

Nebraska Behavioral Health Situation Manual – Avian Influenza

What follows is a situation manual designed to test the organized behavioral health response to disaster via a formal tabletop exercise. The situation includes a hypothetical situation in which avian influenza has been detected in poultry. The manual was used by Nebraska in July 2006 to test regional behavioral health plans in coordination with regional disaster chaplains, local public health districts, and the State Department of Agriculture. It is being placed in the public domain to aid other jurisdictions as they test plans for behavioral health involvement and deployment.

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Acronyms

Contents of the ‘Avian Influenza’ brochure developed by the Nebraska Department of Agriculture Bureau of Animal Industry

World Map of areas with confirmed H5N1 Avian Influenza.

# INTRODUCTION

## ***Purpose***

This exercise gives participants an opportunity to evaluate current response concepts, plans, and capabilities for a behavioral health response to an Avian Influenza outbreak. The exercise will focus on key state and local coordination, critical decisions, risk communications and the integration of external assets necessary to minimize the psychological effects of an Avian Influenza outbreak.

## ***Scope***

This exercise examines the role of assets from Behavioral Health, Public Health, Agricultural, and other entities in Nebraska. **Processes and decision making are more important than minute details.**

## ***Design Objectives***

Exercise design objectives are focused on improving understanding of a response concept, identifying opportunities or problems, and/or achieving a change in attitude. The exercise will focus on the following design objectives:

- **Reinforce the Chain of Command and identify command and control issues in order to maintain NIMS compliance**
- **Identify and clarify physical resources that will be needed by behavioral health personnel**
- **Define strategies for the deployment and mobilization of behavioral health staff**
- **Identify the role of risk communications/public information and how that role will be integrated across State and Local jurisdictions**

## ***Exercise Structure***

This will be a multimedia facilitated Tabletop Exercise (TTX). Players will respond to the following scenario modules:

Module 1 – Pre-Event

Module 2 – Response

Module 3 – Recovery

### ***Exercise Format***

Each module begins with a situation briefing or update presented to the group. Following each situation update, players will participate in a facilitated discussion of the module, and discuss the suggested questions at the end of each module as well as the response issues relevant to the group. At the end of the facilitated discussion, exercise facilitators will highlight key elements of each response phase.

### ***Roles and Responsibilities***

**Players** respond to the situation presented based on expert knowledge of response procedures, current plans and procedures, and insights derived from training and experience.

**Facilitators** provide situation updates and moderate discussions. They also provide additional information or resolve questions as required. Key planning team members will also assist with facilitation as Subject Matter Experts (SME) during the tabletop exercise.

### ***Assumptions and Artificialities***

In any exercise, a number of assumptions and artificialities may be necessary to complete play in the time allotted. During the exercise, the following apply:

- The scenario is plausible, and events occur as they are presented.
- There are no “hidden agendas” or trick questions.
- All players receive information at the same time.

### ***Exercise Rules***

**There is no ‘textbook’ solution.** Varying viewpoints, even disagreements, are expected. This is intended to be a **safe, open, stress-free environment.**

- Respond based on your knowledge of current plans and capabilities (i.e., you may use only existing assets) and insights derived from training and experience.
- Current positions or policies do not limit you. Make your best decision based on the circumstances presented.

- Decisions are not precedent-setting and may not reflect your agency or department’s final position on a given issue. This is an opportunity to discuss and present multiple options and possible solutions.
- Issue identification is not as valuable as suggestions and recommended actions that could improve response and preparedness efforts. *Problem-solving efforts should be the focus.*
- Assume cooperation and support from other responders and agencies.
- The situation updates, written material, and resources are the basis for discussion. There are no situational injects.

### **Additional Resources**

During the exercise, you may need specific information to assist you in making a decision. The appendices to this Situation Manual (SITMAN) contain additional information you may use in your discussion in addition to your existing plans. As you participate, draw on your experience and knowledge of how Federal, State, and local agencies work together in an emergency response situation.

## EXERCISE SCHEDULE

- 1300**      **Registration**
- 1315**      **Welcome**
- 1330**      **Module 1 – Pre-Event and Introductions**  
                 Situation Briefing  
                 Facilitated Discussion
- 1415**      **Module 2 – Response**  
                 Situation Briefing  
                 Facilitated Discussion
- 1515**      **Module 3 – Response to Recovery**  
                 Situation Briefing  
                 Facilitated Discussion
- 1615**      **Review and Conclusion**
- 1645**      **Closing Comments**

## MODULE 1 – PRE-EVENT

### *Background*

#### **THE DISEASE IN BIRDS**

Avian influenza is an infectious disease of birds caused by type A strains of the influenza virus. The disease occurs worldwide. While all birds are thought to be susceptible to infection with avian influenza viruses, many wild bird species carry these viruses with no apparent signs of harm.

Other bird species, including domestic poultry, develop disease when infected with avian influenza viruses. In poultry, the viruses cause two distinctly different forms of disease – one common and mild (low-pathogenic), the other rare and highly lethal (high-pathogenic). In the mild form (low-path), signs of illness may be expressed only as ruffled feathers, reduced egg production, or mild effects on the respiratory system. Outbreaks can be so mild they escape detection unless regular testing for viruses is in place.

In contrast, the second and far less common highly pathogenic form is difficult to miss. First identified in Italy in 1878, highly pathogenic avian influenza is characterized by sudden onset of severe disease, rapid contagion, and a mortality rate that can approach 100% within 48 hours. In this form of the disease, the virus not only affects the respiratory tract, as in the mild form, but also invades multiple organs and tissues. The resulting massive internal hemorrhaging has earned it the lay name of “chicken Ebola”.

Apart from being highly contagious among poultry, avian influenza viruses are readily transmitted from farm to farm by the movement of live birds, people (especially when shoes and other clothing are contaminated), and contaminated vehicles, equipment, feed, and cages. Highly pathogenic viruses can survive for long periods in the environment, especially when temperatures are low. For example, the highly pathogenic H5N1 virus can survive in bird feces for at least 35 days at low temperature (4°C). At a much higher temperature (37°C), H5N1 viruses have been shown to survive, in fecal samples, for six days.

For highly pathogenic disease, the most important control measures are rapid culling of all infected or exposed birds, proper disposal of carcasses, the quarantining and rigorous disinfection of farms, and the implementation of strict sanitary, or “biosecurity”, measures.

#### **THE ROLE OF MIGRATORY BIRDS**

During 2005, an additional and significant source of international spread of the virus in birds became apparent for the first time, but remains poorly understood. Scientists are increasingly convinced that at least some migratory waterfowl are now carrying the H5N1 virus in its highly

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pathogenic form, sometimes over long distances, and introducing the virus to poultry flocks in areas that lie along their migratory routes.

### **COUNTRIES AFFECTED BY OUTBREAKS IN BIRDS**

The outbreaks of highly pathogenic H5N1 avian influenza that began in south-east Asia in mid-2003 and have now spread to a few parts of Europe are the largest and most severe on record.

In late July 2005, the virus spread geographically beyond its original focus in Asia to affect poultry and wild birds in the Russian Federation and adjacent parts of Kazakhstan. Almost simultaneously, Mongolia reported detection of the highly pathogenic virus in wild birds. In October 2005, the virus was reported in Turkey, Romania, and Croatia. In early December 2005, Ukraine reported its first outbreak in domestic birds. Most of these newer outbreaks were detected and reported quickly. Further spread of the virus along the migratory routes of wild waterfowl is, however, anticipated. Moreover, bird migration is a recurring event. Countries that lie along the flight pathways of birds migrating from central Asia may face a persistent risk of introduction or re-introduction of the virus to domestic poultry flocks.

Prior to the present situation, outbreaks of highly pathogenic avian influenza in poultry were considered rare. Excluding the current outbreaks caused by the H5N1 virus, only 24 outbreaks of highly pathogenic avian influenza have been recorded worldwide since 1959. Of these, 14 occurred in the past decade. The majority have shown limited geographical spread, a few remained confined to a single farm or flock, and only one spread internationally. All of the larger outbreaks were costly for the agricultural sector and difficult to control.

### **THE ILLEGAL IMPORTATION OF BIRDS**

Every year, there are many attempts made to smuggle birds into the United States. Most of them are brought in during the hatching season for wild birds, which starts in January and continues through mid- May. Most smuggled birds originate from Central America, South America, and Mexico, but smuggled birds have also been identified coming in from countries such as China and Thailand. Though many of these birds may not exhibit symptoms, they sometimes carry diseases, including the contagious virus that causes exotic Newcastle disease (END). U.S. poultry and caged birds are extremely vulnerable to this virus. Just one infected bird can rapidly spread the disease to others, and from location to location.

Bringing smuggled birds into the United States also increases the chance of introducing high-pathogenicity avian influenza (HPAI) into the country, including H5N1 strains of the disease. Worldwide, there are many strains of avian influenza virus that can cause varying amounts of clinical illness in poultry. HPAI viruses can infect chickens, turkeys, pheasants, quail, ducks, geese, and guinea fowl, as well as a wide variety of other birds.

### **THE DISEASE IN HUMANS**



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Influenza viruses are normally highly species-specific, meaning that viruses that infect an individual species (humans, certain species of birds, pigs, horses, and seals) stay “true” to that species, and only rarely spill over to cause infection in other species. Since 1959, instances of human infection with an avian influenza virus have been documented on only 10 occasions. Of the hundreds of strains of avian influenza A viruses, only four are known to have caused human infections: H5N1, H7N3, H7N7, and H9N2. In general, human infection with these viruses has resulted in mild symptoms and very little severe illness, with one notable exception: the highly pathogenic H5N1 virus.

Of all influenza viruses that circulate in birds, the H5N1 virus is of greatest present concern for human health for two main reasons. First, the H5N1 virus has caused by far the greatest number of human cases of very severe disease and the greatest number of deaths. It has crossed the species barrier to infect humans on at least three occasions in recent years: in Hong Kong in 1997 (18 cases with six deaths), in Hong Kong in 2003 (two cases with one death) and in the current outbreaks that began in December 2003 and were first recognized in January 2004.

A second implication for human health, of far greater concern, is the risk that the H5N1 virus – if given enough opportunities – will develop the characteristics it needs to start another influenza pandemic. The virus has met all prerequisites for the start of a pandemic save one: an ability to spread efficiently and sustainably among humans. While H5N1 is presently the virus of greatest concern, the possibility that other avian influenza viruses, known to infect humans, might cause a pandemic cannot be ruled out.

All evidence to date indicates that close contact with dead or sick birds is the principal source of human infection with the H5N1 virus. Especially risky behaviors identified include the slaughtering, defeathering, butchering and preparation for consumption of infected birds. In a few cases, exposure to chicken feces when children played in an area frequented by free-ranging poultry is thought to have been the source of infection. Swimming in water bodies where the carcasses of dead infected birds have been discarded or which may have been contaminated by feces from infected ducks or other birds might be another source of exposure. At present, H5N1 avian influenza remains largely a disease of birds. The species barrier is significant: the virus does not easily cross from birds to infect humans. Despite the infection of tens of millions of poultry over large geographical areas since mid-2003, just over 200 human cases have been laboratory confirmed. For unknown reasons, very few cases have been detected in presumed high-risk groups, such as commercial poultry workers, workers at live poultry markets, cullers, veterinarians, and health staff caring for patients without adequate protective equipment. Also lacking is an explanation for the puzzling concentration of cases in previously healthy children and young adults.

***United States***

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The U.S. poultry industry is the world's largest producer and second largest exporter of poultry meat. U.S. consumption of poultry meat (broilers, other chicken, and turkey) is considerably higher than beef or pork, but less than total red meat consumption. The United States is also a major egg producer. The poultry and egg industry is a major feed grain user, accounting for approximately 80 billion pounds of feed yearly. With about 15 percent of total poultry production being exported, the U.S. poultry industry is heavily influenced by currency fluctuations, trade negotiations, and economic growth in its major importing markets.

The value of all egg production in 2005 was \$4.04 billion. Egg production totaled 90.0 billion eggs. The total number of broilers produced in 2005 was 8.87 billion.

The combined value of production from broilers, eggs, turkeys, and the value of sales from chickens in 2005, was \$28.2 billion. Of the combined total, 74 percent was from broilers, 14 percent from eggs, 11 percent from turkeys, and less than 1 percent from chickens.

In 1924, 1983, and 2004, High Pathogenic Avian Influenza was detected in the United States although no significant human illnesses resulted from these outbreaks. The 1924 outbreak was contained and eradicated in East Coast live bird markets. The 1983 outbreak resulted in the destruction of approximately 17 million chickens, turkeys and guinea fowl in the northeastern U.S. The 2004 outbreak was quickly eradicated thanks to close coordination and cooperation between the USDA, state, local and industry leaders.

### **Nebraska**

- Nebraska's poultry industry currently provides employment for approximately 2,250 workers and pays nearly \$44 million in wages and salaries to its employees.
- Indirectly, the industry supports over 2,600 jobs earning about \$76 million in wages and salaries. Most of the 2,600 jobs and the \$76 million in wages and salaries benefit rural areas of the state, since major poultry industries are located in rural communities.
- Directly and indirectly, the poultry industry supports 4,900 jobs that pay \$119 million in wages and salaries.
- The employment multiplier for the poultry industry in Nebraska is 2.2, meaning that for every job created in the poultry industry, the equivalent of 1.2 additional jobs are created elsewhere in the economy.
- Nebraska exports approximately 40 percent of its poultry products.
- In 1997, cash receipts from Nebraska's egg production were approximately \$107 million dollars.
- Nebraska's egg layers annually consume approximately 210,000 tons of corn and 126,000 tons of soybeans.
- In 1997, Nebraska produced 2,469 million eggs.

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### **Key Issues**

- Poultry production is a major contributor to the Nebraska and National economies.
- High-Path Avian Influenza has been identified and contained in the United States throughout the century.
- 229 humans have been infected with H5N1 to date, resulting in 131 deaths (57% fatality rate)
- Transmission of the H5N1 virus from birds to humans is rare
- Avian Influenza, regardless of its potential to become a human pandemic, has a large impact upon the world

### **Task**

*Based on the information provided, you have 5 minutes to consider the issues raised in Module 1. Identify any additional requirements, critical issues, decisions, and/or questions you feel should be addressed at this time.*

MODULE 1

QUESTIONS

*Review the following questions in their entirety and discuss your concerns at this point in the exercise scenario. Participants are not required to address every question in this section.*

1. What friends, neighbors or relatives of yours are currently involved in the poultry industry? Retailing of poultry products like eggs, and raw chicken?
2. How do you think rumors of Avian influenza would affect them?
3. How would rumors of Avian influenza affect your community?
4. What agencies/businesses/organizations in your community should be preparing for the potential arrival of Avian influenza?

## MODULE 2 – RESPONSE

### *Production Facility X – Day 0*

Fall, 2006. The owner of a family managed poultry production facility (Production Facility X) in Nebraska notices a decrease in egg production at the facility over the past two days. Although the decrease from just over 24,000 eggs a day to 22,200 is not crippling, it is significant. The owner suspects Caged Layer Fatigue, a disease among laying hens in a high state of productivity. The manager calls a consulting Veterinarian specializing in poultry to come out and look at the hens and provide a diagnosis.

Prior to the Vets arrival, an employee notices a number of chickens having difficulty walking. Upon closer examination, the chickens look to have swollen wattles. He reports his discovery to the owner who calls the Veterinarian again.

Upon arrival, the Vet examines a number of birds. She identifies a number of birds with swollen eyelids, comb and wattles; discoloration of combs and wattles; unstable coordination, and a few are sneezing and coughing.

The Veterinarian contacts Nebraska Department of Agriculture (NDA) and relays her concern about the potential presence of High-path Avian influenza. The NDA dispatches a Foreign Animal Disease Diagnostician to collect test samples and initiate field activities. Because of strong suspicion of High-Path Avian Influenza, the flock is quarantined and biosecurity precautions are taken, including minimizing the number of individuals exposed to the flock and cleaning and disinfecting of vehicles. Samples are gathered and sent to the National Veterinary Services Laboratory in Ames, Iowa.

The unusual activity at the facility draws the attention of neighbors and residents of Production Town X. Workers at the facility call their families to tell them they will be home late because of the disinfecting process.

### *Key Issues*

- There is a strong suspicion of the presence of High-Path Avian Influenza
- Neighbors and employee family members gather limited information on the events at the facility.

**Task**

*Based on the information provided, you have 10 minutes to consider the issues raised in Module 2. Identify any additional requirements, critical issues, decisions, and/or questions you feel should be addressed at this time.*

MODULE 2

QUESTIONS

*Review the following questions in their entirety and discuss your major concerns at this point in the exercise scenario. Participants are not required to address every question in this section.*

1. What new facts do we have?
2. What agencies or partners should now be involved? Should behavioral health be involved at this point?
3. What types of information should be provided to employees and the community at this point? How is this information relayed?
4. If behavioral health has a role, who activates you? How are you contacted? Where do you report? Who do you report to?
5. What types of equipment would you need to take to the scene? Do you have access to that equipment? If not, where will you get it?
6. What other actions should be taken at this point?
7. Who is responsible for the above mentioned actions?

## MODULE 3 – RESPONSE TO RECOVERY

### *Production Town X – Day 3*

Preliminary test results from Ames, IA indicated the presence of Avian Influenza on Day 1. Representatives from the NE Dept of Agriculture emphasized that this is a preliminary test and that final results would not be available until today. Despite these admonitions, trucks from CBS, MSNBC, ABC, CNN, FOX and a number of local stations have converged upon Production town X. They are interviewing residents while awaiting the return of lab results from the diseased chickens. They have also attempted to gain access to the quarantine area on numerous occasions. Governor Heinemann has announced a 3:00 p.m. press conference although the subject of the press conference has not been announced.

Since Day 0, nearly 27,000 of over 100,000 birds have died.

Numerous employees of the U.S. Department of Agriculture’s Animal Plant Health Inspection Service (APHIS) are inspecting nearby production facilities and small flocks. The USDA is also transporting millions of doses of bird vaccine to be used outside the quarantine area in the event of a confirmed case of High-Path Avian influenza. While it is unknown whether the vaccine would be effective against the potential viral strain, the doses are being prepared for distribution.

The Nebraska Department of Agriculture is working closely with the Nebraska Emergency Management Agency, Nebraska State Patrol, Nebraska National Guard and numerous Federal agencies. Law enforcement is attempting to maintain the quarantine zone in conjunction with the military. The Department of Environmental Quality is working to identify a disposal site for the infected flock(s) should it be needed. Other depopulation plans are being reviewed and preparations are being made for the scenario of culling the remaining 70,000+ chickens from this facility. Decisions as the depopulation of other flocks in the area are pending laboratory results from those flocks.

### *Production Town X – Day 14*

By day 6, over 100,000 chickens from Production Facility X had been destroyed. “The family...” said MSNBC “...is showing incredible fortitude in the face of economic ruin.” The media continues, however, to criticize FEMA, the USDA and other federal agencies for their “slow response” to the disaster.

By day 7, the media had left town X.



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Across the country, the USDA, State Departments of Agriculture and the Department of the Interior are increasing surveillance efforts. The appearance of H5N1 in Nebraska appears to have been contained to a single production facility.

The investigation to identify the source of the virus and how it got past the biosecurity measures continues.

### **Key Issues**

- Media outlets awaited test results while staging in Production Town X
- Representative from Federal agencies worked with State officials
- Depopulation of the flocks within the quarantine zone involved over 100,000 birds
- The rest of the Nation has increased surveillance activities to detect other viral infections

### **Task**

*Based on the information provided, you have 10 minutes to consider the issues raised in Module 2. Identify any additional requirements, critical issues, decisions, and/or questions you feel should be addressed at this time.*

MODULE 3

QUESTIONS

*Review the following questions in their entirety and discuss your major concerns at this point in the exercise scenario. Participants are not required to address every question in this section.*

1. What new facts are involved?
2. What are the differences in the role of behavioral health from day 3 to day 14 and beyond?
3. Where, if at all, does behavioral health fit in the local command structure on day 3? Day 14? Beyond Day 14?
4. What is the role of behavioral health with the media? Who in your jurisdiction is responsible for media contacts?
5. What are the top three priorities for behavioral health on day 3? Day 14?
6. What are the steps that need to be taken to assure these priorities are acted upon?

APPENDICES

**Terms of Reference**

AAR	After-Action Report
AI	Avian Influenza
ARNG	Army National Guard
CBRNE	Chemical, Biological, Radiological, Nuclear, Explosive
CDC	Centers for Disease Control and Prevention
CISM	Critical Incident Stress Management
DFO	Disaster Field Office
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
ECC	Emergency Coordination Center
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
FADD	Fatal Animal Disease Diagnostician
FBI	Federal Bureau of Investigation
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency
H5N1	an Influenza A virus subtype
HHS	Department of Health and Human Services
HPAI	High Pathogenic Avian Influenza
IC	Incident Commander
ICS	Incident Command System
JIC	Joint Information Center
JOC	Joint Operations Center
LPAI	Low Pathogenic Avian Influenza
MACC	Multi-Agency Coordination Center
NEMA	Emergency Management Agency
NRP	National Response Plan

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ODP	Office for Domestic Preparedness
PIO	Public Information Officer
POC	Point of Contact
PPE	Personal Protective Equipment
SEOP	Emergency Operations Plan
SITMAN	Situation Manual
SME	Subject Matter Expert
SOG	Special Operating Guidelines
SOP	Standard Operating Procedure
UCS	Unified Command System
USPHS	U.S. Public Health Service
WHO	World Health Organization
WMD	Weapon(s) of Mass Destruction

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### **What is Avian Influenza (AI)?**

Avian influenza (AI), or bird flu, is a rapidly spreading viral disease that mainly infects birds. Migratory birds are natural carriers. AI affects chickens, turkeys, pheasants, quail, ducks, geese, and guinea fowl.

### **Is AI contagious? Who is susceptible?**

#### **How is it transmitted?**

- Yes, AI is contagious.
- Although rare, humans and other mammals can be vulnerable to the disease.
- The disease may spread by direct contact with infected birds, aerosol, and contaminated objects, such as footwear, clothing, equipment, and vehicles.
- Birds, especially poultry, are the most susceptible animal.
- Exists naturally in wild birds.

### **What are the signs of AI?**

#### **In birds:**

- Can range from no clinical signs to sudden death.

Signs can include:

- Decrease in egg production.
- Soft-shelled or misshapen eggs.
- Swelling of the head, eyelids, comb, and wattles.
- Purple discoloration of the wattles, combs, and legs.
- Respiratory signs: coughing, sneezing, respiratory distress.
- Unstable coordination.
- Sudden death.

### **How do I avoid AI or stop it from spreading?**

- Avoid contact with sick birds.
- Avoid live bird markets.
- Wash your hands before and after any contact with animals.
- When traveling abroad, do not bring any prohibited items back to the United States.
- Wash and disinfect any items used while traveling abroad.
- Use strict biosecurity measures on your farm.
- Keep flock away from wild birds.
- Restrict unauthorized people and vehicles from the farm.
- Monitor and record any visitors or vehicles coming on or off the farm.
- Clean and disinfect equipment and vehicles when traveling onto or off of the farm.
- Clean and disinfect footwear after leaving animal areas.
- Do not move animals from farm to farm.
- Isolate any new or returning animals for at least two weeks to allow time for disease signs to develop before exposure to your flock.
- Isolate any animals showing signs of illness.

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- Quarantine the contaminated area.
- Notify your veterinarian immediately of any suspected disease.
- Although poultry vaccines are available, there is not a vaccine that covers all 15 strains of the disease. Therefore, since there is no way to determine which strain will infect a flock, vaccines are generally not practical to prevent infection.

### **How is AI treated?**

- At this time, no specific treatment is known.

### **Are there public health risks?**

- Although rare, humans can be vulnerable to the disease. Most human cases have occurred in people with close contact to infected birds or their environment.
- If you have had contact with infected birds or are showing symptoms, contact your health care provider immediately.
- There have been no reported cases of AI following consumption of fully-cooked meat.

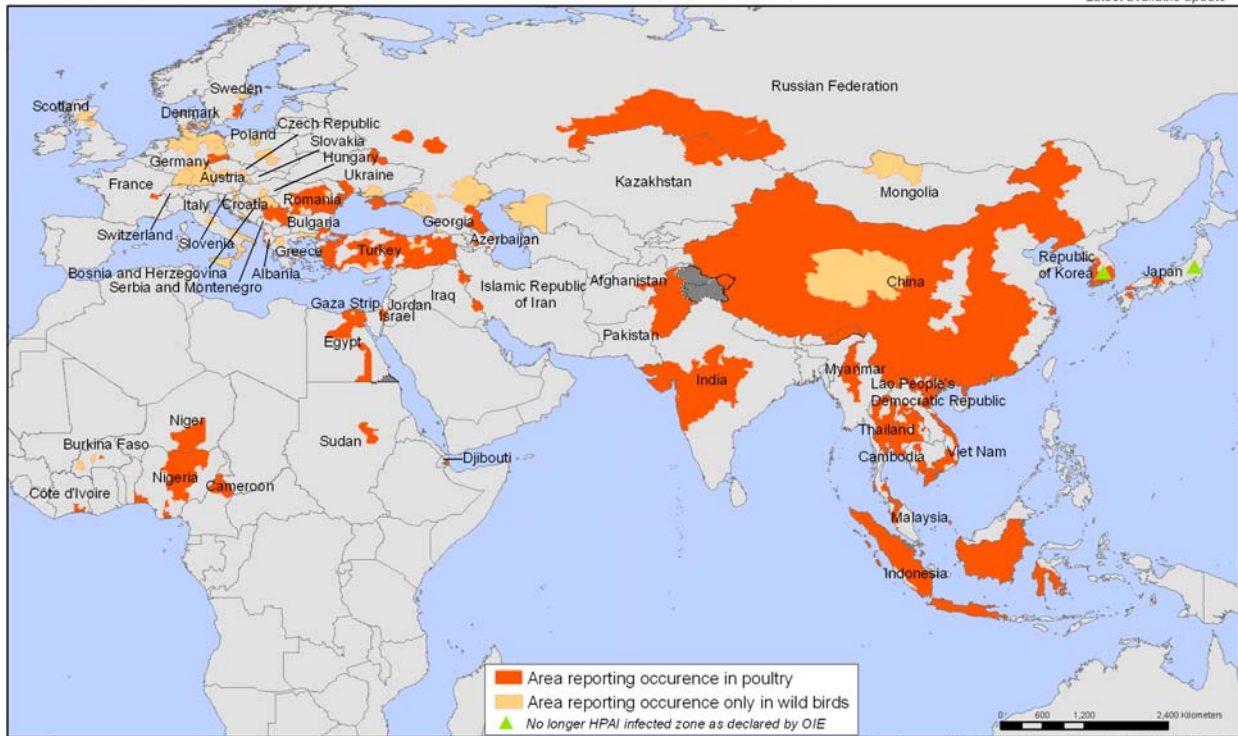
### **What are the signs of AI in humans?**

- Typical flu-like symptoms: fever, cough, sore throat, muscle aches.
- Eye infection.
- Pneumonia.
- Respiratory distress.

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Areas reporting confirmed occurrence of H5N1 avian influenza in poultry and wild birds since 2003

Status as of 26 June 2006  
Latest available update



 **World Health Organization**  
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Data Source: World Organisation for Animal Health (OIE) and national governments  
Map Production: Public Health Mapping and GIS  
Communicable Diseases (CDS) World Health Organization

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