be transmitted directly from an infected bird or indirectly through people or objects contaminated with virus particles (e.g., animal crates, bedding, perches, feathers, food, water, clothing, footwear, vehicles).

Clinical signs of avian influenza are highly variable and nonspecific and could be due to other causes. Wild birds can also show no clinical signs (asymptomatic carriers). In general, signs may develop within 3-21 days after exposure and may include:

- Sudden death; increased mortality in a flock
- Neurological signs (tremors, abnormal head/neck position, circling, inability to stand, paralysis)
- Inappetence, weakness, lethargy, and/or diarrhea
- Difficulty breathing, sneezing, nasal discharge, and/or coughing
- Swelling of the head, eyelids, neck, and/or hocks; purple discoloration of legs

The risk of human infection is considered extremely low, however this strain (EA H5) of HPAI has the potential to infect people, birds, and some mammals. Wildlife rehabilitation and veterinary facilities may receive infected species and inadvertently promote transmission because of close contact among species and caregivers. This could result in spillover to species that might otherwise not be exposed in a natural setting. The wide breadth of species that can be affected and the variation in clinical signs make it difficult to triage high-risk HPAI candidates. To minimize the introduction and spread of HPAI within the wildlife rehabilitation and veterinary facilities, we recommend the following:

General best management practices:

- It is strongly recommended that no wild waterfowl are admitted for rehabilitation.
- Use caution if admitting wild waterfowl. Strict isolation of new admissions is recommended.
- Use extreme caution if admitting wild birds that have had known or suspected contact with backyard chickens or domestic waterfowl or were temporarily held in a facility where chickens or waterfowl may be present (e.g., animal shelters, veterinary clinics).
- Use extreme caution to ensure that wild birds being rehabilitated do not encounter peafowl, mute swans, Muscovy, or any domestic, semi-domestic, hybrid, or feral gallinaceous birds.
- As a precaution, waterfowl should not be fed to other wild birds (e.g., raptors) or mammals undergoing rehabilitation.

Quarantine and Biosecurity

- Staff from wildlife rehabilitation and veterinary facilities that have backyard chickens should use strict biosecurity to avoid cross contamination between their chickens and birds at the facilities. Changing clothes between the work environment and home environment is highly recommended.
- Isolate/quarantine any birds on intake that are suspected of having HPAI based on clinical signs, species, or the location the bird was collected from (e.g., an area of ongoing HPAI outbreak).
- Quarantine suspect cases in a room or building away from other birds and mammals; a location with a separate entrance and HVAC system or ventilation is best.
- Rehabilitation and veterinary staff treating or caring for affected or suspect birds should not handle or have contact with domestic poultry in any setting (e. g. facility, home, neighbor farm). Designated personnel should treat and care for quarantined birds. If staffing limitations preclude this measure, then treatment and care for quarantined birds should occur last.
- Rehabilitation and veterinary staff should have dedicated clothing and personal protective equipment (PPE) for working with quarantined birds and cleaning cages (e.g., face shield/mask or N95 respirator, eye protection, gloves, apron, coveralls, boots).
<https://www.cdc.gov/flu/avianflu/h5/worker-protection-ppe.htm>).
- Use footbaths with disinfectant when entering and exiting a room.
- Clean (remove organic debris) and disinfect cages and travel containers between patients. Use a 10% bleach solution or hospital grade virucide for disinfection. Allow adequate contact time.
- Clean and disinfect food and water bowls, utensils, bedding, perches, etc. between patients.
- Contaminated cage liners/supplies/materials should be double bagged for disposal.
- Release animals at the location of origin. If this is not possible, the animal should be released within 10 miles of its location of origin.
- Do not transport birds across state lines.
- Clinically affected birds should not be transported between facilities or to release sites unless they have tested HPAI negative.
- Provide adequate air exchange and air filtration. Be aware that transmission can occur through aerosols so try to avoid situations where air circulates between rooms or spaces holding susceptible species.
- Carcasses from euthanized or natural mortality birds should be double bagged (disinfect the outside of the bag with 10% dilute bleach) and stored temporarily in a refrigerator.
- Infection control with positive HPAI cases in rehabilitation settings is extremely difficult to manage and may be beyond the facility and staff capacity.

Managing suspect cases, testing, and reporting of HPAI

- Continue to follow state and federal reporting requirements for intake or euthanasia of eagles and threatened/ endangered bird species that are suspect of HPAI infection.
- Consider immediate euthanasia of waterfowl, raptors, or scavengers with unexplained neurologic or respiratory signs.
- Report any bird die-offs or unusual mortality events within your facility by filling out this Online Report Form at <https://agnetuat.mdac.ms.gov/MBAHReportableDiseases/birddeathlanding>.
- If domestic poultry or pet birds are experiencing severe illness or multiple death losses, contact a veterinarian.
- If you have a deceased bird that is a suspect HPAI case, report the death and receive guidance on testing for HPAI. Call the Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) at 601-432-2199 or the MBAH at 888-646-8731 for guidance.
- Avian Influenza is a reportable disease. If a bird tests positive, the State Veterinarian (Dr. Jim Watson) will be notified.

Collecting, removing, and storing dead birds

- Sick and dead birds should not be handled with bare hands. Maintain a physical barrier.
- To collect or remove dead birds from the environment:
 - Pick up the bird with doubled plastic bags that have been turned inside out.
 - Then, invert and seal the doubled plastic bag with the bird inside.
- To dispose of the bird:
 - Place the bag in household garbage.
 - As an alternative, bury the dead bird (without being bagged) by handling the bird with a shovel.
- To store a dead bird prior to delivery for testing:
 - Bag and place the bird on ice or keep it cool until the bird can be refrigerated. Birds should not be frozen before testing.
 - Use clear plastic bags if possible so that the bird can be seen through the bags.
- Wash hands thoroughly with soap and water.

Human Health

- Wash hands with soap and water for > 20 seconds after handling sick or dead birds (even after removing gloves), or contaminated surfaces. Do not eat, drink, or smoke while treating affected birds or cleaning/disinfecting cages.
- Currently there are not H5 vaccines approved in the United States for humans or animals; however, individuals working with wild or domestic birds should receive their annual seasonal influenza vaccine to lower risk of reassortment with seasonal flu strains in people.
- If rehabilitation and veterinary staff develop flu-like symptoms, they should seek prompt medical care and let the provider know that there has been regular contact with wildlife including wild birds.
- During the 10 days after your last exposure, you should watch for these symptoms:
 - Fever (Temperature of 100°F [37.8°C] or greater)
 - Feeling feverish/Chills*
 - Cough
 - Sore throat
 - Difficulty breathing/Shortness of breath
 - Eye tearing, redness, or irritation
 - Headaches
 - Runny or stuffy nose
 - Muscle or body aches
 - Diarrhea

*Fever may not always be present

If HPAI is detected in a bird at a rehabilitation or veterinary facility the following should occur:

- Do not take in or release any birds or mammals following notification of infection confirmation.
- Euthanize the HPAI-positive bird, double-bag (disinfect the outside of the bag) and save frozen until further guidance is provided by state or federal authorities.
- MDAH or the US Department of Agriculture (USDA) will conduct a foreign animal disease investigation and may need to euthanize other suspected or exposed birds.
- The affected wildlife rehabilitation or veterinary facility must be thoroughly cleaned and disinfected.
- State licensing authorities may require that all animals be tested on a recurring basis to ensure the absence of virus shedding in asymptomatic animals or facilities could be depopulated of susceptible species and the facility sanitized.

Official avian influenza updates and guidance:

- National Wildlife Health Center: [Distribution of Highly Pathogenic Avian Influenza in North America, 2021/2022 | U.S. Geological Survey \(usgs.gov\)](#)
- USDA: [USDA APHIS | 2022 Detections of Highly Pathogenic Avian Influenza](#) and [Animal Care Tech Note: Protecting Captive Wild Birds From Highly Pathogenic Avian Influenza \(usda.gov\)](#)

If you have any questions or concerns, please contact the Mississippi Board of Animal Health at 888-646-8731. For more information see our website at www.hpai.ms.gov.

* Information adapted from the Michigan Department of Natural Resources