

ZOONOTIC AND OTHER ANIMAL DISEASES OF CONCERN IN MARYLAND

Table 1. New or Ongoing Morbidity or Mortality Animal or Zoonotic Disease Events

| Estimated first onset | Estimated end date | Jurisdiction affected | Species affected | Diagnosis | Estimated # of cases to date | Lead agency | Comment |
|-----------------------|--------------------|-----------------------|------------------|-----------|------------------------------|-------------|---------|
| | | | | | | | |

For questions regarding specific disease events, please contact the lead agency noted. This contact information is for use by Maryland veterinarians and health professionals:

MDA - Maryland Department of Agriculture: ahops.mda@maryland.gov, 410-841-5810

DHMH - Maryland Department of Health and Mental Hygiene, Center for Zoonotic and Vector-borne Diseases: dhmh.czvbd@maryland.gov, 410-767-5649

DNR - Maryland Department of Natural Resources, Fish & Wildlife Health Program, 877-463-6497 or 800-628-9944

Avian Influenza—HPAI (H7N9) in Mississippi Flyway

The United States Department of Agriculture’s (USDA) Animal and Plant Health Inspection Service (APHIS) has confirmed the presence of highly pathogenic H7N9 avian influenza (HPAI) of North American wild bird lineage in a commercial chicken breeder flock in Lincoln County, Tennessee. The affected flock of 73,500 is located within the Mississippi Flyway. This is the first confirmed case of HPAI in commercial poultry in the United States this year; there have not been any cases detected in commercial poultry flocks or wild birds in Maryland. Despite being of the same subtype, the virus found in Tennessee is NOT the same influenza virus as the China H7N9 virus that has recently impacted poultry and infected humans in Asia.

Samples from the affected flock, which experienced increased mortality, were tested at Tennessee’s Kord Animal Health Diagnostic Laboratory and confirmed at the APHIS National Veterinary Services Laboratories (NVSL) in Ames, Iowa. All eight gene segments of the virus are North American wild bird lineage.

APHIS is working closely with the Tennessee Department of Agriculture on a joint incident response. State officials quarantined the affected premises, and birds on the property have been depopulated to prevent the spread of the disease. Burial is in progress; birds from the flock will not enter the food system. No human cases of this avian influenza virus have been detected in the United States, and there are currently no public health concerns. The Tennessee Department of Agriculture is working directly with poultry workers at the affected facility to ensure that they are taking the proper precautions to prevent illness and contain disease spread. As a reminder, the proper handling and cooking of poultry and eggs to an internal temperature of 165°F kills bacteria and viruses.

| To report cases of disease in: | Contact: |
|--------------------------------|--|
| Domestic animals | MDA Animal Health Program Office 410-841-5810 http://mda.maryland.gov/animalHealth/Pages/Diseases.aspx |
| Wild animals | MD DNR / USDA Wildlife Service Call Center 1-877-463-6497 http://www.wher.org |
| Humans | DHMH Center for Zoonotic and Vector-borne Diseases 410-767-5649 http://phpa.dhmh.maryland.gov/OIDEOR/CZVBD/Pages/Home.aspx |

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Avian Influenza—HPAI (H7N9) in Mississippi Flyway

As part of existing avian influenza response plans, Federal and State partners are working jointly on additional surveillance and testing in an expanded 10-mile radius around the affected premises. In addition, strict movement controls are in place within an established control zone to prevent the disease from spreading. As of March 7, all commercial premises within the surveillance area had been tested, and all of the tests from the surrounding facilities were negative for disease. Officials will continue to observe commercial and backyard poultry for signs of influenza, and all flocks in the surveillance zone will be tested again.

While the affected flock is in the Mississippi Flyway and Maryland is in the Atlantic Flyway, wild birds migrate and mix between flyways, so it is important to be vigilant. We ask you to:

Sick or dead backyard birds or poultry: Report any sick or dead backyard birds or poultry, especially acute upper respiratory cases to the Maryland Department of Agriculture at 410-841-5810; and

Wildlife: Report morbidity or mortality events of five or more birds (especially waterfowl, shorebirds, raptors, etc.) to the MD DNR - USDA Wildlife Services Call Center: 1-877-463-6497 (M-F) or the MD DNR Natural Resources Police Communications Center: 1-800-628-9944 (24/7 toll-free).

Though this particular strain of influenza virus is of wild bird lineage, and similar virus strains can travel in wild birds without them appearing sick, the spread of HPAI in previous commercial poultry flock outbreaks in the United States has largely been attributed to lapses in biosecurity. It is therefore crucial that all bird owners, whether commercial producers or backyard enthusiasts, continue to practice good biosecurity, prevent contact between their birds and wild birds, and report sick birds or unusual bird deaths as described above. People should avoid contact with sick/dead poultry or wildlife. If contact occurs, wash your hands with soap and water and change clothing before having any contact with healthy domestic poultry and birds. Veterinarians in Maryland are urged to educate their clients who are small flock owners to take precautions to protect their flocks from this virus. Additional information on biosecurity for can be found at www.aphis.usda.gov/animalhealth/defendtheflock.

HOW VETERINARIANS CAN HELP PREVENT AVIAN INFLUENZA DISEASE SPREAD:

- Veterinarians in Maryland are urged to educate their clients who are small flock owners to take precautions to protect their flocks from this virus. Additional information on biosecurity for can be found at www.aphis.usda.gov/animalhealth/defendtheflock.
- Veterinarians can submit swab samples from sick birds to the Maryland Department of Agriculture Animal Health Diagnostic Laboratories, at no cost. Prescribed sampling procedures must be followed, along with strict biosecurity measures. These procedures, *Veterinarian Guidance: Collection of Avian Influenza Samples in Backyard Flocks and Clinics*, are provided below and as an attachment.

ADDITIONAL BACKGROUND

Avian influenza (AI) is caused by an influenza type A virus which can infect poultry (such as chickens, turkeys, pheasants, quail, domestic ducks, geese and guinea fowl) and is carried by free flying waterfowl such as ducks, geese and shorebirds. AI viruses are classified by a combination of two groups of proteins: hemagglutinin or “H” proteins, of which there are 16 (H1–H16), and neuraminidase or “N” proteins, of which there are 9 (N1–N9). Many different combinations of “H” and “N” proteins are possible. Each combination is considered a different subtype, and can be further broken down into different strains. AI viruses are further classified by their pathogenicity (low or high)— the ability of a particular virus strain to produce disease in domestic chickens.

Maryland Department of Agriculture (MDA) has issued veterinarian guidance on the collection of avian influenza samples in backyard flocks or clinics. (see attached)

MARYLAND ANIMAL RABIES CASES, 2017

Table 2. New (confirmed since the previous Bulletin) and Cumulative Rabies Cases, Week Ending March 4, 2017

| Jurisdiction | Bat Total (New) | Cat Total (New) | Cow Total (New) | Dog Total (New) | Fox Total (New) | Groundhog Total (New) | Raccoon Total (New) | Skunk Total (New) | Other Total (New) | Total (New) |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------------|------------------------|----------------------|----------------------|----------------|
| Allegany | | | | | | | | | | |
| Anne Arundel | | | | | | | 2(2) | | | 2(2) |
| Baltimore | | | | | 1(1) | | 2 | | | 3(1) |
| Baltimore City | | 1 | | | | | 2(1) | | | 3(1) |
| Calvert | | | | | | | | | | |
| Caroline | | | | | | | 1(1) | | | 1(1) |
| Carroll | | 1 | | | | | 2(1) | | | 3(1) |
| Cecil | | 1 | | | | | | | | 1 |
| Charles | | | | | | | | | | |
| Dorchester | | | | | | | | | | |
| Frederick | | 1(1) | | | | | 2(2) | | | 3(3) |
| Garrett | | | | | | | | | | |
| Harford | | | | | | | 2(1) | | | 2(1) |
| Howard | | | | | | | | | | |
| Kent | | | | | | | 1(1) | | | 1(1) |
| Montgomery | | | | | 1(1) | | 1(1) | | | 2(2) |
| Prince George's | 1 | | | | | | 2 | | | 3 |
| Queen Anne's | | | | | | | | 1 | | 1 |
| Saint Mary's | | | | | | | | | | |
| Somerset | | | | | | | | | | |
| Talbot | | | | | | | 1 | | | 1 |
| Washington | 1(1) | 1 | | | | | | | | 2(1) |
| Wicomico | | | | | | | 1 | | | 1 |
| Worcester | | | | | | | | | | |
| Total (New) | 2(1) | 5(1) | | | 2(2) | | 19(10) | 1 | | 29(14) |

Other:

For complete animal rabies data:

<http://phpa.dhmd.maryland.gov/OIDEOR/CZVBD/Pages/Home.aspx>

To view previous issues of the Maryland One Health Bulletin (MOHB):

<http://mda.maryland.gov/animalHealth/Pages/md-one-health.aspx>

Maryland Department of Health and Mental Hygiene Weekly Public Health and Emergency Preparedness Bulletin:

<http://preparedness.dhmd.maryland.gov/Pages/PHPSA.aspx>

National Wildlife Health Center New and Ongoing Wildlife Mortality Events Nationwide:

http://www.nwhc.usgs.gov/mortality_events?ongoing.jsp

U.S. Livestock and Poultry Disease Events and Trends:

http://www.aphis.usda.gov/wps/portal/banner/help?1dmy&uril=wcm%3apath%3a%2FAPHIS_Content_Library%2FSA_Our_Focus%2FSA_Animal_Health

Maryland Department of Health and Mental Hygiene Weekly Influenza Report:

<http://phpa.dhmd.maryland.gov/influenza/Pages/home.aspx>



Maryland Department of Agriculture

Agriculture | Maryland's Leading Industry

Office of Marketing
Animal Industries and Consumer Services

Larry Hogan, Governor

Boyd K. Rutherford, Lt. Governor

Joseph Bartenfelder, Secretary

James P. Eichhorst, Deputy Secretary

Animal Health

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Animal Health Program

March 7, 2017

Veterinarian Guidance: Collection of Avian Influenza Samples in Backyard Flocks or Clinics

Overview

- *Highly pathogenic avian influenza (HPAI) virus strains are extremely infectious, often fatal to domestic poultry, and can spread rapidly from flock to flock.*
 - *Low pathogenic avian influenza (LPAI) virus strains occur naturally in wild migratory waterfowl and shorebirds without causing illness. However, LPAI viruses are capable of evolving into HPAI viruses in poultry.*
 - *Poultry diseases can be easily spread between flocks by people, clothes, vehicles, and equipment. Care should be taken by collector to prevent spread of infectious disease. It is recommended that you visit only one operation per day.*
 - *Veterinarians providing Health Certification for Interstate Movement must be a Category 2 Accredited Veterinarian in the State of issuance.*
 - *If you have any questions about Avian Influenza testing procedures, call the MDA Laboratories when you are submitting samples to confirm procedures.*
 - *Maryland Department of Agriculture Laboratories are:*
 - Salisbury Animal Health Diagnostic Laboratory** **410-543-6610**
 - Frederick Animal Health Diagnostic Laboratory** **301-600-1548**
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General Sampling Guidelines

- Schedule sample collection for Monday, Tuesday or Wednesday if at all possible, and notify lab when to expect samples to ensure samples are processed without delay.
 - Contact the MDA laboratory for specific schedules around the holidays
 - Wash and clean vehicle thoroughly, inside and out, each time you visit poultry.
 - Prior to entering the facilities to collect samples, ask the owner how many birds of each species are on the premises as well as how birds are housed (pens, coops, free range etc.) to determine the number and type of samples to be collected.
 - Always wear clean coveralls, rubber boots, hairnet and gloves at each testing site.
 - 3 ml Brain heart infusion broth is the recommended Viral Transport Media (VTM) for collecting specimens for viral diagnostic testing. Dry swabs are not acceptable and samples will be refused by the laboratory for testing. As a result, samples will have to be collected and resubmitted for testing.
 - Use synthetic or semi-synthetic swabs (e.g., polyester, rayon, nylon) with a plastic handle (flocked or spun head). Avoid cotton or calcium alginate swabs or swabs with wooden handles.
 - Contact the MDA Laboratory if you have an urgent need for BHI or proper swabs.
 - Keep BHI cool at all times.
 - Samples are taken from live birds and dead birds.
 - Tracheal/oropharyngeal (TR/OP) swabs are preferred for gallinaceous poultry.
 - Cloacal (CL) swabs are preferred for domestic waterfowl and wild birds.
 - **Disease Sampling Guidelines:**
 - A minimum of 5 samples per species is recommended for testing. If there are less than five (5) birds on a premise, collect samples from all species of birds, using a separate tube for each species.
 - A minimum of 10 samples (2 tubes) and a maximum of 30 samples (6 tubes) should be collected from each site.
 - Pool five (5) samples per species in a tube containing 3 ml BHI; do not pool samples from different species.
 - Higher sample levels may be requested for traceback investigations at the direction of the Maryland Department of Agriculture.
 - **Exhibition or Interstate Movement Testing:** Check with each State Department of Agriculture for latest requirements.
 - **NPIP Flock Testing:** A minimum of 30 birds (6 tubes) per flock must be tested every 180 days to maintain National Poultry Improvement Plan (NPIP) *U.S. H5/H7 Avian Influenza Clean* status.
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Biosecurity Considerations

BEFORE ENTERING A PREMISE

- Equipment must always be carefully cleaned and disinfected prior to use on a premises
- Park at least 100 feet from the place where birds are housed and/or as far away from the poultry house as possible.
- Avoid parking on an area where litter has been spread.
- Put on disposable plastic booties before you get out of the car or step onto the ground.
- Once you exit vehicle, put on clean coveralls.
- Put on rubber boots which have been cleaned and disinfected.
- Put on disposable hair cap.
- Put on disposable gloves.
- Draw bucketful of water from outside faucet (or bring water).
- Add approved disinfectant at recommended rate.
- Completely wash boots – use brush.
- Face shields, disposable face mask, or respirators are optional.
- Take only essential equipment and supplies with you.

BEFORE LEAVING A POULTRY PREMISES

- Take care not to touch eyes or mouth until removing gloves and washing hands.
- Thoroughly disinfect any equipment taken into poultry house before placing in vehicle.
- Remove boots and completely wash boots in disinfectant inside and out – use brush.
- Do not keep dirty boots in your vehicle.
- Do not enter your vehicle until you have removed your dirty outerwear.
- Remove and bag all items worn on the premises before leaving the premises.
- Place all non-disposable clothing, such as cloth coveralls and raincoats, etc. worn on the premises. in a clean garbage bag and wash the clothing in hot water before wearing it again.
- Dispose of gloves, swabs, and other sampling trash at home waste receptacle.
- Dump water with disinfectant and clean interior and exterior bucket with a brush.
- Unused tubes and swabs taken onto the farm site are considered contaminated-dispose of properly.
- Disinfect the outside of sample bags and other non-disposable equipment and supplies with a spray disinfectant (Lysol).
- Keep samples, dirty clothing, and used equipment in an area separate from clean items in your vehicle to avoid contamination.
- Clean interior and exterior of bucket with a brush and dump water.
- Wash hands with alcohol solution, including fingernails.
- Sit in seat of vehicle and spray sides of shoes and floorboard of vehicle with disinfectant (Lysol) before placing shoes on floorboard.

IF YOU PARKED ON THE PREMISE:

- Hose the wheel wells and undercarriage of the vehicle to remove organic material.
- Scrub vehicle tires with a brush to remove organic material and spray tires with disinfectant before entering another operation/farm premise.

Specific Sampling Procedures

SELECTION OF SAMPLE TYPE

- **Gallinaceous birds (chickens, quail, pheasants, turkeys) and psitticines:** Tracheal or Oropharyngeal swabs are the specimen of choice.
- **Domestic ducks and other domestic waterfowl:** Cloacal swabs are the specimen of choice.
- **Wild bird species, such as ducks, geese and swans:** Require both one cloacal swab and one oropharyngeal swab from a single bird in one 3 ml BHI tube. Do not pool samples from different wild birds in one tube. Each tube only contains swabs from a single bird.

TRACHEAL/OROPHARYNGEAL (TR/OP) SWAB SAMPLING PROCEDURES:

- Hold bird head up in a nearly vertical position with wings and feet contained.
- Open and remove swab from package.
- Open beak of bird, locate the oropharynx.
- Swab oropharynx. The oropharynx of live birds is swabbed by inserting a swab into the oropharyngeal area and gently swabbing the choanal cleft.
- Place sample swab directly into liquid transport media (BHI broth).
- Swirl swab in media and then "wring out" by gently compressing swab against sides of tube to remove as much liquid as possible and discard swab. Do not leave swab(s) inside BHI tube.
- Make sure tube caps are tightened to avoid leaking. Keep tubes upright in transport container.
- Keep samples on ice packs or refrigerate until shipped to diagnostic laboratory.

CLOACAL SAMPLING PROCEDURES:

- To collect cloacal swab samples, hold bird head down in a nearly vertical position with wings and feet contained. The bird ventrum should face the person swabbing.
- Locate and grasp tail feathers at base and reflect away from you to locate the cloaca.
- Remove swab from package, and insert tip into cloacal orifice (1 cm). Rotate swab tip against cloacal lining two to three times.
- Remove swab, shake off excess fecal material, and place directly into liquid transport media, brain heart infusion broth (BHI).
- Swirl swab in media and then "wring out" by gently compressing swab against sides of tube to remove as much liquid as possible and discard swab. Do not leave swab inside BHI tube.
- Make sure tube caps are tightened to avoid leaking. Keep tubes upright in transport container.
- Keep samples on ice packs or refrigerate until shipped to diagnostic laboratory.

POOLING OF SWABS:

- For pooling samples from one (1) to five (5) birds per species, swabs are placed in tube containing 3 ml of BHI broth. After inoculation of tube, swabs must be discarded and not left in tube.
- ***If swabs are left in tubes, the testing laboratory will reject the samples. As a result, samples will have to be collected and resubmitted to the laboratory for testing.***
- No less than 2 ml of inoculated BHI will be permitted or accepted at submission. Therefore, it is important to express the liquid from the swab on the side of the tube prior to discarding it.
- ***BHI inoculated samples under 2ml will be discarded and resubmission of samples requested.***
- Repeat this procedure for up to five (5) swabs from the same owner per tube.
- Dispose of swab properly (do not leave in tube).
- Label tube and submission form pages.
- Up to five samples of the same species, same premises, and same sampling route may be mixed in the same tube. ***Do not mix samples from different species in the same tube.***
- If the facility has multiple buildings/pens, sample up to five birds from each.

BLOOD SAMPLING PROCEDURES:

- Serum used for testing should be obtained from the bird using a small syringe fitted with a 20 or 21 gauge needle.
- Withdraw 3 ml of blood and place in labeled 5-6 ml tube.
- Fill out all information asked for on the submission form.
- After collecting the blood, the tube(s) should be placed in a slanted position on their sides allowing an air space to form between the blood and the side of tube until a clot forms. After the clot forms you can place the tubes upright. As the clot shrinks, serum will be expressed into the tube.
- Collect the serum aseptically and place in a clean 1.5 ml snap-cap micro-centrifuge tube.
- Place tubes in zip-loc bag.
- Place submission form in separate bag and place both bags in another bag.
- Place samples and submission form in shipping container with adequate ice packs to maintain refrigerated temperatures and ship overnight to diagnostic laboratory for testing.

SAMPLE TUBE HANDLING:

- Label (BHI) tube and submit with completed submission forms. Tube should have owner name, species name and tube # at minimum *clearly* written on label with a black permanent marker (Sharpie). If you can wrap Scotch Tape around the tube and write on the tape it will not smudge or rub off.
- Reminder: up to five (5) samples from the same species and owner may be mixed (pooled) in the same tube. Do not mix samples from different owners or different species.

SAMPLE PRESERVATION:

- Samples must be kept refrigerated and delivered or shipped to laboratory within 48 hours of sampling. Keep samples on cold packs or refrigerate until shipped.
- If samples cannot be shipped or delivered to the testing laboratory on the same day they are collected, the sample tubes must be kept at refrigerated temperature (2-8°C) for a maximum of 48 hours after collection.
- After 48 hours, samples must be frozen at (-20°C) or the samples may be rejected by the testing laboratory.
- ***NOTE:*** *Freezing inoculated BHI broth at -20°C can cause formation of ice crystals because the samples freeze too slowly. Ice crystal formation can disrupt the virus, leading to false negative results.*

Sample Packaging and Shipping Procedures

- Place seal-tight tubes in whirl pack or zip lock bags with an absorbent sheet and seal. (Wrap tube caps with tape to prevent leakage)
- Place bag of samples along with two (2) cold packs into Styrofoam shipping container. Close Styrofoam container and place copy of lab submission form in a separate zip lock bag on top.
- Place Styrofoam container into outer cardboard box.
- If not placing in outer cardboard box (delivering in person - not shipping), place the completed and signed copy of the Laboratory Submission Form *inside* the styrofoam shipping container in a separate zip lock bag.
- Close and seal the outer shipping container.
- Apply proper shipping label, "**Biological Substance, Category B**" + UN 3373 diamond label to side of box (see label sample attached).
- Apply postage paid mailing label available from laboratory.
- **Do NOT mail samples on Friday or Saturday!!!**