

Innovative Strategies to Keep Products Moving in the Face of Disease or Disaster

A Public/Private Partnership Model Approach

2010 Symposium on Food and Agriculture Security

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INTRODUCTION TO THE EGG INDUSTRY

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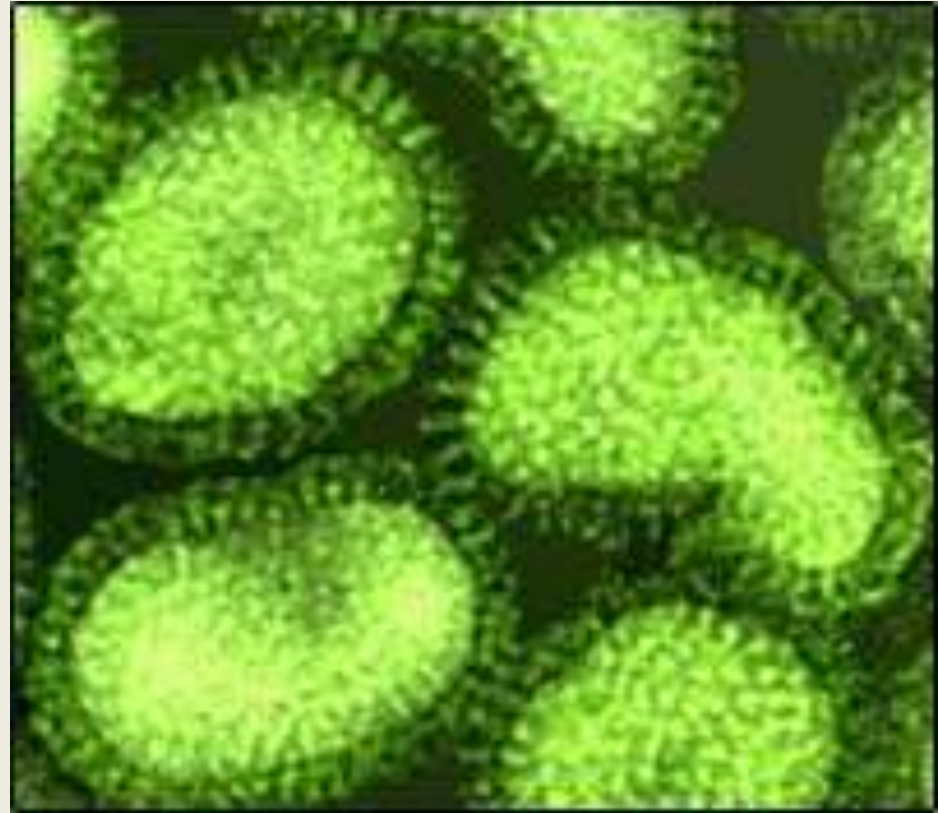


INTRODUCTION TO HIGHLY PATHOGENIC AVIAN INFLUENZA IN LAYERS



INTRODUCTION TO AVIAN INFLUENZA VIRUS

- Viruses cannot multiply independently
- Characteristics of AI virus
- Resistance
- We know how it is transmitted



History of Asian HPAI H5N1 virus

- ❑ 1997 first human death due to an avian influenza virus – Hong Kong
- ❑ 2003-05 Asian Lineage H5N1 HPAI began spreading from East Asia
- ❑ By 2007 64 countries in Asia, Europe and Africa

U.S history of HPAI

- ❑ 1925 and 29 “fowl plague” NE US
- ❑ 1983-84 A/chicken/Pennsylvania/83 H5N2
- ❑ 2004 A/chicken/Texas/04 H5N2

- ❑ Other North American HPAI
 - 1966 A/turkey/Ontario/66 H5N9
 - 1994-? A/chicken/Puebla/94 H5N2
 - 2004 A/chicken/British Columbia/04 H7N3

Animal Health Emergency Response

- ❑ Historically based on the containment and mass animal destruction (MAD)
 - Follows linear, sequential steps for “solving” the problem
 - Success defined as “disease free”
- ❑ Maybe an effective model when
 - agriculture production based on many small farms
 - food system primarily local
 - Disease limited to single sector (commercial) and commodity
- ❑ Involves coordinated response by Federal, State, and private animal health officials

Response

Jan 2004 H5N1 outbreak in Thailand (first 4 months)

Outbreak Officially Declared Jan 2004

- Chicken consumption dropped 80%
- Export markets shut down
- Some but not all stepped up biosecurity
- Fear of pandemics hit media “Bird Flu”
- Customer concerns
- Businesses shut down; people lost jobs
- 30 million birds (20%) were killed in Thailand
 - Many flocks were healthy

Motivating Factors To Find A Better Solution

- Fear of people's reactions if virus hits U.S.
- Cost of past outbreaks
 - 2001 FMD In U.K. →\$5 Billion lost from tourism
 - More healthy animals killed than sick ones
 - Total cost over \$10 billion
 - British Columbia HPAI cost \$1 billion (40 flocks)
- Concern for egg industry customers & businesses
- Previous disease management strategy to circle problems & kill everything in sight (scorched earth policy)
- Desire to find a better solution



The Issue at Hand

The National Highly Pathogenic Avian Influenza Response Plan

- ❑ The Plan as it was drafted did not address the current complexities of the supply chain in the egg industry

The role of the University of Minnesota Center for Animal Health and Food Safety was to:

- Provide a neutral working environment
- Provide scientific basis to evaluate risk.
 - Bridge the knowledge gap between government and industry.
 - Facilitate positive relationships and trust between group members.
 - Facilitate industry input into USDA-APHIS prevention and response strategies.
 - Ensure that university programs remain relevant for current industry practices and government regulations.



An Industry Perspective to

INNOVATIVE STRATEGIES FOR PRODUCT MOVEMENT

The National Highly Pathogenic Avian Response Plan

- ❑ The Plan as it was drafted was based largely on the broiler and turkey industry
- ❑ However the egg industry has some very fundamental differences that were not addressed in the plan

National Highly Pathogenic Avian Influenza Response Plan

- ❑ Challenge No. 1 = Quarantines of all farms in an area and size of Q area
 - Stop Movement was an Automatic 96 hours
- ❑ Challenge No. 2 = Stamping-Out Policy
 - The scale of the operations
 - Investment/production and processing site

National Highly Pathogenic Avian Influenza Response Plan

- Challenge No. 3 = Period of Time the Premises is Quarantined
- Challenge No. 4 = Magnitude of Interstate Commerce Quarantined
- Challenge No. 5 = Inability to Move Product
- Challenge No. 6 = Compartmentalization

Stop Movement: Risk Factors

- Risk of not moving eggs during an extended time:
 - The flocks still need to be fed and watered
 - The flocks will continue to lay eggs
 - Limited storage of eggs on farm
 - Equipment limitations (physical limitations)
 - Disposal of eggs (environmental and disease control considerations)
 - Increased worker safety issues
 - Disruption of the supply chain
 - Loss of consumer confidence





**Innovative Strategies to Keep Products Moving in
the Face of a Highly Pathogenic Avian Influenza
Outbreak**

THE SECURE EGG SUPPLY MODEL

IF Success defined as healthy food system...

- **Food Security:** Supply *sufficiency* – access to nutritionally adequate and safe food
- **Food Safety:** System *reliability* – reducing exposure to natural hazards/errors/failures
- **Food Defense:** System *resiliency* – reducing the impact of system attacks
- **Food Protection:** Global food supply system Safety/Defense “umbrella”

Shared Goals

- Protect animal and public health
 - Feed and protect millions of people and animals each day
- Prevent economic disaster
 - Supply chain implications
- Reassure public
 - Retain normalcy as much as possible



An Integrated Approach to Response Planning

- ❑ An integrated plan to best deal with the multiple aspects of HPAI did not exist for the egg industry that would:
 - Minimize the impact on animal health
 - Halt the spread of the disease
 - Minimize potential impact on human health
 - Address compliance requirements
 - Provide for business continuity

Modify the Approach to NHPAI Plan for Non-Infected Premises

- Work within the system to improve that plan
 - Engage various stakeholders
- Address the concerns
- Find a workable solution to the problems
- Acknowledgement of the overarching concerns and include in a comprehensive plan

Model Approach to Preparedness and Response Planning

- ❑ Involve public-private partnerships
 - To leverage resources for efficient response
 - To increase speed and effectiveness of response
 - To address economic health concurrently
 - To create dynamic cooperation and coordination as the food system evolves
- ❑ Anticipate plausible scenarios to mitigate risks and overcome system constraints

Develop a Prototype with the Egg Industry

- ❑ Achieve mutual understanding of animal health, human health, ecosystem health and economic health risks
- ❑ Comprehend the complexity of the food system related to eggs and egg products
- ❑ Appreciate the operational dynamics of animal disease outbreak response
- ❑ Examine realistic resource capacity

Progression of Events

- ❑ 2005: A core group of industry, State, federal and academic professions was assembled to address the grave concerns

Early Goals

- Educate State / Federal / Academia partners about the just-in-time egg industry model
- Educate industry about disease control strategies
- Present a concept to contain an outbreak w/o killing apparently healthy birds
- Establish risk factors & criteria to move products in a control zone

Progression of Events

- ❑ 5 years later and we are still working
- ❑ However: There have been many accomplishments made





The Product of the Coordinated Efforts
has become known as:

The Secure Egg Supply Plan

Secure Egg Supply (SES) Plan Components

- **Science and Risk Based Approach**
 - USDA-APHIS VS Proactive Risk Assessments
 - Interagency Risk Assessments for Public Health
- **Established Biosecurity Requirements**
 - For response actions during an outbreak
- **Federal and State Transport (FAST) Eggs Preparedness Plan and Auditing Tool Developed**
 - Prior to and during a response
- **Egg Movement Control (EMC) Response Plan**
 - Identifies requirements for movement
 - A set of Risk Assessments defines risk
- **Permitting Guidance**
 - Enhances informed decisions by Incident Command

SES Plan Components

Science and Risk Based Approach

USDA-APHIS VS Proactive Risk Assessments

Interagency Risk Assessments for Public Health

Established Biosecurity Requirements

FAST Eggs Preparedness Plan and Auditing

Egg Movement Control (EMC) Plan
Permitting Guidance

- Examine the scientific evidence
- Re-examine histories of past events
- Publish Risk Assessments for specific products

SES Plan Components

Science and Risk Based Approach

Established Biosecurity Requirements

FAST Eggs Preparedness Plan and Auditing

Egg Movement Control (EMC) Plan

Permitting Guidance

- Predetermined biosecurity requirements to be implemented during an outbreak
- Reviewed by stakeholders
- Takes into account varied risk levels

SES Plan Components

Science and Risk Based Approach

Established Biosecurity Requirements

FAST Eggs Preparedness Plan and Auditing

Egg Movement Control (EMC) Plan

Permitting Guidance

- Aims to prevent the introduction of disease on the farm
- Stipulates on farm bio- security requirements
- Audits for compliance (both prior to and in the event of) an outbreak

SES Plan Components

Science and Risk Based Approach

Established Biosecurity Requirements

FAST Eggs Preparedness Plan and Auditing

Egg Movement Control (EMC) Plan

Permitting Guidance

- Identifies requirements for product movement
- Links to specific Risk Assessments
- Defines flock testing
- Provides cleaning and disinfection protocols

SES Plan Components

Science and Risk Based Approach

Established Biosecurity Requirements

FAST Eggs Preparedness Plan and Auditing

Egg Movement Control (EMC) Plan

Permitting Guidance

- A tool for incident command
- Establishes a blueprint reference for permitting movement
- Supports efficient informed decision making

SES Benefits to Regulatory Officials

- ❑ Supports the National HPAI Response Plan
- ❑ Supports the Incident Command System
- ❑ Provides information on biosecurity levels and diagnostic test results at participating farms
- ❑ Provides guidance on movement permitting

SES Benefits to Consumers and Communities

- Continuous safe food supply
- Reduced work disruption
- Reduced negative economic impacts in communities
- Reduced disruption of day to day life

SES Benefits to Industry

- ❑ Enhanced business continuity within and between states during an disease outbreak
- ❑ Supports compartmentalization and international trade
- ❑ Promotes flock health by excluding many pathogens
- ❑ Facilitates early detection
- ❑ Prevents spread of disease

Benefits of Collaboration



- Strengthens working relationship with State and Federal animal health officials and industry
- Increases both prevention and preparedness at State and National level
- Increases biosecurity promotes flock health by excluding many pathogens
- Decreases potential business disruption and lessens economic impact of catastrophic poultry disease

SES Team

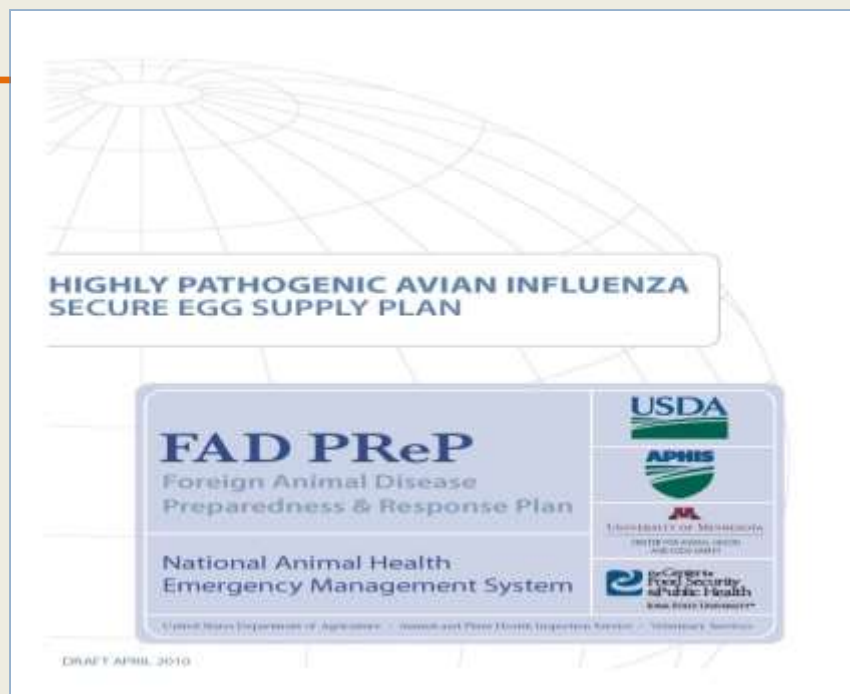
- ❑ Again the glue that kept the project moving was the core team of people involved
- ❑ Progress while not always fast is real

SES Team Accomplishments

- Aug 2006 – Egg Industry HPAI Meeting With APHIS
 - Formation of Egg Industry Movement Group
 - ✓ Creation an Egg Movement Protocol
- Oct 2007 – USAHA Approves EMP Concept
- Nov 2007 – NPIP Supports USAHA Endorsement
- Feb 2008 – State of Minnesota & Iowa Sign Joint MOU
- Jun 2008 – First risk assessment completed
- Oct 2008 – APHIS adds Business Continuity as Part of HPAI Disease Response Plan
- 2008 – ISU establishes the FAST Eggs Plan
- 2009 – 3 Additional Risk Assessments completed

SES Team Accomplishments

- 2010 – The unified preparedness and emergency foreign animal disease response plan was released for review by USDA-AVIC, State Animal Health Officials, CDC, USDA-FSIS



Key Factors for Success

❑ Steady Leadership

- Strong leadership from each of the 3 groups

❑ Common Goal

- Disaster Prevention; Improve response actions

❑ Multi Level Approach

- Government, Industry and Academia

❑ Core Participants

- Long Term Commitment



Our Journey Continues

- Precedent setting experience
- Changing a centuries old paradigm
- A model for future work
- Private/Public collaboration strongest team



Next Steps

This is a journey, not a race (5+ years now)

- **Develop more uniform messaging**
- **Take this concept global**
 - **Need OIE, FAO and WHO endorsement**
 - **Need global trading partner support**



Acknowledgements

☐ Egg industry companies and organizations

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- Animal and Plant Health Inspection Service
- Food Safety Inspection Service

☐ CDC

- Center for Zoonoses, Vectorborne and Enteric Diseases

☐ Academic expertise

- Researchers and Extension