DEFEND THE FLOCK
From Backyard To Barnyard: Biosecurity for Poultry on a Multi-Species Farm
Webinar Transcript
April 17, 2025

Moderator (Gillian Pommerehn) >> Good afternoon, everyone. We'll begin today's webinar in just one [minute]. We'll give folks a few more seconds to join us. Good afternoon and thank you for joining us for today's webinar, *From Backyard To Barnyard: Biosecurity for Poultry on a Multi-Species Farm*. This is being recorded. Today's webinar series is part of the USDA's Defend the Flock campaign, promoting awareness about the importance of biosecurity and ways to prevent the spread of infectious poultry diseases like highly pathogenic avian influenza, or HPAI. You can check out all of the amazing, Defend the Flock free resources by searching "USDA" and typing "Defend the Flock" in your browser. My name is Gillian Pommerehn, and I'm pleased to support USDA Animal and Plant Health Inspection Service or APHIS, and the team's work on avian health and [the] Defend the Flock campaign. Today we are excited to have with us Dr. Melissa Yates, who is serving as the USDA APHIS Incident Lead for the poultry HPAI outbreak. She is also a Veterinary Medical Officer for the National Animal Disease Preparedness and Response Program. Dr. Yates will share important information, updates, and effective ways to keep your poultry and farmyard animals safe from HPAI and other diseases.

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Before we get started we want to let you know that closed captions are available for this program. If you scroll to the bottom of your screen, you can hover over and click on 'Show Captions.' Today we will talk about avian influenza, HPAI, and review biosecurity best practices. If you have questions about today's discussion, please send those to Shilo.Weir@usda.gov - her email is on the screen. Your questions and answers will be posted along with the recording of today's webinar on the Defend the Flock website. Again, for more free resources, search "USDA" and type "Defend the Flock" in your browser. Be sure to follow us on Defend the Flock Facebook and X to find out when [the] Q&A and the recording will be available.

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This presentation will be interactive and audience participation is encouraged during the polling session[s]. You will note the QR code on your screen, you can click on that QR code to participate in our informal poll. We'll give folks just a moment to click that QR code. And with that I will now turn it over to Dr. Melissa Yates.

Dr. Yates >> Hi, everyone! Can you hear me okay? Wanna make sure before I...

Moderator >> Yes, we can.

Dr. Yates >> Okay, wonderful. Hi, I'm Dr. Melissa Yates. I was just going to give you a quick background on me before we jump into the presentation. I attended Virginia Tech for my B.S. in microbiology, and then I attended the University of Edinburgh for my veterinary degree, and then I've been working on my Master's in Public Health at the University of Minnesota. After graduating from veterinary school, I did work for a few years for the Arkansas Livestock and Poultry Commission. I was the Assistant State Veterinarian there and the National Poultry Improvement Plan (NPIP) Coordinator, so, in this role I had to ensure compliance with Poultry Disease Surveillance Programs. Then I worked briefly for the California Department of Food and Agriculture where I assisted with their poultry biosecurity audits during the virulent Newcastle disease outbreak. Then I worked for the State of Maryland for a few years as their NPIP coordinator. And then I came to APHIS, where I was first hired as a Poultry Specialist for North and South Carolina and later took a role as a NADPRP (National Animal Disease Preparedness and Response Program) Project Coordinator. But currently I am detailed as the Incident Lead for the poultry "high-path AI" outbreak, where I am assisting with operational response activities to "high-path AI" (avian influenza; HPAI) at the national level.

So now we're going to get into our first poll. So hopefully, you have Slido pulled up on whatever device that you have. Great.

- My first question is, **'Do you currently own poultry?"** I'm trying to see how many of our audience members currently own any poultry. I don't know how many people are attending the webinar but I'll wait until we get a few more responses. It [looks] like we're holding pretty steady, around 30% percent of our participants [own poultry].
- All right, I'm going to move to the next question. **"If you don't have a poultry flock, do you plan on starting one in the next 6 months – 1 year?"** Good! We're getting great participation, sounds like majority people "No." So that's great that they're interested in learning this information but we still have about 45ish percent of people that either own poultry, or are planning to get poultry soon.
- **"If you do own poultry, what is the primary purpose of raising your flock?"** Oh, let me scroll down, can people see? Oh, sorry guys. Is it still living? Okay, good. Looks like most people raise their birds for eggs and meat, not surprising there, or as pets, or for shows and fairs, or as a business to sell the eggs and the meat.
- Move to the next question, **"How large is your poultry flock?"** Well, that's interesting, we have some people on the call that do own more than a thousand birds. But sounds like most people own between 0-10 birds.
- All right, next question. **"Are you raising other animals on your farm besides poultry?"** It's looking like the majority of people are saying yes, that they do have other animals on their farm; around 60%.
- All right, next question. **"What other pets or animals do you have on your farm?"** So, it's great, looks like the majority of people have dogs and cats, but we still have people [voting].

A good number of people with cattle and goats and pigs. Scroll down. You can see we have a few respondents with sheep as well.

- **“How knowledgeable are you of the current avian influenza outbreak?”** We're just seeing how much you already know about the current outbreak we've been in. It's great that a lot of people have been keeping up with the outbreak and consider themselves knowledgeable, but it's good that we have a lot of people here who are looking to learn more. All right, and so now we're going to get back into the slides. Don't worry, we'll have more poll questions later.

So now I'm just going to tell you a little bit about avian influenza. Avian species are susceptible to avian influenza, but something of note is that there are other species that have been susceptible to HPAI as well, highly pathogenic avian influenza. That includes cats, which you may have seen in the news, skunks, raccoons, and even dairy cattle have been affected by HPAI. So, I just mentioned HPAI but there are actually two forms of avian influenza. You can either have low pathogenicity avian influenza (LPAI), or “low-path AI.” That usually has low mortality, mild to moderate, or even no clinical signs in in birds. We also have highly pathogenic avian influenza, otherwise known as HPAI, which causes high mortality and is a foreign animal disease. But something of note, only subtypes H_5 or H_7 avian influenza can be highly pathogenic avian influenza. This virus can survive for weeks to months in the environment at low temperatures.

So just some information about the current HPAI outbreak. We are still in the same outbreak that has been going on since January 14, 2022. So, we've just passed the 3 year mark. The first detection that we had was a wild bird detection of H_5N_1 avian influenza in an American widgeon in South Carolina. So, that was a wild bird detection. Our first commercial case that we had was on February 8, 2022, it was in commercial turkeys in Indiana. Our first backyard case was a few days later, on February 12, 2022, in some backyard birds in Virginia. I remember that call very distinctly, I received very early in the morning to assist with that case. On March 25, 2024 – so we've jumped forward a couple of years, we had our first dairy cattle case in commercial cattle in Texas. And so, for those of you who've been following a lot of the messaging that has gone out, and we have had a lot of responses associated with these new dairy cattle cases. And then recently, on March 12, 2025, we did have a case of H_7N_9 “high-path AI” in a commercial breeding meat chicken flock in Mississippi. So, of note it's different than the current virus that we have circulating, the H_5N_1, and it was most likely “low-path AI” H_7 that was introduced into that flock that then mutated into H_7N_9 “high-path AI.” But it is distinct from the H_5N_1 that's been circulating; it's a different strain; different subtype.

So how is “high-path AI” introduced into the environment? The main way is wild birds; so, they are the reservoir hosts. They can carry avian influenza and be completely asymptomatic. It's mostly wild waterfowl species, dabbling ducks, and shorebirds that are included in that group of wild birds, but there are other wild birds that are susceptible [that] can carry “high-path AI.” They can carry it in their respiratory secretions, they can contaminate feed and water with their feces, and then any sort of direct or indirect contact with these infected wild birds. So, if you have untreated surface water, like in ponds, that is used for drinking water or cleaning for your poultry, that can have been exposed. You could have contaminated equipment or vehicles and your clothing and footwear can get contaminated from the environment as well, which is very common for helping to spread “high-path AI,” either within your farm or from farm to farm. And infected birds also contacting free

ranging poultry as well. So, if you keep your backyard birds outside and they are able to have contact with wild birds, that is another way that “high-path AI” can make its way into your flock. Additionally, if there are other infected animal species, they are contributing to the environmental contamination with the virus as well. If there's ingestion of those infected animals or animal products, that's again contributing to buildup of the virus in the environment.

So, what are the signs of “high-path AI” in birds? You can have acute mortality, [which] is probably the main clinical sign that we see. You can have very high mortality in a flock over a very short period of time as well. You may have neurological signs, including ataxia, lethargy, drooping wings, or abnormal head position. The birds may be depressed or lethargic, and they may have decreased feed and water consumption or decreased egg production. So, these are all things to monitor in your flock.

So, what are some signs of “high-path AI” in other animals, so besides poultry? Some of the things that we've seen: there's difficulty moving, walking, or standing upright; a lack of appetite; severe illness in multiple animals in the herd; sudden or unexplained deaths; reduced milk production or thicker colostrum-like milk; abnormal, tacky, or loose feces; lethargy; dehydration; fever; coughing, sneezing, or trouble breathing; and also discharge from the eyes or nose.

So, how do you protect yourself from illness? This is a zoonotic disease, there have been some human cases associated with contact with infected animals, so the best thing is to avoid any unprotected exposure to sick or dead animals - especially avoiding exposure to animal feces, litter, or materials that may have been contaminated by birds. If you must contact any sick or dead animals, make sure you use disposable gloves and also trash bags.

What do you do if you see concerning signs in your flock or your herd? One thing I want to mention, if you do have a veterinarian you can always reach out to them. Give them a call, let them know you're worried, and they will triage and either contact us or potentially come out to see your animals. If you do not have a veterinarian, you can always contact your State Animal Health Officials or you can contact us at USDA. We have our phone number there, 1-866-536-7593. So, you may be asking: Okay, you know you have some sick or dead animals, and you don't know what happens after you contact us. So, we'll have someone that will contact you, and they will ask you questions about your flock and that's to allow us to triage your case and determine whether this is concerning, clinical signs that could be indicative of “high-path AI.” If we are concerned about the case, and we think that it could be a suspect for “high-path AI,” we will come out and collect samples and the State, additionally, may quarantine your flock as well. If your birds do come back as positive for “high-path AI” after testing, then the State will issue a quarantine, and as a backyard flock owner it kind of depends on the scenario. Sometimes birds will need to be depopulated. But otherwise, there may also be cleaning and disinfection involved, but sometimes there will just be 120-day fallow periods that are required before you're able to restock.

So, just to give you an overview of the current situation of the “high-path AI” outbreak:

- So, over the last 30 days we've had 33 confirmed flocks, 7 of those commercial [flocks] and 26 of those as backyard flocks, with a total of 1.87 million birds affected. One thing I just want to mention, that since the start of the outbreak in domestic poultry in the US on

February 8, 2022, there have been 168 million birds affected, and “high-path AI” has been detected in over 1,600 flocks in 50 states and one territory, so we've also had detections in Puerto Rico, with a total of 781 commercial flocks and 907 backyard flocks affected.

- So, total detections in backyard flocks are displayed here. This is a heat map, so the darker the color, the more flocks that have been affected. As you can see, in the Northeast and the West Coast is where we've had the majority of our backyard flock detections, but, as you can see, they've been spread out all throughout the country.
- In the last 30 days, these are the states that have had backyard flock detection, with New York having the most cases.
- So, you know I was just talking about domestic poultry but I also want to flag that wildlife services is doing surveillance sampling in wild bird populations as well. And this is a map displaying the total count of “high-path AI” detections that they have found since January 1, 2022, and it's a total of almost 13,000 wild birds found to be carrying “high-path AI” - and the numbers over each state tell you how many detections they have found in each state.
- This is a map displaying the total detections of “high-path AI” in livestock species. So, as you can see, for the most part it's in the middle of the country and our Western states that have been affected with “high-path AI” in livestock species.
- Here's a map showing the total detections in wild and captive wild animals. So again, I don't know if people have been reading in the news, there's been reports of some captive wild cats, but also domestic cats that have been affected by “high-path AI.” But we've had other mammalian species affected as well, such as a bear, wild canids, and also marine mammals.

So, the presentation wasn't meant to be gloom and tomb up to this point, but just to emphasize the need for biosecurity on your farms - and that is your best defense against “high-path AI.” So, what is biosecurity? Biosecurity is everything people do to keep diseases - and the viruses, bacteria, fungi, parasites, and other microorganisms that cause disease - away from birds, property, and people. So, there [are] two kinds of biosecurity. You can have structural biosecurity, which is any measure that's used in the physical construction and maintenance of coops, pens, poultry houses, family farms, or other facilities to help prevent the introduction of disease. Operational biosecurity are any practices, procedures, policies that are consistently followed by people, again, to help prevent the introduction of disease into your flocks and herds.

So, we're going to have another poll - you know, everyone's favorite part.

- So, just wanted to ask you all, **“Are you familiar with the concept of biosecurity?”** I'm just asking if this presentation and where I'm talking about right now - is [this] the first time you've ever heard of it or have you heard of biosecurity otherwise? And it's looking like the vast majority of people have heard of biosecurity, and that's great.
- So, you've heard of biosecurity but **“Do you practice any biosecurity at your farm or property currently.”** And I will be going into a whole bunch of practices, that if you are not currently implementing them, you will be able to implement them on your farm. It looks like most people are currently implementing some biosecurity at their farm - that's great, and don't worry if you're not, I'm going to give you some tips for implementing biosecurity.

- **“Has your flock or any animals on your farm ever contracted a disease, leading to illness or death?”** One thing I want to emphasize is that biosecurity is not just for keeping “high-path AI” out of your farms, it will help to prevent the introduction of any disease. That's good, a lot of people - 60% or so – say they've never had any illness in their animals, on their farm. That's great but looks like at least 35% [of] people have potentially had disease in their flock.
- **“If you have illness or death in your flock or animals, do you know who to contact to get help?”** So, for those of you who don't know - it's good that most people do - again, please make sure that you familiarize yourself and we will give you links and QR codes to access our materials on our website, and that will have phone numbers and or emails you can contact when you have sick animals that you have a concern about.
- **“Has either your flock/farm animals or the flock/farm animals of a friend/neighbor/colleague been affected by the current avian influenza outbreak?”** So have you known anyone that's had any animals, whether poultry or otherwise, that have been infected with “high-path AI?” So, it's good that most people have not, but a good number of people either have themselves been affected, or they're not sure if they know, or they have been affected with “high-path AI.”

All right, so, now we’ll go back to the normal presentation. And now I'm going to discuss seven simple, effective biosecurity ideas to help keep not only “high-path AI” but other diseases out of your flocks and herds.

(1) So, first, one of the most important things you can do, as I was discussing that wild birds are the reservoir species for “high-path AI” - but keep wild birds away from your flock and livestock. So, any measures you can do to enclose food or water so that wild birds don't have exposure to it. Make sure you're regularly washing and sanitizing those food and water containers as well. Never using untreated surface pond water as drinking or cleaning water for poultry. And then using netting, chicken wire, and fencing, or coops for housing as well. Don't let your free range flocks range in areas with a lot of wild bird activity - like near open water sources. So, one thing I want to mention for regular washing and sanitizing your food and water containers, to use a 10% bleach solution.

(2) So, make sure to separate waterfowl species from gallinaceous birds. Keep chickens, turkeys, and game fowl away from ducks and geese in your flock. So, if you do own some chickens or turkeys, or game fowl, and you also own some waterfowl species, house them separately, keep them in separate pens. This will help to prevent introduction of avian influenza into your into your gallinaceous bird species. The best thing is to just not commingle different bird species at all. So, I just want to note there are other diseases that different species of poultry can spread to each other. For example, chickens can spread histomoniasis to turkeys and game birds. There's also several species of poultry that are susceptible to mycoplasma and E. Coli, and other bacterial species. And one of the best ways you can separate your species is just separate them into different pens with chicken wire, or even using mobile coops, or any type of fencing.

(3) A good plan is to just avoid mixing any species at all. So, keeping other animals off of your property, preventing your neighbor's pets from commingling with your birds, and then keeping livestock and pets separated from birds, including away from any bird, feed, litter, or equipment.

So, making sure to house birds and livestock in different areas of your property. And then, additionally, it's important to keep your pets out of poultry zones, and pastures. So again, cats are very susceptible to “high-path AI,” so don't let your cats in with your poultry. You can use fencing or chicken wire to keep birds out of your animal pens or barns. And then, as a general rule, keeping all wild animals, including rodents, away from your burdened livestock areas is always a good idea.

(4) Also use caution when introducing new birds into your flock. Don't introduce new birds into the flock without a minimum of a 30-day quarantine. Don't purchase birds from swap meets or auction markets or internet websites that are not associated with the hatchery. The best way to make introductions into your flock is to purchase poultry, hatching eggs, or day old chicks from sources that participate in the NPIP program - this is the National Poultry Improvement Plan. I did include the website there, because you may be asking: ‘How do I know if somebody participates in this program?’ Well, it's very handy, if you go to this link it will show you a map of the states, and you can click on the state where that a poultry hatchery exists, and then it will provide for you a list of NPIP participants. If they are not listed there, you can always reach out to the NPIP coordinator for that state, and they can always verify if somebody is, in fact, a current NPIP participant. So, the reason that we do recommend sourcing your birds from an NPIP hatchery and avoiding purchasing birds from auction markets or swap meats, is that older birds do have a higher likelihood of exposure to several poultry diseases, so they do pose a higher risk of introduction of disease to your poultry flock. Then, as always, it's always good to purchase birds from reliable sources, such as NPIP hatcheries.

(5) Use dedicated footwear and clothing for your poultry areas. So, the best way to do this is to just don't wear your poultry boots or coveralls off the farm. Clean clothing and footwear: make sure to clean your clothing and footwear, often using bleach powder, water, disinfectant, and a cleaning brush. As I mentioned before, you can use a 10% bleach solution, which includes one part household bleach and 9 parts water. So, when we're talking about specific footwear and clothing for your farm, you may have heard the term PPC, which is personal protective clothing, and that includes footwear, shoe covers, gloves, coveralls, and also some people may use hair covering. So, make sure that you visit your poultry at the beginning of the day, or after having had a shower, if you've had contact with other poultry. And then also consider having dedicated footwear and clothing for each enclosure or area with different species. So, for example, if you have an area where you're keeping your ducks and geese, and you have a separate area where you're keeping your chickens - make sure that you have separate boots and coveralls for each of those areas, if possible, or make sure you are cleaning off your boots in between going into those different enclosures so you're not spreading any potential pathogens between those two areas. Additionally, it's important to wash your hands or use hand sanitizer when entering or exiting your different poultry areas, or to wear gloves that you change often.

(6) Limit outside equipment, vehicles, and visitors to your farm. Visitors can walk disease right into your flock on their clothing and footwear. So, if you remember, there [are] a lot of wild birds that are carrying “high-path AI,” so, the environment is pretty contaminated with the virus, which people can end up picking up on their clothing and footwear and walking right into your flock or on your farm. Especially prevent visitors from entering your poultry-raising areas, especially if they own or have recently visited someone with a poultry flock. Again, they can walk that disease right into your flock.

You can also post biosecurity signs. There are tons of places you can find some free posters online that you can print out, and then you can stick onto gates or fences to just remind people to not just wander into your animal-raising areas. If you do have a neighbor or friend, or any kind of poultry caretaker who's going to be caring for your birds, please provide them with either disposable or reusable footwear and clothing, so that they are using dedicated clothing and footwear on your farm, that they haven't been walking around in other places and then walking directly into your poultry flock. Don't share equipment or tools with other poultry owners unless it's thoroughly cleaned and disinfected because, again, if equipment or tools are used with poultry, and those poultry are infected with any sort of pathogen, and then you subsequently use that equipment or tools in your poultry flock, or with your animals, you can transfer disease to your animals.

(7) It's also important to have some sort of pest control program. Bait stations or traps or fly control - you should have some sort of fly control or tape. And then the most important thing is to prevent rodents and pests from accessing feed and water for your animals. So, one of the best ways you can do this is by storing your feed in fully enclosed bins with lids, and then, if possible, for your poultry to use nipple drinkers. And then again, remembering to clean any of your feed bins and waterers pretty regularly, because they can carry diseases too and act as fomites.

So, let's say you're already doing all of those things and you're like, “Well, how can I upgrade or improve my biosecurity on my farm?” So, one of the best things you can do is - you can write a biosecurity plan for your farm. And it doesn't need to be complicated, but you can just establish simple protocols for anyone that's visiting or caring for your birds. And we do have free biosecurity plan templates available online, so, you don't need to come up with your complete own thing. We have templates that you can use that then you can write down things that are specific to your farm and what sort of biosecurity protocols you would expect anyone that's going to come and have contact with your animals to follow. You can also install fencing or build fully enclosed poultry hutches. Adding in fencing or netted roofs and walls to keep wild birds out of any outdoor areas that your birds may have access to. As well, you can install a gate and biosecurity signs at your property's entrance to discourage any unintended visitors.

Moderator >> Excellent. Thank you, Dr. Yates.

Dr. Yates >> I'll hand it back off so you can discuss some of the available biosecurity resources. Thanks, everyone.

Moderator >> Really, thank you so much for sharing all those valuable resources that we can all use to protect our flocks. And folks before we go, just a few more important things.

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APHIS has a ton of resources for backyard bird owners and farmers like yourself. We encourage you to visit [the] Defend the Flock website to view and download these materials, they're available for free and they're in multiple languages.

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Also, you can scan the QR code that you see on your screen right now to go directly to that resource page on [the] Defend the Flock [website]. And you can also go to Facebook and X to stay up to date on the latest bird news and resources.

So, we have just 2 more questions left for you. And this will be really helpful for us, so, if you wouldn't mind answering:

- Folks, **"Did you learn about biosecurity measures from this presentation?"** And we love that many of you learned, it sounds like many of you knew a lot of really important biosecurity but this is great to see. [We'll] give folks just another second there.
- All right, let's go to the next and last question: **"Which of these biosecurity measures do you think you'll implement on your farm or property in the future?"** Love, seeing "Most of them," love that so many of you already [practice biosecurity on your farm/property]. That's terrific, awesome.

Alright, you can keep filling that out. Thank you guys, we appreciate that. And just real quick, want to let you know that answers to your questions will be available for download on the Defend the Flock website, we'll notify you on Facebook and X when the presentation is available. But if you have general questions about avian health, HPAI, or even concerns about your flock or farm animals, here's one resource for you - you can reach out to USDA Animal and Plant Health Inspection Service's toll free number. That's 1-866-536-7593, that's here on your screen. If you have questions about today's webinar, some information about today, again, you can email Shilo.Weir@usda.gov. And again, we just want to give a really big thank you to Dr. Yates for her time and sharing her expertise. Thank you to Lindsay, Shilo, and everyone else on the team who helped make this webinar possible. And of course, really, a special thanks to all of you for recognizing the importance of keeping your flocks and farms safe and healthy. We hope you have a wonderful day everyone, thanks for joining us.