Avian Influenza
USDA APHIS
Preparedness and Response

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• USDA APHIS VS
• EMD NCAHEM

• NIEHS-APHIS Conference
• September 17, 2007
Topics in this Presentation

- USDA APHIS Emergency Response
- USDA APHIS - Avian Influenza Background
- USDA APHIS - AI Safeguarding Efforts
- USDA APHIS – AI Surveillance
USDA APHIS
Emergency Response
USDA

- USDA provides leadership on food, agriculture, natural resources, and related issues based on sound public policy, the best available science, and efficient management.
- USDA wants to be recognized as a dynamic organization that is able to efficiently provide the integrated program delivery needed to lead a rapidly evolving food and agriculture system.
- Nearly 30 agencies and offices.
- A USDA presence in each county nationwide.
- A network of Emergency Response Agencies and personnel with APHIS as a Primary Responder.
APHIS

• APHIS Mission: To protect the health and value of American agriculture and natural resources.

• APHIS is on the job 24 hours a day, 7 days a week working to defend America’s animal and plant resources from agricultural pests and diseases.

• In the event that a pest or disease of concern is detected, APHIS implements emergency protocols and partners with affected States to quickly manage or eradicate the outbreak. This aggressive approach has enabled APHIS to successfully prevent and respond to potential pest and disease threats to U.S. agriculture.
APHIS' Mission:
To protect the health and value of American agriculture and natural resources
An Animal Health Emergency Can Come in Many Forms

- Foreign Animal Disease
- Emerging Disease
- Natural Disaster
- Terrorist Attack*
Foreign Animal Disease Investigations
APHIS Has a History of Managing Animal Health Emergencies

1970s  Classical Swine Fever

1984  Highly Pathogenic Avian Influenza

2002  Low Pathogenic Avian Influenza

2002-2003  Exotic Newcastle disease

2004  Highly Pathogenic Avian Influenza
USDA Safeguarding Efforts

- APHIS' safeguarding system encompasses:
  - Targeted surveillance
  - Cooperative efforts with States and Industry
  - Outreach and education
  - Trade restrictions
  - Anti-smuggling programs
  - International efforts
  - Diagnostic capacity
APHIS Role in an Animal Emergency

• Secretary of Agriculture has statutory authority and leadership role to protect American agriculture and animal health.

• Animal Health Protection Act (AHPA) (7 U.S.C. 8301 et seq.) gives the Secretary of Agriculture a broad range of authorities to use in the event of an outbreak of HPAI in the United States, as well as to prevent its introduction into the United States.
APHIS Role in an Animal Emergency

- APHIS also has the responsibility under the NRF in a Stafford Act Declaration to assist in any animal emergency or natural disaster through leadership of USDA for ESF 11
- APHIS works and integrates with other State - Federal - Industry partners for non FAD diseases programs and responses
- APHIS and USDA lead a science based approach for State – Federal – Industry partners in animal emergency response
APHIS Emergency Management

• Provide services, products and capabilities to keep emergencies ‘local’
• Provide science based guidance and support
• Function as a ‘one-stop resource’ for information and knowledge
• Operate and communicate on a global scale
• Know where expertise exists and how to access it
APHIS Emergency Management

• Provide preparedness and response leadership to animal and plant health events
• Develop strategies and policies for effective incident management
• Act as a liaison with outside emergency management groups to ensure that APHIS emergency management policies, strategies, and responses are current with national and international standards.
Emergency Management Policy: Four Pillars

- Preparedness and Communication
- Surveillance and Detection
- Response and Containment
- Continuity of Business Plans (Animal Agriculture) and Recovery
<table>
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<tr>
<th>Prevention</th>
<th>Preparedness</th>
<th>Response</th>
<th>Recovery</th>
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Mitigation
• National repository of critical veterinary supplies

• Homeland Security Presidential Directive 9
  – Directed the Secretary in 2004 to establish the National Veterinary Stockpile (NVS)
  – Required the NVS to

  ❖ **Augment** local/state resources by deploying **within 24 hours** “sufficient amounts of animal vaccine, antiviral, or therapeutic products to appropriately respond to the most damaging animal diseases affecting human health and the economy”

  ❖ Leverage the work done by the Strategic National Stockpile at CDC
NVS Deployment Goals

Arrive at the outbreak site within 24 hours

Pack products for rapid pick and load

Provide sufficient supplies to support response efforts for 10 responders changing 5 times/day for 10 days. Objective is 3,000 responders for 40 days.

Organize and label shipments for rapid identification by responders

Establish contracts with commercial sources to provide reliable, ready sources of material to support the NVS and responders beyond the initial response.
Current Inventory

- Personal Protective Equipment
- Antivirals
- AI vaccine
- AI field test kits
- Portable satellite equipment (voice and data)
- Portable vaccine shipment/storage containers
- Disinfectants
NVS 3D Service Contracts
Multiple contractors – available for use concurrently

Services
- Depopulation
- Disposal
- Decontamination

Response - 24 hours

Scalable response
- Personnel
- Equipment
- Supplies
- Purchase
State Planning / Execution Considerations

- State Distribution Plan
- Warehouse Facility Characteristics
  - Location: Central facility or multiple facilities
  - Size of Facility / Facilities
    - Pallet size, weight, stacking capability
    - Aisles widths ~ 72” - 96” wide
    - Overall warehouse space ~ 6000 sqft
  - Loading docks ~ 100ft deep (53ft trailers)
  - Material Handling Equipment (MHE)
    - Forklifts – one 3,000 & one 5,000lb capacity
    - Pallet Jacks: ~ 6 (3-picking, 2-staging/loading/unloading, 1-Quality Assurance)
    - Fuel
  - Refrigeration – Vaccines & Diagnostic Test Kits = 36 – 46 degrees F
  - Antivirals must be stored at room temperatures (58 – 86 degrees F)
  - Emergency Generators (uninterruptible electrical power)
  - Office Equipment (phones, computer, printer, fax, etc)
  - Warehouse Supplies (pallets, stretch wrap, tri-wall containers, gloves, ear plugs, first aid kit and office supplies)
  - Security

Several Truck Loads of NVS Deployed
National Coordination

Homeland Security Act of 2002 and HSPD-5 required a comprehensive national approach to domestic incident management through the development of the National Incident Management System (NIMS) and National Response Framework (NRF)

– **NIMS**: Standardizes incident management processes, protocols, and procedures for use by all responders

– **NRF**: Establishes . . .
  • Federal coordination structures/mechanisms
  • Direction for incorporation of existing plans
  • Consistent approach to managing incidents
The NRF applies to all Federal departments and agencies that may be requested to provide federal to federal support.

Major disasters, emergencies, and terrorist incidents including threats.

Other events requiring Department of Homeland Security (DHS) assistance.

The NRF provides one way of doing business for both Stafford Act and non-Stafford Act incidents.
Figure 1. Organization of the **Framework**

- **Core Document**: Provides the foundation for the *National Response Framework*, including the doctrine to guide our national response, roles and responsibilities and national response actions.
- **Emergency Support Function Annexes**: Group capabilities and resources into functions most likely needed during an incident.
- **Support Annexes**: Describe common support processes and specific administrative requirements.
- **Incident Annexes**: Outline core procedures, roles and responsibilities for specific contingencies.
- **National Planning Scenarios**: Defined by the National Preparedness Guidelines, these high-consequence scenarios are being used to develop more granular strategic guidance and operational plans.
- **Strategic Guidance**: Defines the broad national priorities and capabilities and supports the development of specific plans.
- **Playbooks**: Provide checklists to ensure coordinated response to the 15 specific high-consequence threat scenarios.
NRF and Existing Authorities

The NRF:

• Uses the foundation provided by the Homeland Security Act, HSPD-5, and the Stafford Act to provide a comprehensive, all-hazards approach to domestic incident management.

Does NOT alter or impede the ability of Federal agencies to carry out their specific authorities under applicable laws, Executive orders, and directives.
Federal-to-Federal Support

• A Federal entity with primary responsibility and statutory authority, such as APHIS, for an incident that needs support or assistance beyond its normal operations may request DHS coordination and facilitation through the NRF

• Generally, this support is funded by the Federal entity with primary responsibility and statutory authority for the incident, according to the Economy Act, unless other statutory authorities exist
NRF Emergency Support Functions

ESF #1: Transportation
ESF #2: Communications
ESF #3: Public Works/Engineering
ESF #4: Firefighting
ESF #5: Emergency Management
ESF #6: Mass Care/Housing/Human Services
ESF #7: Resource Support
ESF #8: Public Health/Medical Services
ESF #9: Urban Search/Rescue
ESF #10: Oil/Hazardous Materials Response
ESF #11: Agriculture/Natural Resources (USDA/DOI)
ESF #12: Energy
ESF #13: Public Safety/Security
ESF #14: Long-Term Community Recovery/Mitigation
ESF #15: External Affairs
National Response Framework
Emergency Support Function #11

1. Provision of nutrition assistance

2. Animal and plant disease and pest response

3. Assurance of the safety and security of the commercial food supply

4. Protection of natural, cultural, and historic properties
ESF #11 - Agriculture and Natural Resources

- Revamps the previous Food ESF to address agriculture and natural resources issues related to Incidents of National Significance

- Supports State, local, and Tribal authorities and other Federal agency efforts to:
  - Provide nutrition assistance
  - Control and eradicate animal and plant disease outbreaks
  - Assure food safety and food security
  - Protect natural and cultural resources and historic properties
STANDARD OPERATING PROCEDURES FOR NRP
ESF #11 ACTIVATIONS

- Table of Contents
- Emergency Support Mission
- Notification
- National Responsibilities and Duties
- Regional Responsibilities and Duties
- Financial/Administrative Requirements
- Role and responsibilities of Emergency Operations Centers
- Roles and responsibilities of ESF #11 Support Agencies
- Appendices
- Mission Assignment (MA) and pre-scripted MA language
- Action Request Form (ARF)
- Briefing Paper (SitRep) template
- Administrative Direction for FEMA Incident template
- Notification/contact directory
  - ESF #11 Coordinators from FNS and APHIS
  - USDA Office of Homeland Security
  - Animal and Plant Health Inspection Service
  - Department of the Interior
  - Food and Nutrition Service
  - Food Safety and Inspection Service
USDA Responds to Emergencies Using Incident Command System (ICS)

ICS a time-tested, emergency management structure. APHIS has used ICS since 2002.

ICS is used to respond to:
- A foreign animal disease
- An emerging disease
- A natural disaster
- An act of bioterrorism*

ICS Organizes Animal Health Emergency Responses Through 5 Key Functions
Incident Command System

Local Emergency Operations Center Coordinates information and resources to support local incident management activities

Area Command Oversees the management of multiple incidents that are each being handled by an ICS organization

Incident Command Post Performs primary tactical-level, on-scene incident command functions
If Multiple Infected Premises, And Wide Spread Geographically...
NIMS Framework

The structure for NRP coordination is based on the NIMS construct: ICS/Unified Command on-scene supported by an Area Command (if needed), multiagency coordination centers, and multiagency coordination entities.

Multiagency Coordination Entity
- Strategic coordination
- Prioritization between incidents and associated resource allocation
- Focal point for issue resolution

EOCs/Multiagency Coordination Centers
- Support and coordination
- Identifying resource shortages and issues
- Gathering and providing information
- Implementing multiagency coordination entity decisions

Incident Command
- Directing on-scene emergency management

The focal point for coordination of Federal support is the Joint Field Office. As appropriate, the JFO maintains connectivity with Federal elements in the ICP in support of State, local, and tribal efforts.

An Area Command is established when the complexity of the incident and incident management span-of-control considerations so dictate.

The role of regional coordinating structures varies depending on the situation. Many incidents may be coordinated by regional structures using regional assets. Larger, more complex incidents may require direct coordination between the JFO and national level, with regional components continuing to play a supporting role.
Joint Field Office
A temporary Federal facility established locally to provide a central point for Federal, State, local, and tribal executives with responsibility for incident oversight, direction, and/or assistance to effectively coordinate protection, prevention, preparedness, response, and recovery actions.
Operations Section

Disease Management Branch
- Appraisal Group
- Euthanasia Group
- Disposal Group
- Cleaning and Disinfection Group

Surveillance Branch
- Mortality Surveillance Group
- Diagnosis and Inspection Group
- Disease Survey Group
- Vaccination Group

Disease Support Branch
- Education and Outreach Group
- Vector Control Group
- Biosecurity and Disease Prevention Group
- Movement and Permits Group

Tactical Epidemiology Group
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APHIS Animal Health
Emergency Response

Key Points!

• State — Federal — Industry Partnership!
• State — Federal — Industry Integrated and Coordinated Response!
• Goals of this Conference: Coordinate and Communicate!
• Integrate, Synchronize and Deconflict!
AI Background
Avian Influenza Overview

- AI first identified in the early 1900s
- HPAI associated with H5 and H7 subtype
- HPAI strains evolve from LPAI lineages
- Vast majority of AI viruses found in birds do not represent a public health concern
2006 World Organization for Animal Health (OIE) Avian Influenza Chapter

- New definition of poultry
- Notifiable AI (NAI)
  - HPAI, and all H5 and H7 regardless of pathogenicity detected in poultry
  - All other subtypes are not reportable
- Report all HPAI immediately
- Report H5/ H7 LPAI
  - Immediately if found in commercial operations
  - 6 month report if found in LBM or other backyard environments (these are expected findings)
AI Funding
AI Background

- USDA’s HPAI prevention and response efforts are part of the National Strategy for Pandemic Influenza outlined by President Bush in November 2005
- To support these efforts, at the end of 2005 USDA received $91.4 million in supplemental funding (of which $80.2 million went to APHIS)
In fiscal year (FY) 2006, APHIS also received $13.6 million for LPAI surveillance efforts.

The President’s budget request for FY 2007 includes $82.1 million ($73.6 million would go to APHIS) for USDA’s continued efforts with domestic AI preparation and international AI assistance.
### Fiscal Year 2006 AI Supplemental Funding Allocations

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## Fiscal Year 2007 AI Supplemental Funding Allocations

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<td><strong>Total</strong></td>
<td><strong>$47.2</strong></td>
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The Agriculture & Food Sector is Essential To National Security
Agriculture - a National Resource

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<th>$1.24 Trillion or 12.3% of GDP</th>
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<td><strong>Value Toward GDP</strong></td>
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<tr>
<td><strong>Direct and Related Employment</strong></td>
<td>16.7% or 1 in 6 Jobs</td>
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“Most reliable, secure and safe supply of food at a reasonable cost that the world has ever known”

Source: Agricultural Statistics Board (National Agricultural Statistics Service)
National Avian Influenza Surveillance
Plan - Population Groups

- Group I – Large Volume Commercial Poultry (NPIP Broilers, Layers, Turkeys)
- Group II – Small Commercial and Other Industries
- Group III – Live Bird Marketing System
- Group IV – Backyard Birds
- Group V – Wild Birds
- Group VI – Zoological and Exhibition Birds
Number of Broilers and Other Meat-Type Chickens Sold: 2002

1 Dot = 2,000,000 Broilers

United States Total
8,500,313,357

02-M171
U.S. Department of Agriculture, National Agricultural Statistics Service
Emergency Management and Diagnostics

(HP AI)
Response Plan
U.S. Positioned to Contain Virus

- United States is very active in international efforts to detect and control AI
- U.S. industry is likely to report suspicious birds to help protect the overall health of the poultry industry
- Compensation is an additional incentive
- USDA National Avian HPAI Response Plan Summary in place
- USDA has some of the world’s top AI researchers
USDA AI Safeguarding Efforts

- International Capacity Building
  - Study Threat Abroad at Source
  - Reduce Threat Abroad at Source
- Targeted Surveillance
  - Early Detection
- Cooperative Efforts with States and Industry
  - Early Detection
  - Rapid Response and Containment
- Outreach and Education
  - Threat Awareness
- Trade Restrictions
  - Exclusion
  - Science Based Trade Policy
- Anti-Smuggling Programs
  - Exclusion
USDA National HPAI Response Plan

• Intended to complement State and Industry plans that are more specific to local issues and needs
• States should continue to develop plans that are specific to their poultry industry and requirements
• The plan is a “living document” that will continue to evolve with new or additional information and with further stakeholder and partner communication
HPAI Response Plan Updates

• APHIS may authorize pre-emptive culling for presumptive positive cases that meet case definition

• Indemnification for owners and growers consistent with H5/H7 LPAI interim final rule formula

• Water-based foam has been approved as a method of mass depopulation under certain conditions
AI Preparedness

• Key is early detection and rapid response
• USDA maintains a comprehensive emergency response structure:
  Partnerships with local, State, and Federal organizations
  Integration with the National Response Plan
  Continual collaboration with HHS, DOI, DHS and other Federal entities
  Diagnostic capabilities
Response Strategy

- National Animal Health Emergency Management (NAHEMS) Guidelines
- Stamping out
- Cleaning and disinfection
- Availability of first responders
- Vaccines (to be used only upon approval by the USDA and the applicable State Veterinarian)
Border Protection and Trade Restrictions

- USDA maintains trade restrictions on the importation of poultry and poultry products from countries and/or regions where the HPAI H5N1 strain has been detected in commercial or traditionally raised poultry.
- USDA regulations require that import permits accompany properly sanitized poultry products, such as raw feathers.
HPAI and Trade

• Trade restrictions apply to countries or zones affected with HPAI H5N1
• 40 countries currently on list
• Triggers for action:
  - Official report to OIE
  - Report to VS Chief Veterinary Officer
• Restrictions described in 9 Code of Federal Regulations Parts 93 to 95
Trade Restrictions and Prohibitions

- Unprocessed avian products are prohibited
- Live birds and hatching eggs are prohibited
- Returning U.S.-origin birds and theatrical birds must be quarantined in a USDA facility for 30 days
- Processed avian products require a Veterinary Services import permit and government certification of treatment
Trade Restrictions and Guidelines

- USDA is prepared to encourage trading partners NOT to disrupt trade
- The USDA encourages trading partners to align import standards with science-based OIE guidelines to avoid import restrictions that are not scientifically based
HPAI and Trade: Exports

- U.S. exported $3 billion in live poultry and poultry products worldwide in 2006
- APHIS negotiates trade resumption based on OIE standards
- However, importing countries ultimately determine when trade will resume
- A previously free country or zone (region) may be reconsidered to be free of HPAI or notifiable LPAI 3 months after stamping-out (including disinfection), provided that surveillance has been carried out in that 3-month period
AI Restrictions and Prohibitions: Exports

- If U.S. experienced notifiable LPAI, countries could suspend trade with that State or region until the importing country determined the area to be disease free
- If U.S. experienced HPAI, countries might impose a country-wide ban initially, followed by a reduction in the size of the ban to the affected State or region
- Disease freedom must be endorsed on export certificates whether the importing country implements a ban or not
USDA’s “Biosecurity for the Birds” Campaign is an extensive and far-reaching outreach initiative designed to:

Educate non-commercial poultry owners about the signs of AI & other poultry diseases

Promote the importance of practicing biosecurity

Encourage rapid reporting of clinical signs of disease and/or unexpected deaths through a sick/dead bird call line

Information is disseminated through brochures, DVDs, public service announcements, printing on feed sacks, and other materials.

Information is printed in multiple languages
AI Surveillance
Surveillance: National Animal Health Laboratory Network (NAHLN)

NAHLN currently consists of 58 State and university labs in 46 States. NAHLN labs:

- Provide laboratory services nationwide
- Provide laboratory data for reporting
- Respond to foreign animal disease (FAD) outbreaks
- Focus on surge capacity during disease outbreak situations
National Animal Health Laboratory Network (NAHLN) Laboratories

Approved Laboratories
- Pilot NAHLN (CSREES coop. agreement)
- Newcastle Disease (ND)/Avian Influenza (AI)
- Scrapie/Chronic Wasting Disease (CWD)
- *Bovine Spongiform Encephalopathy (BSE)
- *Classical Swine Fever (CSF)/*Foot and Mouth Disease (FMD)
- Recently Approved
- National Veterinary Services Laboratories

*For specified agents, not all laboratories are currently participating in surveillance testing.

February 1, 2007
AI Surveillance – Big Picture

- NPIP poultry breeding flocks
  - Meat-type chickens & turkeys
  - Egg-type chickens
  - Waterfowl, exhibition and backyard flocks
- NPIP commercial poultry production flocks
  - Meat-type chickens & turkeys
  - Table egg layers
- Live Bird Marketing System
  - Producers, distributors, retail markets
  - Backyard flocks, auctions, swap meets, etc.
- Waterfowl and game birds raised for release
- Wild birds
- Diagnostic laboratories (passive surveillance including FAD investigations)
Summary of National AI Surveillance

- Multiple data streams for AI surveillance
- National Surveillance Unit and Aquaculture, Swine, Equine, and Poultry staff collaboration on development of the National AI Surveillance Plan
- Capitalizing on existing surveillance systems
  - NPIP Breeder flocks
  - Diagnostic labs (passive surveillance)
- Developing new surveillance systems
  - NPIP production flocks, LBMS, and wild birds
- Expanding laboratory capacity - NAHLN & NPIP labs
Wildlife Surveillance
Response Plans for AI in Wild Birds

- Continue to monitor potential wild bird threats to domestic poultry
- Assessment of the risk wild birds pose to the transmission of a HPAI virus to susceptible livestock and poultry will be conducted after confirmation of the index case
Improved Wildlife Surveillance/Sampling

- AI surveillance in wild, migratory birds for the early detection of HPAI H5N1 virus is on pace to detect a possible disease incursion

- Currently, the surveillance effort is being fully supported by all 50 State Wildlife Agencies in a cooperative effort to produce robust sample sizes from across the United States
As of March 30, 2007, the total number of wild bird cloacal samples collected by APHIS Wildlife Services and State Wildlife Agency employees are:

- Pacific flyway (including Alaska): 17,869
- Central flyway: 17,719
- Mississippi flyway: 23,605
- Atlantic flyway: 24,696
- Hawaii, Guam & Pacific Islands: 525
- Cloacal samples collected by DOI: + 25,000
- **USDA TOTAL:** 109,414
APHIS/WS & State Wildlife Agency fecal samples as of March 30, 2007:

Pacific flyway (including Alaska): 9,361
Central flyway: 8,899
Mississippi flyway 14,306
Atlantic flyway: 16,929
Hawaii, Guam & Pacific Islands: + 689

TOTAL: 50,184
USDA’s Commitment to International AI Efforts
USDA International Efforts

• Eliminating the virulent strain of HPAI H5N1 at its source—in poultry abroad—is an effective way to reduce the chances of a domestic outbreak

• To help slow the spread of HPAI H5N1, USDA has provided training and equipment, dispatched response teams, and expanded lab capacity in the United States to assist with international detection and diagnosis
USDA International Efforts (cont.)

• Committing $1.2 million to the OIE for standardized assessments of foreign veterinary infrastructure

• Supporting the United Nation’s FAO and the OIE in their launch of a Crisis Management Center to coordinate global HPAI response and deploy rapid response teams to HPAI hotspots
USDA International Efforts (cont.)

- Establishing AI-dedicated offices and personnel in Cambodia, China, Indonesia, Laos, and Thailand that (where possible) are co-located with offices of the U.S. Centers for Disease Control and Prevention

- Hiring a local national veterinarian in Burma (Myanmar) to carry out USDA AI activities; and,

- Offering (as capacity-building for AI diagnostic testing) three training courses at the NVSL. These courses have provided training to some 99 foreign officials from 62 countries.
Questions?