

STATE OF RHODE ISLAND, DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DIVISION OF AGRICULTURE

AVIAN INFLUENZA RESPONSE PLAN

(for all strains)

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See also:

CDC, [Avian Influenza](http://www.cdc.gov/flu/avian/) <<http://www.cdc.gov/flu/avian/>>, especially [Avian Influenza Infection in Animals](http://www.cdc.gov/flu/avian/gen-info/qa.htm#4) <<http://www.cdc.gov/flu/avian/gen-info/qa.htm#4>>
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USDA, APHIS, [Summary of the National Highly Pathogenic Avian Influenza Response Plan](http://www.aphis.usda.gov/newsroom/hot_issues/avian_influenza/content/printable_version/SummaryHPAI-Response092007Draft.pdf) (August 2007) <http://www.aphis.usda.gov/newsroom/hot_issues/avian_influenza/content/printable_version/SummaryHPAI-Response092007Draft.pdf>
USDA, APHIS, [Standard Operating Procedures: Response Plan to a Report of Notifiable Avian Influenza Virus](#) (2005)
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USFWS, [Early Detection and Response Plan for Occurrence of Highly Pathogenic Avian Influenza in Wild Birds](http://www.fws.gov/migratorybirds/issues/AvianFlu/HPAI%20Response%20Plan%20final%20071707%20Edition.pdf) <<http://www.fws.gov/migratorybirds/issues/AvianFlu/HPAI%20Response%20Plan%20final%20071707%20Edition.pdf>>

INTRODUCTION

Purpose

The purpose of this document is to describe the basic procedures for addressing the potential or actual presence of Avian Influenza (AI) in poultry in the State of Rhode Island. With respect to potential and actual AI outbreaks, this document outlines plans for prevention, preparation, response, and recovery. The objective is to minimize the impact of a potential or actual outbreak of AI on animal and public health and the state and national economy.

This document is intended as a general reference, to guide rather than constrain response of the Rhode Island Department of Environmental Management (DEM) to AI, in compliance with National Incident Management System (NIMS) and the National Response Plan (NRP). Strategies and tactics may be revised with the benefit of incident-specific information including, but not limited to, virus strain, pathogenicity, morbidity and mortality, movement of birds and products, and

additional epidemiological information obtained as a result of AI investigations. In consultation with private, state, regional, and national response partners or with unified command, DEM reserves the right to revise plans to best prevent and mitigate a particular threat. This document shall not be construed to limit the statutory or regulatory authority of the DEM to take actions, issue orders, or impose requirements that are not specified in this document or that vary from the general guidance that it provides.

Scope of Operation

This document was developed by the Division of Agriculture and the Office of Emergency Response in the RI DEM. It provides guidance to state and local government agencies, other support agencies/organizations, and the agriculture industry.

Operations discussed in this document are aimed at detecting, containing, and eliminating Avian Influenza in poultry and in protecting human health.

MISSION

Mission Statement

It is the mission of the DEM Division of Agriculture (DAG) to regulate, promote, and protect agriculture and agriculture-related activities in the State.

Goals and Objectives

The mission will be carried out through development and implementation of AI plans with four goals and objectives:

- Prevent the introduction and/or spread of Avian Influenza in the State.
- Prepare for rapid and coordinated response to Avian Influenza in the State.
- Respond to the presence of Avian Influenza, through testing, quarantine, and depopulation as necessary to minimize the spread of disease, the loss of animals, and disruption in the economy.
- Recover from the economic impact of Avian Influenza on Rhode Island's poultry and allied industries.

Statutes and Regulations

The Rhode Island Department of Environmental Management (DEM, which includes the Division of Agriculture, DAG) is authorized by [Rhode Island General Laws, Section 42-17.1-2](#) to protect the environment from pollution and to maintain an acceptable environmental quality within the State. DEM has Statutory Authority for emergency powers in a wide variety of environmental emergencies.

[RI General Laws, Section 4-4-1 et seq](#) authorize the State Veterinarian (an office within the DEM DAG, Animal Health Unit) to quarantine, destroy, and regulate

domestic livestock to eradicate disease. [RI General Laws, Section 20-1-1 et seq.](#) assigns the DEM authority over fish and wildlife in the State.

Rhode Island's environmental response authority supplements certain federal legislation (e.g., [9 CFR Part 53](#) and [9 CFR Part 56](#)) that requires and authorizes the DEM Division of Agriculture to undertake emergency measures.

A caveat is that in the event of a disaster, as defined by [RI General Laws Section 30-15-1 et seq.](#), the DEM's emergency powers will be supplemented, and in some cases superseded, by the emergency powers of the Rhode Island Emergency Management Agency (RI EMA). Additionally, in the event of a disaster, the Governor has the authority to issue executive orders, proclamations, and regulations pursuant to [RI General Laws Section 30-15-7](#).

SITUATION

Poultry in Rhode Island

Rhode Island has approximately 60,000 birds in production and 30,000 birds in so-called "backyard" flocks, which includes farms with fewer than 500 birds and residences with poultry being raised for fairs, shows, and exhibition. Commercial production facilities are at the highest risk for disease, due to the large numbers of birds in confined areas and the movement of potentially contaminated vehicles and materials among farms. Backyard flocks and small farms can also be infected, especially through contact with birds, vehicles, or materials from commercial operations.

Avian Influenza

Avian Influenza (AI), like other highly contagious diseases of livestock and poultry, has the potential for rapid spread between birds and between flocks and farms. Transmission of the AI virus can occur through direct and indirect contact. Certain subtypes (especially H5, H7, or other subtypes that have serious animal/public health implications, and/or highly pathogenic AI) can have serious economic and public health consequences and are of major importance in international trade of animals and animal products.

The potential exists for a low pathogenic virus (LPAI) to mutate into a highly pathogenic virus (HPAI), as occurred in the Pennsylvania outbreak of 1983-84. The discovery of AI requires rapid response to contain infection through quarantine and movement control, and to eliminate the disease agent through testing and depopulation of infected and dangerous contact animals.

The Office of International Epizootics (OIE) maintains a list of transmissible diseases that have the potential for very serious and rapid spread, irrespective of national borders. These diseases have important consequences for socio-economic or public health as well as international trade of animals and animal products. For on-line information on [OIE notifiable diseases](#) in general, see http://www.oie.int/eng/maladies/en_classification2007.htm?e1d7 and on [Avian Influenza](#), see http://www.oie.int/eng/info_ev/en_AI_avianinfluenza.htm

Categories and Phases of AI Risk and Response

More severe disease outbreaks are more dangerous to public health and the environment. They entail more frequent and debilitating illnesses or mortalities as well as diminished capacities for containing and remediating the threat. Both the conditions of the outbreak (e.g., specific vectors, time of year, etc.) and the characteristics of the pathogen affect incident severity. In general, the level of response (its scale and intensity) will increase with the severity of the threat.

Avian Influenza (AI) viruses are normally classified by a combination of two groups of proteins found on the surface of the virus: hemagglutinin proteins (H), of which there are 16 (H1-H16), and neuraminidase proteins (N), of which there are 9 (N1-N9). These 25 types, in turn, encompass a total of more than a hundred strains.

AI strains also are divided into two groups based on the pathogenicity of the virus – the ability of the virus to produce disease. As a notifiable disease, Avian Influenza is defined as an infection of poultry caused by any influenza A virus of the H5 or H7 subtypes or by any AI virus with an intravenous pathogenicity index greater than 1.2 (or alternatively, at least 75% mortality in 4 to 8 week old chickens infected intravenously).

AI viruses can be divided into high pathogenicity notifiable Avian Influenza (HPNAI) and low pathogenicity notifiable Avian Influenza (LPNAI).

- Low Pathogenic Avian Influenza (LPAI): Most AI strains are classified as low pathogenic and cause few clinical signs in infected birds. LPAI generally does not pose a significant health threat to humans. However, LPAI is monitored because two strains of LPAI – the H5 and H7 strains – can mutate into highly pathogenic forms.
- Highly Pathogenic Avian Influenza (HPAI): This is a more pathogenic type of Avian Influenza that is frequently fatal to birds and easily transmissible between susceptible species. The strain that is currently of concern in Southeast Asia and Europe is the H5N1 HPAI virus.

A zoonotic disease is defined as an infectious disease that may be transmitted across species – from wild or domestic animals to humans or from humans to other animals. Many disease agents that affect animals are zoonotic and are capable of causing disease and death in humans. Depending upon the subtype, an Avian Influenza virus can be zoonotic and cause disease in humans. (The H5N1 subtype of Avian Influenza has recently caused human disease and death in Asia and other countries in addition to the mass culling of millions of poultry.)

A pandemic is a global outbreak of human disease. An influenza pandemic occurs after a new influenza A virus emerges, for which there is little or no immunity in the human population, when that virus begins to cause serious illness, and the virus then spreads easily person-to-person worldwide.

In [WHO Global Influenza Preparedness Plan](#) (2005)
 <http://www.who.int/csr/resources/publications/influenza/GIP_2005_5Eweb.pdf>,
 the World Health Organization organizes recommendations for response to AI
 around “periods” and “phases” of pandemic, as follows:

| Period | Phase | Risk to Public Health |
|-----------------------|---------|---|
| Inter-pandemic Period | Phase 1 | Low risk of human cases. No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human infection or disease is considered to be low. |
| | Phase 2 | Higher risk of human cases. No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk of human disease. |
| Pandemic Alert Period | Phase 3 | No or very limited human-to-human transmission. Human infection(s) with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact. |
| | Phase 4 | Evidence of increased human-to-human transmission. Small cluster(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans. |
| | Phase 5 | Evidence of significant human-to-human transmission. Larger cluster(s) but human-to-human spread is still localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk). |
| Pandemic Period | Phase 6 | Efficient and sustained human-to-human transmission. Pandemic: Increased and sustained transmission in the general population. |

An HPAI subtype of H5N1 has been in Phase 3 since 1993-4, but no one can be sure how long this phase will last or if the next one will be more or less severe. The [Current WHO Phase of Pandemic Alert](#) is available on-line at
 <http://www.who.int/csr/disease/avian_influenza/phase/en/>

Emergency Planning Matrix

The comprehensive emergency response plans most relevant to DEM's AI response are its [Animal Disease Plan](#) (ERP Section 6-9, to which this document is an Annex), [Animal Disaster / Animal Care Plan](#) (ERP Section 6-8), and [Continuity of Operation Plan](#) (ERP Section 6-14). These plans are implemented in proportion to the severity of the AI threat:

| WHO Assessment | | RI DEM Assessment | |
|-----------------------|-----------|-------------------|---|
| Period | Phase | Severity Level | DEM Strategy and Plan |
| Inter-pandemic Period | Phase 1 | Level 0 | Normal, Passive Disease Surveillance |
| | Phase 2 | Level 1 | Increased Readiness Consult Animal Disease Plan |
| Pandemic Alert Period | Phase 3-4 | Level 2 | Active Surveillance Use Animal Disease Plan |
| | Phase 5 | Level 3 | Containment Use Animal Disease Plan and Consult Animal Disaster Plan |
| Pandemic Period | Phase 6 | Level 4 | Eradication and Recovery Use Animal Disease Plan, Animal Disaster Plan, and Continuity of Operation Plan |

As risks to human health increase (Phase 5 or higher), DEM is apt to shift its role from leading to supporting unified State response. DEM will lead State response to an AI outbreak when the virus remains LPAI and even HPAI, as long as it is confined to agricultural livestock, pets, or wildlife. HEALTH will lead State response to AI infection or pandemic among humans.

Risk Assessment

In consultation with regional, national and/or international authorities, the RI State Veterinarian normally determines the severity of actual or potential outbreaks of zoonotic or highly contagious animal disease, which in turn determines the appropriate level of response. In general, the level of response will increase with the likelihood of infection, illness, or death within the state.

In the case of Avian Influenza, DEM response will normally be proportionate to the evidence of actual or likely AI fatalities among susceptible species. For example, typically:

- HPAI is of more concern than LPAI.
- H5 and H7 strains are of more concern than other strains of LPAI.
- Confirmed AI infections among poultry are of more concern than among wildfowl.
- Confirmed AI infections among mammals are of more concern than among birds.

For some strains of AI (e.g., H5N1 HPAI), the mere geographic proximity of the pathogen may be enough to raise the level of response.

Because of this variability among AI strains, the determination of incident severity depends on an assessment of both environmental vulnerabilities and the particular pathogen. Laboratory tests are likely to be as determinative as clinical evidence (for example, in estimating how likely a virus is to mutate into a more contagious, pathogenic, or zoonotic form). These are among the considerations that the State Veterinarian will normally discuss with USDA APHIS Veterinary Services in setting and readjusting assessments of incident severity and appropriate response.

Triggers and Strategies for Levels of Response to AI in Birds

| Response Level 0 – Normal, Passive Surveillance |
|---|
| Trigger: No confirmed HPAI infection in North America |
| <p>Strategy: Passive surveillance</p> <ul style="list-style-type: none"> • The RI DEM Division of Agriculture (DAG) and Division of Fish and Wildlife (DFW) maintain normal surveillance and readiness to respond to highly contagious or zoonotic disease. • DAG promotes biosecurity, especially among at-risk growers, and the reporting of suspicious livestock illness. • DAG inspects and certifies the health of livestock before interstate sales or shipment. • The State Veterinarian encourages and receives reports of suspicious illness among livestock • In cooperation with the USDA, APHIS, Veterinary Services, the State Veterinarian investigates suspicious livestock illness. |

| Response Level 1 – Increased Readiness |
|---|
| Trigger: Confirmed HPAI infection in North America, but not in the United States. |
| <p>Strategy: Level 0 plus increased surveillance:</p> <ul style="list-style-type: none"> • DAG and DFW increase surveillance and readiness to respond to highly contagious or zoonotic disease. • The State Veterinarian advises growers and private practice veterinarians to beware of specific clinical symptoms of HPAI. • Officers of RI DEM Division of Law Enforcement (EPOs) increase enforcement of verification of animal health certification of livestock in-transit. |

| Response Level 2 – Active Surveillance |
|---|
| Trigger: HPAI confirmed in the United States, but not in Rhode Island |
| <p>Strategy: Level 1 plus active surveillance:</p> <ul style="list-style-type: none"> • DEM reviews and updates, as necessary, disease response plans, response resources, and public information on HPAI. • The State Veterinarian suspends the import of affected or potentially affected animals from the impacted states, pending certified HPAI eradication in those states. • DAG notifies the public, poultry growers, and response partners – particularly the RI Department of Health (HEALTH) and USDA – of the disease threat and the results of surveillance of RI livestock. |

| Response Level 3 – Containment |
|---|
| Trigger: HPAI confirmed in Rhode Island |
| <p>Strategy: Level 2 plus containment measures:</p> <ul style="list-style-type: none"> • In cooperation with HEALTH, DAG and DFW issue warnings about safe handling of birds to avoid human infection. • The State Veterinarian issues a “stop animal movement” order, requiring state and local law enforcement to bar animal movement across state lines. • The State Veterinarian quarantines the site of any HPAI poultry infection and bars movement of all livestock to or from all agricultural premises within 2 miles of that site. • DAG issues an emergency order, requiring that all poultry growers practice biosecurity. • If HPAI is confirmed in migratory birds, DFW closes wildlife management areas to visitors or hunters. • In cooperation with response partners, DAG and DFW begin vigilant surveillance of all potential affected species with 5 miles of a confirmed infection. |

| Response Level 4: – Eradication and Recovery |
|---|
| Trigger: HPAI infection confirmed in several, dispersed sites (e.g., at least one case in two different counties). |
| <p>Strategy: Level 3 plus eradication and recovery measures</p> <p>In cooperation with response partners, DEM requests that the Governor issue an appropriate emergency declaration.</p> <p>DEM joins emergency partners in incident command to respond to the HPAI outbreak.</p> <p>DAG requests USDA assistance to eradicate HPAI.</p> <p>DAG declares that all poultry operations that do not have sufficient biosecurity are subject to preemptive depopulation. (Those that are not NPIP participants may not be indemnified.)</p> <p>Depopulate and properly dispose of infected and contact or epidemiologically linked poultry flocks.</p> <p>Establish biosecurity and testing measures to allow for certification of livestock health.</p> <p>Support recovery of commercial poultry operations.</p> |

Public Health Issues

Under normal circumstances, AI – particularly LPAI – does not present a significant threat to human health. But in the event that a zoonotic subtype is identified in Rhode Island, the risks of a pandemic may greatly increase. In all such risks of communicable human disease, the State Department of Health (HEALTH) will lead State response, and DEM will be a support agency. DAG will work closely with HEALTH to protect public health and the health of response personnel while eliminating the disease as rapidly as possible. See the HEALTH website on [Pandemic Flu](http://www.health.ri.gov/pandemicflu/) <<http://www.health.ri.gov/pandemicflu/>> and [DEM-HEALTH MOU Concerning Outbreaks of HPAI](#) (6-9-AI-MOU01 in the DEM ERP). People who work with poultry should also refer to the appendix of this document.

ORGANIZATION

Direction and Control

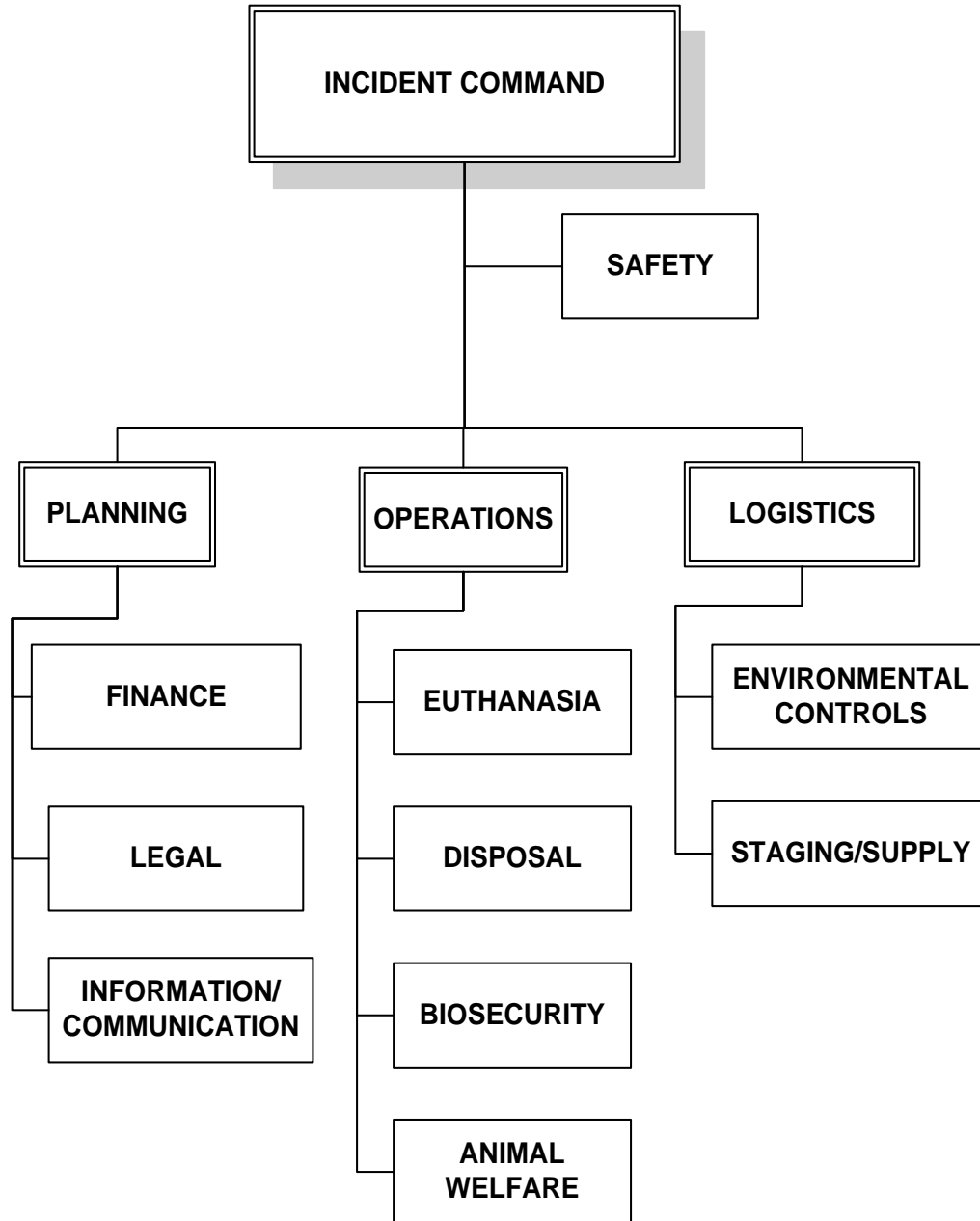
- The Chief of the DEM Division of Agriculture (DAG), the State Veterinarian, and the USDA Veterinary Services District Director will jointly provide direction and leadership during an outbreak of Avian Influenza. To the extent of each authority, they will provide Unified Incident Command.
- Collection of samples for testing will be coordinated by the DAG Animal Health Unit, under the direction of the State Veterinarian.
- Testing of samples will be done at Connecticut Veterinary Medical Diagnostic Laboratory (CVMDL) at the University of Connecticut. The laboratory is accredited by the American Association of Veterinary Laboratory Diagnosticians and is approved by USDA APHIS to perform official tests, including PCR as well as AGID, virus isolation, and necropsy. (Refer to [Tests for Diagnosis of AI](#) in the appendix of this document -- -- 6-9-AI-App03 in the DEM ERP -- for descriptions of AI tests.) In accordance with USDA APHIS NVS protocols, confirmatory testing/subtyping will normally be done at the National Veterinary Services Laboratory (NVSL) in Ames, Iowa.
- If criminal activity is suspected, officials will notify State and/or Local law enforcement.
- If terrorist activity is suspected, officials will notify the FBI.
- Members of the standing State [Animal Emergency Disease Management \(EDM\) Committee](#) (6-9-AI-App 01 of the DEM ERP) meet on a regular basis throughout the year and are involved in Avian Influenza response planning and exercises. The Committee is administered by a DAG employee, in consultation with the DEM Office of Emergency Response. The committee also consults representatives from support agencies and organizations. The Committee ensures that emergency response personnel in the DEM are trained according to National Incident Management System (NIMS) standards and that all emergency plans are compatible with the National Response Plan (NRP).

Incident Management

The RI Department of Environmental Management has adopted the Incident Management System for emergency response, which will be utilized to respond to an outbreak of Avian Influenza in the State. The DEM flow chart may be modified as necessary to allow efficient response to an outbreak of AI and may utilize personnel from other departments, agencies, and organizations.

Normally, when infection is limited to LPAI in poultry, DEM will provide the Incident Commander, who will direct Planning, Operations and Logistics. The Planning Section will develop the Incident Action Plans and coordinate Finance, Legal, Communications and Information activities. The Operations Section will implement euthanasia, animal welfare, disposal and biosecurity/safety protocols according to Incident Action Plans that the Incident Commander approves. The Logistics Section will stage supplies and environment controls. Staffing will be provided by the appropriate personnel of the RIDEM, DAG, USDA APHIS, LREF and Contracted Vendors.

For an LPAI outbreak on a commercial poultry operation, DEM anticipates the following command structure. Incident Command will draw leadership for these positions from DEM and Regional USDA APHIS, beginning with notification of the standing State [Animal Emergency Disease Management \(EDM\) Committee](#) (6-9-AI-App 01 of the DEM ERP)



Premises Identification and GIS

The ability to rapidly identify an AI-infected flock, trace its origin and movements, and identify contact animals, is vital to epidemiological investigation and effective response to disease. The Department will utilize all available information, including Global Positioning System (GPS) coordinates and mapping, to identify poultry premises located within Controlled Zones. This information will allow DAG to notify poultry owners of recommended enhanced-biosecurity measures, in addition to testing requirements and animal movement restrictions.

CONCEPT OF OPERATIONS

Prevention (reducing the risk of the introduction and/or spread of AI)

Reducing the risk of the introduction and/or spread of AI in the State is a cooperative effort and is dependent upon interaction among poultry disease experts, the USDA, the RI DEM Division of Agriculture (DAG), certified laboratories, and the State's poultry growers. Prevention is maximized through a combination of education of poultry producers, biosecurity, importation requirements, and surveillance testing.

Statewide education initiatives include mailings to poultry producers to provide updates on poultry programs and biosecurity recommendations. The DAG participates regularly in meetings of groups with stakes in various domestic and wild birds. The DAG produces, updates and circulates materials to publicize poultry regulations and programs. Commercial poultry producers receive updates concerning AI and poultry program information through routine mailings as well as direct contact with the Office of the State Veterinarian.

DAG veterinarians and veterinary technicians conduct biosecurity training as needed for live bird market owners and employees and for distributors sending birds into the live bird market system.

Preparation (for identifying, containing, and eliminating AI in the State):

Preparing for AI in the State requires development of response plans and partnerships among agencies, organizations, and individuals, as well as training in Incident Management, Personal Protection Equipment (PPE), recognition of disease, and response. Preparation also requires rapid and accurate diagnostic capabilities at the Connecticut Veterinary Medical Diagnostic Laboratory and the National Veterinary Services Laboratory and capabilities/plans for rapid communication among partners. The DEM is a member of the State Avian Flu Working Group and participates in planning meetings involving numerous agencies and organizations in the State. The goals of this Working Group include coordinating preparations for an AI outbreak in Rhode Island. Coordinated messages for the public emphasize information about the virus, including potential zoonosis (e.g., transmission from birds to humans); response plans of participating agencies, and steps that may be taken to reduce the size of an outbreak, including decreasing social movements, preparing an emergency food supply in the home, planning for livestock and companion animals, etc.

Educational messages stress the fact that the finding of AI in poultry or in wild birds does not necessarily mean that human illness will follow. Messages also stress that human illness due to AI does not necessarily mean that a pandemic will follow. The DAG has also encouraged discussion of continuity of business plans, especially in poultry and poultry-related industries. Since DAG's response to AI in poultry includes quarantine, discussions focus on alternate plans for keeping products moving in the event of widespread quarantine. Overall, the interaction between agriculture, public health, law enforcement, and emergency

management agencies in Rhode Island is ongoing and is important to integrated planning and response to any AI outbreak.

The DEM Office of Communications and Media Relations has tasked a representative to be the point of contact with the public in any AI outbreak situation. This spokesperson utilizes a point person within the DAG Animal Health Unit as a subject matter expert.

Response (to an incident of AI in the State):

COMMUNICATIONS

Response to an incident of AI in the State involves rapid and accurate communications with partners and stakeholders as well as rapid and accurate diagnosis, containment, and elimination of the virus. The DAG Animal Health Unit utilizes an internal and external contact lists for reporting of every AI investigation in Rhode Island poultry. The LPAI lists are expanded to include additional stakeholders for a HPAI and/or zoonotic incident.

When a certified laboratory test identifies an AI suspect flock in Rhode Island, a laboratory representative notifies the Office of the State Veterinarian in DAG. A representative of the Office of the State Veterinarian notifies the USDA District Director and an alternate USDA contact. Other key stakeholders may also be contacted, including HEALTH, but generally only if there is any reason to anticipate an effect on human public health. Owners of flocks on properties contiguous to the suspect flock as well as State Veterinarians in surrounding states may also be notified. Refer to the protocol [Notification of Contiguous Flocks](#) (6-9-AI-P08 in the DEM ERP) appended to this document.

If the DAG Animal Health Unit determines that the outbreak is going to require assistance from other agencies, or if it is determined that the incident entails HPAI and/or zoonotic AI, the RI EMA will be notified and the levels of response for a highly contagious disease may be implemented. If the DAG Animal Health Unit determines that the outbreak involves a subtype that could impact public health, the Rhode Island HEALTH will be notified. Notifications are conducted via email and/or telephone, depending upon the situation. Updates are provided on each investigation as additional information is available until the investigation is closed.

The official determination of a flock as positive for H5/H7 is made only by the National Veterinary Services Laboratories (NVSL).

RESPONSE PLAN EXECUTION

The strategy for dealing with AI may vary depending upon the virus subtype and industry sector involved. Therefore, rapid and accurate diagnosis is important. H5, H7, and other subtypes which may pose a serious threat to animal and/or human health will, in most circumstances, be handled differently than other

subtypes. Highly pathogenic AI may be handled differently than low pathogenic AI.

In an emergency, a flock plan template will be drafted by DAG with input from USDA APHIS, and the Poultry Advisory Committee and will be utilized as needed for individual flocks. The template will be derived from the current version of this AI Response Plan.

In the event of an AI outbreak, a written flock plan will be provided to poultry flock owners to outline the steps to be taken to eradicate H5/H7 LPAI from a positive flock or to prevent introduction of H5/H7 LPAI into another flock. A flock plan shall include, but is not necessarily limited to, poultry and poultry product movement and geographically appropriate infected and control/monitoring zones. Control measures in the flock plan should include detailed plans for safe handling of conveyances, containers, and other associated materials that could serve as fomites; for disposal of flocks; for cleaning and disinfection; for downtime; and for repopulation.

QUARANTINE AND MOVEMENT CONTROL

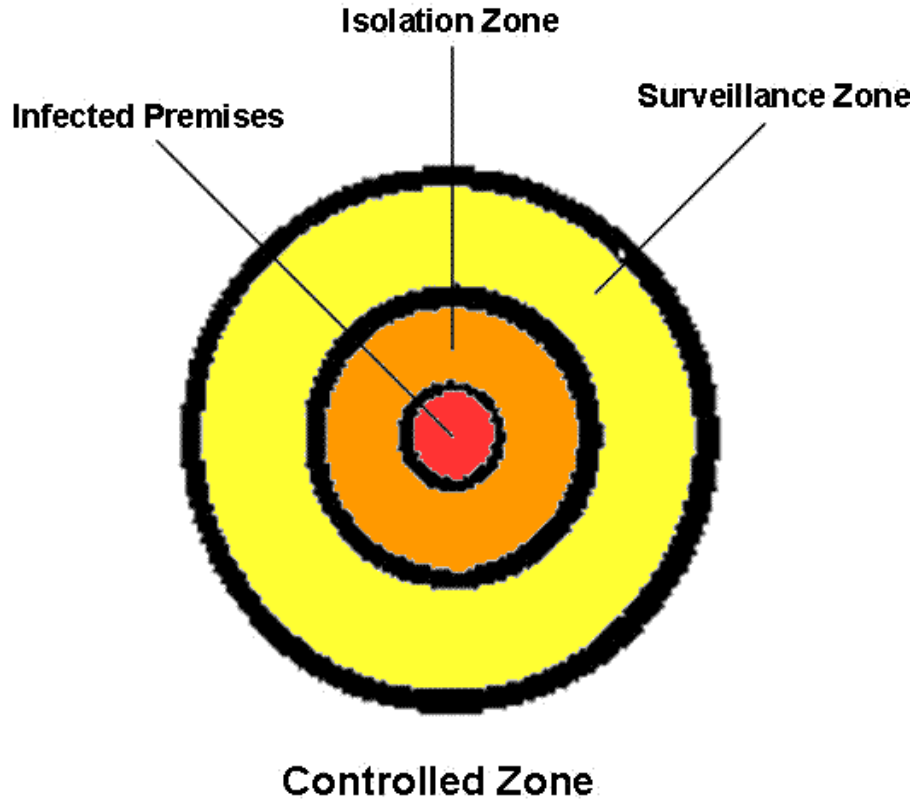
Note: See Appended Protocols

- Authority to Quarantine

State and Federal regulatory officials have authority to impose quarantines or hold orders and to impose testing requirements for importation of poultry. Generally, State quarantines are imposed on individual flocks and premises when AI is suspected. State quarantines are used to control intrastate movements. Federal quarantines are used to stop interstate movement of poultry. Both Federal and State quarantines may be used simultaneously. Refer to the appendix of this document for protocols.

- Controlled Zone

The initial response to the identification of AI in the State is quarantine and movement control with a Controlled Zone, which may be followed by depopulation and disposal of infected and exposed poultry, cleaning and disinfection of the poultry houses, and cleaning and disinfection or disposal of contaminated products and materials, on infected and dangerous contact (exposed) premises. The initial zones will normally be established as follows:



A Controlled Zone (CZ) consists of a Surveillance Zone and an Isolation zone surrounding an Infected Premises. A CZ will be established to ensure the rapid and effective containment of the disease. Initially, all susceptible animal movement within the Controlled Zone will be stopped for a period long enough to determine the scope of the disease outbreak. The potential modes of transmission (e.g., aerosol, water, direct contact, fomites, vectors, etc.) should be considered when determining the minimum size and shape of the CZ. Movement control through the use of permits should be maintained until the disease is eradicated.

Isolation Zone

In an AI outbreak, the Isolation Zone (IZ) will encompass all Presumptive or Confirmed Positive Premises and include as many of the Contact Premises as the situation logistically or scientifically requires. The boundary of the IZ initially should be at least 2 miles beyond the perimeters of the Presumptive or Confirmed Infected Premises. The boundaries can then be modified (either expanded or reduced) as new information becomes available. The actual distance in any one direction is determined by factors such as known characteristics of the pathogen, terrain, the pattern of livestock movements, livestock concentrations, weather, prevailing winds, the distribution and movements of susceptible wild and feral animals, processing options (flocks and products), and effect on non-risk commodities. Boundaries of the IZ can be modified when tracing and surveillance results become available and other factors become better defined.

Susceptible animals from outside an IZ should not move into or through an IZ unless they are going to slaughter inside the IZ. Livestock

conveyances should be rerouted prior to reaching the IZ. Quarantine and movement controls will be imposed to ensure that any product from an infected or exposed animal is properly disposed of and any suspect product is detained.

Activities in an IZ include:

- Conduct epidemiological investigations.
 - Identify trace-ins and trace-outs.
 - Determine source(s) of infection.
- Enforce movement restrictions.
 - Prevent susceptible animals from leaving the IZ except if going directly to slaughter in an approved establishment located in the IZ and meeting conditions described on a permit to move.
 - Prevent products from susceptible animals from leaving the zone, unless the DAG determines that such movement can be permitted.
 - Prevent movement of vehicles, equipment, and non-susceptible animals out of the zone, unless DAG-designated biosecurity procedures are followed and a DAG permit is issued.
 - Conduct a public awareness campaign to increase compliance with movement restrictions.

Surveillance Zone

A Surveillance Zone (SZ) should be established between of the Isolation Zone and the Free Zone. Surveillance in the SZ will focus on premises determined to be at the highest risk of infection. The boundary of the Surveillance Zone should normally begin 2 miles from Infected Premises and extend 5 miles beyond them.

Activities in the Surveillance Zone include:

- Increase biosecurity measures required for movement of vehicles, equipment, and susceptible animals.
- Increase monitoring (surveillance) of flocks.
- Conduct a public awareness campaign to increase compliance.

Free Zone

A Free Zone (FZ) is an area outside the CA and in which no infection has been detected.

Activities in free zone include:

- State and Federal regulation of the production and movement of animals and animal products.
- Routine surveillance and monitoring of highly contagious disease by the DAG.

The size of these zones and attendant activities are subject to change as determined by DAG in cooperation with USDA APHIS to allow rapid and efficient containment and elimination of the virus. For example, initial response to the discovery of LPAI (in advance of typing) will normally entail establishing a single, large (e.g., 5-mile radius) surveillance zone around the LPAI-infected premises. If LPAI is type H5N7 or if HPAI is indicated, DAG will normally establish both a 2-mile radius isolation zone and

- Epidemiology/Tracing

Epidemiologists will gain an understanding of the characteristics of the disease, identify risk factors, provide information to authorities on control measures, and monitor the effectiveness of implemented control measures. The standard surveillance plan may be modified for each situation.

Epidemiologists will conduct rapid trace back and trace forward investigations of infected and potential contact (exposed) flocks to identify the origin of disease and identify infected and exposed flocks. Tracing will target movements to and from premises under investigation, including movement of susceptible and non-susceptible animals, products, equipment, vehicles, and people. The actual index premises will be identified, if possible. Refer to the protocol [Testing Trace-Back Trace-Forward Flocks for AI Status](#) (6-9-AI-P20 in the DEM ERP) in the appendix of this document. Flocks identified as “dangerous contact” flocks will be required to undergo testing. Refer to the protocol [Testing Contact Flocks for AI Status](#) (6-9-AI-P19 in the DEM ERP) in the appendix of this document. Wildlife and other vectors, both mechanical and biological, will be considered in the investigation.

- Surveillance

Initial submission of samples for surveillance testing of flocks within the 2-mile Isolation Zone will be required within 48 hours after the announcement from DAG. Initial samples required are tracheal/oropharyngeal or cloacal (waterfowl) swabs for virus detection testing (PCR/virus isolation). Initial swab samples may be replaced by blood samples for birds destined for slaughter or live bird market but not within 6 weeks, as per protocol. For birds destined for slaughter or for live bird market within 6 weeks, only swab samples will be accepted, as per protocol.

Initial submission of samples for surveillance testing of flocks within the general quarantine area will be required within 72 hours after the announcement from DAG. Initial samples required are tracheal/oropharyngeal or cloacal (waterfowl) swabs for virus detection testing PCR/virus isolation). Initial swab samples may be replaced by blood samples for birds destined for slaughter or for live bird market but not within 6 weeks, as per protocol. For birds destined for slaughter or for live bird market within 6 weeks, only swab samples will be accepted, as per protocol. Refer to the protocols [Testing In the Controlled Zone for Birds Not Destined for Slaughter](#) (6-9-AI-P22 in the DEM ERP) and [Testing In the Controlled Zone for Birds Destined for Slaughter or LBM](#) (6-9-AI-P21 in the DEM ERP) in the appendix of this document.

The option of leaving dead birds in leak-proof containers at the end of farm lanes for swabbing by government-authorized personnel may be offered. If swabbing (and/or blood sample collection) is done in-house, all samples must be collected by government-authorized personnel.

Surveillance at live bird markets and dealer premises will also be conducted as needed to complete a thorough investigation. Refer to the protocols [Surveillance](#)

[of RI Poultry Markets Outside of a Quarantine Zone](#) (6-9-AI-P18 in the DEM ERP) and [Poultry Dealer Premises-Inspection Report](#) (6-9-AI-P16 in the DEM ERP) in the appendix of this document.

- Biosecurity

DAG, USDA, and other authorized personnel will follow strict biosecurity guidelines within Controlled Zones and when entering and leaving a poultry premises to reduce the risk of spreading disease. Refer to the protocols [Infection Protection for Workers](#) (6-9-AI-App04 in the DEM ERP), [Comparison of Air-Purifying Respirators](#) (6-9-AI-App05 in the DEM ERP) in the appendix to this document.

The DAG has identified minimum daily biosecurity practices and recommended them to the poultry industry. Flock owners/managers are encouraged to adopt these practices and additional practices as needed for each flock. Refer to the protocols [Biosecurity Recommendations for Reducing Everyday Risk of Introduction of Disease into a Poultry Flock](#) (6-9-AI-P01 in the DEM ERP) and [Biosecurity Measures for Visitors to Poultry Farms](#) (6-9-AI-P02 in the DEM ERP) in the appendix of this document. Recommendations for enhanced biosecurity practices during an outbreak of AI have also been made available to the poultry industry to protect their flocks during an outbreak. Refer to the protocol [Biosecurity Measures to Reduce Risk of AI During an Outbreak](#) (6-9-AI-P03 in the DEM ERP) in the appendix of this document.

- Personnel Safety

All personnel responding to contain and eradicate AI will be provided with proper personal protective equipment (PPE) and will be trained in its proper use.

In the event of a zoonotic AI outbreak, The RI HEALTH will advise on issues of personnel safety among responders to the outbreak. Normally, only responders who have been medically cleared, fit tested, and trained in the proper use of respiratory PPE will be allowed to enter a Hot Zone. Medical clearance, fit testing, and training for the use of respiratory protection is underway and will be ongoing for key DEM personnel. Refer to the protocols [Testing in the Controlled Zone for Birds Not Destined for Slaughter](#) (6-9-AI-P22 in the DEM ERP) and [Testing in the Controlled Zone for Birds Destined for Slaughter or LBM](#) (6-9-AI-P21 in the DEM ERP) and [DEM-HEALTH MOU Concerning Outbreaks of HPAI](#) (6-9-AI-MOU01 in the DEM ERP) in the appendix of this document.

- Euthanasia

Euthanasia of condemned poultry must be carried out as rapidly and humanely as possible, using methods approved by the AVMA and USDA APHIS. Carbon dioxide is an option for poultry and certain livestock and has been used successfully in Rhode Island to euthanize large numbers of poultry. In 2006, the AVMA announced support of the use of water-based foam as a method of mass depopulation for floor-reared poultry (broiler chickens and turkeys) in accordance with the conditions and performance standards outlined by USDA APHIS. Mass

foam euthanasia may be approved for use on other types of poultry as more information becomes available.

Euthanasia will be conducted on site to minimize the risk of spreading disease. The most appropriate method of euthanasia for each location must be determined with consideration of the following factors:

- Safety of personnel;
- Risk of spreading disease;
- Age/size of the birds;
- Environment and confinement capabilities;
- Requirement and availability of specialized equipment/training;
- Public perception/acceptance; and
- Environmental impact.

See the protocol [Preparation for Euthanasia of Livestock in Disease Eradication](#) appended to the DEM Animal Disease Response Plan (6-9-4 in the DEM ERP) and [AVMA Guidelines on Euthanasia](#) <http://www.avma.org/issues/animal_welfare/euthanasia.pdf>

- Disposal of Poultry and Products

Poultry, poultry products, litter/manure, and other materials associated with the poultry on an infected or exposed premises will be disposed of. If feasible, certain materials may be cleaned and disinfected. Poultry carcasses, litter/manure, and other contaminated materials on-premises will be disposed of as soon as possible after the death of the flock. Disposal will be done in a manner that will minimize the risk of spreading disease and that will have minimal negative impact on the environment. For details on disposal methods, refer to the protocol [Disposal](#) (6-9-AI-P37 in the DEM ERP) in the appendix of this document.

The following options will be considered and the best option for each situation will be chosen and must be approved by the State veterinarian in consultation with the appropriate divisions of DEM:

- On-site composting:
Onsite composting (controlled decomposition of organic materials) has been proven effective for disposal of poultry and materials in an AI outbreak. HPAI may be inactivated in 3 hours at 132 degrees F or in a half-hour at 140 degrees F. On-site composting is often preferable over landfill disposal because it reduces the potential for virus transmission during carcass transport and because it can be less expensive. It is also often preferable over burial, because it reduces the risk of groundwater and air contamination. Additionally, it offers the benefit of producing compost, which is considered to be a useful product. Refer to the protocol [In-House Composting of AI Carcasses](#) (6-9-AI-P38 in the DEM ERP) in the appendix of this document, and see U.S. Environmental Protection Agency, [Disposal of Domestic Birds Infected by Avian Influenza An Overview of Considerations and Options](#) (EPA530R06009, August 11, 2006) <<http://www.epa.gov/epaoswer/homeland/flu.pdf>>. On-site composting will be considered as an option for disposal of dead birds and if utilized, producers will be provided with guidance on proper

composting methods and collection of necessary materials. The composting process will be monitored by the DEM.

- On-site burial:
Due to considerations of topography, soil type, water-table levels, etc, burial on-site may be done only in cooperation with the DEM. Refer to the protocol [Disposal](#) (6-9-AI-P37 in the DEM ERP) in the appendix of this document.
- Off-site landfills:
Birds and materials may be buried in solid waste landfills. For transport of carcasses to a landfill, carcasses must be contained in vehicles that minimize the possibility of leakage and aerosol dispersal and that can be readily cleaned and disinfected. Handling of carcasses should be kept to a minimum and should not take place in windy conditions. In Rhode Island, the DEM oversees landfill operations and its personnel in DEM will assist with landfill disposal, as needed. The State maintains contracts hazardous waste cleanup and transport companies for assistance with disposal of biohazards and related materials. These companies have worked with the Rhode Island Resource Recovery Corporation (RIRRC) and may assist with disposal at landfills, as needed. As needed, Incident Command will task Logistics with contacting trucking companies with landfill access. The DAG will continue to support investigation of other methods of disposal, such as incineration, rendering; and chemical digestion. Refer to the protocols [Disposal](#) (6-9-AI-P37 in the DEM ERP), [Transport of AI-Positive Flocks or AI-Infected Materials for Off-Site Disposal](#) (6-9-AI-P36 in the DEM ERP), and [DEM-RIRRC Model MOU Concerning Landfill Disposal of LPAI Waste](#) (6-9-AI-MOU02 in the DEM ERP) in the appendix of this document.

- Handling of Litter/manure

Litter/manure in a poultry facility with a flock positive for H5/H7 must be handled appropriately after the flock has been removed to minimize the risk of spreading AI. Refer to the protocol [Handling Litter, Cleaning and Disinfection for Revocation of Quarantine](#) (6-9-AI-P31 in the DEM ERP) in the appendix of this document.

- Environmental Testing

Environmental testing of poultry houses is required to ensure that cleaning and disinfection have been effective and that new flocks are placed in an AI -negative environment. Refer to the protocols [Sampling Commercial Poultry Houses for AI](#) (6-9-AI-P17 in the DEM ERP) and [Sampling Small Flock Poultry Houses for AI](#) (6-9-AI-P15 in the DEM ERP) in the appendix of this document. Environmental testing of crate washing facilities is necessary because crate washing facilities may pose a special biosecurity risk. Dirty crates may be shipped to the facility from many different locations, including live bird markets. Clean crates may leave the facility to transport birds to many different locations, including live bird markets. Refer to the protocol [Response to AI-Positive Crate Washing Facilities](#) (6-9-AI-P34 in the DEM ERP) in the appendix to this document.

- Cleaning and Disinfection Requirements

Premises, conveyances, and materials that have been in contact with infected or exposed poultry must be cleaned and disinfected. If the cost of cleaning and disinfection of certain materials would exceed the value of the materials, or if cleaning and disinfection would be impractical for any other reason as determined by DAG or USDA APHIS, those materials may be destroyed. Standard cleaning and disinfection must be done with disinfectants approved by DAG and USDA APHIS, and each cleaning and disinfection must be approved after completion by DAG or USDA APHIS officials. Refer to the protocol [Cleaning and Disinfection of AI-Positive Premises](#) (6-9-AI-P32 in the DEM ERP) in the appendix of this document. These recommendations were taken from [9 CFR Part 56](#). See also the protocol [Disinfectants for FMD – For Field Use](#) (6-9-FMD2 in the DEM ERP) and [MSDS for Virkon](#).

- Valuation/Indemnity

Poultry and products/materials that are condemned by DAG, HEALTH, and/or USDA APHIS and destroyed as part of the disease eradication effort will be eligible for a fair market value appraisal for indemnification purposes. Cleaning and disinfection costs may also be indemnified. In accordance with [9 CFR Part 56](#) (referenced below), USDA APHIS may pay indemnity for the following activities:

- Destruction and disposal of poultry that were infected with or exposed to H5/H7 LPAI;
- Destruction of any eggs destroyed during testing of poultry for H5/H7 LPAI during an outbreak of H5/H7 LPAI; and
- Cleaning and disinfection of premises, conveyances, and materials that came into contact with poultry that were infected with or exposed to H5/H7 LPAI; or, in the case of materials, if the cost of cleaning and disinfection would exceed the value of the materials or cleaning and disinfection would be impracticable for any reason, the destruction and disposal of the materials.

Poultry: Indemnity for the destruction of poultry infected with or exposed to H5/H7 LPAI will be based on the fair market value of the poultry, as determined by an appraisal. Poultry infected with or exposed to H5/H7 LPAI that are removed by USDA APHIS or DAG from a flock will be appraised by a USDA APHIS official appraiser and a State official appraiser jointly, or, if USDA APHIS and State authorities agree, by either a USDA APHIS official appraiser or a State official appraiser alone. For laying hens, the appraised value should include the hen's projected future egg production.

Appraisals of poultry must be reported on forms furnished by USDA APHIS and signed by the appraisers and must be signed by the owners of the poultry to indicate agreement with the appraisal amount. Appraisals of poultry must be signed by the owners of the poultry prior to the destruction of the poultry, unless the owners, USDA APHIS, and DAG agree that the poultry may be destroyed immediately. Reports of appraisals must show the number of birds and the value per head.

Disposal: Indemnity for disposal of poultry infected with or exposed to H5/H7 LPAI will be based on receipts or other documentation maintained by the claimant verifying expenditures for disposal activities authorized by [9 CFR Part 56](#). Any disposal of poultry infected with or exposed to H5/H7 LPAI for which compensation is requested must be performed under a compliance agreement between the claimant, DAG, and USDA APHIS. USDA APHIS will review claims for compensation for disposal. If disposal is performed by DAG, USDA APHIS will indemnify DAG for disposal under a cooperative agreement. The destruction and disposal of the indemnified poultry must be conducted in accordance with the initial State response and containment plan for H5/H7 LPAI.

Eggs: Indemnity for eggs destroyed during an outbreak for testing for H5/H7 LPAI will be based on the fair market value of the eggs, as determined by an appraisal. Eggs destroyed for testing for H5/H7 LPAI will be appraised by a USDA APHIS official appraiser and a State official appraiser jointly, or, if USDA APHIS and State authorities agree, by either a USDA APHIS official appraiser or a State official appraiser alone. Appraisals of eggs must be reported on forms furnished by USDA APHIS and signed by the appraisers and must be signed by the owners of the eggs to indicate agreement with the appraisal amount. Appraisals of eggs must be signed by the owners of the eggs prior to the destruction of the poultry, unless the owners, USDA APHIS, and DAG agree that the eggs may be destroyed immediately. Reports of appraisals must show the number of eggs and the value per egg.

Cleaning and Disinfection: Indemnity for cleaning and disinfection of premises, conveyances, and materials that came into contact with poultry that are infected with or exposed to H5/H7 LPAI will be based on receipts or other documentation maintained by the claimant verifying expenditures for cleaning and disinfection activities authorized by this part. Any cleaning and disinfection of premises, conveyances, and materials for which indemnity is requested must be performed under a compliance agreement between the claimant, DAG, and USDA APHIS. USDA APHIS will review claims for indemnity for cleaning and disinfection.

Materials Destroyed: In the case of materials, if the cost of cleaning and disinfection would exceed the value of the materials or cleaning and disinfection would be impracticable for any reason, indemnity for the destruction of the materials will be based on the fair market value of those materials, as determined by an appraisal. Materials will be appraised by a USDA APHIS official appraiser and a State official appraiser jointly, or, if USDA APHIS and State authorities agree, by either a USDA APHIS official appraiser or a State official appraiser alone.

- Strategic Vaccination

Vaccination of poultry in Rhode Island may be considered as part of the AI eradication effort. Vaccination may be considered only with approval from USDA APHIS and DAG. Many factors must be considered before vaccination may be implemented, including availability, resources, trade and economic impact, etc. Refer to the protocol [AI Vaccination Strategy](#) (6-9-AI-P35 in the DEM ERP) in the appendix of this document.

- Controlled Marketing

Infected or exposed poultry may be transported for controlled marketing only under the following conditions:

- Poultry infected with or exposed to H5/H7 LPAI will not be transported until at least 21 days after the acute phase of infection has concluded, as determined by DAG.
- Each flock to be transported for controlled marketing must test negative on a DAG-approved test within the 7 days prior to the date of movement.
- Flock owners will not be eligible for indemnity of marketed birds.

For testing requirements for movement of birds, refer to the protocols [Moving Birds to Slaughter from Test-Negative Flocks](#) (6-9-AI-P29 in the DEM ERP) and [Moving Birds Not to Slaughter from Test-Negative Flocks](#) (6-9-AI-P30 in the DEM ERP) in the appendix of this document.

For requirements for movement of eggs, refer to the protocols [Disposition of Eggs from Non-Quarantined Flocks](#) (6-9-AI-P27 in the DEM ERP) and [Disposition of Eggs From a Quarantined Flocks](#) (6-9-AI-P28) in the appendix of this document.

- Wildlife Management

If it is determined that wildlife may play a role in the spread of disease, USDA Wildlife Services will lead wildlife surveillance and control.

Recovery:

Recovery actions necessary following an AI outbreak will depend upon the extent of the outbreak, the subtype involved, and other factors. Basic recovery initiatives involve the following:

- Partnerships with other agencies and organizations:
The DAG partners with other key agencies and organizations throughout all components of planning for an Avian Influenza outbreak, including prevention, preparation, response, and recovery.
- Plan review and revision:
The AI response plan is reviewed and revised as needed, as protocols are utilized, and as new information becomes available.
- Indemnification:
Indemnification is also included in the response section because it must be considered before depopulation occurs. Indemnity funds will be vital to allow Rhode Island's poultry industry to recover from an AI outbreak.
- Restocking:
Restocking will be allowed after quarantines have been released and DAG has determined that the threat of AI infection on a premises has passed.

The RI DEM Division of Agriculture reserves the right to amend the above mentioned requirements for Avian Influenza with the goal of any changes still being to prevent, contain and eliminate the disease. Changes to the general guidelines of the protocol may result from information including, but not limited to, virus strain, pathogenicity, morbidity and mortality, movement of birds and products, and additional epidemiological information obtained as a result of avian influenza investigations.