

Avian Influenza (AI)

National & International Update

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Introduction

- *AI Biology & Epidemiology*
- *AI Outbreaks*
- *International Trade and OIE Standards*
- *Domestic AI Program Development*
- *H5N1 Situation*

AI Biology & Epidemiology

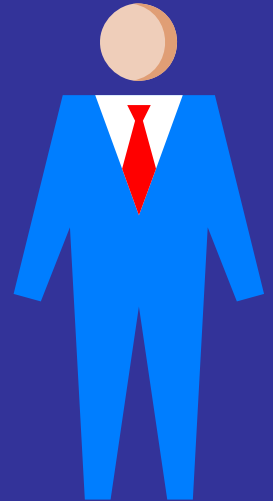


AI Biology – Risk Factors

- Wild waterfowl and shorebirds serve as natural reservoir for Low Path AI (LPAI)
 - Backyard and commercial poultry at risk of exposure
- H5 & H7 LPAI can mutate to High Path AI (HPAI)
- AI transmission can occur from poultry to swine and/or humans

Transmission of AI to Humans

Historically, H1, H2, H3 human pandemics have followed adaptation of AI viruses to swine



Recently, H5 and H7 human infections have resulted from direct transmission from poultry (Asia; The Netherlands; Canada)

AI Outbreaks



HPAI Occurrences Outside of the USA

- Mexico: 1995 (H5N2)
- Australia: 1997 (H7N4)
- Southeast Asia: 1997 – 2005 (H5N1)
- Italy: 1999-2000 (H7N1)
- Chile: 2002 (H7N3)
- Netherlands: 2003 (H7N7)
- British Columbia: 2004 (H7N3)
- Central Asia: 2005 (H5N1)
 - Russia, Kazakhstan, Mongolia, Tibet

AI in the Live Bird Markets

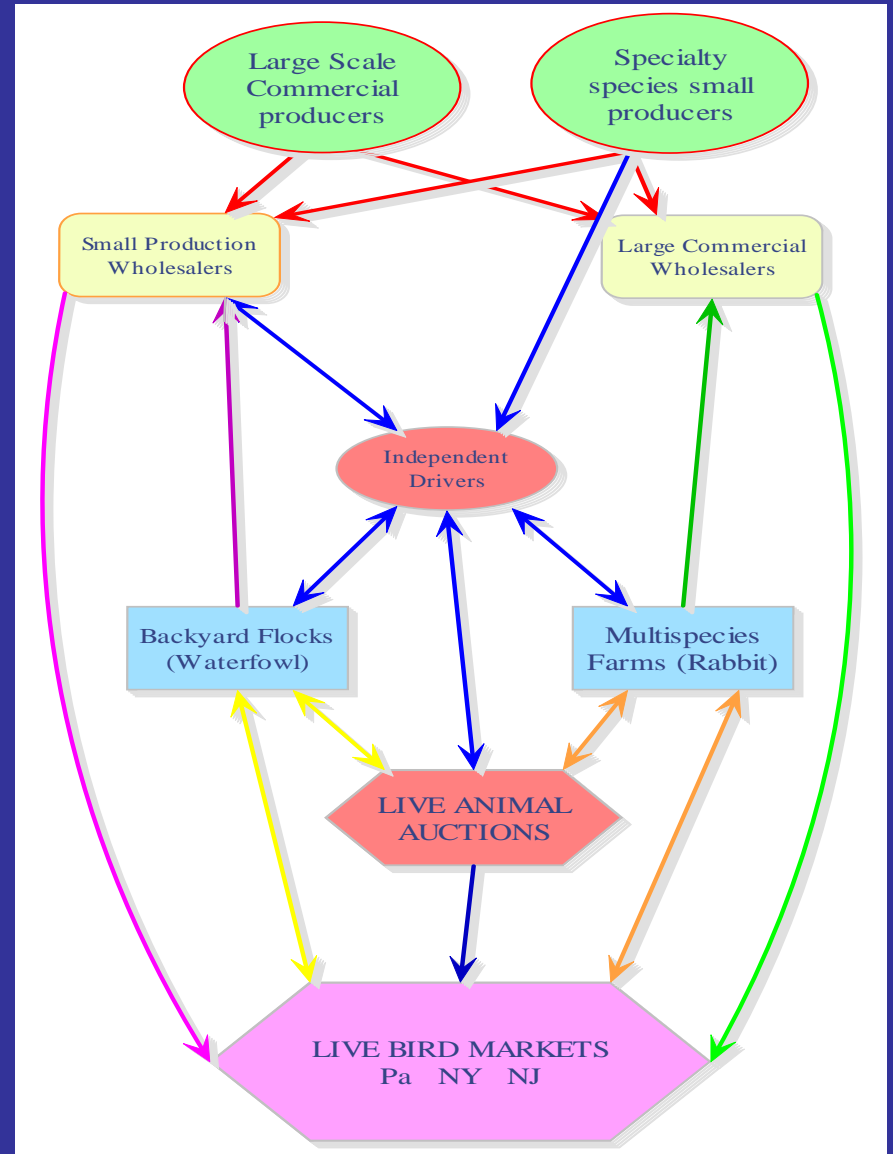
- Low pathogenicity H7N2 AI (LPAI) has been isolated frequently from live bird markets in the NE since 1994.
 - Approximately 120 markets in NY, NJ and New England
 - Approximately 25 million birds marketed annually
- LBMs also present in TX, CA, FL, MN and probably other States



AI Epidemiology – Live Bird Markets



State control programs require marketing of AI negative birds.



Courtesy of Dr. Ernie Zirkle

H5/7 AI in Commercial Flocks Linked to Live Bird Marketing Systems in the U.S.

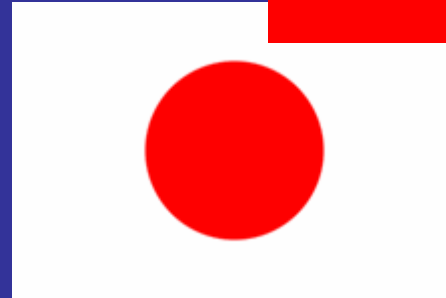
- **LPAI: (H7N2)**

- 1996-98: PA (47 flocks, 2.5 M birds)
- 2001: CT (1 flock, 16,000 birds)
- 2001-02: PA (7 flocks)
- 2002: VA, WV, NC (210 flocks, 4.7 M birds)
- 2003: CT (4 flocks, 4.5 M layers)
- 2004: DE, MD (3 flocks, about 500,000 birds)
- 2004: TX (H7N3; 2 flocks)

- **HPAI: (H5N2)**

- 2004: TX (1 flock)

International Trade



16 countries currently have trade bans on U.S. poultry products because of LPAI

- Argentina, Brazil, India, Korea, South Africa & South Korea: entire US
- Colombia: 10 States (CA, CT, DE, MD, ME, MI, NJ, NY, PA, TX)
- Mexico: 9 States (CA, CT, DE, MD, MO, NC, NJ, PA, TX)
- Iceland: TX
- Cuba: All Northeastern States & CA
- China: CT & RI
- Kazakhstan: DE & TX
- Kenya: DE
- Japan: CT, NJ
- Peru: (CA, CT, DE, MD, NJ, PA, RI, TX)
- Russia: Certain Counties in NC & IN

New OIE Chapter on AI

Adopted May 2005

- Avian influenza
 - Notifiable AI (NAI)
 - HPAI, and all H5 and H7 regardless of pathogenicity detected in *poultry*
 - All other subtypes are *not* reportable
 - Compartmentalization
 - Geographic/ management
- Commodity trading recommendations
 - Trade measures appropriate to risk
 - Based on country/zone/compartment status
 - Allows trade in poultry meat and eggs from LPNAI zone
- Surveillance for NAI is critical to reduce trade interruptions

Domestic AI Program Development

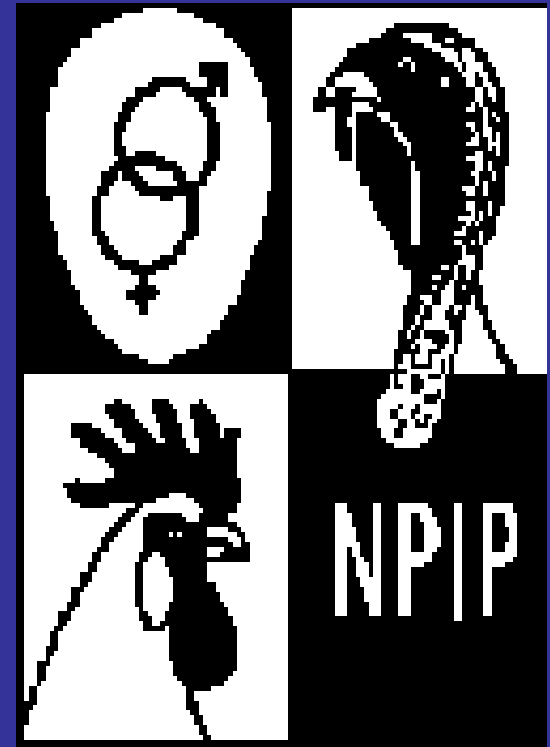


Protection of Domestic Flocks and Adherence to International Standards

- Must be based on national surveillance and control programs.
- Active and Passive surveillance currently conducted by various means
- USDA is developing:
 - National NLP AI monitoring program for all aspects of the commercial poultry industry
 - National NLP AI prevention and control program for the live bird marketing system

Commercial poultry program

- NPIP - The National Poultry Improvement Plan
 - LPAI programs for chicken & turkey breeders are already in place (“U.S. Avian Influenza Clean” program)
 - H5/H7 LPAI program for production flocks was adopted at the July 2004 Biennial conference and regulations are under development



Commercial poultry program (cont.)

- New provisions for establishing the LPAI program within NPIP for commercial production flocks
 1. AI Monitored flock and State certification programs
 2. Guidelines for State diagnostic surveillance programs
 3. Guidelines for State initial response and containment plans

Commercial poultry program (cont.)

1. AI Monitored flock and State certification programs:

- Broilers & Turkeys – AI monitoring based on slaughter plant serology
 - Minimum 11 birds per shift (chickens) or 60 birds per month (turkeys)
- Table egg layers – AI monitoring based on annual flock serology
 - 11 birds or eggs per house, at least 30 days prior to slaughter
- Biosecurity, sanitation, and separation from non-participating flocks required

Commercial poultry program (cont.)

2. Guidelines for State Diagnostic Surveillance Program:

- Low Path Avian Influenza would be a disease reportable to the State
- All Laboratories (private, state, and university) would test for AI in all submitted cases of respiratory disease, unexplained egg production drops, and unexplained severe mortality



Courtesy: Drs. Tablante & Bautista

Commercial poultry program (cont.)

3. Guidelines for State initial Response and Containment Plan - State should establish:

- Procedures for reporting H5/H7 LPAI
- Standing emergency disease management committee
- Procedures for handling and investigating suspicious cases
- Adequate diagnostics
- Quarantine, monitoring and movement controls
- Minimum biosecurity plan followed by all commercial producers
- Plans for disposal of infected flocks
- Plans for cleaning and disinfection of premises; and repopulation
- Vaccination plan if applicable
- Public awareness and education programs for AI

Commercial poultry program (cont.)

- Other issues:
 - Depopulation/controlled marketing and indemnification if positive facilities found
 - \$18 M in indemnity funds currently available
 - Provides for Vaccination
 - Vaccine bank under development
 - 40 M doses of H5/7 killed antigen, with further expansion planned
 - OIE proposed changes allow for vaccination
 - Discrimination between vaccinated and infected animals (DIVA)

Live Bird Market System (LBMS) Program

- Uniform Standards published in October 2004
- Standards provide guidelines for markets, dealers and producers:
 - Licensing requirements and education
 - Bird testing and recordkeeping
 - Sanitation and biosecurity
 - Surveillance and inspections
 - LPAI positive facilities
- States must require participation

LBMS Program (cont.)

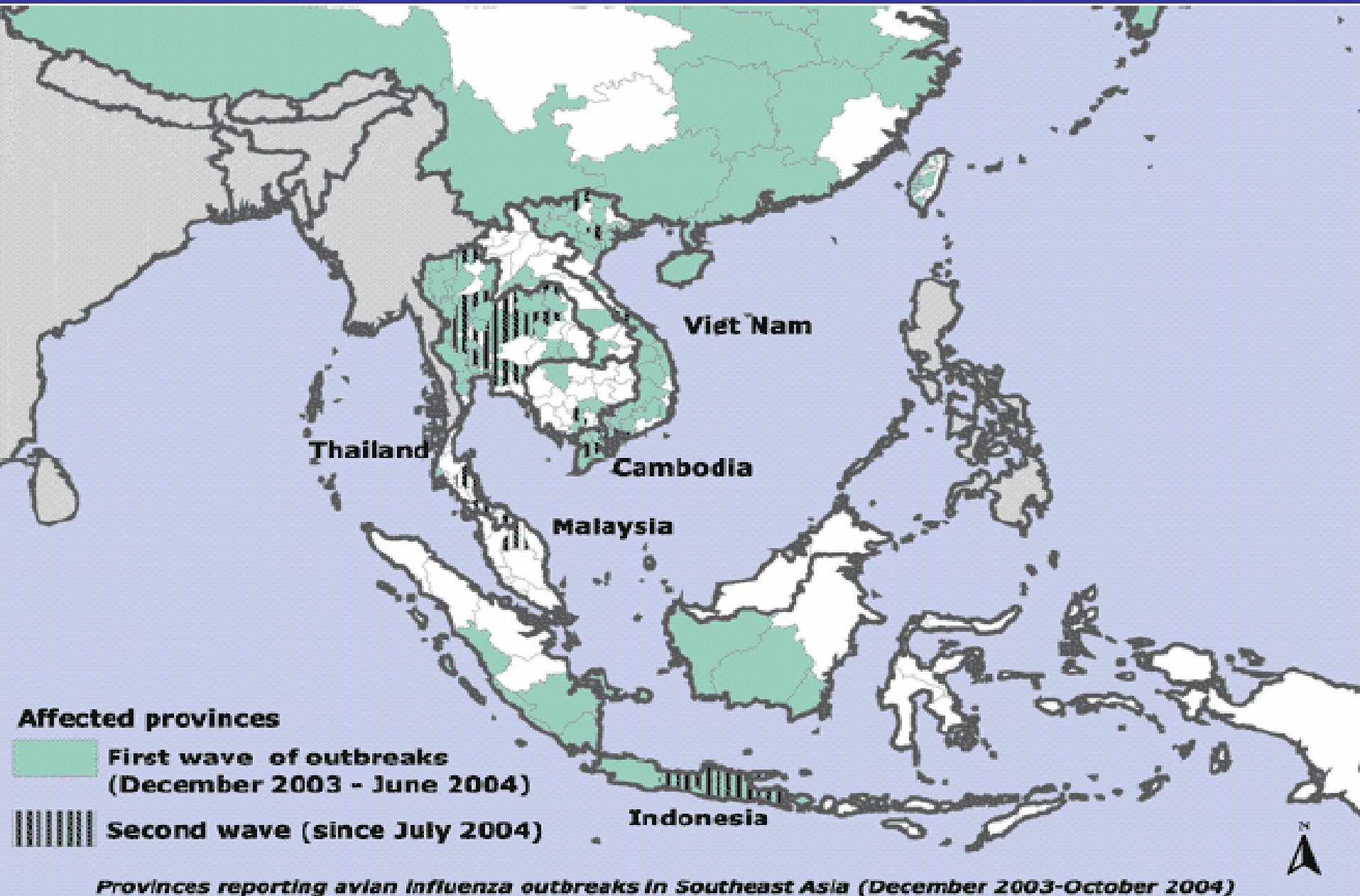
- Implementation status
 - Currently have cooperative agreements with 10 states
 - State MOUs under development
- Bird identification study
 - To determine when premises, lot, and individual bird ID is preferable
 - Evaluate/refine available identification tags to maximize effective use in hatchling and mature birds
 - To address labor, cost, and record keeping
 - To evaluate how ID can assist in tracing infected birds within the LBMS



H5N1 Situation and USDA's Response



H5N1 Poultry Outbreaks, Asia 2003-04



Source: U.N. Food and Agricultural Organization

H5N1 in Poultry in 2005*

- Total of 13 countries that have reported H5N1 HPAI virus since the end of 2003 [Vietnam, Cambodia, Lao, PDR, Thailand, China, Indonesia, Japan, South Korea, Malaysia, Russia, Kazakhstan, Tibet and Mongolia].
 - **Russia:**
 - Initial report on July 24, 2005 in backyard chickens, turkeys, ducks, and geese in Novosibirsk,
 - Siberia; positive for H5N1 virus.
 - **Kazakhstan:**
 - Initial report on August 5, 2005 in domestic ducks and geese; confirmed H5N1 virus.
 - **Tibet:**
 - China reported to OIE on August 10, 2005 H5N1 virus in breeding hens.
 - **Mongolia:**
 - Initial report on August 12, 2005. Only reported in migratory birds - confirmed H5N1 by SEPRL, Athens, GA.

Human Cases of H5N1 2004-2005*

- **112 confirmed human H5N1 cases, 57 deaths**
 - **Cambodia: 4 confirmed, 4 fatal**
 - **Thailand: 17 confirmed, 12 fatal**
 - **Vietnam: 90 confirmed, 40 fatal**
 - **Indonesia: 1 confirmed, 1 fatal**
 - **Overall case fatality: 51%**

H5N1 Highly Pathogenic Avian Influenza

USDA Response

- Domestic activities
 - Import restrictions in place since 2003
 - Heightened awareness at import sites
 - Domestic program development will increase surveillance
 - Public education campaign for AI and END
 - “*Biosecurity for the Birds*” campaign

H5N1 Highly Pathogenic Avian Influenza USDA Response (cont.)

www.aphis.usda.gov/vs/birdbiosecurity

BIOSECURITY FOR THE BIRDS
A national campaign to promote avian health through biosecurity.

Report Sick Birds!
1-866-536-7593
(toll-free)

LOOK
for signs.

REPORT
sick birds.

PRACTICE
backyard biosecurity.

An outbreak of a bird disease such as Exotic Newcastle Disease or Highly Pathogenic Avian Influenza could not only harm your birds, it could kill other nearby birds and quickly spread through your flock. In order to prevent such an outbreak, USDA, in cooperation with States, has begun a campaign to promote avian health by encouraging bird owners "to report sick or suspicious birds to your veterinarian, and/or extension agent and to practice good biosecurity."

Look for Signs. Watch for signs of disease or unexpected deaths among your birds.

Report Sick Birds. Don't wait! Early detection can make a difference. If your birds are sick or dying, call USDA's Veterinary Services toll free at 1-866-536-7593, or your State Veterinarian or local extension agent to find out why.

Practice Backyard Biosecurity. Keep your birds free from disease. Restrict traffic on your property, and disinfect shoes, clothes and hands to prevent the possible spread of disease.

Learn how you can protect your birds by practicing [Backyard Biosecurity](#).

You are the best protection your birds have!

USDA | APHIS | Veterinary Services
Internet zone

BIOSECURITY FOR THE BIRDS CAMPAIGN

H5N1 Highly Pathogenic Avian Influenza USDA Response (cont.)

- **Providing international assistance**
 - **Collaborating with HHS and US Agency for International Development (USAID) to develop unified US Government response to address HPAI in Asia**
 - **\$25 million requested**
 - **USDA advice and assistance in surveillance, laboratory capacity and diagnostics, vaccination issues, culling, disposal, among others, in collaboration with FAO and OIE**

Thank you for your attention!



For more information, visit our website at www.aphis.usda.gov