

Colorado Department of Agriculture Poultry Emergency Disease Plan

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Colorado Department of Agriculture Poultry Emergency Disease Plan

1. Introduction

In the event that there is an outbreak of a poultry disease significant to Colorado, a cooperative response between Colorado's Department of Agriculture, USDA and the poultry industry may be required in order to detect, contain, and eradicate the disease and complete the recovery phase of the incident.

This Colorado Poultry Emergency Disease Plan will be applicable to any poultry disease that causes significant morbidity or mortality in commercial or back yard poultry. At this time the diseases of concern would be Avian Influenza, Exotic Newcastle Disease or any other new, emerging or reportable disease that causes significant economic losses to the poultry industries of Colorado.

This plan would also be used in the event that other new or emerging poultry diseases of significant concern become prevalent in Colorado. While this plan primarily addresses HPAI, the prevention, protection, response and recovery aspects of emergency management to this disease would likely be applicable to many other highly infectious poultry diseases. Sections specific to the National Poultry Improvement Plan (NPIP) H5/H7 Low Pathogenic Avian Influenza (LPAI) Monitoring Program are also included to satisfy the basic requirements of the NPIP H5/H7 LPAI Monitoring Program of active surveillance, passive/diagnostic surveillance, and initial response and containment plan.

1.1 High Pathogenic Avian Influenza

Avian influenza (AI) is a viral infection of birds caused by type A influenza viruses. AI viruses are classified as either highly pathogenic AI (HPAI) or low pathogenic AI (LPAI), based on the genetic features of the virus and the severity of disease in poultry. Of particular concern are the H5 and H7 subtype viruses. While most AI viruses are LPAI and usually result in mild or asymptomatic infections, HPAI viruses are associated with very high morbidity and mortality rates in poultry. Some LPAI virus strains are capable of mutating under field conditions into HPAI viruses.

High Pathogenic Avian Influenza is caused by type A influenza viruses of the family *Orthomyxoviridae*. The designation of highly pathogenic is determined by meeting criteria for specific genetic sequences and/or pathogenicity in poultry. The disease is transmitted directly through aerosol and fecal-oral routes and indirectly from contaminated clothing, equipment and vehicles. Incubation is

from 1 to 7 days with morbidity and mortality ranging from 70 to 100%. Clinical signs include a severe drop in egg production, severe depression, anorexia, watery diarrhea, facial edema, cyanosis of the combs and wattles, and sometimes sudden death.

AI viruses are often found in migratory waterfowl, which may serve as a natural reservoir for the influenza A viruses. The reservoir of AI virus in wild birds should be considered a major source of infection for domestic birds, particularly free and open range poultry. Therefore, it is important to reduce the contact between these two groups. Live bird markets are another important reservoir of influenza viruses for commercial poultry.

1.2 Low Pathogenic Avian Influenza (LPAI)

LPAI may present with very mild to moderate clinical signs. The clinical signs of LPAI are similar but less severe and notable as with the HPAI disease. It is likely that the response to a LPAI H5 or H7 outbreak may be very similar to that of a HPAI virus, due to the potential of the virus to mutate to a high pathogenic form. Vaccination upon approval of state and federal animal health officials may be an effective tool in response to a LPAI disease outbreak. The NPIP has approved both depopulation and vaccination in conjunction with enhanced biosecurity, and active surveillance as acceptable methods of eradication of H5 or H7 LPAI. Both options will be considered based on the epidemiological risk assessments, economic impact on the State and upon the joint agreement of the State Veterinarian, APHIS and poultry industry.

1.3 Exotic Newcastle Disease

Exotic Newcastle Disease (END) is a contagious and often fatal viral disease affecting all species of birds. END is one of the most infectious diseases of poultry in the world. END can be so acute that many birds die without showing any signs of disease. High death rates can occur in unvaccinated poultry flocks. END affects the respiratory, nervous, and digestive systems. The incubation period for the disease ranges from 2 to 15 days. An infected bird may show the following signs:

- Sneezing, gasping for air, nasal discharge, coughing;
- Greenish, watery diarrhea;
- Depression, muscular tremors, drooping wings, twisting of head and neck, circling, complete paralysis;
- Partial to complete drop in egg production;
- Production of thin-shelled eggs;
- Swelling of the tissues around the eyes and in the neck;
- Sudden death;
- Increased death loss in a flock.

END is spread mainly through direct contact between healthy birds and the bodily discharges of infected birds. High concentrations of the END virus are in birds' bodily discharges. Therefore, the disease can be spread easily by mechanical means. Virus-bearing material can be picked up on shoes and clothing and carried from an infected flock to a healthy one. The END virus can survive for up to three weeks in a warm and humid environment on birds' feathers, manure, and other materials. However, the virus is destroyed rapidly by dehydration and by the ultraviolet rays in sunlight.

2. Investigation Response for Poultry Disease

A confirmed positive case of a highly contagious poultry disease will require the coordination and deployment of a large amount of resources in order to respond to the disease outbreak.

2.1. Investigations for Highly Infectious Poultry Diseases:

2.1.1 Rapid disease reporting of a possible disease outbreak of a highly contagious poultry disease to the State Veterinarian or Colorado Area-Veterinarian-In-Charge by producers, industry and veterinarians represents the first step in initiating investigations by Colorado's Division of Animal Industry. After an outbreak of disease is reported, the State Veterinarian will task out a Foreign Animal Disease Diagnostician (FADD) to do an investigation.

2.1.2 For precautionary measures during an investigation, the State Veterinarian may determine it necessary to implement a higher level of biosecurity. The State Veterinarian may also implement certain movement restrictions for poultry and poultry products. Decisions relative to movement restrictions would be based on the morbidity and mortality of a disease outbreak and the risk to other poultry facilities. Any movement restrictions that are determined necessary and the duration of these measures will be communicated to the producer either by the FADD or the State Veterinarian directly.

3. Premises, Zones and Area Designations

The designation of Control Areas and Zones is essential to successful quarantine and movement control activities. The State Veterinarian shall determine premises classification in the event of a highly infectious poultry disease outbreak.

3.1 Premises Designations:

Infected Premises—An infected premises is a premises with a laboratory diagnosis of HPAI.

Contact Premises—A Contact Premises is a premises related to a known Infected Premises by sound epidemiological evidence but on which a highly contagious poultry disease has not been diagnosed.

Suspect Premises—A Suspect Premises is a premise on which it is reasonable by virtue of clinical signs of illness, morbidity or mortality

to believe that some risk of a highly contagious poultry disease may exist.

At-Risk Premises—Premises within the Buffer-Surveillance Zone that have clinically normal susceptible birds are known as At-Risk Premises. Surveillance on an At-Risk Premises will be appropriate to prove the absence of the disease on that premises.

3.2 Biological Control Zones and Areas

Infected Zone—During an outbreak the Infected Zone initially will encompass the perimeter of all suspect and infected premises and will include as many of the Contact Premises as the situation requires.

Buffer-Surveillance Zone—The zone immediately surrounding the Infected Zone is the Buffer-Surveillance Zone.

Control Area—The Control Area consists of the Infected Zone and a Buffer-Surveillance Zone.

Buffer-Vaccination Zone—Emergency vaccination may be used to slow the spread of HPAI. The area where vaccination is being—or has been—practiced will be known as a Buffer-Vaccination Zone. The Buffer-Vaccination Zone borders the Infected Zone and is surrounded by a Buffer-Surveillance Zone.

Free Zone—A Free Zone is a zone in which the absence of a highly contagious poultry disease has been demonstrated by meeting requirements for disease-free (or “free”) status as specified in the OIE International Animal Health Code.

Surveillance Zone—A Surveillance Zone is established within a Free Zone, along its border with the Buffer-Surveillance Zone within a Control Area. Surveillance in the Surveillance Zone will focus on premises determined to be at the highest risk of infection.

Adjustment of Buffer-Surveillance Zone Boundaries—The perimeter of the Buffer-Surveillance Zone will be adjusted appropriately as epidemiological information becomes available and the extent of the outbreak becomes better known.

Compartment—One or more premises under a biosecurity management system with specific disease control requirements including surveillance, biosecurity measures and other disease control requirements for the purposes of permitted movement upon approval of the State Veterinarian.

General Operations Area—The area outside of the Biological Control Area where there is no direct contact with poultry, poultry products, beddings or wastes by personnel, equipment or vehicles.

Biological Control Area—The area within a premises where direct contact with poultry, poultry products, bedding or wastes presently exists or had previously occurred.

4. Activities for Control and Eradication of HPAI, END, H5/H7 LPAI & other LPAI subtypes

Disease Eradication Plan:

4.1 HPAI and END:

The farm will be quarantined and strict biosecurity measures will be met. HPAI and END are OIE emergency animal diseases and infected farm(s) will be depopulated. Surveillance of all farms surrounding an infected premise within the quarantine zone and any contact or suspect premises outside the quarantine zone:

- a. AGID and RRT-PCR for H5 or H7 AI and END will be used in the first week of surveillance.
- b. Tracheal swabs from dead birds will be tested weekly using RRT-PCR.

Controlled ring vaccination of flocks surrounding an infected premise may be used upon approval of the State Veterinarian and the USDA if there is evidence that the disease is spreading and can not be controlled and eradicated by quarantine, biosecurity and depopulation.

Quarantine will be lifted after the last previously infected flock is depopulated and the house is cleaned and disinfected and the disinfected house is tested negative of the virus.

4.2 H5 or H7 LPAI:

The farm will be quarantined and strict biosecurity measures will be implemented. Based on epidemiologic assessment, an infected farm may be depopulated with the approval of the state veterinarian and the USDA. If the birds have to be moved off of the farm for disposal, the depopulation may take place as much as two to four weeks after the initial outbreak in order to reduce the amount of virus being shed by the infected birds that could contaminate the roadways when the infected flock will be depopulated. Infected birds usually stop shedding the virus four weeks after infection. Appraisal of the flock, if possible, should occur prior to depopulation.

4.2.1 LPAI Vaccination Protocol:

- a. Controlled vaccination of commercial layers, layer breeders, broiler breeders, and turkey breeders in conjunction with strict biosecurity, active

surveillance, sequential depopulation and repopulation plan may be used as a method to eradicate the disease upon the approval of the State Veterinarian and the USDA.

b. Replacement pullets will be vaccinated twice at least three weeks prior to placement to an infected or positive premise/farm. Previously infected layers/breeders will be vaccinated once either via subcutaneous or intramuscular injection. Pullets that will be older than six weeks at the start of vaccination will be vaccinated once.

c. Eighty to one hundred sentinel birds may be co-mingled with vaccinated flocks to monitor virus recirculation and infection.

d. Sentinel birds will be bled every other week for HI test and dead birds from the infected farm will be swabbed every week for RRT-PCR test. Any dead sentinel will be sent to an approved diagnostic laboratory for postmortem testing.

e. Vaccine will be under the control and permitted for use by the State Veterinarian and the USDA. The vaccine is strictly limited to flocks on the positive premises and to replacement pullets prior to placement on the positive premises.

f. The affected farm producer must submit a signed flock eradication and repopulation plan (sequential depopulation and repopulation) that will be reviewed and co-signed by the State Veterinarian and APHIS.

4.1.2 H5H7 LPAI Surveillance and Testing:

Surveillance of all farms surrounding an infected premise within the quarantine zone and any contact or suspect premises outside the quarantine zone:

a. AGID and RRT-PCR for H5 or H7 AI will be used in the first week of surveillance.

b. Tracheal swabs from dead birds will be tested weekly using RRT-PCR. Flu Detect Synbiotic, Directigen or Binax could also be use in the surveillance of AI.

c. Surveillance will continue weekly until the infected flock has been free of active infection for at least 30 days or until all surrounding and contact flocks/farms have been sufficiently tested and found free of active infection for a period of at least 30 days.

d. Quarantine may be lifted by approval of the State Veterinarian after the last previously infected flock is depopulated and the house is cleaned and disinfected and is cultured negative of the virus.

4.1.3 LPAI other than H5 or H7 subtypes

a. The flock/farm will be quarantined and strict biosecurity measures will be implemented.

b. Spent laying hen, layer breeders, broiler breeder, turkey breeder, broilers and turkey meat flocks found to be serologically positive to LPAI but without the ability to infect sentinel birds or evidence of virus shedding may be moved to approve slaughter. Sequential depopulation by slaughter may occur once

sentinel birds and viral testing indicate that the flock/farm to be without active infection for a period of at least three weeks.

c. Controlled vaccination of commercial layers, layer breeders, broiler breeders, turkey breeders and turkey meat flocks in conjunction with strict biosecurity and active surveillance may be used as a method to eradicate the disease upon the approval of the State Veterinarian and the USDA. Vaccination protocol will be the same as the vaccination protocol of H5 or H7 LPAI.

d. Surveillance of all farms surrounding an infected premise within the quarantine zone and any contact or suspect premises outside the quarantine zone. AGID and RRT-PCR for H5 or H7 AI will be used in the first week of surveillance. Tracheal swabs from dead birds will be tested weekly using RRT-PCR. Flu Detect Synbiotic, Directigen or Binax could also be use in the surveillance of AI.

e. Surveillance will continue weekly until the infected flock has been free of active infection for at least 30 days or until all surrounding and contact flocks/farms have been sufficiently tested and found free of active infection for a period of at least 30 days.

f. The quarantine may be lifted three weeks after the last previously infected flock is depopulated and the house is cleaned and disinfected and is cultured negative of the virus.

4.1.4 H5/H7 LPAI Monitoring Program:

The State will maintain “H5/H7 Avian Influenza Monitored State” status under the NPIP program for avian influenza. All commercial producers should sign a Memorandum of Understanding (MOU) with the State Veterinarian. The commercial producer has the responsibility to implement biosecurity measures in his/her farm. He/She has to maintain complete flock records such as daily mortality, feed/water consumption, egg production etc.. and shall make such records available for review by the State Veterinarian upon request.

Testing/Monitoring Plan:

a. Active Surveillance:

Commercial table-egg layers:

1. Eleven birds or eggs tested negative 30 days prior to disposal or
2. Eleven birds or eggs tested negative during a 12 month period or
3. Flocks that have ongoing active and passive surveillance program

for H5/H7 subtypes of AI approved by OSA and APHIS.

Commercial meat-type chickens:

1. Eleven birds per flock tested negative within 21 days of slaughter or
2. Flocks that have ongoing active and passive surveillance program for H5/H7 subtypes of AI approved by OSA and APHIS.

Commercial Turkey:

1. Sixty birds tested negative each month or
2. Flocks that have ongoing active and passive surveillance program for H5/H7 Subtypes of AI approved by APHIS.

b. Passive or Diagnostic Surveillance – All laboratories that perform diagnostic procedures on poultry will examine all submitted cases of unexplained respiratory disease, egg production drops, and mortality for AI.

AI Screening Tests:

1. All blood or egg yolk samples will be tested using Agar Gel Immunodiffusion (AGID). All AGID positive tests will be further tested by the National Veterinary Services Laboratory (NVSL) using Hemagglutination Inhibition (HI) test. Confirmatory diagnosis will be done by NVSL through virus identification. All antigens or test kits that will be used must be licensed by the Center of Veterinary Biologics.

2. Blood or egg yolk samples can also be tested with Enzyme-linked Immunosorbant Assay (ELISA) but any ELISA positive samples must be confirmed on AGID.

3. Oropharyngeal, tracheal, and cloacal swabs will be tested using Real-time Reverse Transcriptase-Polymerase Chain Reaction (RRT-PCR). They can also be tested using the Flu Detect Synbiotics, Directigen or Binax. All positive results will be sent to NVSL for confirmatory diagnosis

5. Disease Control: Personnel, Vehicle and Cleaning and Disinfection Operations

5.1 Personnel

5.1.1 Any employee(s) or visitor(s) entering or exiting the Biological Control Areas should meet specific biosecurity requirements to decrease the chance of disease spread. Biosecurity requirements shall include personal protective equipment necessary to protect employees or responders from disease exposure during operations and also serve to limit potential for transfer of infectious agents across an established clean line; thereby preventing the movement of pathogenic organisms out of the biologic control operations area of the infected premises. PPE shall include coveralls or tyvek suits, appropriate water resistant foot or boot covering, head or hair covering, and appropriate PPE respirator equipment.

5.1.2 Employees and visitors that have direct contact with the Biological Control Area should undergo documented cleaning and disinfection protocol before exiting into the General Operations Area.

5.1.3 PPE guidelines for Colorado Department of Agriculture employees shall be according to guidelines in the attached PPE annex. The guidelines provide guidance as to what equipment is recommended

according to whether HPAI is or is not diagnosed in the US, whether there are sick/dead birds on the premises, the task the employee is being designated to complete, and in the event that HPAI is diagnosed in Colorado, then what zone, area or premises designation the employee is tasked to work in.

5.2 Vehicles and Equipment

- 5.2.1** No vehicles or equipment that have had contact with the Biological Control Area should be allowed to enter the General Operations Area without following an approved cleaning and disinfecting procedure to control disease spread.
- 5.2.2** Equipment or vehicles that are stationed in the General Operations Area should follow pre-established traffic patterns to prevent entry into the Biological Control Area.

5.3 Feed, Egg transport, or other essential delivery

- 5.3.1** The proper controls for the movement of poultry or poultry products within Biologic Control Areas or Zones are very important. Movement controls are necessary to prevent further disease exposure yet movement within a risk based permitted system will likely be necessary to allow for business continuity. The balance between disease control and the ability to allow permitted movement of poultry or poultry products is an important aspect of emergency management. The attached appendix L: “ Movement Protocol Egg Products and Day-Old Chicks and the Movement Controls for Eggs and Egg products are included for reference for use within an Incident Management System.
- 5.3.2** Permitted movement of eggs which are washed, sanitized, and packed in new materials may be moved into normal marketing channels. If allowed, the trucks hauling these eggs must not visit another premises between the production site and the market. Egg handling materials must be cleaned, sanitized, and returned to the premises of origin without contacting materials going to other premises. Disposable egg flats or sanitized, plastic flats must be used to transport eggs.
- 5.3.3** Eggs that are sold as “nest run” and are not washed and sanitized must be moved directly to only an “off-line” breaking operation for pasteurization and used for breaking only, if allowed. The egg handling materials must be handled as described in (13.5)? above.
- 5.3.4** Liquid egg products may continue to be moved to pasteurization facilities provided that the tankers are cleaned and disinfected before entering and exiting the premises.
- 5.3.5** A designated entry protocol and route for feed or other essential delivery should be determined. Protocols should be instituted requiring the drivers to remain in the cab while an employee facilitates the delivery of feed. Unless open for direct communications with farm employees, cab windows should remain closed to prevent flies from

being transported to new premises. A complete cleaning and disinfection (approved disinfectants) of the vehicle exterior using (an appropriate product, such as Virkon,) out after feed delivery should be done to control disease spread.

5.4 Records

5.4.1 Record keeping should include a log of all visitors and vehicles on and off the premises. The log should document all types and purposes of traffic on and off of the premises.

5.5 Cleaning and Decontamination (C&D)

5.5.1 The pre-establishment of a C&D area on a premises aids in decreasing disease spread and is an essential asset during response activities. Optimally, C&D areas should be on a hard surface, preferably sealed concrete, with adequate drainage to a temporary containment basin. A designated route for entry and exit to the C&D area that prohibits cross traffic is necessary and a designated area for changing, showering and hand washing is desirable.

5.6 Wild Bird, Insect, and Rodent Control

5.6.1 Wild bird, rodent, and insect control programs must be implemented on the premises during disease response operations. For example: AI viruses have been isolated from house flies, darkling beetles, and hide beetles.

6. Investigation Guidelines for Response of Infected Premises or Contact Premises

6.1 The primary goal of an investigation is to determine if a highly infectious poultry disease is present in Colorado's poultry population. The investigation allows for the collection of any samples necessary to confirm or rule out the presence of a disease while gathering essential epidemiological information that would be used in the event a response is necessary. Initial information required from the premises includes: type of poultry facility, plat map description, GPS coordinates, type and number of buildings, available resources (skid loaders, tractors, trucks etc.), number of personnel or employees, number, type, age and weight of poultry, and number of eggs produced per day, if applicable.

6.2 Information from the investigation will be reported to the State Veterinarian who will coordinate a risk assessment which will determine turn around time on diagnostic samples and aid in establishing appropriate disease control measures. The reporting of a positive result for a highly infectious poultry disease, such as HPAI, H5 or H7 LPAI to the State Veterinarian will begin a chain of events to determine what

would be an appropriate response by Colorado's Department of Agriculture and Colorado's USDA Area-Veterinarian-In-Charge, and poultry industry.

- 6.3** The activation of an emergency plan is at the discretion of Colorado State Veterinarian. Upon receipt of a Colorado State University Veterinary Diagnostic Laboratory presumptive positive, or NVSL confirmed positive HPAI, H5/H7 LPAI, END, the State Veterinarian will activate the disease response emergency operations.
- 6.4** The Colorado State Veterinarian will immediately contact the Commissioner of Agriculture, Deputy Commissioner and the USDA Colorado Area Veterinarian-In-Charge and relay all known information associated with the positive test notification. The State Veterinarian should be prepared to make recommendations with respect to activation of the Colorado Animal Response Plan, activation of the Colorado Department of Agriculture EOC. The State Veterinarian should be prepared to provide the following information:
 - a. Name of the verifying laboratory official reporting the confirmatory test and call back telephone number.
 - b. The name and location of the infected premises including GPS and official premises ID designator, if issued.
 - c. The type of production facility and number of birds on the infected premises.
- 6.5** If notification of a positive test sample is after normal working hours, on a weekend or holiday, the State Veterinarian will attempt to initiate a conference call with the Commissioner, Deputy Commissioner and the Colorado Area Veterinarian-In-Charge at their after-hours contact numbers.
- 6.6** Based on direction from the Commissioner, Deputy Commissioner and the Colorado Area Veterinarian-In-Charge, the State Veterinarian will contact Colorado Department of Agriculture VMO's or USDA VMO's and field assistants to report to Department headquarters or Incident Command Post location. The Incident Command Post will normally consist of the following functional positions:
 - a. Incident Commander (State Veterinarian or Commissioner's designee)
 - b. Safety Officer
 - c. Public Information Officer

- d. Operations Chief
- e. Planning Chief
- f. Logistics Chief
- g. Finance & Administrative Chief

Additional staffing requirements for Colorado Incident Command functions will be determined by the Incident Command Team, upon arrival at the Department headquarters or at the ICP location.

6.7 The State Veterinarian will coordinate with the Commissioner, Deputy Commissioner and the Colorado Area Veterinarian-In-Charge for notification of the following state, federal and local agencies:

- a. The Office of the Governor (Commissioner will notify)
- b. The Office of the Attorney General
- c. Colorado Department of Public Health and Environment
- d. Colorado State Patrol
- e. Colorado Department of Transportation
- f. Colorado Department of Natural Resources
- g. Colorado Department of Emergency Management
- h. Local law enforcement and (if criminal or terrorist introduction of the disease is suspected) FBI and Colorado Bureau of Investigation.
- i. County Departments of Emergency Management, Public Health and Indian Tribes in affected jurisdictions(s).
- j. Wyoming, Nebraska, Kansas, Oklahoma, New Mexico, Arizona and Utah Departments of Agriculture.

6.8 The State Veterinarian will notify the poultry industry through the Colorado Poultry Health Board and the Colorado Poultry Disease Committee.

7. Physical Containment

In general order of importance the following steps are necessary to control a disease outbreak, 1) Site Security, 2) Site Biosecurity and development of a C& D area, 3) Appraisal/Indemnity, 4)Euthanasia of live birds, 5) Disposal of Carcasses, 6) Cleaning and Disinfection (C&D) of buildings, 7) C&D of Environment. Below is a description of each activity.

7.1 Site Security

Any site that is under investigation as an infected premise, a suspect premises, or a contact premises shall take steps to prevent all non-essential traffic. These are considerations for feeding, processing and care of birds during investigations, especially, for the index farm. All traffic should be prohibited from entering the premises unless directly involved in the care of poultry or in the investigation and response.

7.2 Entry/Exit Point

One entry/exit point must be designated and all other access points must be blocked to prevent entry or exit from the premises. The designated entry/exit point should be on a level, solid surface. Access to water, either by hose or tanker truck, will be necessary for cleaning and disinfecting if a designated C&D area has not be established.

7.3 Non-Essential Personnel, Equipment and Vehicles

Personnel, equipment and vehicles that are not participating or being used in the general care of poultry or in the response efforts are considered non-essential and will be prohibited from entering the premises. All personnel on an infected premise must undergo an approved method of cleaning and disinfection before exiting. Any personal vehicles leaving the premises must undergo an approved cleaning and disinfection protocol and will not be allowed to re-enter the Biological Control Area of the premises. All non-personal vehicles and equipment on the premises may be prohibited from leaving unless pre-approved by the State Veterinarian and only after undergoing acceptable cleaning and disinfection.

7.4 Designated Decontamination Area

A designated decontamination area on the premises shall be established. This is an area where personnel, vehicles, and equipment will undergo cleaning and decontamination prior to leaving the premises. This area should be close to the entry/exit point, on a hard surface, and should have access to water.

7.5 Entry Procedures

All personnel should have on the appropriate personal protective clothing and equipment prior entering the premises. This can be accomplished prior to exiting the vehicle or at a changing tent or station, if available. All personnel shall adhere to prior training and protocol concerning PPE procedures.

7.6 Essential Personnel

Essential personnel are required to wear personal protective gear determined necessary to protect or prevent the spread of the disease and to mitigate any zoonotic disease potential. Personnel entering the premises will be required to wear disposable or adequately cleaned and disinfected boots, coveralls, gloves, head/hair covering and masks. These items must be put on prior to entry onto the premises and must be removed and disposed prior to leaving.

7.7 Essential Equipment

Essential equipment may enter the premises but will not be allowed to exit until cleaned and disinfected in accordance with established protocol.

7.8 Non-Essential Equipment

Non-essential vehicles and/or equipment will not be allowed on the premises and must be parked at a designated area off site outside the Biological Control Area to prevent contamination. This may include parking on the road or at a pre-approved location close to the premises.

8. Hold Orders and Quarantines

8.1 CRS 35-50-103 Definitions

(5) "Hold" means a temporary order issued by the state veterinarian when an infectious or contagious disease is suspected in livestock to isolate any specific livestock, premises, county, district, or section of the state; restrict the movement of livestock; and specify sanitary measures, pending completion of testing.

(10) "Quarantine" means an order issued by the commissioner when testing has confirmed the presence of an infectious or contagious disease in livestock, which order isolates specific livestock, premises, counties, districts, or sections of the state; restricts the movement of livestock; and specifies sanitary measures.

8.2 CRS 35-50-111. Hold/Quarantine Actions

(2) The commissioner may place a hold upon any specific livestock, premises, county, district, or section of the state for the purpose of preventing the spread of an infectious or contagious disease when clinical signs and symptoms suggest the presence of the disease and laboratory confirmation is pending.

(3) Once testing has confirmed the presence of an infectious or contagious disease, the commissioner may quarantine any specific livestock, premises, county, district, or section of the state for the purpose of preventing the spread of any infectious or contagious disease within the state, under such rules as the commissioner may adopt.

(4) Whenever the commissioner finds it necessary to quarantine any livestock, ranch, farm, premises, or portion of this state because of an

infectious or contagious disease, the commissioner may hold in quarantine such ranch, farm, premises, or part of this state as the commissioner may deem necessary after all livestock have been removed, until such time as in the judgment of the state veterinarian there is no further risk of exposing livestock to disease by permitting them to inhabit such quarantined area.

9. Epidemiology

An important component of an investigation is to establish trace outs from the premises to determine that risk for disease transmission to other premises with susceptible species. Trace backs will occur for at least two incubation periods (30 days) from the beginning of the appearance of clinical signs in order to determine contact premises to be held and investigated. All movements on and off the farm by visitors, personnel, equipment and vehicles must be accounted for over this time period. Special attention will be given to those visitors, personnel, equipment or vehicles that have come in contact with live poultry, poultry products, litter, bedding or other housing facilities during the first incubation period back from the time of clinical symptoms. Movements to and from IPs for at least 21 days before the first observation of unusual morbidity or mortality should be traced as a foremost priority. People involved with feed delivery, vaccinating crews, catching crews, trades people, company service people and veterinarians should be interviewed and lists compiled of all possible contacts for three days after visiting any premises under suspicion.

10. Appraisal and Indemnity

Appraisal and indemnity may be accomplished through CRS 35-10-113 and CRS 35-10-114. 9.2. In previous highly infectious disease outbreaks, such as HPAI, the cost of euthanasia, carcass disposal and C&D were paid for by the USDA. Colorado intends to follow USDA procedures to request assistance with indemnification of poultry in response to an eligible disease event.

11. Euthanasia/Depopulation

The State Veterinarian has the authority under Colorado CRS 35-50-113 to order euthanasia, mass depopulation and carcass disposal as a control measure to eliminate the threat of a poultry disease in Colorado as part of a comprehensive response plan. In the event that a highly contagious poultry disease is confirmed in Colorado, poultry euthanasia and carcass disposal represent the most probable methods of disease eradication.

Colorado's Department of Agriculture will take every measure to ensure the rapid and humane euthanasia of any poultry and will rely on the most current AVMA Euthanasia Guidelines or other suggested methods from the USDA

for guidance. The following AVMA approved forms of euthanasia will be incorporated into a comprehensive euthanasia and disposal plan. Efficient, humane procedures must be employed to kill birds without moving them from the site. Individual birds can be humanely destroyed by cervical dislocation. Several gases have been used to kill large numbers of birds. Carbon dioxide and nitrogen are the preferred gases to use for large populations of birds. It is better to remove the birds from their cages alive and humanely euthanize them in an enclosed trailer or container before burial or incineration, as it can be extremely difficult to remove dead birds from cages.

11.1. Carbon Dioxide Gas

Carbon dioxide gas is an acceptable agent for euthanasia of poultry. It acts rapidly as a depressant, is an analgesic and anesthetic, and is readily available in compressed gas cylinders. Various protocols exist for using carbon dioxide in poultry euthanasia.

11.2 Cervical Dislocation

Cervical dislocation is a humane technique for euthanasia in poultry that rapidly accomplished a loss of consciousness when done correctly by trained individuals.

11.3 Nitrogen/Argon Gas

Nitrogen and argon gas are conditionally acceptable agents for euthanasia of poultry. Both agents act rapidly with minimal risk to humans and are readily available as compressed gas.

11.4 Barbituric Acid Derivatives

Barbituric acid derivatives are acceptable agents for euthanasia that depresses the respiratory centers, which leads to cardiac arrest. When used correctly this provides a rapid loss of consciousness.

11.5 Fire Arms

This form of euthanasia is only acceptable in poultry with free ranging birds by personnel that have the training and are approved by the Colorado Department of Agriculture.

11.6 Fire Retardant Foam

This method of euthanasia has been demonstrated to be effective for mass euthanasia in poultry houses and has been approved by the USDA and has been recognized as having fewer worker safety issues than some other gaseous forms of depopulation.

12. Carcass Disposal

The goal of carcass disposal is to facilitate the decomposition of carcasses and destruction of any pathogenic disease agent present while limiting the potential for the spread of the disease or exposure of susceptible species to disease. It is recognized that one method may not fit all circumstances so the following represents the most probable carcass disposal options. Potential environmental impacts will be reviewed when determining specific carcass disposal methods. Consultation and approval by the Colorado Department of Public Health and Environment (CDPHE) will determine the desired method of carcass disposal. It is implicit that any needed Environmental Protection Agency (EPA) approval will be obtained by the CDPHE.

Any disposal option that requires the movement of contaminated carcasses off site increases the need for coordination of personnel, equipment, biosecurity protocols and cleaning and disinfection at both sites. The Colorado Department of Agriculture will exhaust all methods for onsite disposal prior to considering moving contaminated carcasses off site. Preferably depopulated flocks should be composted or buried in the farm. If infected materials such as depopulated birds or litters have to be brought to off-site locations such as landfills, incineration plants, rendering plant etc., the following procedures should be followed:

- 1) If possible, the driver of the vehicle should remain in the vehicle with the windows closed. If the driver exits the vehicle they must meet the biosecurity standards for clothing and footwear ;
- 2) Birds must be euthanized prior to transport;
- 3) The truck used for transport must be first lined with tough (minimum 6 millimeter thickness) disposable polyethylene plastic sheeting large enough to cover the carcasses and be sealed at the top. If leak-proof trucks with good seals are used, one layer of plastic is required. If the truck is not leak-proof, an extra layer of plastic sheeting on the floor should be added.
- 4) If the dead birds are already decomposing, an absorbent material such as sawdust, hay or litter should be placed on top of the plastic sheeting to absorb fluids;
- 5) Extra care should be observed during loading to prevent tearing the plastic liner and prevent feathers from contaminating the surroundings;
- 6) At least one foot of headspace should be left at the top of the container to allow for expansion of materials during transport;
- 7) When the truck is properly filled, the plastic liner should be closed over the top and sealed or taped, then sprayed with disinfectant;
- 8) The top of the truck must be covered in such a way as to prevent material from blowing out at highway speeds. The material used to cover the top must be capable of being cleaned and disinfected;

- 9) All personnel involved in the load-out must observed strict biosecurity including disinfection of all clothing, footwear, vehicles and equipment that leave the farm;
- 10) After loading is complete, vehicles and equipment must be first cleaned to remove organic material and then thoroughly sprayed with disinfectant, including tires, wheel wells and undercarriages of vehicles;
- 11) The trucks are required to travel via a route approved by the State Veterinarian and must drive from the farm without making stops in between;
- 12) Upon reaching the destination to off-load, drivers should remain in the vehicle with the windows closed;
- 13) All vehicles that transport infected materials must be thoroughly cleaned and disinfected at the site after dumping the materials;
- 14) Any problems or breaks in these biosecurity procedures are to be reported immediately to the State Veterinarian.

12.1 Composting

Carcass management by composting provides a method that can dispose of large amounts of biomass with effective destruction of infective agents. This disposal method has been employed in previous disease outbreaks and has procedures that have been described in detail.

12.1.1 In-house Composting

In-house composting provides a controlled environment that reduces the need to move contaminated carcasses and protects compost piles from inclement weather which aids in providing more satisfactory composting temperatures for pathogen inactivation. The contaminated litter that is present in the barn can be utilized to meet part of the carbon source requirements for composting with other approved carbon sources such as straw usage, if necessary. In properly constructed piles, temperatures are expected to reach between 120°F to 160°F within the first 10 days. It is generally accepted that 1 to 2 days at 149°F is sufficient to inactivate bacterial and viral pathogens.

Advantages – 1) Contaminated poultry and litter do not have to be moved off site. 2) Pathogen load is reduced in a short period of time, thereby decreasing the risk of disease spread. 3) After sufficient composting, disposal can proceed through approved methods. 4) Protocols exist for in-house composting.

Disadvantages-1) Proper pile construction, monitoring, and maintenance is critical to achieving required temperatures for pathogen inactivation. 2) Increases the time between depopulation and cleaning and disinfection of the barn.

12.1.2 On Premises Outside of House Composting

Outside-house composting provides for carcass disposal without transporting potentially infected material off of the property. Most premises have adequate area to accomplish composting on site outside of enclosed buildings. The contaminated litter that is present in the barn can be utilized to meet part of the carbon source requirements for composting with other approved carbon sources such as straw usage, if necessary. In properly constructed piles, temperatures are expected to reach between 120°F to 160°F within the first 10 days. It is generally accepted that 1 to 2 days at 149°F is sufficient to inactivate bacterial and viral pathogens.

Advantages – 1) Contaminated poultry and litter do not have to be moved off site. 2) Pathogen load is reduced in a short period of time, thereby decreasing the risk of disease spread. 3) After sufficient composting, disposal can proceed through approved methods. 4) Protocols exist for outside-house composting. 5) Decreases the time between depopulation and cleaning and disinfection of the barn. 6) Allows for potential repopulating of indoor buildings in a shorter time period.

Disadvantages-1) Proper pile construction, monitoring, and maintenance are critical to achieving required temperatures for pathogen inactivation. 2) Requires adequate and appropriate area on site to be accomplished.

12.1.3 Ag-Bag Composting

This is a method of composting in special composting bags that are ventilated during the composting process. Using special equipment, carcasses and an appropriate amount of carbon sources such as litter, straw or wood shaving are loaded into long plastic bags which are then ventilated as the materials are composted.

Advantages – 1) Inactivates pathogens on-site. 2) Composted material can be utilized after destruction of pathogens. 3) Barns may be cleaned and disinfected as soon as poultry are removed.

Disadvantages – 1) Special equipment, bags and sufficient expertise is required. 2) Prior agreements need to be made with the appropriate vendors for equipment and personnel. 3) The bags may remain on the premises for an extended period of time. 4) The bags must be protected from scavenger animals. 5) Must be monitored for optimum moisture content to ensure proper composting.

12.2 Burial

12.2.1 On Site Burial

The plan requires a plat map description to help determine if an appropriate area for carcass disposal is on or close to the infected premises.

The burial area will be evaluated for potential ground water hazards or other environmental issues. In the event that there is no approved burial area on the premises, the procedure will be to look at other areas in the vicinity, primarily other infected premises, contact premises or adjacent crop land.

Advantages -1) Barns can be cleaned and disinfected as soon as poultry and litter are removed. 2) Once burying is completed, the risk of disease transmission is reduced.

Disadvantages – 1) Risk of indirect disease spread when moving poultry and litter. 2) Equipment requirements and agency coordination are increased.

12.2.2 Designated Burial Sites

Designated burial sites may be allowed within a quarantined area.

Advantages – 1) Cleaning and disinfection can be done as soon as carcasses and litter are removed from the site. 2) Long term disposal methods are moved off site.

Disadvantages – 1) Special considerations for movement of carcasses off site. 2) More intensive biosecurity. 3) Use more human resources and requires more heavy equipment. 4) Requires increased coordination.

12.2.3 Landfill

Carcasses and litter may be loaded and hauled to an approved landfill. A site for poultry disposal would be designated away from the working face of the landfill. A track hoe would be required to dig a single trench in the waste pile where trucks would dump that carcass load and carcasses would be immediately covered with at least two feet of solid landfill.

Advantages – 1) Cleaning and disinfection of the infected premises can be done as soon as carcasses and litter are removed from the site. 2) Long term disposal of carcasses is moved off site.

Disadvantages – 1) Special considerations for movement of carcasses off site. 2) More intensive biosecurity procedures

required. 3) Requires approval to use landfill. 4) Requires increased coordination for proper movement of carcasses off site.

12.3 Rendering

Rendering is the process of mechanically processing carcasses to reduce particle size and subsequent cooking and further refinement resulting in the formation of a carcass meal that may be used as an animal feed ingredient.

12.3.1 Off Site Rendering

Advantages – 1) Cleaning and disinfection can be done as soon as carcasses and litter are removed from the site. 2) Long term disposal methods are moved off site.

Disadvantages – 1) Special considerations for movement of carcasses off site. 2) More intensive biosecurity procedures required. 3) Requires increased coordination for proper movement of carcasses off site. 4) Requires an approved disposal method for the carcass meal. 5) Disposal time dependent on capacity of plant or processing equipment.

12.3.2 On Site Rendering

Advantages – 1) Inactivates pathogens on site. 2) Rendered product can be moved with little risk of disease spread.

Disadvantages -1) Required special equipment and expertise to be brought to the premises. 2) Disposal time dependent on capacity of equipment. 3) Requires an approved disposal method for the carcass meal.

12.4. Alkaline Hydrolysis

Alkaline hydrolysis is a process that uses a caustic agent, such as sodium hydroxide, and heat to hydrolyze carcasses into a sterile solution and calcium products.

12.4.1 Off Site Alkaline Hydrolysis

Advantages – 1) Cleaning and disinfection can be done as soon as carcasses and litter are removed from the site. 2) Disposal methods are moved off site.

Disadvantages – 1) Special considerations for movement of carcasses off site. 2) More intensive biosecurity. 3) More human resources and more heavy equipment required. 4) Requires increased coordination for proper movement of carcasses off site. 5) Requires an approved disposal method for the resultant sterile solution. 6) Disposal time dependent on equipment capacity. 7)

Limited biomass can be disposed of by employing this method of carcass disposal.

12.5 Incineration

The use of incineration for poultry mortalities would require approval by the CDPHE and local authorities. Methods may include cremation in approved facilities, air curtain incineration, open burning and plasma incineration. Incineration has been approved in other species depopulation.

13. Cleaning and Disinfection

13.1. Cleaning shall be the sufficient removal of organic debris and disinfection shall be the application of approved products which renders infectious agents inactive.

13.2. Building Cleaning and Disinfection

The housing facilities should be cleaned and disinfected under state supervision after affected poultry have been removed.

13.3 Outside Cleaning and Disinfecting

13.3.1 Articles that cannot be disinfected and pose a risk in disease transmission, such as feed, bedding, and debris should be disposed of in an approved method such as burial, composting or incineration. The areas required to be cleaned and disinfected on the property will be determined by the State Veterinarian.

13.3.2 All equipment or vehicles leaving the site must first be cleaned of any gross contamination during the washing process. An approved disinfectant must be used, heeding the necessary contact time. A protocol for down time may be necessary when the equipment or vehicle is no longer required on site and allowed to leave.

14. Restocking

14.1 No poultry may restocked onto a previously infected premises for a minimum of 30 days after depopulation and the last detection of an active etiological agent on the premises. In the event that vaccination is the option selected to eradicate LPAI, vaccinated replacement pullets/poults will be allowed with permit from the State Veterinarian to be placed in an infected or previously infected premises.

14.2 After 21 days, if allowed, poultry marketing will only be allowed for delivery to slaughter establishments.

14.4 Routes used to transport poultry to slaughter, if allowed, must avoid other poultry operations and be scheduled to provide delivery at the close of business for the slaughtering establishment for the week.

14.5 Trucks used to transport poultry from a previously infected premises must be cleaned and disinfected and may not enter another poultry facility for at least 24 hours.

15. Recovery/Repopulation

15.1 After an approved cleaning and disinfection process has been completed, the Colorado Department of Agriculture will require a mandatory down time of no less than thirty days.

15.2 Once the mandatory down time requirements are met, serologically negative sentinel birds may be introduced to determine if pathogens are still viable. Sentinel birds will remain for two specific pathogen incubation periods (30 days) and monitored for clinical signs of the disease. Serological monitoring of the sentinel birds may occur at the end of each specified pathogen incubation period. In the event that a sentinel bird becomes infected or serologically positive, then the depopulation, cleaning and disinfection process must be repeated and the introduction of sentinel birds repeated.

15.3 When sentinel birds have tested negative after two specific pathogen incubations, repopulation will be considered. If repopulation is approved, birds will be monitored serologically during a time frame specified by the State Veterinarian over the duration of the production cycle. If the birds remain seronegative, production may continue pending approval of the State Veterinarian. The Colorado Department of Agriculture reserves the right to extend the time for repopulation of a premises if an area quarantine still exists in an area where the premises is located.

APPENDIX A

GLOSSARY OF TERMS

a. CDA

The Colorado Department of Agriculture. The Colorado Department of Agriculture is the official state agency for purposes of program administration, responsible for the official oversight of the response plan, compartment biosecurity documents and poultry surveillance in Colorado.

b. Compartment

One or more establishments (companies) under a common biosecurity management system containing a poultry subpopulation with a distinct health status (U.S. H5/H7 LPAI Monitored) with respect a specific disease or specific diseases for which required surveillance, control and biosecurity measures have been applied for the purpose of international trade. Documentation must be provided to the Department to demonstrate clear evidence that the biosecurity, surveillance, traceability and management practices are adequate to meet the definition of a compartment.

c. Contact Premises

Premises that have been epidemiologically linked to an infected premises either by proximity to, clinical disease contact or by contact with poultry, poultry products, poultry wastes, vehicles, equipment or personnel from an infected premises.

d. USDA

The United States Department of Agriculture (USDA).

e. Establishment

A company with one or more premises under a common biosecurity management system containing a poultry subpopulation with a distinct health status (H5/H7 LPAI Monitored) for which required surveillance, control and biosecurity measures have been recognized.

f. Flock

Poultry of the same species and age (hatched and placed within a two week time period) held together on one premises for at least 21 days or as determined by the Colorado Department of Agriculture. Poultry may be composed of multiple breeds, hatches, may originate from multiple hatcheries and be housed in multiple barns.

g. Hold Order

A document issued by the Colorado Department of Agriculture (CDA) to control movement of poultry and equipment from positive premises. The Hold Order will be released when the flock is marketed or is determined to be a virus negative poultry flock by the CDA.

h. Positive Flock

A flock that has been confirmed HPAI positive for subtype H5 or H7 avian influenza or another highly contagious poultry disease by an approved test from an authorized laboratory and confirmed by NVSL.

i. Positive Premises

Premises (geographic location) that house a flock(s) that have been confirmed positive for subtype H5/H7 HPAI or another highly contagious poultry disease in an authorized laboratory and confirmed by NVSL.

j. Poultry

All birds reared or kept in captivity for the production of meat or eggs for consumption, for the production of other commercial products, or for breeding these categories of birds.

k. Premises

A geographic location on which one or more flocks are located.

APPENDIX B

RECOMMENDED QUANTINE AND MOVEMENT CONTROLS

Infected premises and contact premises

Movement out of susceptible birds:

Prohibited for all susceptible birds in flocks that have tested positive for HPAI or showing clinical disease. Infected animals are to be slaughtered on-site. Other non-clinical groups on the farm after tested negative surveillance may be slaughtered off-site under supervision and the product heat treated.

Movement in of susceptible birds:

Prohibited

Movement out of other animals:

All avian species prohibited. Other animals allowed by permit.

Movement out of litter and manure:

Prohibited

Movement out of equipment and feed:

Prohibited except by permit

Movement in and out of people:

Allowed by permission. Subject to strict disinfection procedures.

Movement in and out of Vehicles:

Subject to security and decontamination arrangements in place at the premises.

Suspect premises

May be moved under permit for slaughter off-site under supervision after negative surveillance including serological testing and real time reverse transcriptase PCR testing.

Allowed by permit. Subject to surveillance.

Allowed by permit.

Prohibited

Prohibited except by permit

Allowed by permission. Subject to strict disinfection procedures.

Allowed by permit subject to strict quarantine and disinfection procedures.

Movement of fertile eggs:

To be destroyed on the place except for salvage of genetic stock under strict controls and previously approved protocols on handling procedures.

Allowed by permit subject to disinfection and transport procedures.

Movement of table eggs:

Allowed by permit subject to prescribed sanitization procedures, otherwise destroyed on-site.

Allowed by permit subject to prescribed sanitization procedures, otherwise destroyed on-site.

Movement in of feed:

Allowed by permit to supply feed to remaining birds on a DCP.

Allowed by permit, subject to strict quarantine and decontamination procedures.

Movement of slaughter waste:

Operations suspended. Waste buried or composted on sight or removed on permit subject to decontamination procedures for approved disposal.

Allowed by permit within the RA subject to decontamination procedures.

Movement out of dead birds:

Dispose of on place or in RA by permit subject to strict quarantine and disinfection for approved disposal.

Allowed by permit within the RA.

Movement out of horticultural and agricultural crops:

Unrestricted movement with appropriate C & D vehicles, as needed.

Unrestricted movement

Restricted area

Control area

Movement out of susceptible birds:

Prohibited.

Prohibited, except by permit.

Movement in of susceptible birds:

Movement from a free area or contiguous CA to a slaughter house for immediate slaughter is allowed by permit.
Restocking of specified premises is permitted.

Movement from a free area to a property or slaughter house is allowed by permit.

Movement within of susceptible birds:

Movement to a abattoir for immediate slaughter or to a farm for restocking may be allowed by permit .

Movement is allowed within the CA.

Movement out of litter and manure:

Prohibited

Movement out of feed and equipment:

Prohibited except by permit

Allowed by permit

Allowed

Movement through of susceptible birds:

Direct movement by air, road or rail may be allowed by permit, provided the origin and destination are both outside the RA and CA and the birds are not unloaded within the declared areas. If transport is delayed within the RA, the birds should be regarded as suspect and their further movement carefully reassessed.

As for RA.

Risk enterprises, eg private avian laboratories, cull hen collectors, dead bird pick-ups, etc (not processing establishments):

Operations suspended

May continue to operate by permit.

Sales, shows, pigeon races, etc:

Concentrations of susceptible birds may be allowed subject to permit.

May continue to operate by permit.

Movement of table eggs in or out:

Allowed by permit subject to sanitization procedures.

Allowed into, within or out of the CA by permit. Allowed by permit into the RA.

Movement of fertile eggs:

Not allowed from infected flocks except for genetic salvage by permit. Allowed from other flocks by permit subject to strict quarantine, disinfection, subsequent surveillance and transport procedures

Allowed within the CA. Allowed by permit to outside the CA subject to upgraded hygiene procedures and subsequent surveillance. Movement allowed by permit.

Movement of egg pulp from plants including on farm plants:

Allowed under permit for heat treatment within the RA or CA.

Allowed within the CA. Permit required to move outside the CA.

Control of domestic pets and poultry:

Within the RA, all free poultry to be confined.

Within the CA, all free poultry to be confined.

APPENDIX C

COLORADO BIOSECURITY PLAN **COMMERCIAL POULTRY PRODUCTION**

Introduction

Biosecurity is the term to describe the procedures and practices that are followed in order to prevent the introduction of infectious diseases into a poultry flock. Bacteria and viruses travel from an infected area to disease-free location on trucks, equipment, people and animals. They can be found on people's hands, hair, clothing and shoes. They are also found on the skin, in the digestive tract and in a respiratory tract of many domestic and wild animals, i.e, dogs, cats, rodents, raccoons, skunks and birds. The most effective means of disease control in poultry is to prevent exposure of poultry to disease causing agents. The biosecurity program that follows is intended to prevent this disease transmission caused by people, animals and equipment, any of which may bring infectious bacteria and viruses on to the farm and into the barns. The following biosecurity guidelines are meant to achieve these goals.

STANDARD BIOSECURITY PLAN

The basic goal of a biosecurity program is to prevent the introduction of disease causing infectious agents on to a farm. To accomplish this we must separate farms from one another as much as possible. Any connection of people, equipment or animals between farms must be scrutinized and limited to essential controlled movement. If one farm is infected with a communicable disease, we do not want the transfer of infectious agents to a second farm. The next step in our biosecurity program is to prevent the entrance of these disease agents into individual barns if they should find their way on to the farm. Once they are on the farm, infectious agents can be easily transported into the barn especially on footwear and clothing. Therefore, it is essential that feet are cleaned before entering barns. Boot washing, protective clothing and specific barn entrance procedures are aimed at preventing the introduction of infectious agents into the barns. The main source of transmitting infection from one farm to another farm is people. Animal populations that move around in the wild could also transfer disease from farm-to-farm. Thus, it is imperative that rodents, birds and other wild life be eliminated from the premises. Viable biosecurity relies on measures to control people traffic, limit equipment movement and eliminate wild animals from the farms. We want to decrease as many risk factors as possible, while still being able to service and work the farms in a reasonable manner. By understanding these principles and using some common sense to guide them, workers can make sound biosecurity decisions when they encounter a new situation not

specifically detailed in this document. If ever in doubt, the immediate supervisor should be contacted regarding biosecurity procedures.

1. EMPLOYEE BIOSECURITY

- a. Definition: An employee is one who is hired by the company. These employees typically work on one site and infrequently travel between sites.
- b. Vehicle Policy
 - i. Employees shall park their vehicle in the specified parking area and will not get back in their car for any reason until the end of the day when they have changed into their street clothes. The outside and inside of personal vehicles should be kept free of dirt, manure or dust.
- c. Clothing Policy
 - i. Employees are required to come to work wearing clean clothes. They will change into work shoes, clean coveralls, hard hat, safety glasses, hairnet (optional) and face mask (optional) at work and remove everything before leaving for the day.
 - ii. Work shoes must stay at the work site. Street shoes need to be removed and left in the designated spot.
 - iii. When winter/fall outerwear is needed, use farm provided clothing or bring it clean from home and leave it on farm for the whole week. Take coats off when entering the barn and hang in appropriate designated location. Coats can be taken home and washed as needed. The coat should not be worn outside of work.
- d. Sanitation Policy
 - i. Hand washing will be required prior to starting work and before and after eating.
 - ii. Employees are required to use all dip pans they pass and maintain them daily. Dip pans must be maintained in travel paths and changed every day. Using a USDA approved disinfectant on a specific dilution amount (such as "Tektrol" mix in one gallon of water and pour about ½" in the pan).
 - iii. Items that could act as fomites must be cleaned between farms. Manure and dust must be cleaned off, and then items must be wiped thoroughly with alcohol wipes or sprayed with a USDA approved disinfectant. This includes: radios, rubber over shoes, clipboards, pens, etc.
- e. Employee Rules
 - i. Only employees scheduled to work that day are allowed on the premises. If they need to pick up something or contact someone they should contact the farm manager.
 - ii. Employees shall stay in their designated work area on the farm.

- iii. Always work youngest with flock in a sequential manner, youngest to oldest and healthy to sick.
- iv. All employees will be expected to report abnormal bird mortality to their supervisor.
- v. Employees are to have no visitors on the farm. Any strangers on the farm should be approached and questioned as to their reason for being on the farm. If their visit is not warranted they need to be escorted out. Employees should immediately notify their supervisor if they see someone suspicious or question a stranger's actions.
- f. Travel Biosecurity Policy
 - i. Employees will have 12 hours down time, a shower and a change of clothes between any other bird contact and work.
 - ii. Employees must have 48 hours down time, a shower, change of clothes and clean their vehicle between travel out of the country or to a high risk area, before returning to work
- g. Employee Pet Policy
 - i. No pets are allowed in the barns.
- h. Employee Home Environment Policy
 - i. Employees cannot own birds at home and should avoid all contact with birds outside of work, including visiting other poultry operations, contact with pet birds and backyard flocks, attending live bird markets, visiting relatives or friends with birds and hunting wild birds or waterfowl. If an employee has contact with outside birds, they must have 12 hours down time, a shower and a change of clothes before returning to work.
- i. Employee Hunting, Fishing and Trapping Policy
 - i. Employees cannot hunt, fish or trap on a work day prior to coming to work.
 - ii. An employee who has been hunting, fishing or trapping must have 12 hours down time, a shower and a change of clothes before returning to work.

2. SUPERVISOR BIOSECURITY

- a. Definition: A company employee who oversees other workers. These employees may travel between sites with varying frequency.
- b. See "Employee Biosecurity"

3. VISITOR BIOSECURITY

- a. Definition: A visitor is anyone wishing to enter the farm that is not employed by or contracted by the company.
- b. Arrival Policy
 - i. No visitors on the farm unless by appointment.
 - ii. Visitors must park their vehicles in the designated area and may not re-enter their vehicle until the end of the day when they have changed back into their street clothes.

- iii. All visitors need to sign the log book when entering and leaving the farm.
- iv. Visitors must observe the 12 hour down time rule: if they had contact with outside birds, they must have 12 hours down time, a shower and a change of clothes before visiting the farm. Manager or supervisor who scheduled the visitor will communicate the down time rule to them.
- c. Clothing Policy
 - i. Visitors that are allowed into the houses need to change into boots and coveralls provided by the farm.
- d. Sanitation Policy
 - i. Visitors must wash their hands before entering the house.
 - ii. Any equipment that the visitors bring with them must be sanitized before entering the houses. Manure and dust must be cleaned off, then items must be wiped thoroughly with alcohol wipes or sprayed with a USDA approved disinfectant. This includes: radios, rubber over shoes, clipboards, pens, etc.

4. OTHER EMPLOYEE AND VISITOR BIOSECURITY

- a. Truck Driver Policy
 - i. Definition: Drivers that haul poultry, manure, feed, or eggs.
 - ii. Drivers need to stay in designated areas and avoid going in the houses.
 - iii. They are required to keep their trucks and trailers clean. Clean at least once a week, inside and out.
 - iv. Always start work with the youngest birds and work towards the oldest.
 - v. Wear clean coveralls and be aware of **cross traffic??**.
- b. Outside Crew Policy
 - i. Definition: A group of workers hired by the company to complete a specific task or set of tasks. They are not employed by the company.
 - ii. Clean coveralls must be worn, and will be provided by the company.
 - iii. Workers will be required to wash their shoes thoroughly before entering farm.
 - iv. Workers must wash their hands before entering the farm.
 - v. Workers will walk to the house after performing the above biosecurity precautions. They are not permitted to drive down.

5. BIOSECURITY FOR THE ENVIRONMENT

- a. Rodent and Varmint Control Policy
 - i. Keep the best control of flies, rodents, pest birds and other varmints that is possible.
- b. Wild Bird Control Policy
 - i. Bird nests will be removed as soon as they are discovered.
- c. Insect Control Policy

- i. Keep the best control of flies, rodents, pest birds and other varmints that is possible
 - d. Barn Perimeter Policy
 - i. A two foot rock zone will be maintained around all barns.
 - ii. Weeds will be controlled and the lawn mowed.

6. PREMISES BIOSECURITY

- a. Security Policy
 - i. All doors will be locked at night.
- b. Stranger Policy
 - i. Any strangers on the farm should be approached and questioned as to their reason for being on the farm. If their visit is not warranted they need to be escorted out.
 - ii. Employees should immediately notify their supervisor if they see someone suspicious or question a stranger's actions.
- c. Farm Entrance Policy
- d. Farm Sanitation Policy

7. FLOCK BIOSECURITY

- 7.1 Companies are recommended to have the following plans in place:
- a. Dead Bird Pick Up and Disposal Policy
 - b. Manure Handling and Disposal Policy
 - c. Bird Movement Policy
 - d. Egg Movement Policy
 - e. Feed Delivery Policy
 - f. Supply Delivery Policy

8. EGG PROCESSING BIOSECURITY AND FOOD SUPPLY PROTECTION PLAN

(If applicable)

Statement of purpose: Egg processing can play a role in the distribution of disease agents to commercial egg-laying chicken flocks and in the distribution of adventitious materials into the human food chain. This plan seeks to prevent disease spread to production from the processing plant through the incorporation of simple, straightforward policies that address both security and biosecurity. It seeks to prevent the malicious or inadvertent adulteration of food products through these same policies.

1) VISITOR POLICY

- a) Every processing plant should have a clear visitor policy - Visitors to the processing plant should be limited.
 - i) The general public should not be permitted access to the plant.
 - (1) The perimeter of the plant should be controlled by:
 - (a) Perimeter fencing
 - (b) Locked doors
 - (2) A logbook of visitors should be maintained.

- (a) This necessitates that visitors come into the plant via a specific route, i.e. through the office.
 - (3) Retail stores with public access must be specifically addressed.
 - (a) Traffic pattern must be kept separate from the processing plant and from production.
 - (4) The breaking room should be secured at all times to prevent visitor entry.
 - (a) Access limited by keypad, lock, card access
- ii) Service personnel
 - (1) Their access to various areas of the plant should be clearly defined
 - (2) Access should be communicated to service personnel
 - (3) A company contact for all service personnel should be designated to communicate changes.
- iii) USDA/CDA (Colorado Department of Agriculture) inspectors
 - (1) They should receive biosecurity training
 - (2) A company contact for all inspectors should be designated to communicate changes.
 - (3) Equipment transported by inspectors should be kept to a minimum
 - (a) Provide locker for inspectors to store their supplies
- b) Truck drivers
 - i) Drivers bringing eggs from the farms can carry disease agents between the farm and processing plant. Each plant should have a plan to address this issue. Some possible solutions are:
 - (1) On farm egg packing areas should be separated from egg production areas
 - (a) One way traffic only
 - (2) Eggs from the ranch (unprocessed) should be unloaded by processing plant personnel and truck drivers should not enter the processing plant
 - (3) Trucks are loaded at the farm by production personnel
- c) Parking
 - i) Each plant should have designated visitor parking.
 - (1) Separate from production parking
 - (2) Plan should include designated parking areas.
 - (a) Clearly marked to direct visitor parking
 - (b) Hard surface
 - (c) Good drainage

2) **EQUIPMENT SANITATION**

- a) Each processing plant should have a specific plan that addresses egg flat, egg rack, egg pallet, and/or trolley sanitation and separation.
- b) Egg flats
 - i) Flat washers
 - (1) All processing and breaking plants must have flat washers that adequately clean flats.
 - (2) Critical parameters for disease agent killing must be monitored

- (a) Wash water temperature
 - (b) Type of chemical disinfectant uses
 - (i) Frequency of additions/changes
 - (ii) Concentration
 - (c) Contact time with disinfectant
 - (d) Wash water changes
- ii) One way paper flats
 - (1) At times when egg processing plants are transmitting diseases or are suspected of transmitting diseases, one way paper flats will be used for all production.
 - (2) Flats arriving at the processing plant will be condemned and destroyed.
 - (3) Records on the number of flats purchased must be maintained and will be used to validate that flats are only going one way.
- iii) Retail stores
 - (1) One-way paper must be used
 - (2) In times of high risk, retail stores should be closed
- c) Racks or Pallets
 - i) Sanitation
 - (1) A good idea if it can be done
 - ii) Dedicated to clean and dirty areas of the plant
 - (1) Each plant should have a plan to keep clean and dirty equipment separate
 - (2) Defined clean and dirty functions in the plant
 - (a) Clean: processed eggs, outgoing cooler, washed flats
 - (b) Dirty: unprocessed eggs, unwashed flats, incoming cooler

3) **TRAFFIC FLOW**

- a) Each plant must have a plan that addresses:
 - i) Separation of clean and dirty areas of the plant
 - (1) Inclusion of physical barriers to direct traffic
 - (2) Painted areas to designate areas
 - (3) Signage to direct traffic
 - (4) Employee knowledge of traffic flow via education
 - (5) Visitor education about traffic flow
 - (a) Education of frequent visitors (service personnel, inspectors, etc.)
 - (b) Chaperone infrequent visitors to the plant (University personnel, company owner, etc.)
 - ii) Plan should address how any resident flocks will be protected
 - (1) Fencing and gates that separate traffic
 - (2) Traffic flow
 - (a) Processing and production personnel separation
 - (i) Breakrooms
 - (ii) Parking
 - (iii) All traffic

- (3) Timing of processing
 - (a) Process eggs from the resident flock first, before outside eggs

4) **EMPLOYEE TRAINING**

- a) Each processing plant should address employee biosecurity training.
 - i) Communicate biosecurity goals to processing plant employees
 - (1) Develop an education program for each plant
 - (2) Redo training annually
 - (a) In periods of high risk, training should be refreshed

ELEVATED BIOSECURITY PLAN
(Suspect or Confirmed HPAI Flock)

The components of the Elevated Biosecurity Plan are implemented after the identification of a Suspect Premises and are in addition to the Standard Biosecurity Plan.

1. Communication

- Monitor disease status of farm and surrounding area. The company veterinarian is responsible for this.
- Notify farm of the suspect status. Notices will be posted on all doors to the farm. Farm managers will review the situation with their employees at the morning meetings. Farm managers are responsible for this.

2. Traffic Restrictions

- Stop people movement with no employees moving between farms. This includes managers, supervisors and truck drivers. All repairs will be done in house. Utility companies will be notified. Only employees will be allowed on the farm. The general manager will be responsible for this.
- Stop vehicle movement. Truck drivers will service the infected site last and sanitize truck thoroughly after. The pullet feed truck will wash tires and spray with a disinfectant prior to entering the pullet farm. All pullet barns will be filled first. When all feed deliveries are done for the day the feed truck will be power washed and disinfected. Grain delivery trucks will be required to wash and disinfect tires while avoiding the interior of the farm by backing out of the elevator once they make their delivery. The general manager will be responsible for this.

3. Dead Bird Disposal

- Consult Emergency Poultry Disease plan guidelines on disposal of carcasses.

4. Manure Movement

- Manure from the infected farm will be isolated from all other poultry farms. The site will be kept clean of manure to prevent spread. Manure hauling

equipment will be disinfected each day. The spreading of manure will be monitored closely to maximize distance from other poultry.

2. Bird and Supplies Movement

Birds and/or supplies will not be moved from the suspect premises.

APPENDIX D

TASK FORCE BIOSECURITY MEASURES

Procedures for General Biosecurity

Government personnel with oversight responsibility, as well as other individuals, visit multiple premises routinely as part of their job. They can inadvertently come into contact with viruses and bacteria on these properties and without the proper precautions, they can spread the organisms to the next premises they visit. Therefore, field personnel should make extraordinary efforts to ensure that they do not spread an agent to other facilities or animals. This document describes the practices that should be used to reduce the spread of unwanted organisms on a routine basis. *During a known emergency animal disease outbreak, additional precautions specified by animal health officials must be followed.*

All personnel serving on a task force will be directed to take the following minimum biosecurity measures:

1. Wear rubber boots (or other footwear that can be cleaned and disinfected) or disposable boots. When visiting low-risk areas, such as offices or homes away from animal areas, clean street shoes or boots are acceptable. It may be possible to store footwear at facilities that would only be worn there. Some animal owners provide rubber boots or disposable plastic boots for visitors. Ask if they would prefer that you used their footwear, if provided.
2. Remove all dirt and organic matter from your boots and then thoroughly disinfect them using a bucket, brush, and an appropriate broad-spectrum disinfectant prior to entering and when leaving an animal production facility, including backyard facilities.
3. Wear disposable or clean coveralls, laboratory coats, smocks, or other suitable outerwear when you plan to come into contact with animals, manure, or animal secretions. If visiting multiple facilities, have an ample supply of disposable or clean coveralls so a fresh pair can be used at each site. Outerwear need not be sterile, but if it has come into contact with animals or is soiled with manure, blood, milk or other secretions, change into a clean replacement when leaving a premises. Place dirty materials into a double plastic bag and seal it.
4. Thoroughly wash your hands with antimicrobial soap prior to entering and when leaving a premises. Disposable latex gloves may also be used, but not as a

- substitute for proper hand washing. NOTE: Remove watches, jewelry and other items prior to washing your hands. Lather your hands with soap and then rub hands together vigorously for 15-20 seconds. Finish by rinsing under a stream of water, if available.
5. Avoid driving through manure and wastewater. Park your vehicle away from pens, pastures or areas when animals may be held. Park on concrete or paved areas when available. NOTE: Do not enter animal production areas unless a facility employee is present or you have been authorized to do so by the facility owner.
 6. Clean your vehicle between visits to commercial animal production facilities, including tires and floor-mats (carpets should be covered with plastic floor mats). A commercial car wash is adequate. Tire sprays may be necessary in some situations.
 7. Dispose of used disposable boots, gloves and coveralls at the facility, if possible. Otherwise place them in a double plastic sealed garbage bag for later disposal in a designated dumpster at the Task Force headquarters.
 8. Keep all equipment used in the field clean. Disinfect any equipment that comes into contact with animals or their secretions before taking it to another property or use disposable equipment. NOTE: When making visits to farms, select equipment that is easily disinfected. Plastic clipboards are easier to disinfect than wooden ones and organic material is easier to see.
 9. Keep clean and dirty clothing, equipment and supplies separate. Designate “clean” and “dirty” storage areas in your vehicle.
 10. If you come into contact with a sick or dying animal, consider yourself a carrier of disease and clean your shoes, shower, put on clean clothing and wash your car before coming into contact with other animals.

Procedures for Biosecurity before Leaving Premises

1. Task Force personnel will thoroughly clean and disinfect all reusable equipment and eyewear.
2. Task Force personnel will place disposable coveralls (turned inside out), boots and other solid in a double plastic garbage bag to be placed in the “dirty” area of their vehicles. These items will be disposed of in a designated dumpster at the task force headquarters.
3. Task Force personnel will wash their hands with soap and water or antibacterial gel.

Procedures for Biosecurity at the End of the Day

1. Task Force personnel will clean and/or launder all reusable clothing and equipment.
2. Task Force personnel will take a shower and shampoo your hair, clean under their finger nails and clean their respiratory passages by blowing their nose, clearing their throat and spitting into a sink with running water.

APPENDIX E

PROTOCOL FOR PERSONNEL ENTERING AN INFECTED PREMISES

Procedures for Entering Infected Premises

1. All Task Force personnel must be trained in biosecurity.
2. All Task force personnel must wear required personal protective equipment, as recommended by the USDA/CDC, including:
 - Tyvek or other coveralls,
 - Rubber boots or boot covers,
 - Safety goggles,
 - Gloves (inner latex glove, outer glove),
 - Dust mask, and
 - Head bonnet and/or hardhat.
3. A cleaning and disinfection line must be established and maintained.
4. Once personnel have entered premises, they may not cross back over the cleaning and disinfection line for any reason without removing and properly disposing of all personal protective equipment and adhering to biosafety regulations.
5. Personal items such as food, beverage containers, etc., must be properly disposed of on premises (placed in dumpster). No containers leave the area.
6. All tools and other equipment must be cleaned and disinfected before being brought across the cleaning and disinfection line.
7. Once the personnel protective equipment has been removed, designated personnel must disinfect personal footwear.
8. All personnel will thoroughly wash hands at the wash station.
9. Personnel may not re-enter the premises without following the above steps.

Procedures for the End of the Day

1. All equipment and/or debris must be properly stored and/or disposed of by the end of each day.
2. Before returning to Task Force headquarters, personnel must:
 - Wash vehicles (under carriage wash) and clean and/or launder reusable equipment
 - Take a shower and shampoo their hair, clean under fingernails, and
 - Change clothes.

APPENDIX F

BIOSECURITY PROCEDURES FOR POULTRY FARMS

The following procedures are recommended for poultry growers (including game birds, waterfowl, exhibition flocks, sporting birds and small farm flocks):

1. Keep poultry houses locked.
2. Resident flock manager should have clothing (including shoes, boots, hat and gloves) when caring for flocks separate from those worn off the farm.
3. Flock manager and other caretakers should not visit any other poultry flocks.
4. Do not allow visitors in or near the poultry houses.
5. After caring for the flock, change clothes completely and wash hands and arms before leaving premises.
6. Essential visitors such as owners, fuel and feed delivery drivers, meter readers, poultry catchers and haulers, and service personnel must put on protective outer clothing including boots and headgear prior to being allowed near the flocks.
7. Monitor vehicles entering premises for poultry pickup or delivery, feed delivery, fuel delivery, etc. to determine if they have been scrubbed down and the undercarriage and tires spray disinfected prior to entering. If vehicle does not appear to be properly sanitized, growers should not admit the vehicle to the property.
8. All coops, crates and other poultry containers or equipment must be cleaned and disinfected prior to use and following use.
9. Sick and dying birds should be evaluated by the production veterinarian or submitted to a state/university laboratory for diagnosis. Commercial growers should contact their flock supervisors.
10. Dead birds must be properly disposed of by composting or burial or incineration.
11. Persons handling wild game (especially waterfowl) must change clothes completely and bathe prior to entering poultry premises.
12. Keep “Stop”; “Keep Out” and similar type signs posted at drive entrances. These are available from flock supervisors and local hardware outlets.

APPENDIX G

EMERGENCY KIT CONTENTS

All VMO's/FADD's must have the following emergency kit during an emergency poultry disease alert:

1. Copy of this procedure manual
2. Boots (disposable or easily disinfected)
3. Plastic trash bags
4. Disinfectant
5. Boot brush
6. Bucket
7. Disposable coveralls
8. Disposable dust masks
9. Rubber gloves
10. Restricted Area Tape (for driveway and poultry house door)
11. Household aerosol insect killer
12. Disposable surgical caps
13. Hand sprayer (one gallon)
14. Specimen bags
 - Large (for birds)
 - Small (for tissues, etc.)
 - Buffered formalin
 - Blood tubes

	Item	Quantity per kit
1.	Shoe cover	1 pair
2.	Biohazard Bags 25"x35"	1
3.	Chlorhexidine	50 ml
4.	Brush	1
5.	Box/Bucket	1
6.	Tyvec Coveralls, XL	1
7.	Dust Mask	1
8.	Surgical Gloves	1 pair
9.	Temporary Signs (waterproof)	2
10.	Orange Caution Tape	1
11.	Bug Killer	1
12.	Sterile 50 ml Conical Tubes	5
13.	Sterile Sample Bags, 3"x7"	4
14.	Buffered Formalin	200 ml
15.	Vacutainer Tubes and Needles	4
16.	Hood and Beard Cover	1

APPENDIX H

PROCEDURE FOR COMMERCIAL POULTRY HOUSE DEPOPULATION

1. Determine the number of birds to be euthanized.
2. Determine the size of the euthanasia enclosure to be needed. This should be calculated based on the size and number of birds to be held in the enclosure. The following estimate may be used.
3. Determine the amount of CO₂ required. Use .08 to .11 pounds of CO₂ per cubic foot of enclosure to calculate this amount. The .08 figure is a minimum and does not allow any buffer for gas delivery problems. The .11 figure is based on filling the entire enclosure area which, in reality, is more than necessary because CO₂ is heavier than air and settles to the lowest possible point. This figure provides a buffer of additional CO₂.
 - Pounds of CO₂ needed = length (feet) x width (feet) and height (feet) x .08 pounds of CO₂ per cubic foot.
 - For example, an enclosure 56 feet long, 24 feet wide and 4 feet high will require a minimum of 430 pounds of CO₂ (56 x 24 x 4 x .08 = 430).
4. CO₂ is provided in 50 and 387 pound tanks (the large tanks sometimes freeze up), are hard to move, and are more complicated to operate.
5. Prepare the enclosure.
6. The size of the tarp or plastic sheeting needed should be the length of the enclosure plus 4 to 6 feet plus the width of the enclosure plus 4 to 6 feet.
7. Extra tarps/sheeting should be available in case the primary tarp sheeting develops large tears or rips. If two tarps need to be used, they should be overlapped by at least 4 feet and secured together to ensure air tightness.
8. Check tanks to ensure that they are operative.
9. Move tanks inside of the enclosure. Space them evenly. Secure them along the side of the enclosure.
10. The tarp/sheeting should have some "pull device" attached to allow pulling over from the opposite side of the enclosure.
11. Any gaps at the junction of the enclosure wall and the floor should be closed with hay bales. Seams on the enclosure should be sealed with duct tape.
12. Birds should now be moved to the enclosure.
13. Ropes or strapping should be run across the top of the enclosure to support the tarp. If enough people are available, no support is needed; people can hold the tarp from the sides of the enclosure.
14. Seal the enclosure using the pull system. The tarp/sheeting should be pulled across the top of the enclosure.
15. The tarp should be secured to the edges of the enclosure to be as air-tight as possible. The tarp should be observed for obvious large leaks. Leaking areas

- should be sealed with appropriate materials such as duct tape (or the tarp should be replaced).
16. Tanks should be opened slowly for one minute then opened completely and allowed to completely empty. Personnel should always exercise caution when working with CO₂.
 17. The tarp should be left on for an additional 15 minutes after the tanks have completely emptied.
 18. Confirm euthanasia. Use conditionally acceptable methods of euthanasia if necessary.

APPENDIX I

PROTOCOL FOR EUTHANASIA OF BACKYARD PREMISES

Personnel Required for Backyard Depopulation Teams

1. The following personnel are required:
 - 1 VMO
 - 1 Appraiser, and
 - 4 Animal Health Technicians or Agriculture Technicians

Equipment for Personal Safety and Biosecurity

1. The following equipment is required for each team member:
 - Biosecurity pack containing: one Tyvek suit, two pairs of disposable boots, two pairs of disposable gloves, one hair bonnet, one dust mask and one large plastic bag.
 - Coveralls
 - Hand sprayer (with disinfectant)
 - Heavy duty rubber gloves
 - Extra vinyl gloves, disposable boots,
 - Safety glasses/goggles
 - Waterless hand cleaner, cold packs
 - First aid kit
 - Drinks

2. The following tools are required:
 - Depopulation truck (box truck)
 - Hand trucks (2)
 - CO2 cylinders (number as needed, must be strapped in place in back of truck)
 - Hoses for CO2
 - Roll-off garbage cans used as depopulation chamber
 - Pump sprayer (with disinfectant)
 - Heavy duty large and small trash bags
 - Roll of duct tape
 - Roll of paper towels
 - Clipboard and pen
 - Maps
 - Fire Extinguisher.

Procedures for Depopulation of Backyard Premises

1. The depopulation truck (box truck with Tommy Lift) will try to park on contaminated premises.
2. Crew vehicle(s) should park well away from the depopulation truck.
3. Establish a cleaning and disinfection line.
4. Put on biosecurity equipment (suits, gloves, etc.) before crossing the cleaning and disinfection line.
5. Line depopulation barrels with two large plastic bags.
6. Remove needed barrels from truck.
7. Take CO2 off truck.
8. Take barrel to depopulation area (backyard).
9. Pre-charge barrel to be used with CO2.
10. Place up to four birds (depending on the size of the birds) in barrel.
11. Replace lid securely.
12. Administer CO2.
13. Continue to add birds and gas until container is nearly full.
14. Small birds (finches, love birds, etc.) are placed in bags.
15. Take the barrel back to the depopulation truck. If necessary, repeat 6 through 14 with another barrel.
16. When depopulation is completed, all barrels and tools taken from the depopulation truck must be disinfected (sprayed with solution).
17. Use the Tommy Lift to place barrel in the back of the depopulation truck.
18. Disinfect the Tommy Lift.
19. At the cleaning and disinfection line, disinfect the depopulation truck (spray tires and wheel wells).
20. Crew members walk to the cleaning and disinfection line and remove biosecurity equipment and place in trash bag, which are to be placed in barrel.
21. Crew members will disinfect their own safety glasses/goggles and keep for continued use.
22. At the cleaning and disinfection line, disinfect shoes and sanitize hands.
23. The depopulation truck will dump barrels at designated area at the end of each work day.
24. All vehicles and other equipment must be disinfected before returning to Task Force headquarters.

APPENDIX J

ANIMAL DISPOSAL

1. Composting

Three types of composting may be employed during an event requiring large-scale disposal of contaminated chicken carcasses and manure.

In-house composting may be used in a large-scale operation that can be monitored and can be constructed to eliminate that possibility of leachate release.

On-site composting may be utilized with the same provisions specified for in-house composting. On-site composting will not be an option for backyard flocks. These flocks will be destroyed under the direct supervision of federal, state or local officials. The carcasses and any other potentially contaminated materials will be packaged, transported and disposed of in a state approved landfill or central composting site.

Large scale off-site composting may be considered with the provision that a person with recognized expertise in the composting field will be in charge of the operation of the facility.

2. Burial

Compared to other disposal methods, burial is simpler, more expeditious and economical, and depending on the seasonal high water table level, soil conditions and proximity to drinking water supply systems less likely to adverse environment effects. On-site burial also minimizes biosecurity concerns involved in moving contaminated carcasses, animal products, and other materials off the infected or presumptive positive premises.

Depending on soil conditions, burial pits that are 7 ft wide and 9 ft deep usually are acceptable. If equipment and soil conditions permit, it may be desirable to dig deeper (12-20 ft) and wider burial pits. After the burial pit is filled, it should be covered with 6 ft of soil mounded over the burial site, starting at ground level.

Approvals, which may be provided by local department of health personnel or be delegated to a disposal team manager, will be required of producers who have the appropriate equipment and personnel to perform burial operations for their own flocks before animals are placed in pits.

Monitoring of burial site will continue for one year following a disposal action.

3. Landfills

The infectious nature of the disposed animal by products and carcasses requires disposal in a controlled environment.

Transportation will occur according to a procedure that provides a clean truck and trailer at the disposal site. The loading of trucks or containers will occur using the following criteria.

- a. Prior to loading, carcasses must be sprayed thoroughly with a disinfecting solution.
- b. Truck or container compartments should be leak proof.
- c. Truck compartments shall be lined with at least a 3 ml disposable plastic sheet and sealed at the top. The plastic sheet must be large enough to cover the carcasses and to be secured to the sides and ends of the compartment.
- d. A layer of absorbent material, (e.g. wood shaving or sawdust) will be placed on top of the plastic liner to prevent punctures.
- e. The bottom of the container will have a layer of wood shaving, sawdust, hay or straw that is at least 1 ft thick to absorb fluids.
- f. At least 2 ft of space depending on the air temperature will be left between the carcasses and the top, sides, and ends of the truck compartment.
- g. After loading is completed into the plastic liner, but before sealing of the liner, the contents will be sprayed with Virkon solution.
- h. Liners will be sealed with tape.
- i. Sealed container will be sprayed thoroughly with a disinfecting solution.
- j. After the top of the plastic sheet has been sprayed with disinfectant, a heavy tarp must be put over the entire container and secured.
- k. All shipments leaving a quarantine zone enroute to a landfill will be tracked and documented.

4. Incineration/Burning

Open burning wither on-site or off-site in mass, generally is not acceptable with current environmental quality and health standards. Incineration is a valuable process for its ability to stabilize and eliminate hazardous material. It basically converts organic material into inorganic matter while destroying pathogenic organisms through the application of high ambient temperature conditions. The temperature within the incinerator (continuous combustion type) is stabilized to keep it constant at 1652°F at the exit portion of the combustion chamber.

5. Digesting

In alkaline hydrolysis, sodium hydroxide or potassium hydroxide is used as the agent that under heat and pressure digests carcass tissue leaving only liquid effluent and the mineral portion of bone and teeth. Back yard

flocks may utilize this method of disposal at the Colorado State University
Veterinary Diagnostic Laboratory.

APPENDIX K

PRE AND POST CLEANING AND DISINFECTION OF COMMERCIAL PREMISES

After depopulation of birds, careful and thorough cleaning and disinfection ensures that AI does not re-emerge on the premises. Thus, cleaning and disinfection is a vital component of the Task Force mission. Adequately cleaning and disinfecting larger commercial premises requires planning before the depopulation occurs as well as work after depopulation.

Procedures for the Week Before Depopulation:

1. Before the depopulation team finishes on site, assign the appropriate number of Cleaning and Disinfection personnel to all necessary positions.
2. Stock the entrance to the facility with all of the necessary biosecurity supplies, including coveralls, boots, gloves, and masks.
3. Ensure that a sign or signs at the site's entrance identify the site as a quarantined site with restricted entry.
4. Help the facility maintain a biosecurity perimeter.
 - Work with the facility management on a plan to keep all allied industry vehicles, personnel, and equipment outside of the area considered "dirty" at all times. If those vehicles must enter, any equipment must be disinfected before leaving the site, and every vehicle surface that comes into contact with the facility, including floorboards, must be disinfected before leaving.
 - Instruct or reinstruct all farm personnel who work at or visit the facility that they must follow all standard biosecurity protocols until the facility is officially released from quarantine. All personnel must understand that they must wear coveralls, boots, hairnets, and gloves (if they must touch equipment, surfaces, or items in the facility).
 - Ensure that the facility is locked during all non-working hours or that each entrance is monitored by a member of the Task Force to ensure proper biosecurity protocols are followed.
5. Review Cleaning and Disinfection protocols with the facility management and establish timelines for the work. Evaluate personnel and equipment needs so that timelines can be met.
6. Ensure that a signed Compliance Agreement between facility management and the AI Task Force is in place.

Procedures for the Week After Depopulation

1. Ensure that pest control programs are in place. Use contractors designated for the AI Task Force. A rodent control program must be in place by the end of the first week after depopulation; the designated contractor must provide this service for three weeks. A fly control program must be in place by the end of the first week after depopulation; the designated contractor must provide his service for one week.
 2. Do not allow manure to be moved for 28 days after depopulation.



Ready Reference Guide for the Highly Pathogenic Avian Influenza (HPAI) Response Plan: The Red Book



9/21/2011

Goals of an HPAI Response

The goals of an HPAI response are to

1. detect, control, and contain HPAI in poultry as quickly as possible;
2. eradicate HPAI using strategies that seek to protect public health and stabilize animal agriculture, the food supply, and the economy; and
3. provide science- and risk-based approaches and systems to facilitate continuity of business for non-infected animals and non-contaminated animal products.

Achieving these three goals will allow individual poultry facilities, States, Tribes, regions, and industries to resume normal production as rapidly as possible. They will also allow the United States to regain disease-free status without the response effort causing more disruption and damage than the disease outbreak itself. The USDA will coordinate and collaborate with public health agencies and entities in any HPAI outbreak in poultry.

Three Epidemiological Principles of Response

1. Prevent contact between HPAI virus and susceptible animals.
2. Stop the production of HPAI virus in infected or exposed animals.
3. Increase the disease resistance of susceptible animals to the HPAI virus or reduce the shedding of the HPAI virus in infected or exposed animals.

Control and Eradication Strategy for HPAI in Poultry

The primary control and eradication strategy for HPAI in poultry is stamping-out. If the spread of HPAI outpaces the resources for stamping-out, or if other factors direct the response away from a stamping-out strategy alone, emergency vaccination strategies may be considered.

Stamping-Out. The depopulation of all clinically affected and in-contact susceptible poultry.

Factors Influencing HPAI Response

Detection of HPAI may result in emergency intervention by State, Tribal, Federal, and/or local authorities. The scope of regulatory intervention will depend on the following factors:

- Disruptions to interstate commerce
- Disruptions to international trade
- Acceptance of response strategy
- Scale of outbreak
- Rate of outbreak spread
- Resources available to implement response strategy.

For more information, please go to:
<https://fadprep.lmi.org> (request username and password), or
<http://inside.aphis.usda.gov/vs/em/fadprep.shtml>
(for APHIS employees).



Critical Tools and Activities for Containment, Control, and Eradication

In order to achieve the goals of an HPAI response, critical tools and activities must be implemented to execute and support the response strategy. These tools and activities must support a science- and risk-based approach that protects public and animal health and stabilizes animal agriculture. Here are some of the critical activities which will be employed:

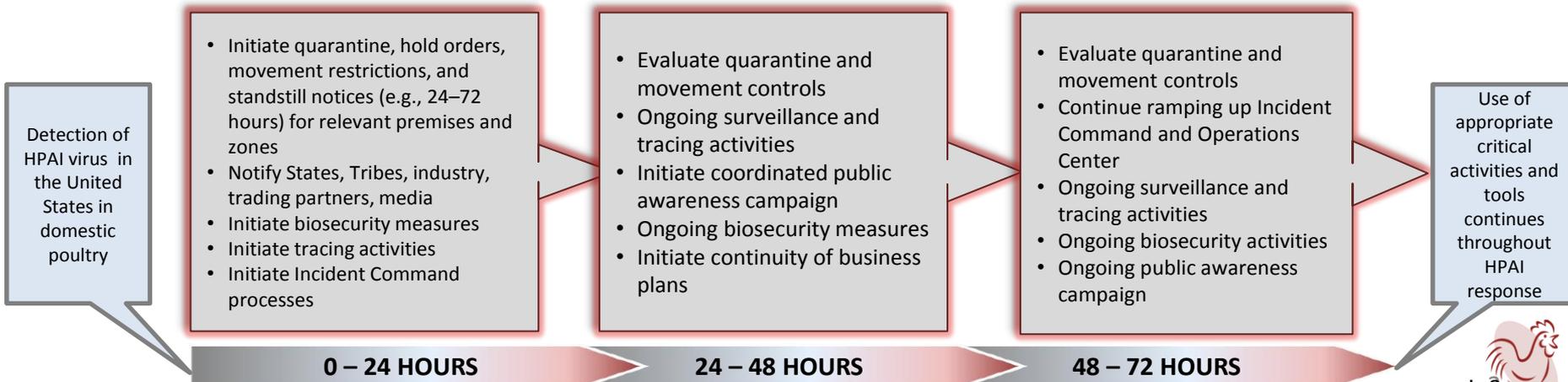
- Swift imposition of effective quarantine and movement controls.
- Rapid diagnosis and reporting.
- Epidemiological investigation and tracing.
- Increased surveillance.
- Continuity of business measures for non-infected premises and non-contaminated animal products.
- Biosecurity measures.
- Mass depopulation and euthanasia, potentially including preemptive culling.
- Effective and appropriate disposal procedures.
- Cleaning and disinfection measures.
- Emergency vaccination (as the response strategy indicates).

Communication and Coordinated Public Awareness Campaign

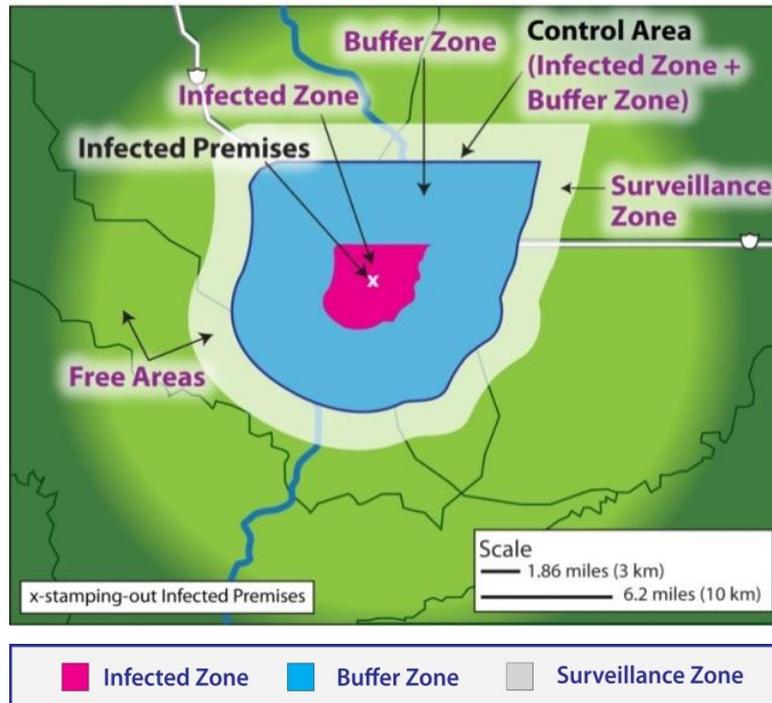
Regardless of the response strategy, a public awareness campaign must be coordinated. This will support the response strategy by

- Engaging and leveraging Federal, State, Tribal, local, and stakeholder relationships to provide unified public messages for local, national, and international audiences;
- Addressing the issues and concerns related to public health, food safety, and animal welfare;
- Addressing issues and concerns related to interstate commerce, continuity of business, and international trade; and
- Widely disseminating key communication messages to consumers and producers.

Critical Activities in the First 72 Hours of U.S. HPAI Outbreak



Example of Zones and Premises in Relation to Stamping-Out



Quarantine and Movement Control

- Definitions of zones and premises, as well as minimum sizes of zones and areas, are provided in a companion ready reference guide.
- Movement control is also summarized in a companion ready reference guide.
- The Incident Command will work to determine appropriate premises designations in the event of an HPAI outbreak.
- In addition, commodity-specific proactive risk assessments, conditions for movement (such as biosecurity measures), movement and marketability plans, and other plans may be considered in movement control.
- World Organization for Animal Health (OIE) treatment guidelines should be considered in moving poultry products.

Continuity of Business Plans

- Continuity of business is the management of non-infected premises and non-contaminated animal products in the event of an HPAI outbreak.
- These plans provide science- and risk-based approaches and systems for a response effort, helping to minimize consequences on producers and consumers.
- Continuity of business can protect animal health by preventing the transmission of HPAI from an infected flock, and protect public health by preventing products containing live HPAI virus from going to market.
- Please see the *Secure Egg Supply Plan* for more information on the movement of eggs and egg industry products during an HPAI outbreak.

Stamping-Out

Depopulation of all clinically affected or in-contact susceptible poultry. All Infected Premises would be depopulated.

Diagnostics, the National Veterinary Services Laboratories (NVSL) and the National Animal Health Laboratory Network (NAHLN)

The confirmation of an HPAI outbreak will be made by NVSL in Ames, Iowa. After positive confirmation of HPAI, subsequent samples from premises inside an established Control Area may be sent to laboratories that are part of NAHLN. The Incident Command will provide specific instructions regarding when samples no longer need to be sent to NVSL in an outbreak.