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Ohio Animal Disease Response: An Overview

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USDA APHIS VS

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Foreign Animal Diseases

- Ohio Revised Code 941
  - Dangerously contagious or infectious disease
    - Any disease, including any foreign animal disease, or vector, that the director of agriculture, in the director's sound discretion, determines to be of harmful effect on the animal or poultry industry or the public health and to be capable of transmission by any means from a carrier animal to a human or to another animal

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Foreign Animal Diseases

- Ohio Revised Code 941
  - Disease of concern
    - Any disease, including any foreign animal disease, or vector, that the director determines may have adverse impact on the animal or poultry industry or to the public health in this state, but that is not a disease that is reportable to the USDA

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Foreign Animal Diseases

- Animal health officials define an exotic or foreign animal disease as an important transmissible livestock or poultry disease believed to be absent from the United States and its territories that has a potentially significant health or economic impact

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Foreign Animal Diseases

- Examples of Foreign Animal Diseases
  - **Highly Pathogenic Avian Influenza**
  - Foot and Mouth Disease
  - **Virulent Newcastle Disease**
  - New World Screwworm
  - Classical Swine Fever
  - African Swine Fever
  - Cattle Fever Tick
  - Rabbit Hemorrhagic Disease Virus

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FAD Outbreak Response

1. Is it a disease of high consequence?
   - HPAI
   - FMD
   - ASF
2. What is the scope of the outbreak?
   - County, State, Regional, National?
   - Can that jurisdiction respond without national assistance (funding, equipment, people, etc.)?
3. Is it a zoonotic disease?
   - Certain strains of influenza
   - New World Screwworm
4. Who would be the lead agency?
   - Animal Diseases – State Departments of Agriculture, USDA APHIS Veterinary Services
   - Human Diseases – Center for Disease Control and Prevention (U.S. Department of Health and Human Services), State Public Health Departments

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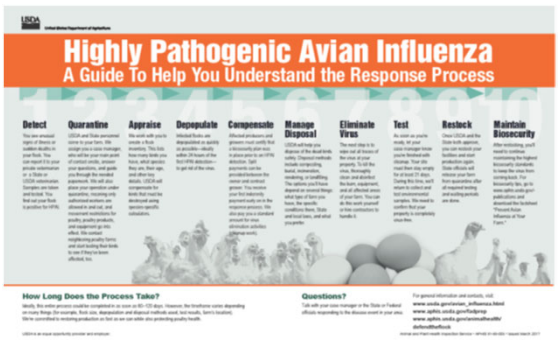

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Detection

- Animals begin exhibiting signs of illness or sudden death:
  - Reported to the private veterinarian
  - Private veterinarian would report suspicious diseases or signs to USDA or ODA
- May also be detected through surveillance programs that have been put into place

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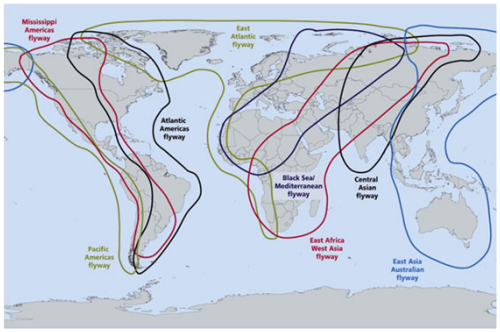
Migratory Bird Flyways



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Highly Pathogenic Avian Influenza

- AI often causes between 90-100% morbidity and mortality rates in domestic poultry
  - Wild waterfowl infected with AI may not show clinical signs
- Clinical signs in poultry may include:
  - Marked depression and loss of appetite
  - Soft-shelled eggs
  - Sudden drop in egg production
  - Swollen wattles and combs
  - Diarrhea
  - Respiratory distress
  - Increased daily mortality

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Highly Pathogenic Avian Influenza

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Low Pathogenicity Avian Influenza

- Occur naturally in wild migratory waterfowl and shorebirds without causing illness
- Can infect domestic poultry, creating little or no signs of illness
  - Potential then exists for the virus to mutate or shift into an HPAI strain

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Virulent Newcastle Disease Virus

- Contagious and fatal viral disease affecting the respiratory, nervous and digestive systems of birds and poultry
- Disease is so virulent that many birds and poultry die without showing any clinical signs

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Virulent Newcastle Disease Virus

- Clinical signs include:
  - Sudden death and increased death loss in flock
  - Sneezing, gasping, nasal discharge, coughing
  - Greenish, watery diarrhea
  - Decreased activity, tremors, drooping wings, twisting of the head and neck, circling, stiffness
  - Swelling around the eyes and neck

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Virulent Newcastle Disease Virus

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Feds seize 1 million lbs. of pork smuggled from China to N.J. port amid African swine fever outbreak

Updated Mar 15, 2019. Posted Mar 15, 2019

US Custom and Border Protection agents made the biggest seizure of agricultural product in American history, officials announced Friday.

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African Swine Fever

- Highly contagious and deadly viral disease affecting both domestic and wild swine
- ASF is a devastating disease that would have a significant impact on US livestock producers, their communities and the economy if it were found in the US

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African Swine Fever

- Clinical signs include:
  - High fever
  - Decreased appetite and weakness
  - Red, blotchy skin or skin lesions
  - Diarrhea and vomiting
  - Coughing and difficulty breathing

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African Swine Fever

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Control (Quarantine)

- Once disease is suspected on a premises, the site is placed under quarantine
  - Only authorized workers will be allowed on and off of a farm
- Movement restrictions will be put in place for animals, animal products, feed, waste, equipment, etc.
  - Some movements allowed under permitting through ODA

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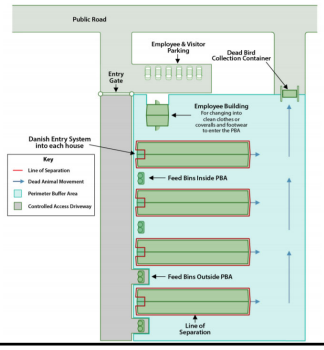
Control (Quarantine)



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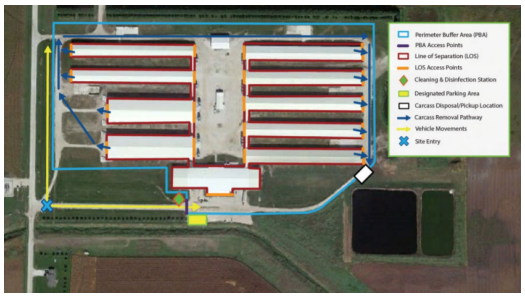
Control (Quarantine)



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Control Zones

- Control zones/areas are established
  - Infected Zone – Zone that immediately surrounds an infected premises
  - Buffer Zone – Zone that immediately surrounds an Infected Zone or a Contact Premises
  - Control Area – Consists of an Infected Zone and a Buffer Zone
  - Surveillance Zone – Zone outside and along the border of a Control Area
    - Surveillance Zone is part of the Free Area
  - Free Area – Area not included in any Control Area
    - Includes the Surveillance Zone

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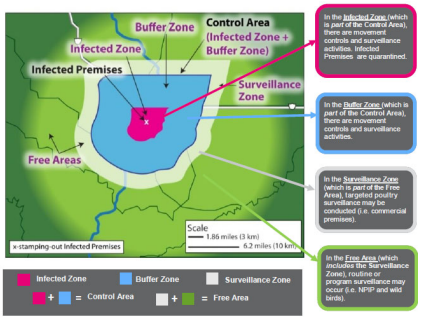
Control Zones/Areas



In the Infected Zone (which is part of the Control Area), there are movement controls and surveillance activities. Infected Premises are quarantined.

In the Buffer Zone (which is part of the Control Area), there are movement controls and surveillance activities.

In the Surveillance Zone (which is part of the Free Area), targeted poultry surveillance may be conducted (i.e. commercial premises).

In the Free Area (which includes the Surveillance Zone), routine or program surveillance may occur (i.e. NPIP and wild birds).

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Biosecurity

- Strict biosecurity measures are implemented to prevent or slow the spread of disease
- Proper biosecurity measures have two functions:
  - Contain the pathogen on an infected premises (biocontainment)
  - Prevent the introduction of the pathogen to naïve livestock and premises (bioexclusion)

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RISK FACTORS

- Unlikely to cause disease in healthy adult workers and animals
- Effective therapy or vaccines available
- Risk of spread is limited

RISK LEVEL

- Low individual and community health risk
- Moderate individual risk and limited community risk

CLEAN UP

- Dispose of gloves and disposable coveralls
- Disinfect boots
- Wash hands
- Launder washable coveralls before next use
- Shower upon returning home

APPROPRIATE PPE

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RISK FACTORS

- Capable of causing serious human or animal disease
- Does spread but treatment/ vaccine is available
- Does not ordinarily spread by casual contact between individuals

RISK LEVEL

- High individual risk
- Low community health risk

CLEAN UP

- Dispose of PPE (except non-disposable items like PAPR blower/filters)
- Disinfect boots
- Wash hands
- Shower

APPROPRIATE PPE

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Appraisal and Compensation

- Indemnity is a key component of APHIS' disease control programs
  - The promise of fair compensation for losses helps to ensure cooperation from the owners of affected poultry
- Such cooperation is important for rapid disease control and eradication

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Depopulation

- State and APHIS officials approve depopulation prior to its occurrence
- The State Veterinarian has statutory authority to:
  - Prevent the spread of dangerously contagious or infectious disease
  - Provide for the control and eradication of such disease
  - Cooperate with USDA in such work

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Depopulation

- Euthanasia or mass depopulation should be provided as safely, quickly and humanely as possible to decrease the risk of virus amplification
- Depopulation methods follow AVMA Guidelines for the Euthanasia of Animals

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Depopulation

- Options for depopulation will depend on several things:
  - Type of farm and specific conditions on-site
  - State and local laws
  - Owner preferences
- Carbon dioxide and water-based foam concentrate have most commonly been used to depopulate poultry flocks

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CO_2 Carts

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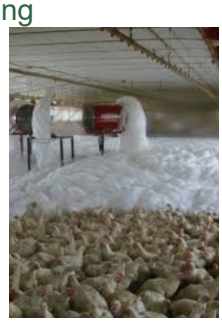
Foaming



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Disposal

- Disposal begins as soon as possible after depopulation and will depend on several requirements/conditions
- Options for disposal will depend on several things:
  - Type of farm and specific conditions on-site
  - State and local laws
  - Owner preferences

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Disposal

- Contaminated and potentially contaminated materials must be properly disposed of to prevent disease spread
- Acceptable disposal methods may include composting, burial, rendering, incineration or landfilling

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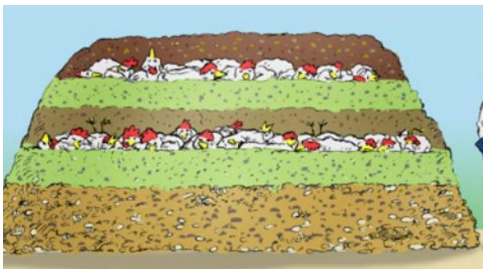
Composting



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Landfilling

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Cleaning and Disinfection

- Goal is to wipe out all traces of disease from the premises
  - Cleaning and disinfecting of barns, equipment and all affected areas must take place
- Depending on the pathogen, additional and/or specific steps must also take place

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Virus Elimination

- Cleaning is the removal of gross contamination, organic material, and debris from the premises
- Disinfection refers to the methods that destroy or eliminate the pathogen

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Virus Elimination

- HPAI has a high survival rate on both organic and inorganic materials
- Aggressive cleaning and disinfection practices are required to:
  - Contain the HPAI virus to the Infected Premises
  - Eliminate virus from contaminated equipment, materials and all other fomites

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Testing

- Depending on the disease, a premises may have environmental samples collected and tested
- Goal is to ensure that the site is free of virus before re-stocking more animals

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Restocking

- Once USDA and State Officials approve, a premises may be restocked and production may be started again
- At this point, the farm may be released from any quarantine
  - Certain diseases may require additional monitoring of new animals to ensure that no pathogen remains

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Maintaining Biosecurity

- Producers must use special preventative measures and precautions on the farm
  - To the fullest extent possible, close the herd to the introduction of new livestock
  - Isolate newly purchased livestock and those returning from shows/fairs/etc.
  - Vaccinating the flock/herd for common diseases, if available
  - Separating stages/types of animals

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Maintaining Biosecurity

- Producers must use special preventative measures and precautions on the farm
  - Prevent indirect transmission through contaminated equipment, footwear, etc.
  - Limit visitors to the premises
  - Establish a rodent and pest control program
  - Deliver, store and maintain feed and bedding in a manner that limits exposure to contamination

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Chicken Masks

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Your Role in a Response

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What to do if you suspect an FAD?

- Contact ODA or USDA immediately!
  - USDA APHIS VS – 614-856-4742
  - ODA Animal Health – 614-728-6220

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Reporting an FAD

- We will need to know the name, address and contact information for the owner
- The location of the animal(s) if different
- The clinical presentation of the affected animal(s)
  - How many animals are affected?
  - When did signs first present?
- The type of operation
  - How many and what types of other animals are on-site?

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Standard Biosecurity Practices

- PPE/Uniforms
- # of Visits/Day
- C&D between visits

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Outreach to Clients

- Info/posters/brochures/etc. from USDA, ODA, OPA, and OSU Extension
- Best practices for biosecurity on the farm
  - Acquisition
  - Separation/Isolation of new birds
  - Limiting visitors

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Other Resources and Contact Information

United States Department of Agriculture
Animal and Plant Health Inspection Service
Veterinary Services
www.aphis.usda.gov

Ohio Area Office:
12927 Stonecreek Drive
Pickerington, Ohio 43147
Office: 614-856-4735 · Fax: 614-856-1086
Email: vsoh@aphis.usda.gov