USDA Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

HPAI Response

Surveillance of Backyard Flocks in a Control Area or Surveillance Zone

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*This scheme describes surveillance in response to an INFECTED WOAH Poultry premises and is specific to Control Areas and Surveillance Zones. This is separate from ongoing testing for LPAI through NPIP and LBMS, and for LPAI and HPAI in wild birds through Federal-State partnerships.

Please note: These procedures may be revised as the situation develops

DEFINITIONS (*HPAI Response Overview of Zones*)

Commercial Premises: Categories as defined by NPIP in 9 CFR Part 56.

Backyard Premises: Premises with susceptible poultry that do not meet the definition of commercial premises.

Backyard Premises with Risk Factors: Backyard premises that have risk factors for lateral spread, including birds kept primarily for the purpose of producing poultry or poultry products offered for sale or trade, birds kept for sale or breeding, or flocks where direct or indirect contact likely occurred between the flock and any poultry or poultry facilities.

Infected Premises: Premises where a presumptive positive case or confirmed positive case was located based on laboratory results, compatible clinical signs, the highly pathogenic avian influenza (HPAI) case definition, and international standards.

Contact Premises: Premises with susceptible animals that may have been exposed to HPAI, either directly or indirectly, including but not limited to exposure to animals, animal products, fomites, or people from Infected Premises.

Suspect Premises: Premises under investigation due to the presence of susceptible animals reported to have clinical signs compatible with HPAI. This is intended to be a short-term premises designation.

At-Risk Premises: Premises that have susceptible poultry[1], but none of those susceptible animals have clinical signs compatible with HPAI. Premises objectively demonstrates that it is not an Infected Premises, Contact Premises, or Suspect Premises. At-Risk Premises may seek to move susceptible animals or products within the Control Area by permit. Only At-Risk Premises are eligible to become Monitored Premises.

Monitored Premises: Premises objectively demonstrates that it is not an Infected Premises, Contact Premises, or Suspect Premises. Only At-Risk Premises are eligible to become Monitored Premises. Monitored Premises meet a set of defined criteria in seeking to move susceptible animals or products out of the Control Area by permit.

Infected Zone: Zone that immediately surrounds an Infected Premises; the perimeter should be at least 3 km (~1.86 miles) beyond the perimeters of the presumptive or confirmed Infected Premises. This zone may be redefined as the outbreak continues.

Buffer Zone: Zone that immediately surrounds an Infected Premises; this is the area that is at least 7 km (~4.35 miles) beyond the perimeter of the Infected Zone (10 km beyond the Infected Premises). This zone may be redefined as the outbreak continues.

Surveillance Zone: Zone outside and along the border of a Control Area. A Surveillance Zone may also be formed immediately surrounding a non-poultry infected premises. The perimeter of the zone should be at least 10 km (~6.21 miles). The Surveillance Zone is part of the Free Area**.**

Control Area: Consists of an Infected Zone and a Buffer Zone; the perimeter of the Control Area should be at least 10 km (~6.21 miles) beyond the perimeter of the closest Infected Premises. This area may be redefined as the outbreak continues.

Foreign Animal Disease Investigation: An investigation conducted according to *VS Guidance Document 12001.5 Ready Reference Guide*.

INTRODUCTION

This document provides surveillance guidance for backyard premises (non-commercial) within a Control Area. Surveillance activities and associated testing should be based on recommendations of the Unified (State-Federal) Incident Command; this guidance may require further modification based on epidemiological and situational information.

This document reflects the epidemiological information known about the behavior of currently circulating viruses and experiences from previous outbreaks. For example, there is no evidence that the circulating viruses cause sub-clinical infection in gallinaceous poultry[1] species; clinical signs and mortality are apparent.

COMMUNICATION

It is critical to ensure that information about HPAI, as well as recommended biosecurity measures, are clearly communicated to all backyard premises in a Control Area. APHIS and State/Tribal officials must ensure that instructions are provided to owners to report clinical signs and abnormal mortality; there should be transparent procedures for managing reports of clinical signs or unusual mortality from backyard producers (also known as sick bird calls).

VISITING PREMISES

While it is important to identify all backyard and commercial premises within a Control Area, responders should not enter premises unless instructed to do so by the Incident Management Team (IMT). It is critical to remember that any real or perceived belief that responders are spreading HPAI is incredibly detrimental to the response effort. As with any premises, if a visit is necessary, appropriate biosecurity and cleaning and disinfection measures should be observed, and all guidance provided by Incident Command should be followed.

PRIORITIES FOR SURVEILLANCE ACTIVITIES IN THE CONTROL AREA

The following are the priorities for backyard surveillance activities in the Control Area; it is critical to investigate Infected and Contact Premises as rapidly as possible to detect, control, and contain the virus as rapidly as possible. These premises should remain the top priority in any response effort.

SURVEILLANCE PLAN – PASSIVE SURVEILLANCE

General Guidance

The IMT, in coordination with any subject matter experts, should develop morbidity and mortality criteria that dictate the need for further investigation. These criteria/triggers should be species specific. During a widespread HPAI outbreak, reports of clinical signs or unusual mortality from backyard premises (sick bird calls) are investigated as rapidly as possible.

However, sick bird calls may overwhelm available resources, particularly when investigation and/or management of Infected and Contact Premises are not complete. In this case, the IMT may recommend triaging disease investigations on backyard premises, using the morbidity and mortality criteria and/or farm risk factors (e.g., close proximity to bodies of water with waterfowl concentrations). These triggers should be based on the best information available and should be developed in coordination with State/Tribal officials. Typically, premises in the Infected Zone should be prioritized over those in the Buffer Zone.

Start and Duration

Passive surveillance is conducted consistently in the United States through foreign animal disease investigations (per *VS Guidance Document 12001.5*); passive surveillance is intensified through rapid and clear communication to backyard premises as soon as there is an HPAI detection.

[1] Poultry is defined as: all birds reared or kept in captivity for the production of any commercial animal products or for breeding for this purpose, fighting cocks used for any purpose, and all birds used for restocking supplies of game or for breeding for this purpose, until they are released from captivity.

Procedures
For sick bird calls on backyard premises, a Foreign Animal Disease Diagnostician (FADD) (or individual designated by the IMT) should:

1. If resources allow, investigate each call meeting the identified criteria immediately.
2. If necessary, prioritize those premises in the Infected Zone and those meeting morbidity/mortality triggers or having additional risk factors for further investigation. This should be conducted in coordination with State officials.
3. Schedule an appointment to collect samples as quickly as possible.
4. Conduct diagnostic testing according to sampling recommendations, submit samples to designated National Animal Health Laboratory Network (NAHLN) lab as indicated by the IMT (provided in "Recommended Sampling Scheme" below).
5. Record all relevant information in the Emergency Management Response System (EMRS), including means of communication.

SURVEILLANCE PLAN–ROUTINE/ACTIVE SURVEILLANCE

General Guidance
In addition to passive surveillance, routine/active surveillance is conducted to provide evidence that HPAI is not present.

Premises Selection
The minimum number of known Other Backyard Premises in the CA to contact by phone is shown in Table 1. Include premises known to have additional risk factors related to introduction or potential for spread such as proximity to bodies of water with waterfowl concentrations. If the premises does not have any clinical signs, unusual morbidity/mortality, or other risk factors requiring further investigation, a site visit is not required. If the premises has poultry with clinical signs, unusual morbidity/mortality, or other risk factors requiring investigation, an FADD (or individual designated by the IMT) should visit the premises for diagnostic testing.

State/Tribal officials may also choose to conduct site visits on apparently healthy Other Backyard Premises flocks within the CA. This may be useful when there is minimal diagnostic test data available, e.g., in areas where there are few commercial operations and/or few sick bird calls. Record all relevant information in EMRS, including all premises contacted and whether or not they were visited for diagnostic testing. Follow IMT guidance on additional information to enter.

Table 1. Minimum number of Other Backyard Premises to contact from each Control Area to achieve 95% confidence[1] of detecting at least one infected premises when the prevalence of infected premises in the Control Area is 10%.

Total number of Other Backyard premises in Control Area (to be selected from)	Minimum number of premises to select assuming 10% premises level prevalence
11 or less	All
12 to 15	13*
16 to 40	21*
40 to 50	23
51 to 75	25
76 to 100	26
101 to 150	27
151 to 200	28
201 to 500	29
>500	30

[1]These sample sizes assume that if there are birds with clinical signs on a contacted premises that pooled-bird specimens are collected and tested to achieve a 95% confidence in detection among birds within all houses or smaller epidemiological units/animals held in a similar manner with the same exposure risks.
*Select all Other Backyard Premises if the number of premises within the zone or area is less than the value given.

Start and Duration
APHIS and/or State officials will determine the time period for active surveillance. It may begin upon completion of initial virus elimination (cleaning and disinfection) of the Infected Premises that established the Control Area (e.g., though compost piles may remain, all fomites, vehicles, and outside areas of the houses have undergone virus elimination), or a different timeline for sampling may be recommended. Active surveillance may continue after the Control Area has been released for international or bilateral trading partners.

Procedures
The IMT performs the following:

1. Select a minimum number of premises to sample (see Table 1).
    a) Include high-risk premises, such as those near bodies of water.
    b) Sample remaining premises based on IMT guidance (the IMT may have further guidance on which premises should be sampled when there are a large number of backyard premises in the Control Area).
2. Contact (by phone) all selected premises.
    a) If the premises does not have any clinical signs, unusual morbidity/mortality, or other risk factors requiring further investigation, a site visit is not necessary.
3. Visit selected premises as needed.
    a) If the premises has clinical signs, unusual morbidity/mortality, or other risk factors requiring investigation, a FADD (or individual designated by the IMT) should visit the premises for diagnostic testing.
    b) State/Tribal officials may also choose to conduct site visits on apparently healthy backyard flocks within the Control Area. This may be useful when there is minimal diagnostic test data available, e.g., in areas where there are few commercial operations and/or few sick bird calls.
4. Record all relevant information in EMRS, including all premises 'sampled' (meaning those contacted *or* visited for diagnostic testing). Follow IMT guidance on additional information to enter.

Recommended Sampling Scheme

For premises that require further investigation, samples should be collected as follows and in line with the current version of Avian Sample Collection for Influenza A and Newcastle Disease (NVSL-WI-0023):

1. Identify whether sick or recently dead birds are available for sampling. If not, document site visit and absence of clinical signs. Sampling is not required if sick or dead birds are not available, unless further instructed by the IC.
2. If clinical signs or morbidity are apparent, sampling at minimum two 5-bird pools if the number or sick or dead birds is ≤10, or three 5-bird pools if the number of sick or dead birds is >10, is sufficient to detect HPAI with 95 percent confidence if prevalence is 40 percent [2].
    a) Sampling non-gallinaceous birds is not generally recommended for HPAI surveillance, as they may not exhibit clinical signs of HPAI infection. If the IMT determines sampling is necessary in these flocks, the Center for Epidemiology and Animal Health (CEAH), USDA-APHIS-VS can provide assistance on sampling guidance.
3. Collect swabs according to the current version of *Recommendations for Collecting Specimens from Poultry for Viral Diagnostic Testing* (NVSL-WI-0023 available here):
    a) Oropharyngeal swabs are preferred for gallinaceous birds.
    b) If domestic waterfowl are sampled, cloacal swabs are preferred.
    c) If pooling is conducted, only pool samples collected by the same sampling route from the same species; refer to section 3 "Pooling procedures" of WI-AV-0020 for further details.
    d) Prepare, package, and process swabs for laboratory submission according to the

[2] Five-bird pools are typically used on backyard premises due to smaller flock size (instead of 11-bird pools).

guidance found in the *FAD Investigation Manual.*

4. Repeat visits and sampling on premises are not necessary unless clinical signs continue or escalate.

Table 2. *Minimum number of backyard premises to contact or sample from each Control Area* [a]

Total number of premises in Control Area	Minimum number of premises for active surveillance activity (See explanation)
11 or less	9[b]
12 to 15	11
16 to 50	16
51 to 75	17
76 to 150	18
151 to 500	19
>500	20

[a] This presumes 15% design prevalence among premises, 95% confidence, and 95% within-flock sensitivity (or capability of detection).

[b] Select all premises if number of premises within the zone or area is less than the value given.

Surveillance in a Surveillance Zone

For Other Backyard Premises, there is no active surveillance in the surveillance zone, only continued passive surveillance.

Recommended Specimen Collection Procedures

For premises where based on phone contact a site visit is required and sampling is recommended, select birds to collect specimen from as follows and refer to the current version of *Avian Sample Collection for Influenza A and Newcastle Disease* (NVSL-WI-0023 available here). Repeat visits and sampling on premises are not necessary unless clinical signs continue or escalate.

1. Identify whether sick or recently dead birds are available for sampling. Obtaining specimens from healthy birds is of negligible benefit, so sampling is not required if sick or dead birds are not available, unless further instructed by the IC.
2. If clinical signs or morbidity are apparent, sampling at minimum two 5-bird pools if the number or sick or dead birds is ≤10, or three 5-bird pools if the number of sick or dead birds is >10, is sufficient to detect HPAI with 95 percent confidence if prevalence is 40 percent [3].
    a. If there are not enough sick or dead birds to fill the required minimum number of pools, evenly distribute the samples between at least two pools.
    b. Sampling non-gallinaceous birds (e.g., waterfowl) is not generally recommended for backyard HPAI surveillance, as they may not exhibit clinical signs of HPAI infection. If the IMT determines sampling is necessary in these flocks, please contact the Center for Epidemiology and Animal Health (CEAH), USDA-APHIS-VS at VS.CEAH.Surveillance@usda.gov for assistance on sampling guidance.
3. Collect swabs according to the current version of current version of *Avian Sample Collection for Influenza A and Newcastle Disease* (NVSL-WI-0023).
    a. Oropharyngeal swabs are preferred for gallinaceous birds.
    b. If domestic waterfowl are sampled, cloacal swabs are preferred.
    c. If pooling is conducted, only pool samples collected by the same sampling route from the

[3] Five-bird pools are typically used on backyard premises due to smaller flock size (instead of 11-bird pools).

same species. Collect three 5-swab suspensions in 3 mls of acceptable virus transport media (VTM) for any species. Refer to section 3 “Pooling procedures” of NVSL-WI-0023 for further details.

d. Prepare, package, and process swabs for laboratory submission according to the guidance found in the FAD PReP Manual 4-0.

Documentation

As with all surveillance activities, documentation is critically important. EMRS is the system of record for all HPAI outbreaks in the United States, and relevant data regarding backyard surveillance activities must be entered into EMRS in as close to real-time as possible. This data may be reported internally and externally through situation or close-out reports and other means.

At a minimum, the following items are important to maintain and report. Refer to IMT guidance for how to appropriately record these and other data:

- Number of known Backyard Premises in Control Area.
- Number of sick bird calls received (passive surveillance).
- Number of sick bird calls resulting in visits and sampling.
- Number of known other backyard premises contacted by phone for active surveillance.
- Number of known other backyard premises visited and sampled for active surveillance.
- Total birds sampled per premises.
- Laboratory results for all submissions.

For More Information

USDA APHIS VS. 2025. Surveillance Sampling for Commercial Premises in Control Area or Surveillance Zone.
USDA APHIS VS. 2024. Avian Sample Collection for Influenza A and Newcastle Disease (NVSL-WI-0023)
USDA APHIS VS. 2022. Foreign Animal Disease Investigation Manual (FAD PReP Manual 4-0).
USDA APHIS VS. 2017. Highly Pathogenic Avian Influenza (HPAI) Response Plan: The Red Book.
USDA APHIS VS. 2024. Guidance Document 12001.5: Policy for the Investigation of Potential Foreign Animal Disease/Emerging Disease Incidents (FAD/EDI).