United States Department of Agriculture

HPAI AVIAN INFLUENZA (HPAI) STATUS REPORT & AFTER ACTION REPORTS

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ANIMAL AND PLANT HEALTH INSPECTION SERVICE

VETERINARY SERVICES

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Outline

- Introduction
- After Action Reports
- Corrective Actions
- Conclusion

Introduction

The Avian Influenza (AI) Status Report summarizes the preparedness measures, response activities, and documentation of the 2014–2015 highly pathogenic avian influenza (HPAI) outbreak in the United States as well as the 2016 events, excluding those in the live bird marketing system (LBMS).

Report Section Guide

Introduction
1. Background
2. 2015 Response
3. 2016 Response
4. Financial Status
5. AI Vaccine
6. Corrective Actions

Conclusion

Referenced Documents

- *2015 Fall HPAI Preparedness Plan*
- *2015 HPAI Final Report*
- *2015 HPAI After Action Report*
- *2016 Indiana Final Report*
- *2016 Indiana After Action Report*
- *Corrective Action Program*

1. Background

2014–2015 outbreak

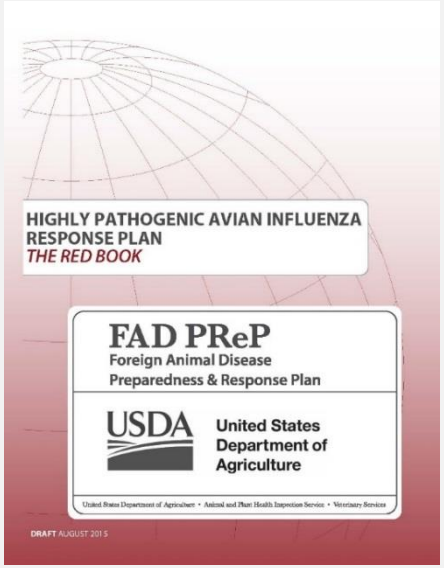
- Largest HPAI outbreak ever recorded in the United States
- December 2014, Eurasian-origin H5 HPAI was detected in the United States
- 21 affected States
- 232 detections
- 50.4 million affected birds
- Last HPAI commercial case, June 16, 2015

2016 HPAI/LPAI outbreak

- H7 HPAI and low pathogenicity AI (LPAI) in Indiana
  - 414,000 birds affected
- H5 LPAI in Missouri
  - 39,000 birds affected

2. 2015 Response

- Response activities in accordance to *USDA APHIS HPAI Response Plan: The Red Book*
- Established multiple incident management teams (IMTs), national incident coordination group, a multi-agency coordination group, and a planning group to prepare for fall re-emergency of the virus.
- The updated (January 2016) *Fall HPAI Preparedness Plan* focused on:
  I. Preventing or Reducing Future Outbreaks
  II. Enhanced Preparedness
  III. Improved and Streamlined Response Capabilities
  IV. Preparing for the Potential Use of AI Vaccines



2. 2015 Response *(continued)*

2015 HPAI After Action

- Collected and summarized lessons learned and observer recommendations from the response. APHIS collected data through:
  - Subject matter experts
  - Document review
  - VS National Incident Management Team (NIMT) Incident Commander hot wash
  - Joint Information Center hot wash
  - Responder feedback survey
  - HPAI Fall Planning Workshop
  - VS NIMT Workshop and hot wash
- The After Action team organized the feedback it received according to the 23 critical activities and selected activities were presented as thematic observations and corrective actions.
  - 13 of 23 activities had observations

3. 2016 Response

- After the 2014–2015 HPAI outbreak, APHIS, States and producers remained on high alert.
- January 15, 2016, National Veterinary Services Laboratories (NVSL) confirmed H7N8 HPAI in an Indiana turkey flock.
- April 2016, NVSL confirmed H5N1 LPAI in a Missouri turkey flock.
- Additional cases of LPAI in the LBMS are not discussed in this report and brief.

Indiana Incident

- APHIS published the 24-hour depopulation goal in the fall of 2015. In addition, published the use of ventilation shutdown—depopulation method of last resort.
- National Veterinary Stockpile (NVS) crews were delayed in arriving and encountered freezing temperatures making foam difficult to use.
- In result of depopulation difficulties, ventilation fans at some sites were turned off.

(Continued)

3. 2016 Response *(continued)*

Indiana Incident *(continued)*

- Indiana State Board of Animal Health (BOAH) and the industry were prepared and responded hard to the initial detection.
- This incident provided an opportunity to test improved processes and procedures from those used in the 2014–2015 HPAI outbreak.

2016 HPAI/LPAI After Action

- Summarizes complied feedback regarding APHIS' and Indiana's State BOAH and Department of Homeland Security's performance of response and recovery activities in the months prior to an following the outbreak.
- Critical activities are presented here as thematic observations from responders and corrective actions:
  - 13 of 23 activities has observations

4. Financial Status

2014–2015 HPAI outbreak

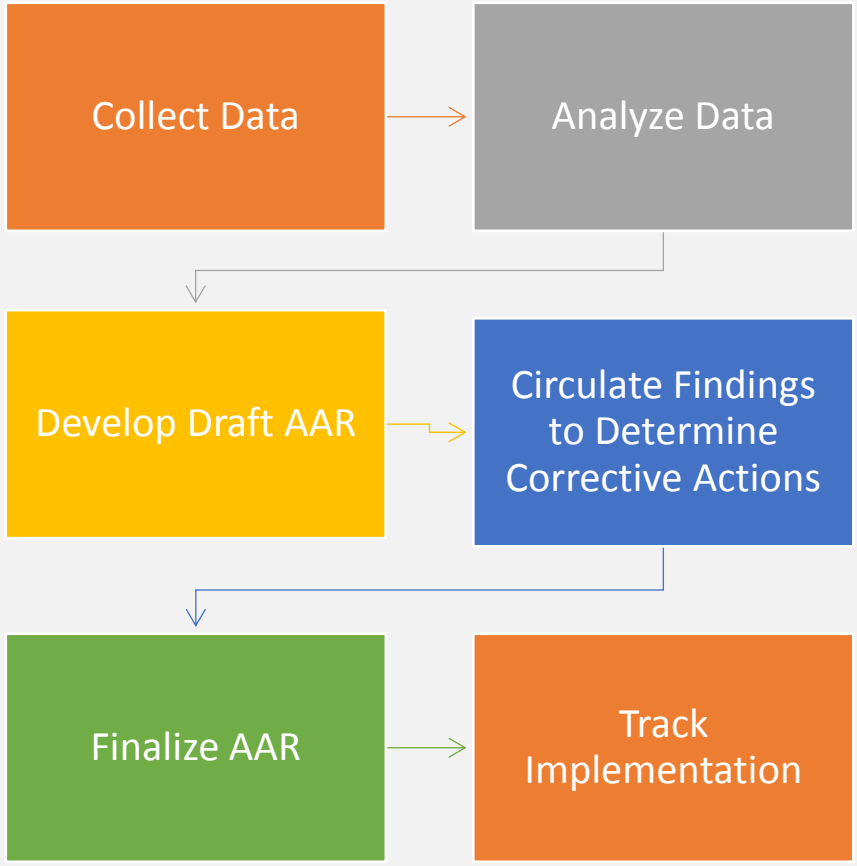
- $989 million requested from the Commodity Credit Corporation
- $850 million obligated by APHIS for response activities
  - — $200 million for indemnity payments
- $100 million additionally was made available for further preparedness activities
- The most expensive animal health incident recorded in U.S. history

2016 HPAI/LPAI outbreak

- $30 million obligated for all response operations including indemnity payments ($4.9 million)

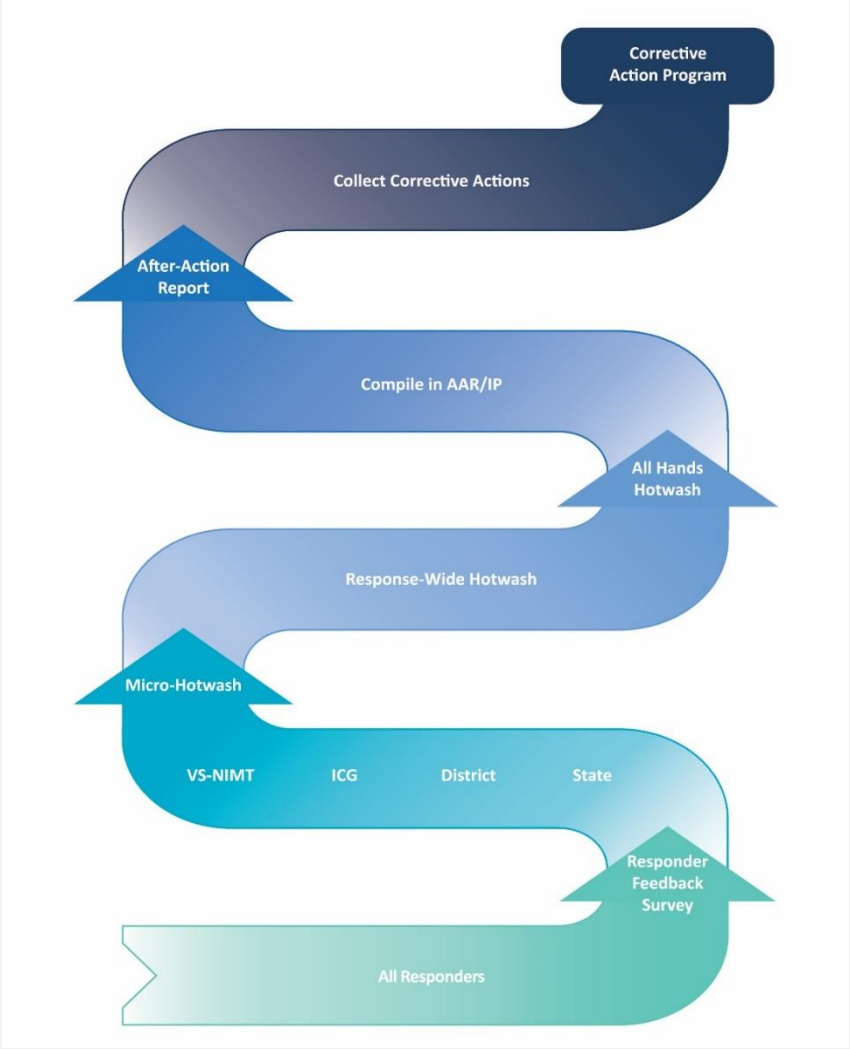
After Action Reports

- FAD PReP SOP: Evaluating and Improving Planning.
- Focuses on identifying areas for improvement, highlighting and circulating successes, and facilitating corrective actions and continued improvement.
- Overall – supports continued improvement of capabilities.



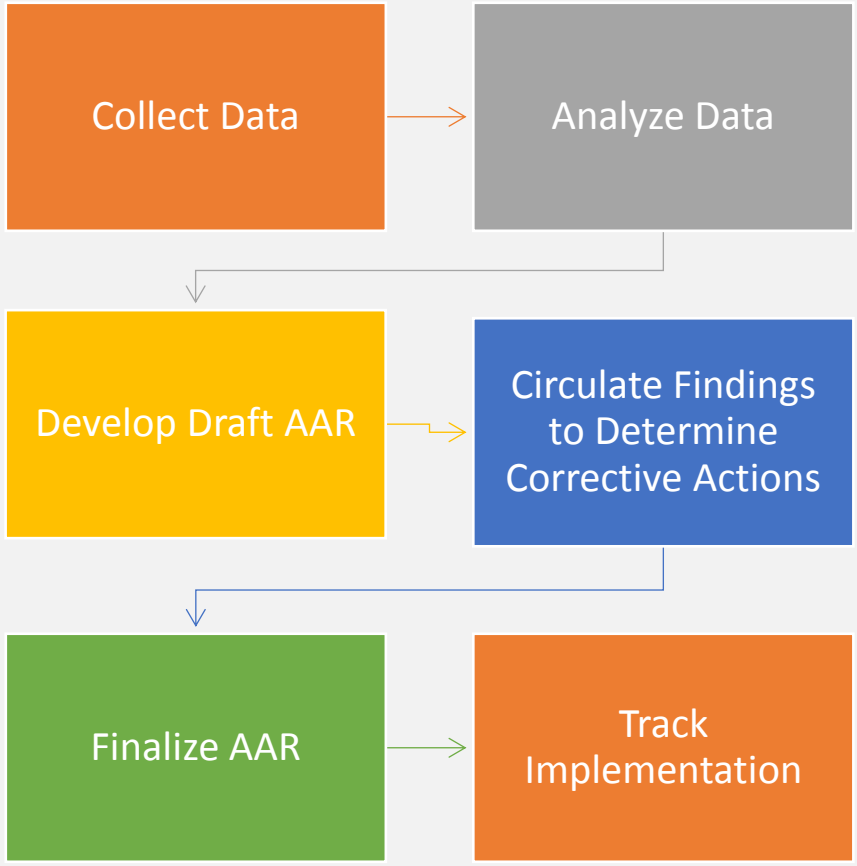
Collecting AAR Information

- Responder Feedback Survey
  - Over 430 responses
- Joint State, Federal, Industry Workshops
  - Teams Demobilizing
  - Regional Hotwashs
  - Comprehensive VS-NIMT Hotwash
  - Incident Commander Hotwash
- Multiple Hotwash Opportunities
- Leadership Feedback & Interviews



Analyzing AAR Information

- Organized by VS Critical Activities
- Outlines
  - Observations
  - Analysis of root cause
  - Recommendations for improvement
- 2014/2015 AAR made a concerted effort to highlight corrective actions to date.



After Action Report Process Started Early…

- **April 2015:** APHIS began an after action evaluation process to collect and summarize lessons learned and observer recommendations from the response.
  - This process continued through the fall of 2015.
- APHIS collected data through a variety of methods, including interviews of:
  - key subject matter experts (SMEs),
  - document review,
  - a VS NIMT Incident Commander hot wash,
  - a Joint Information Center (JIC) hot wash,
  - an online survey,
  - the HPAI Fall Planning Workshop, and
  - a VS NIMT workshop.

After Action Report, *continued*

- Debriefing activities focused primarily on areas for improvement and related recommendations rather than strengths.
- Most observations in this AAR are those that are directly applicable to the outbreak response activities from the responder point of view; some that were generated from a single occurrence may not be representative of the response as a whole.
- The After Action team organized the feedback it received according to the 23 critical activities defined APHIS' Foreign Animal Disease Preparedness and Response Plan (FAD PReP).

Critical Activities

Select activities are presented next as thematic observations from responders and corrective actions to date. The absence of a critical activity means it was not identified in the AAR process.

Please find more information on the *2014–2015 HPAI After Action Report* at www.aphis.usda.gov/fadprep.

Critical Activity 4

- **Diagnostics**
  - *The diagnostic testing infrastructure was unable to provide timely HPAI results during the height of the outbreak.*
    - Since the 2015 HPAI outbreak, APHIS has increased staffing at its National Veterinary Services Laboratories (NVSL) and updated the *NAHLN Operational and Emergency Activation Plan* in August 2015.
    - The Plan also provides options for increasing capacity at NAHLN laboratories as necessary, in response to an outbreak.

Critical Activity 6

- **Information Management**
  - *Some responders were unfamiliar with the new version of the Emergency Management Response System (EMRS) and/or the protocols (e.g., definitions) for its use, resulting in incorrect usage and/or underutilization of the system.*
    - Since mid-2015, APHIS hired 3 EMRS program specialists; identified 16 network associates in the field; created standard definitions for all fields; provided specific data-entry instruction; trained HPAI term employees on EMRS use, as well as many permanent VS personnel; and created standard data reporting templates.
  - *EMRS data-entry backlogs affected response operations.*
    - Since May 2015, APHIS has worked almost 100 bulk jobs with States and industry involving over 15,000 locations and has created more than 13,000 new commercial poultry premises thru the validation and bulk upload processes.

Critical Activity 7

- **Communication**
  - *Initially, there seemed to be a lack of coordination between Legislative and Public Affairs (LPA) and the VS NIMT, particularly with regard to maintaining situational awareness of operational activities.*
    - APHIS' LPA recruited additional Public Information Officers (PIO) across USDA to deploy with each VS NIMT. They developed just-in-time training to better prepare PIOs to provide critical communications support in the field.
  - *Stakeholders, including States and producers, desired more timely notifications regarding situation updates, such as establishment of movement control areas, identification of newly infected premises, and other such changes.*
    - Since the 2015 HPAI outbreak, LPA and the ICG, in conjunction with the Office of the Administrator and USDA Office of Communications, developed an approval process for incident-related messaging and content.
    - The process facilitates rapid approval and execution of requested changes as well as release for publication of messaging, content, and documents.

Critical Activity 8 & 9

- **8: Health and Safety and Personal Protective Equipment**
  - *Issues with medical clearance (both missing documentation of clearance as well as staff not having current clearance) caused delays in some mobilizations.*
    - APHIS has established an initiative to ensure all possible responders are fit-tested and medically cleared before an incident.
- **9: Biosecurity**
  - *Site-specific biosecurity preparedness activities were lacking or inconsistent across different premises, and many producers/growers lack a strong culture of biosecurity.*
    - APHIS has collaborated with state, academic, and industry experts to identify more robust biosecurity measures and develop biosecurity materials and training aids.
  - *Producers reported biosecurity infractions by contracted APHIS response teams.*
    - USDA implemented the use of the Site Manager position at the height of the 2015 response. One of the responsibilities of this position was to maintain biosecurity.

Critical Activity 11

- **Continuity of Business**
  - *APHIS successfully worked with States and industry to help maintain commerce in regulatory control areas while managing the risk of disease spread.*
    - At the beginning of the recent outbreak, APHIS and state partners initiated risk-based, managed movement criteria that included surveillance, testing, and permits as needed for unaffected facilities' continuity of business in affected areas.
  - *Guidance documents outlining repopulation procedures were adjusted during the HPAI outbreak.*
    - APHIS has revised and published multiple policies, plans, and guidelines that support recovery, restocking, and continuity of business.

Critical Activity 13

- **Mass Depopulation and Euthanasia**
  - *There were significant delays in depopulating some HPAI-positive flocks.*
    - NVS has procured additional equipment, including additional foaming units and whole-house CO2 depopulation systems.
  - *A lack of alternatives to foam depopulation resulted in challenges related to finding water sources for foam and overuse of those water sources.*
    - Since the outbreak, the NVS has implemented a turnkey solution in which contractors will acquire water locally or transport water to the outbreak.
  - *There were not enough skilled personnel available for depopulation teams.*
    - In fiscal year 2016, the NVS conducted four foam training courses that provided contractors and APHIS depopulation coordinators the opportunity to experience hands-on training in the preparation, deployment, and operation of foam depopulation equipment.

Critical Activity 14

- **Disposal**
  - *Landfills were reluctant to accept infected birds and contaminated equipment.*
    - As part of preparedness planning in the latter half of 2015, APHIS mapped the coordinates for rendering and incineration facilities, as well as landfills, and encouraged state partners to assess their disposal options.
  - *Disposal options for all materials were limited.*
    - In some cases, state rules regarding the movement of infected poultry and contaminated products did not reflect the current biocontainment and disinfection options available and interfered with operations.
    - Despite attempts at incineration and landfilling, composting became the primary disposal method.
  - *Initially, the cadre of composting SMEs was limited, as was their ability to respond.*
    - APHIS developed a Composting SME Program in September 2015. The program consists of contracting external composting SMEs and training APHIS employees on composting.

Critical Activity 15

- **Cleaning and Disinfection**
  - *Cleaning and disinfection of premises using the classical wet cleaning and chemical disinfection approach was very expensive or not practical on some farms.*
    - In 2016, APHIS determined that a combination of dry cleaning (removing gross contamination, organic matter, and debris) followed by drying and heating of the interior was a cost-effective method for eliminating the HPAI virus from affected premises.
    - APHIS also calculated the cost to clean and disinfect poultry premises and determined that a per-bird flat rate would be an appropriate method for reimbursement for virus elimination.
  - *The cooperative compliance agreement process was laborious and bureaucratic for producers, and expensive for APHIS.*
    - APHIS revised its payment policy in 2016 to a flat-rate process for virus elimination activities.

Critical Activity 17

- **Logistics**
  - *The responsibility for tracking and oversight of contractors in the field was unclear, and VS NIMT personnel were largely unprepared to provide this oversight.*
    - APHIS has determined that contracting officers' deploying with and supporting VS NIMTs will achieve faster resolution of contracting issues and better oversight of contractors in the field.
    - APHIS has also identified the Contracting Officer Representative (COR) as a position that should deploy with a VS NIMT, the NVS, or District personnel to aid with contractor oversight.
  - *Cost management controls are needed, in particular contractor oversight and documentation.*
    - A defined process for contractor oversight needs to be developed, to include initial outbreak activities conducted by the VS Districts and NVS, as well as sustained outbreak activities conducted by VS NIMTs.

Critical Activity 17, *continued*

- **Logistics**
  - *There was not a standardized approach for VS NIMTs to track contracted personnel and equipment.*
    - APHIS contracted with a response-based credentialing and resource tracking provider to support the accountability of contracted personnel and equipment. APHIS CORs are needed to assist in these activities.
  - *There was confusion as to what supplies were included in the NVS push packs and longer than anticipated delivery times for resource requests submitted via the Resource Ordering and Status System (ROSS).*
    - VS NIMT Logistics Section and ROSS personnel have undergone NVS logistics training; the NVS has created shadow assignments affording Logistics Section personnel the opportunity to spend time with NVS staff.
    - NVS push packs have also been re-designed to include a greater number and variety of necessary items.

2015 Response

Critical Activity 21

- **Appraisal and Compensation**
  - *Initially, the process used by APHIS to verify poultry losses created delays in depopulation efforts.*
    - Changes implemented in the 2016 responses include establishing a 24-hour depopulation goal, providing additional latitude as to who can sign and process the VS 1-23, and waiving the requirement for a Flock Plan prior to depopulation.
  - *The entire financial process was confusing and difficult to follow.*
    - APHIS has restructured and streamlined many additional aspects of the indemnity and compensation process.
    - New documents that have been developed and published include an overview of the entire process; details for appraisal, virus elimination, and materials destroyed; owner/grower split indemnity; and outreach-based tools needed to educate and inform producers.
  - *Stakeholders expressed concern that indemnity calculators did not capture all costs accurately.*
    - During the response, APHIS updated the chicken broiler, chicken layer, and turkey indemnity calculators with 2014 Agri Stats data and made changes to make the layer calculator more reflective of current industry standards for the productive lifespan of layers.

Critical Activity 22

- **Finance**
  - *In some cases, VS NIMTs did not have enough personnel with purchase cards.*
    - In the revised VS NIMT Finance and Administration Section position descriptions, being a warranted purchase-card holder is now a mandatory qualification for the Finance and Administration Section Chief and having a purchase card is now a mandatory qualification for the Finance and Administration Section Assistant and the Procurement Unit Leader.

Critical Activity 23

- **Incident Management**
  - *Operational inconsistencies between the various VS NIMTs caused challenges during staffing transitions and transfers of command.*
    - The VS NIMTs have developed a standard organizational chart and SOPs for response activities and transfer of command. APHIS has developed standard position descriptions for VS NIMT rostered positions, along with additional frequently requested positions, and set minimum qualifications for each position.
  - *Adequately staffing the VS NIMTs in a timely manner was a challenge, both upon initial deployment and throughout operations.*
    - Since the 2015 outbreak, a new VS NIMT has been developed and staffed. This increases the VS NIMTs from four rostered teams on rotation to five. In addition, APHIS has established the VERRC to recruit and provide additional surge capacity.
  - *There were significant challenges in rapidly establishing unified incident command.*
    - VS should continue working with States on implementing unified command and on defining the roles and responsibilities for federal and state personnel.

2014–2015 HPAI AAR

Corrective Actions

Corrective Action Program

- To support continuous improvement in all VS critical capabilities, APHIS VS established a Corrective Action Program (CAP).
  - The CAP refers to both the overall process of identifying issues and the database used for tracking and reporting progress.
    - The database is built from recommendations identified in evaluations and after AARs to include responder feedback and directed actions from APHIS leadership.
  - CAP items are gathered through the AAR process and include responder- or leadership- identified issues and recommended corrective actions.

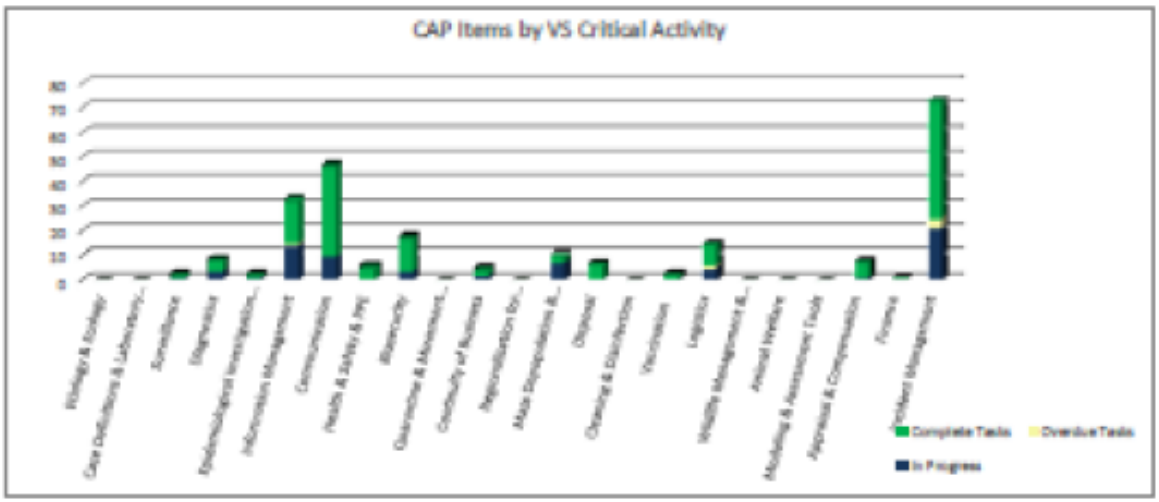
Corrective Action Program, *continued*

- VS staff apply a priority and responsible party, as well as a due date, for those items that require close monitoring.
- Status notes provide information on the disposition of items.
  - Once complete, items are statused as such.
  - Items with a somewhat continual nature that cannot ever be actually be complete are Closed-Conditional and reviewed for additional progress annually.
    - i.e., EMRS training or pre-loading premises in EMRS
- The 3-panel dashboard view provides the status of all CAP items and details of priority items (see the following 3 figures).

CAP Dashboard, View 1

Total CAP Items 242	CAP Items by VS Critical Activity				
	Critical Activity	Total Tasks	In Progress	Update Needed	Completed
On Schedule	Etiology & Ecology	0	0	0	0
73	Case Definitions & Laboratory Definitions	0	0	0	0
	Surveillance	3	2	0	1
	Diagnostics	9	5	0	4
Update Needed	Epidemiological Investigation & Tracing	3	2	0	1
	Information Management	33	15	1	17
6	Communication	47	11	0	36
	Health & Safety & PPE	6	1	0	5
	Biosecurity	18	5	0	13
Completed	Quarantine & Movement Control	0	0	0	0
	Continuity of Business	5	2	0	3
161	Regionalization for International Trade	0	0	0	0
	Mass Depopulation & Euthanasia	10	7	0	3
	Disposal	7	1	0	6
	Cleaning & Disinfection	0	0	0	0
	Vaccination	3	1	0	2
	Logistics	18	7	2	9
	Wildlife Management & Vector Control	0	0	0	0
	Animal Welfare	0	0	0	0
	Modeling & Assessment Tools	0	0	0	0
	Appraisal & Compensation	8	1	0	7
	Finance	1	0	0	1
	Incident Management	69	13	3	53
	Total	240	73	6	161

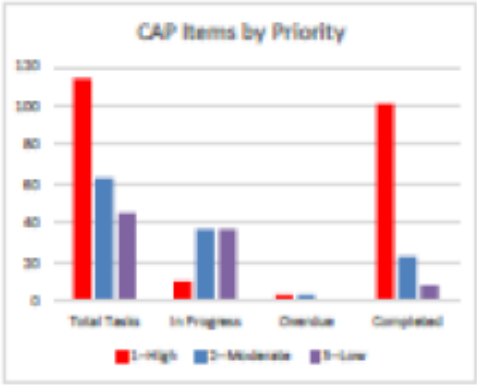
CAP Dashboard, View 2



CAP Items by Priority

Priority	Total Tasks	In Progress	Overdue	Completed
1–High	154	10	3	101
2–Moderate	63	37	3	23
3–Low	45	37	0	8
Closed	20			20
Total Items:	242	84	6	152

1 = High & near-term
2 = Moderate or high & long-term
3 = Low or under consideration
Closed = Combined with other or N/A



Corrective Actions

CAP Dashboard, View 3

Priority 1 Issues Status (multiple CAP items may apply to an issue)		
VS Critical Activity	**CAP Issue or Item**	**Status Notes**
Incident Management	The responsibility to track contractors in the field was unclear and positions were largely unprepared to provide this oversight.	NVS is working with APHIS Contracting to get a comprehensive list of CORs that could deploy with IMTs.
Incident Management	There were inconsistencies in how VS-IMTs implemented process and procedures.	Position Descriptions and Minimum Qualifications for the VS-NIMT were posted July 2016
Information Management	Provide "basic" EMRS training for ALL NIMT positions	Operations and Finance/Admin is scheduled for July and August.
Information Management	Increase EMRS proficiency among new users	Omgoing -- Training for Ops and F/A occuring July & Aug
Information Management	Pre-load premises data into EMRS	Ongoing - the number of commercial poultry-related premises in EMRS is approximately 18,000.
Logistics	Investigate resource tracking technologies to track resource in near to real-time.	Ongoing.
Mass Depopulation & Euthanasia	Identify ways to continue to enhance the NVS' surge capacity.	A contract has been recently awarded for the purchase of additional next generation nozzle-type foamers, Modified Atmospheric Killing Trailers, and Whole House CO2 units. Also, pending is the procurement of additional next generation foam units.

Tasks Needing Updates			
VS Critical Activity	**CAP Item**	**CAP Item #**	**Responsible Program**
Incident Management	Implement updates to the Positions Descriptions and Minimum Qualifications for the VS-NIMT	207	IMT Support Staff
Incident Management	Develop and maintain a comprehensive list of all CORs in APHIS	238	ICG/Logistics
Logistics	Train CORs for deployment duties and determine reporting structure	34	F/A Section & Logistics
Incident Management	Incorporate VS-NIMT PD updates and new positions into Dispatch	234 & 65	IMT Support Sstaff
Information Management	Develop standard operational procedures for documentation to include a standard naming convention.	238	F/A Section

Corrective Actions

Training and Exercise Program

- The real-world events of 2014–2015 required that we immediately adjust the focus of our TEP events to certain areas of interest—preparedness for a response in case of re-emergence of the HPAI virus.
- The TEP Working Group, composed of representatives from VS as well as external stakeholders, modified its activity list to include the following specific preparedness activities:
  - Poultry Carcass Composting Technical Training for 30 APHIS staff and stakeholder experts;
  - Poultry Depopulation Group Supervisor and Disposal Coordinator Training for 44 APHIS employees;
  - EMRS training for 189 term hires, permanent staff and state cooperators;
  - Specialized EMRS training for 165 VS NIMT Logistics, Plans, Finance/Administration, and Operations staff.

2014–2015 HPAI AAR

Conclusion

Preparedness Overview

- Significant improvements for HPAI response have occurred, and other improvements are in process.
- A sobering reality is that APHIS, States, and industry were better prepared for HPAI than any other foreign animal disease (FAD) because, prior to the 2014–2015 outbreak, APHIS, States and industry enjoyed a robust National Poultry Improvement Plan LPAI surveillance program and response experience for LPAI outbreaks.
- The challenges of the 2014–2015 HPAI outbreak are fair warning for the difficulties ahead when any other FAD agent is detected in our country.
- The diagnostic infrastructure and response experience we had for the AI responses of 2014–2015 do not exist for other FADs.
- In addition, other FADs may require the extensive use of emergency vaccination for which APHIS, States, and industry need significant additional preparations to implement.

Preparedness Overview, *continued*

- The proposed increase of $25.6 million, in the Emergency Preparedness and Response line item in the President's FY 2017 Budget, would:
  - allow APHIS to increase the numbers of trained field personnel who are prepared and ready to respond to animal health events,
  - enhance response planning, and
  - develop new tools and tactics to improve response.
- Expanded readiness will enable APHIS to respond more rapidly and effectively to emergency events, lessening their impact on producers, consumers, taxpayers, and the overall economy.

Abbreviations

AAR	After Action Report
AI	avian influenza
APHIS	Animal and Plant Health Inspection Service
BOAH	Indiana State Board of Animal Health
CAP	Corrective Action Program
CCC	Commodity Credit Corporation
CDC	Centers for Disease Control and Prevention
COR	Contracting Officer Representative
EMRS	Emergency Management Response System
FAD	foreign animal disease
FAD PReP	Foreign Animal Disease Preparedness and Response Plan
HPAI	highly pathogenic avian influenza
ICG	Incident Coordination Group
ILI	influenza-like Illness
IMT	Incident Management Team
JIC	Joint Information Center
LPA	Legislative and Public Affairs
LPAI	low pathogenicity avian influenza
MAC	Multiagency Coordination
NAHLN	National Animal Health Laboratory Network
NIMT	National Incident Management Team
NVS	National Veterinary Stockpile
NVSL	National Veterinary Services Laboratories
PIO	Public Information Officers
ROSS	Resource Ordering and Status System
SME	subject matter expert
TEP	training and exercise program
USDA	United States Department of Agriculture
VERRC	Volunteer Emergency Ready Response Corps
VS	Veterinary Services

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