AVIAN FLU SCHOOL

International Course Guide

Version: June 25, 2007

MODULE 1: OVERVIEW

Wildlife Health Center and Cooperative Extension
School of Veterinary Medicine
University of California, Davis
Acknowledgments

The Avian Flu School International Program is a project of the Global Livestock CRSP

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www.avianfluschool.org

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INTRODUCTION

TARGET AUDIENCES

This module is designed for a variety of audiences from poultry producers to decision makers. For some audiences, it will provide the background information upon which other modules will build. For others, it will be the only module they participate in.

For this module, you will need the following materials:

- AFS Course Guide—Module 1
- AFS Handouts for Module 1
  A. Testing Procedures
  B. Laboratory Setup
  C. Reporting Tree
  D. Ten Components of an HPAI Preparedness and Response Plan
  E. Communication Plan Matrix

This module includes the following training methods:

- Lecture
- Exercises and Guided Discussions
  1. Exercise 1-1: Identifying the HPAI Transmission Paths
  3. Exercise 1-3: Developing Messages for an H5N1 HPAI Communication Plan
- Small and large group discussion

Introduce this course by welcoming the participants to the Avian Flu School training program.
INTRODUCE INSTRUCTORS

Ask participants to introduce themselves, including:

- Name, area of residence
- Current work, research
- What they would like to learn from the course

LESSON TIMELINE

A projected time plan for this module is as follows:

- Introduction: 10 minutes
- Lesson 1: 40 minutes
- Lesson 2: 15 minutes
- Lesson 3: 20 minutes
- Lesson 4: 15 minutes
- Lesson 5: 15 minutes
- Lesson 6: 60 minutes
- Lesson 7: 60 minutes
- Lesson 8: 60 minutes
- Recap: 15 minutes
- Total Estimated Time: 5.5-6 hours

Instructor may add or omit material to customize length of module as necessary.

Answer questions, then continue.
### MODULE OBJECTIVES

At the conclusion of this module, you will be able to:

- Define Avian influenza
- Identify Avian influenza subtypes and pathogenic forms
- Describe how the avian flu virus is transmitted among birds and to other species
- Identify potential health and economic risks associated with an outbreak of H5N1 HPAI
- Describe purpose of surveillance
- Describe the procedures for reporting an outbreak or case of H5N1 HPAI
- Define components of an effective National or Regional H5N1 HPAI Preparedness and Response Plan
- Identify when and how to communicate with the public regarding an avian influenza emergency
- Identify components of a communications plan
- Develop messages to communicate to various stakeholder groups regarding HPAI H5N1
### MODULE PREVIEW

**Important points covered in this module:**

- Waterfowl and shorebirds are the reservoirs of all of the 144 possible influenza A subtypes.
- H5 and H7 avian influenza viruses can cause a mild or a fatal disease in poultry. Those that cause mild disease can become the fatal type if they are not eradicated from domestic poultry.
- Very few of the possible influenza subtypes infect humans.
- Outbreaks of highly pathogenic avian influenza have serious economic impacts.
- Effective monitoring, managing, and reporting activities are essential to mitigate or respond to H5N1 HPAI.
- National and Regional H5N1 HPAI Response Plans are highly recommended.
- Emergency response and communication plans are critical when working with the public on an animal health emergency.

### ADDITIONAL NOTES:
There are many kinds of flu with various classifications and sub-types. For example, seasonal flu, which infects humans is different than avian flu.

Birds, waterfowl and shorebirds are the reservoir hosts of influenza A viruses.

Influenza viruses are named by the proteins on their surfaces, the HA and NA proteins. There are 16 HA types and 9 NA types with a possible 144 combinations. The vast majority of these subtypes infect only birds.

H5N1 is the subtype of the virus that is the current concern.

Reassortment. Influenza viruses have segmented genomes, meaning that the virus’ blueprints are in pieces that can be exchanged with pieces of the blueprints of other flu viruses.

Reassortment results in large changes in the virus.

Mutations happen every time the virus reproduces itself, changing the virus in very small changes.
Avian influenza viruses can adapt to grow in new hosts or change in virulence either by reassortment or mutation.

**LOW PATHOGENIC VS. HIGH PATHOGENIC**

Avian influenza viruses can be further divided into two forms based on what they do to naïve chickens:
Instructor Notes | Course Material
--- | ---

1. **Low pathogenic avian influenza (LPAI)**
   - Causes few to no signs of sickness in infected chickens.
   - Can be any of the 144 subtypes

2. **Highly pathogenic avian influenza (HPAI)**
   - Causes mortality rates of up to 100% in chickens.
   - Can only be H5 or H7 subtypes

Some H5 and H7 LPAI strains turn into HPAI strains as the viruses reproduce and therefore, mutate.
Avian influenza viruses have lipid envelopes.

Viruses can’t survive long outside of their hosts.

Over time, viruses will die as they are exposed to heat or light or drying.

Avian influenza viruses will be preserved by wetness and coolness.

AVIAN INFLUENZA VIRUSES ARE ENVELOPED

The virus is inactive when the envelope, or membrane coat, is destroyed.

Heating, drying and most disinfectants will destroy the envelope.

AVIAN INFLUENZA VIRUSES NEED A LIVING HOST TO REPLICATE AND STAY ALIVE

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**ADDITIONAL NOTES:**
### LESSON I
### AVIAN INFLUENZA VIRUSES

<table>
<thead>
<tr>
<th>Instructor Notes</th>
<th>Course Material</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TAKE A MOMENT TO CHECK YOUR KNOWLEDGE:</strong></td>
<td></td>
</tr>
<tr>
<td>How do flu viruses change?</td>
<td></td>
</tr>
<tr>
<td>Which virus subtypes can cause HPAI?</td>
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<tr>
<td>How can flu viruses be destroyed?</td>
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</tbody>
</table>
**LESSON 2**
**HISTORY OF H5N1**

<table>
<thead>
<tr>
<th>Instructor Notes</th>
<th>Course Material</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TIME: 15 MINUTES</strong></td>
<td><strong>HISTORY OF GLOBAL SPREAD OF H5N1 HPAI:</strong></td>
</tr>
<tr>
<td><strong>START TIME:</strong> _______</td>
<td>• 1996 – Precursor of current H5N1 HPAI subtype first detected in a goose in Southern China.</td>
</tr>
<tr>
<td><strong>END:</strong> _______</td>
<td>• 1997 – First reported outbreak of H5N1 HPAI in domestic poultry (Hong Kong), which led to the first human infections, 18 cases resulting in 6 deaths. The outbreak was controlled through the culling of 1.5 million domestic birds.</td>
</tr>
<tr>
<td><strong>TRANSITION</strong></td>
<td>• 2001 – H5N1 HPAI appeared again in Hong Kong— stamping out resulted in the culling of 1.2 million birds</td>
</tr>
<tr>
<td><em>Now that we have talked about Avian Influenza in general, let’s talk about the type of bird flu of the most concern currently, particularly its global spread.</em></td>
<td>• 2004 – Numerous outbreaks in most Southeast Asian countries: Thailand, Vietnam, Hong Kong, Cambodia, Laos, Indonesia, China, and Malaysia. Human cases were detected in many of these same countries.</td>
</tr>
<tr>
<td><strong>PRIMARY SPREAD</strong></td>
<td>• May – August 2005 – H5N1 HPAI in domestic and wild birds in China, Siberia, and Mongolia resulted in die-offs signaling a dramatic geographic expansion and possible involvement of migratory birds in transmission.</td>
</tr>
<tr>
<td>H5N1 HPAI can be introduced in a new country or region by:</td>
<td>• October 2005 – February 2006 – H5N1 HPAI outbreaks in poultry and wild birds in Turkey, Iraq and Eastern Europe.</td>
</tr>
<tr>
<td>• Migratory birds: H5N1 HPAI shows a seasonal occurrence in high-risk areas, which coincides with migratory activity</td>
<td>• February 2006 – The first outbreaks in the European Union were recorded, when H5N1 HPAI cases were confirmed in wild swans in Greece, Italy, Germany, France, Austria, and Hungary. In subsequent months, it spread to an additional nine European countries.</td>
</tr>
<tr>
<td>• Legal and illegal poultry trade</td>
<td>• February 2006 – H5N1 HPAI was detected in commercial poultry flocks in Nigeria. Since then, the virus has been reported in Egypt, Niger, Cameroon, Burkina Faso, Sudan, Ivory Coast, Djibouti and Ghana on the African continent.</td>
</tr>
<tr>
<td>• Legal and illegal wild bird/pet trade</td>
<td></td>
</tr>
</tbody>
</table>
### Definitions:

An **outbreak** is a sudden rise in the incidence of a disease.

A **pandemic** is a global disease outbreak.

- human pandemic
- animal pandemic

### Course Material

- February 2006 – Outbreaks in poultry in the Indian sub-continent (Pakistan and India) were reported.
- Since January 2006, 70% (111) of all human cases in the world have occurred in Indonesia and Egypt.

Historical record accurate through June 1, 2007.

Latest developments important to the region:

| 
| 

### Terms and Definitions:

Outbreak

Pandemic

Discussion:

Are any of these facts surprising to you?

Which of these facts are most important to the stakeholders or constituencies you work with?

Based on these facts, what messages are important to communicate with the groups and constituencies your work with?

Discuss the current Animal Health Emergency and that currently this is a panzootic and not a human pandemic.

Discuss the issue of prevalence of the disease in humans. Limited to only 315 cases worldwide over several years.

Source: World Health Organization
(http://www.who.int/csr/disease/avian_influenza/country/)

Summary of the Animal Pandemic:

The continued spread across Asia, the Middle East, Europe, and Africa in 2006 has resulted in the largest avian influenza pandemic ever recorded, leading to the deaths of an estimated 140 million birds, with over 190 confirmed deaths in humans (as of June 2007).
# LESSON 3
## HPAI TRANSMISSION

### Instructor Notes

**TIME:** 20 MINUTES

**START TIME:**

**END:**

**Transition**

We’ve seen how rapidly H5N1 HPAI has spread. Now, let’s take a look at the mechanisms of how it is transmitted.

**EXERCISE 1-1: IDENTIFYING THE TRANSMISSION PATHS**

**Purpose:** This exercise allows the participants to check their knowledge about the proper transmission paths from bird to bird and birds to humans.

**Instructions:** Follow the steps below to conduct this exercise:

1. Form small groups based upon similar experiences or interests.
2. Groups should take 10–15 minutes to talk and compare thoughts among themselves.
3. Ensure that each group identifies a key area of concern and/or a way to use this transmission information in their H5N1 Avian Flu prevention and response.

### Course Material

Highly pathogenic influenza viruses are transmitted in the same basic ways that other influenza A viruses are. Most of that transmission is via direct contact or droplet-borne virus rather than by aerosol.

**Within species (intraspecies) transmission**

The most common transmission for influenza A viruses is from one member of a species to another member of the same species.

**Between species (interspecies) transmission**

Transmission of influenza A viruses from one species to another occurs rarely between most species such as chickens and humans and somewhat more frequently between other species, such as between ducks and turkeys.

Generally, larger doses of virus and longer-contact duration is required for between-species transmission than for transmission within a species.
Sources of infection

- **a**: Feces
- **b**: Contaminated environment / body of water
- **c**: Contaminated equipment / vehicles
- **d**: Eggs and meat
- **e**: Secretions
- **f**: Carcasses / live infected individuals
- **g**: Pests (insects, rodents, cats, etc.)
- **h**: Blood
- **i**: Contaminated clothing / footwear

Barriers to transmission

- **1**: Hand-washing / good hygiene
- **2**: Personal protective equipment / dedicated clothing
- **3**: Vehicle and equipment disinfection
- **4**: Enclosing birds / avoiding attractants
- **5**: Restricting movements on and off premises
- **6**: Depopulation
- **7**: Vaccination / medication (humans only)
- **8**: Proper disposal of carcasses
- **9**: Pest control
- **10**: Avoiding contaminated environment / carcasses
**EXERCISE 1-1: IDENTIFYING THE TRANSMISSION PATHS**

Purpose: This exercise allows you to check your knowledge about the virus transmission paths.

Instructions: Follow the steps below to complete this exercise within your assigned small group:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Study the previous illustration “Paths of Avian Influenza Transmission.”</td>
</tr>
<tr>
<td>2</td>
<td>Identify three sources of infection from poultry to other poultry.</td>
</tr>
<tr>
<td>3</td>
<td>Identify three barriers to infection from poultry to other poultry.</td>
</tr>
<tr>
<td>4</td>
<td>Identify three sources of infection from wild birds to poultry.</td>
</tr>
<tr>
<td>5</td>
<td>Identify three barriers to infection from wild birds to poultry.</td>
</tr>
<tr>
<td>6</td>
<td>Identify sources of infection from poultry to humans.</td>
</tr>
<tr>
<td>7</td>
<td>Identify three barriers to infection from poultry to humans.</td>
</tr>
<tr>
<td>8</td>
<td>Discuss with your group:</td>
</tr>
<tr>
<td></td>
<td>• What parts of the transmission paths are of most concern to you or your community?</td>
</tr>
<tr>
<td></td>
<td>• What was the most valuable thing you learned about how the virus is transmitted?</td>
</tr>
<tr>
<td></td>
<td>• How will you use this transmission information to help with your community’s current H5N1 HPAI response?</td>
</tr>
</tbody>
</table>
Now that we’ve reviewed transmission paths of the virus between birds and how birds transmit the virus to humans, let’s go over key issues regarding H5N1 HPAI affecting humans.

**H5N1 HPAI IN HUMANS**

- Most avian influenza viruses do not infect humans.
- H5N1 HPAI can infect humans and is often fatal.
- Infections of people have been after heavy exposure.

**H5N1 HPAI EFFECTS ON HUMANS**

- The risk from avian influenza viruses is generally low to most people, because most do not infect humans.
- H5N1 HPAI is one of the few avian influenza viruses to have crossed the species barrier to infect humans, and it is among the most deadly of those that have infected humans.
- Most cases of H5N1 HPAI in humans have resulted from direct contact with infected poultry (e.g., domesticated chickens or ducks) or surfaces heavily contaminated with secretion/excretions from infected birds.

**IMPORTANT POINT**

So far, the spread of H5N1 HPAI virus person-to-person has been limited and has not continued beyond one person or a small cluster of people. Nonetheless, because all influenza viruses have the ability to change, scientists are concerned that H5N1 virus one day could be able to infect humans and spread easily from one person to another.
Because these viruses do not commonly infect humans, there is little or no immune protection against them in the human population. If the H5N1 HPAI virus were to gain the capacity to spread easily from person to person, a pandemic (worldwide human outbreak of disease) could begin.

Exposures resulting in human infections:
There have been very few studies that can tell us which of the many ways people are exposed, actually result in H5N1 HPAI.

The studies that have been done with good controls suggest that the following are important risk factors:

**IMPORTANT POINT**

The H5N1 HPAI virus has raised concerns that it could cause a human pandemic because:

1. It is especially virulent.
2. It can be transmitted from birds to mammals and in some limited circumstances to humans.
3. Most humans have no immunity to H5 viruses.

**Exposures resulting in human infections:**

- Home slaughter of poultry (dressing and plucking)
- Touching poultry unexpectedly sick or dead
- Being <1m from dead poultry

**Notes:**

- There is no evidence that the disease can be transmitted by infected poultry meat as long as it is cooked to an internal temperature of 70°C (158°F).
- H5N1 HPAI can produce rapidly-developing and severe illness in humans, with viral pneumonia and multi-organ failure as common outcomes.
### Human symptoms may include:

- Diarrhea
- High fever
- Lower respiratory tract symptoms (pneumonia)
- Vomiting
- Abdominal and chest pain
- Conjunctivitis
- Bleeding from the nose and gums

The human symptoms of avian influenza may depend on which virus caused the infection, host immunity or other infections. It is unclear why some people have died and others have not.

### Symptoms in humans are similar to many other syndromes and may include:

- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]

### CHECK YOUR KNOWLEDGE

The majority of human cases have occurred with humans who have had direct and/or sustained contact with

- [ ]

No evidence that the disease can be transmitted by consuming infected poultry meat as long as it is cooked to an internal temperature of

- [ ]

Human infection is associated with:

1. [ ]
2. [ ]
3. [ ]

An effective method for the ___________ of birds is needed to protect the public health.

- [ ]

<table>
<thead>
<tr>
<th>Instructor Notes</th>
<th>Course Material</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TIME: 15 MINUTES</strong></td>
<td><strong>POTENTIAL IMPACTS OF ANIMAL HEALTH EMERGENCY OF H5N1 HPAI:</strong></td>
</tr>
<tr>
<td><strong>START TIME:_______</strong></td>
<td><strong>IMPORTANT POINT</strong></td>
</tr>
<tr>
<td><strong>END:_______</strong></td>
<td>An H5N1 HPAI animal disease outbreak has enormous impacts.</td>
</tr>
</tbody>
</table>

**Transition**

A human influenza pandemic would have a major impact on the global economy.

However, short of a human pandemic, H5N1 HPAI has also been devastating economically as an animal health emergency.
# Lesson 5
## Impacts of H5N1 HPAI

### Instructor Notes

- Have participants present costs they identified, and then summarize their responses.

### Course Material

#### Economic Impacts of the Animal Health Emergency of H5N1 HPAI

- Combined losses to Gross National Product of affected Asian nations estimated to be US $10-15 billion (FAO 2005)
- Substantial economic impact to small farmers and commercial poultry producers
- Biosecurity measures involving isolation of flocks, sanitation and disinfection of clothes, equipment and vehicles also add to cost of containment

**Estimated US $100 million to address the H5N1 HPAI outbreak in Southeast Asia alone**

#### Costs of Biosecurity

List likely costs or impacts of an H5N1 HPAI outbreak in your country or community:

1. _____________________________________________
2. _____________________________________________
3. _____________________________________________
4. _____________________________________________

In large group, share the potential costs of an outbreak.
LESSON 6
SURVEILLANCE, TESTING, AND REPORTING

Instructor Notes

TIME: 90 MINUTES

START TIME: ________
END: ________

TRANSITION

The high risks and costs associated with an animal disease outbreak – both from a global perspective and from the potential impacts that we just identified for your communities – warrants effective prevention and response measures.

For avian flu, effective management requires surveillance of commercial poultry, backyard poultry flocks, and live markets. And for H5N1 HPAI, it may also include surveying wild birds.

Course Material

SURVEILLANCE, TESTING, REPORTING

Effective animal health emergency management requires pre-planning and developing response preparedness. That includes:

• Surveillance planning
• Diagnostic testing and laboratory preparations
• Establishing a reporting system

Surveillance for H5N1 HPAI

IMPORTANT POINT

To minimize risks associated with an H5N1 HPAI outbreak, effective surveillance activities are required. This encompasses the surveillance of commercial poultry, backyard poultry flocks, live markets and wild birds.

To have effective H5N1 HPAI emergency management, it is important to be ready to respond to an outbreak. A surveillance plan should be ready to be applied before, during and after an outbreak.

Successful surveillance planning includes specific strategies for each the following:

• Knowing where susceptible populations are.
• Efficient detection, reporting and assessment of
Instructor Notes

Course Material

disease and mortality events.

• Rapid collection and transport of samples to a laboratory. (Proper packaging and shipping of samples)

• Rapid diagnosis and reporting.

• Traceability of the samples.

• Recording, managing and analyzing diagnostic and surveillance data.

• Dissemination of information

Discussion Questions:

What are the challenges or barriers to implement an effective surveillance program?

How do you prioritize surveillance activities?

TRANSITION

One of the key elements of an effective surveillance program is a rapid and effective diagnostic laboratory with a rapid reporting system.

IMPORTANT POINT

1. Surveillance efforts require expenditure of resources and, as such, should be prioritized and targeted.

2. In addition to detection efforts for H5N1 HPAI, it is important to pay close attention to cases of LPAI H5 and H7 in domestic poultry flocks, since these viruses can mutate into HPAI, just like the current H5N1 HPAI virus did.
**Testing**

Review Testing guidelines (OIE) for H5N1 HPAI (See OIE handout):

Presumptive diagnosis can be made on basis of clinical and pathological findings (further discussed in Module 4: Prevention and Response)

Confident diagnosis requires confirmation by the isolation and identification of the virus

Delays in responding to an outbreak while waiting for test results can worsen the spread of disease.

While waiting for diagnosis:

**Stop all movements in and out.**

<table>
<thead>
<tr>
<th><strong>Instructor Notes</strong></th>
<th><strong>Course Material</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIAGNOSTIC TESTING</strong></td>
<td>Testing for H5N1 HPAI involves:</td>
</tr>
<tr>
<td></td>
<td>1. Initial Screening (Clinical Signs, Necropsy, RT-PCR)</td>
</tr>
<tr>
<td></td>
<td>2. Virus Isolation (oral cavity and cloacal swabs, tissues)</td>
</tr>
<tr>
<td></td>
<td>3. Virus characterization</td>
</tr>
<tr>
<td></td>
<td>a. subtyping with RT-PCR, sequencing, or reference antiserum, and</td>
</tr>
<tr>
<td></td>
<td>b. pathotyping by bird inoculation or sequencing</td>
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<tr>
<td></td>
<td>4. Laboratories need the ability to screen samples of cases rapidly. How they screen and how well they do will depend on their capabilities, which may include the following:</td>
</tr>
<tr>
<td></td>
<td>• Necropsy of dead birds (and expert evaluation)</td>
</tr>
<tr>
<td></td>
<td>• RT-PCR tests to detect Type A virus in swab samples</td>
</tr>
<tr>
<td></td>
<td>• Virus isolation in eggs (SPF)</td>
</tr>
<tr>
<td><strong>Regional or national labs should have additional capabilities, including:</strong></td>
<td></td>
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<tr>
<td></td>
<td>• Neuraminidase antigen identification</td>
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<td></td>
<td>• Pathogenicity testing of virus isolates using chicken inoculation; and</td>
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<tr>
<td></td>
<td>• Virus subtyping serologically, RT-PCR, sequencing</td>
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<tr>
<td><strong>Regional Laboratories to Test Diagnostic Samples</strong></td>
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</tr>
<tr>
<td></td>
<td>See laboratory form on next page.</td>
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</tbody>
</table>
LESSON 6
SURVEILLANCE, TESTING, AND REPORTING

LABORATORY OPTIONS

To which laboratory do you ship H5N1 HPAI diagnostic samples in your region?

Do you have their instructions for packaging samples?

(See Handout F, Shipment of Diagnostic Samples and Viruses)

When can you obtain the proper materials for shipping?

Laboratory Option 1:

Name of Lab: ____________________________
Contact person: __________________________
Email of lab: ____________________________
Phone: ____________________________
Shipping address: __________________________

__________________________

Special limitations or instructions for shipping samples to this lab:

__________________________

Locally, where are shipping materials to ship samples to this lab?

__________________________

Laboratory Option 2:

Name of Lab: ____________________________
Contact person: __________________________
Email of lab: ____________________________
Phone: ____________________________
Shipping address: __________________________

__________________________
LESSON 6
SURVEILLANCE, TESTING, AND REPORTING

Special limitations or instructions for shipping samples to this lab:

Locally, where are shipping materials to ship samples to this lab?
TAKE 5 MINUTES TO COMPLETE THE CURRENT LABORATORY CAPABILITY ASSESSMENT BELOW.

DISCUSS ANY ISSUES OR IDENTIFIED GAPS THAT ARISE FROM COMPARING RECOMMENDED CAPABILITIES TO THOSE THAT ARE ACTUALLY AVAILABLE IN YOUR COMMUNITY OR REGION.

CURRENT LABORATORY CAPABILITY ASSESSMENT

<table>
<thead>
<tr>
<th>Current Laboratory Testing Capability</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Necropsy of dead birds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RT-PCR tests to detect avian influenza viruses (AIV) in swab samples</td>
<td></td>
<td></td>
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<tr>
<td>Virus isolation in eggs (SPF or SAN) for virus identification</td>
<td></td>
<td></td>
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<tr>
<td>Serology for AIV</td>
<td></td>
<td></td>
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<tr>
<td>Subtyping of AIVs</td>
<td></td>
<td></td>
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<tr>
<td>Neuraminidase typing of viruses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pathogenicity testing of virus isolates using chicken inoculation, sequencing or RT-PCR</td>
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</tbody>
</table>

FILL IN THE BLANKS BELOW:

Identify Lab and Testing capability gaps or opportunities for improvement:

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
What resources would you need in order to close these gaps?

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
What available international resources could help address the needs?

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
VIRUS REPORTING

Reporting guidelines for detection of H5N1:

World Organization for Animal Health (OIE) considers the detection of any H5 or H7 avian influenza virus in commercial poultry a reportable event.

OIE standards under the OIE International Animal Health Code state that a reportable case means:

All animals suspected of infection should be quarantined while awaiting confirmation of the diagnosis and instructions from authorities.

Movement of ALL domestic birds from areas experiencing outbreaks should be halted.

The OIE International Animal Health Code can be found on the internet under OIE-International Standards. The International Animal Health Code is available in web format or a hard copy version may be ordered from OIE. (http://www.oie.int/eng/en_index.htm)

Optional Exercise: Construct a Wildlife Reporting Tree.
WHERE TO REPORT H5N1 HPAI OUTBREAKS

In your area, where and how do you report a suspected H5N1 HPAI outbreak:

Local officials to report to

Agency: 
Contact person: 
Phone: 
Email: 
Address: 
Preferred method to inform them:

National officials to report to

Agency: 
Contact person: 
Phone: 
Email: 
Address: 
Preferred method to inform them:

See next page for important information to report
Important information to report

1. Exact geographical location of the H5N1 HPAI outbreak(s):
   (GPS Coordinates if available):

2. Names and addresses of affected farms or villages, or wildlife areas:

3. Domestic or wild species affected:

4. Approximate numbers of sick and dead animals:

5. Brief description of clinical signs and lesions observed:

6. Date(s) when the disease was first noticed at the initial outbreak site and any subsequent sites:

7. Details of any recent movements of susceptible animals to or from the outbreak farm or village:

8. Any other key epidemiological information, such as disease in wild or feral animals and abnormal insect activity:

9. Initial disease control actions taken:
LESSON 7
COORDINATION AND MANAGEMENT

Instructor Notes

INTERNATIONAL RESOURCES AND COORDINATION

START TIME: __________
END: __________

TRANSITION

Once there is a diagnosis, individuals, local, and national government agencies will begin their responses, which will have many component parts. The coordination of those responses is essential to rapid and effective disease control.

IMPORTANT POINT

Because numerous agencies are involved in preparing for and responding to H5N1 HPAI, it is important to coordinate and cooperate for effective response.

Poor coordination can lead to the waste of resources and inappropriate responses to an outbreak, such as rushing into an infected farm.

Over-response can actually make conditions worse by spreading the virus during unnecessary or improperly conducted vaccination or stamping out campaigns.

FOR RESOURCES AND RESPONSE COORDINATION CONSULT THESE INTERNATIONAL AGENCIES:

- World Organization for Animal Health (OIE)
  http://www.oie.int/eng/en_index.htm

- Food & Agriculture Organization (FAO)

- World Health Organization (WHO)
  http://www.who.int/csr/disease/avian_influenza/en/

- Centers for Disease Control and Prevention (CDC)
  http://www.cdc.gov/flu/avian/index.htm

AT THE NATIONAL LEVEL CONSULT:
<table>
<thead>
<tr>
<th>Instructor Notes</th>
<th>Course Material</th>
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<tr>
<td></td>
<td>Animal health agencies and veterinary service departments:</td>
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</table>
### H5N1 HPAI COORDINATION CONTACTS

**National HPAI Coordinator Contact:**
- Name:
- Email:
- Phone:

**Animal Health Ministry or Department Contact:**
- Name:
- Email:
- Phone:

**Public Health Ministry or Department Contact:**
- Name:
- Email:
- Phone:

**National Veterinary Services:**
- Name:
- Email:
- Phone

**District Veterinary Services:**
- Name:
- Email:
- Phone

**NGO:** ______________________________________________
- Name:
- Email:
- Phone:
**LESSON 7**

**COORDINATION AND MANAGEMENT**

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<th>Instructor Notes</th>
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<td><strong>COORDINATION CONTACTS, CONT.</strong></td>
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<td><strong>National HPAI Outbreak Reporting Contact:</strong></td>
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<td><strong>District HPAI Outbreak Reporting Contact:</strong></td>
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DEVELOPING HPAI PREPAREDNESS AND RESPONSE PLANS

I. Planning Guidance and resources of FAO, OIE, and NIMS

The following resources are useful for developing an emergency response plan for HPAI or other animal health emergency:


b. The World Organization for Animal Health (OIE) is an international authority and important resource for technical information regarding H5N1 HPAI or other animal health emergencies. (See: http://www.oie.int/eng/AVIAN_INFLUENZA/home.htm)

OIE also produces the Terrestrial Animal Health Code, which is a useful reference for developing response plans for H5N1 HPAI and other animal health emergencies.

The value of the Terrestrial Code is twofold:

- The measures published in it are the result of consensus among the veterinary authorities of OIE Member Countries. It constitutes a reference within the World Trade Organization (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) as an international standard for animal health and zoonoses.

- The OIE Terrestrial Code is a reference document for use by Veterinary Authorities, import/export services, epidemiologists and all those involved in international trade.
Instructor Notes | Course Material
---|---
c. **Consult the National Incident Management System** – an emergency planning and response management model for effectively coordinating the efforts of multiple agencies. (See: [http://www.fema.gov/emergency/nims/index.shtm](http://www.fema.gov/emergency/nims/index.shtm)).

The NIMS system, utilized by agencies regionally and nationally in the U.S., describes the basic principles and components of an emergency management system, and the importance and purpose of each component of that system.

NIMS provides a standard flexible structure and systems for managing emergency events of various size and complexity. The NIMS components include:

- Command and management structure
- Multiagency coordination system
- Communications and information management system
- Planning unit
- Operations units
- Logistics
- Resource management
- Finance and administration
- Preparedness activities
- Training
- Supporting technologies

### 2. BENEFITS OF A COMMAND AND MANAGEMENT SYSTEM FOR EMERGENCY RESPONSE

- Provides a unified command and coordination among agencies.
- Establishes a chain of command—identifies a clear line of authority, and every person has only one supervisor.
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<tr>
<td></td>
<td>• Establishes accountability for supervisors and leaders.</td>
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<td>• Relies on an Action Plan developed through planning.</td>
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<td>• Provides a process for deployment of personnel and resources.</td>
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<td>• Provides a means to gather information and to manage that information.</td>
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<td>• Uses common terminology referring to organizational functions, resource descriptions, and facilities.</td>
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<td>• Provides modular organization—the management system is scaleable. It can be expanded as needed to cover more functions and greater geographical area.</td>
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<td>• Applies management by objective—objectives must be communicated to all involved in emergency management effort, establishes objectives, and monitors how well those objectives are met.</td>
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<td>• Maintains a reasonable span of control for each supervisor—this is based on the idea that there is a limit to how many individuals a person can effectively manage. It is a good idea to assign responsibilities so that no one supervises more than 3–7 people. In an emergency situation, 3–4 people is a more appropriate span of control.</td>
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<td>• Predesignates important locations and facilities as part of planning, such as worker protective clothing, poultry farm intervention equipment, or vaccines.</td>
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<td></td>
<td>• Provides a mechanism evaluating the current status of available resources.</td>
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<tr>
<td></td>
<td>• Provides a means for integrated communications.</td>
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<tr>
<td></td>
<td>• Matches people and organizations to responsibilities and tasks based on their expertise and experience.</td>
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<tr>
<td>Instructor Notes</td>
<td>Course Material</td>
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<tr>
<td><strong>IMPORTANT POINT</strong></td>
<td>A major component of effective H5N1 HPAI management is response preparedness. This is achieved, ideally, by developing an H5N1 HPAI Preparedness and Response Plan before an outbreak occurs.</td>
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</table>

**ADDITIONAL NOTES:**
EXERCISE 1.2 – EVALUATING COMPONENTS OF A PREPAREDNESS AND RESPONSE PLAN

Successful control of H5N1 HPAI is difficult and requires timely cooperative efforts among farmers, public health workers, public agencies and officials, veterinarians, wildlife managers, and the public. The following charts and exercises are provided to help you identify current strengths and improvement opportunities within your existing emergency management system.

Purpose: This exercise is meant to develop familiarity with the important components of national animal health emergency preparedness and response plan.

You will use the two documents below (see next two pages) to conduct this exercise:

- Ten Components of an H5N1 HPAI Preparedness and Response Plan
- Animal Health Emergency Command Chart Models

Specifically, this exercise will encourage you to consider the following:

- The role and importance of each of the components of an animal health emergency preparedness and response plan
- The status of a national or regional command and management structure in your area
- Who the national or regional authority or coordinator is in your area
- How you communicate with the management team in your area
- What national and local agencies and organizations are involved in H5N1 HPAI planning and response
## TEN COMPONENTS OF A HPAI PREPAREDNESS AND RESPONSE PLAN

1. **Establish Unified Command**
   
   Establish a cooperative, empowered coordinating body to manage a disease emergency, share resources, and provide a single decision-making entity. Consider including representatives of animal health, public health, emergency logistics agencies, and enforcement agencies.

2. **Establish Management Structure**
   
   Ensure management structures have the geographic reach to cover infected areas across multiple regions, including remote areas. National and regional coordination centers are highly recommended.

3. **Establish a H5N1 HPAI Consultative Committee**
   
   Use a consultative committee of experts and high level agency representatives to provide recommendations to the Unified Command. Use a consultative committee to give guidance on H5N1 HPAI surveillance programs and to assess preparedness.

4. **Establish a H5N1 HPAI Science Advisory Team (or Sub-committee)**
   
   Use an independent science advisory team, separate from the Consultative Committee, to ensure that scientific analyses are not unduly influenced by stakeholder interests.

5. **Establish a HPAI Information Reporting System**
   
   Use an information reporting system to communicate information from the field to national coordination centers and back.

6. **Establish a Public Information System**
   
   Establish processes and procedures for communicating with the public in an effective, coordinated, and timely fashion.

7. **Establish Finance and Administrative Systems**
   
   Establish support processes and procedures to manage the budget for HPAI prevention and response scenarios and to develop strategies for obtaining adequate funding for various HPAI operations.

8. **Establish a HPAI Policy Committee (or Sub-committee)**
   
   Establish a policy committee to ensure national focus and endorsement of H5N1 HPAI emergency management efforts. Also consider policy changes necessary to support prevention and response needs, or to reduce policy conflicts.

9. **Establish a Resources Management System**
   
   Establish support processes and procedures to manage the physical resources, people, and equipment needed for H5N1 HPAI prevention and response scenarios and to develop strategies for obtaining adequate funding for various H5N1 HPAI operations.

10. **Establish an Operations Management System**
    
    Provides management structure and procedures to implement various prevention and response field activities. The operations system assigns teams to implement each type of operation, such as public education outreach for prevention, disease surveillance or H5N1 HPAI outbreak response actions.
Example 1
Animal Health Emergency Management Chart

Example 2
Animal Health Emergency Management Chart
Exercise 1.2  
Instructions: Follow the steps below to conduct this exercise:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | REVIEW (IN SMALL GROUPS OF 4-6 AS ASSIGNED)  
Ten Components of an H5N1 HPAI Preparedness and Response Plan |
| 2    | ANALYZE IMPORTANCE OF PLAN COMPONENTS  
For each of the components, list and discuss the potential problems if that component was not addressed in a Preparedness and Response Plan. |
|      | Component | Problems if component not addressed |
|      | 1.        | |
|      | 2.        | |
|      | 3.        | |
| 3    | ANALYZE CHALLENGES TO IMPLEMENTING PLAN COMPONENTS  
For each of the components, list and discuss challenges or barriers to establishing or implementing that component as part of a national plan. |
|      | Component: | Challenges to implementing the component: |
|      | 1.        | |
|      | 2.        | |
|      | 3.        | |
### Exercise 1.2 Continued

#### 4 PRIORITIZE COMPONENTS

Next, identify and list the 3 components that you believe need to be addressed first in your region or community:

1. 

2. 

3. 

#### 5 SOLVING CHALLENGES TO IMPLEMENTATION

Identify any likely or potential obstacles that might be faced when implementing the component you and your group selected as top priority. Then, for each potential obstacle, identify options that would help overcome it.

<table>
<thead>
<tr>
<th>Potential obstacles</th>
<th>Options for overcoming obstacles</th>
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</thead>
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</table>

Be prepared to share your answers with the larger group.
Exercise 1.2 Continued:

Returning to the Emergency Management Chart, what changes do you think need to be made to the chart to improve it or make it more appropriate for the region?

Example 2
Animal Health Emergency Management Chart

LIST CHANGES BELOW OR DRAW THEM ON THE CHART ABOVE:

1.

2.

3.

Give participants 3 minutes to list audiences. Then ask them to explain why those are important audiences.
LESSON 8
COMMUNICATIONS PLANNING

<table>
<thead>
<tr>
<th>TIME: 60 MINUTES</th>
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<tbody>
<tr>
<td>START TIME: ______</td>
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<tr>
<td>END: ______</td>
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</table>

Transition
As you can see, coordinating the response to an HPAI outbreak is a major undertaking. The community will have lots of questions and will be looking for information on a variety of topics. Let’s take a closer look at how to address the concerns people have related to H5N1 HPAI.

Ask large group to discuss what challenges they anticipate in communicating to the public or groups they work with about a H5N1 HPAI outbreak.

IMPORTANT POINT
Because numerous agencies are involved in preparing for and responding to H5N1 HPAI, it is important that ministries and organizations communicate well with each other and coordinate to effectively communicate to stakeholders and the public.

It is important during an emergency event to convey complex information clearly and simply between agencies and to the public. This lesson will give you information about how to communicate during an avian flu emergency.

H5N1 HPAI COMMUNICATION PLAN
An effective H5N1 HPAI communication plan helps:

- Facilitate emergency response of multiple organizations
- Maintain information control
- Prepare effective messages to address the concerns of stakeholders and the public
- Minimize public anxiety and confusion

CONSIDERATIONS FOR ORGANIZATIONS TO DEVELOP A COMMUNICATIONS PLAN:

1. ASSIGN A COMMUNICATIONS COORDINATOR FOR YOUR ORGANIZATION.

This person can:
   a. Guide your organization’s communication planning
### Course Material

**Lesson 8: Communications Planning**

**Instructor Notes**

1. Review the list of information to report, then:
   - Ask the group who would they report an outbreak to?
   - How would they report an outbreak?
   - Should they talk to a news reporter?

Ask the group what problems might occur if various organizations do not coordinate their messages.

Review WHO Risk Communication Guidelines handout.

**Course Material**

- effort
  - b. Coordinate with other organizations
  - c. Serve as a public information officer

2. **MAKE PLANS TO GATHER ACCURATE INFORMATION OF AN H5N1 HPAI INCIDENT**
   (SEE RECOMMENDED INFORMATION TO REPORT, P. 33):
   - the exact geographical location of the H5N1 HPAI outbreak(s);
   - the names and addresses of affected farms or villages;
   - domestic or wild species affected;
   - approximate numbers of sick and dead animals;
   - brief description of clinical signs and lesions observed;
   - date(s) when the disease was first noticed at the initial outbreak site and any subsequent sites;
   - details of any recent movements of susceptible animals to or from the outbreak farm or village;
   - any other key epidemiological information, such as disease in wild or feral animals and abnormal insect activity; initial disease control actions taken.

3. **REVIEW INFORMATION AND MESSAGES OF OTHER ORGANIZATIONS. SEEK TO MAKE YOUR MESSAGES TO THE PUBLIC CONSISTENT WITH OTHER RESPECTED ORGANIZATIONS.**

See OIE, UNFAO, WHO and other resources for communications guidelines and recommended messages. Different messages on the same issue from multiple organizations can cause distrust and unnecessary anxiety among the public.
4. UNDERSTAND COMMUNICATING RISK

**IMPORTANT POINT**

Risk communication impacts everything outbreak managers do and is most effective when integrated with risk analysis and risk management.

**REVIEW RISK COMMUNICATION GUIDELINES:**

*(SEE WHO HANDOUT)*

- Strive to build and maintain **trust** with the public
- Ensure that your communication sources are **credible**
- **Announce early**, when public behavior might reduce risk or contribute to the containment
- **Check your information sources**. Caution against basing early announcements on incomplete or inaccurate information.
- **Be transparent, clear, and candid** in communications with the public
- Be sensitive to the public’s beliefs, culture, opinions, or knowledge

5. IDENTIFY IMPORTANT TARGET AUDIENCES AND CONSIDER IN ADVANCE THEIR NEEDS FOR INFORMATION.

List five important target audiences for information about an animal health emergency or a H5N1 HPAI event:

1. 
2. 
3. 
4. 
5.
Describe the importance of briefing reporters before there is a crisis. A well-informed reporter is likely to write a more reasoned story during a crisis.

Be prepared to explain to the group why those you listed are important audiences.

### 6. IDENTIFY COMMUNICATION MESSAGES FOR TARGET AUDIENCES

As part of planning, develop messages for target audiences based on various scenarios. (This will be practiced in the exercise below.)

**See below:**

- Communication Plan Matrix
- Audience-Message Worksheet

**Messages should be:**

- Based on potential primary concerns
- Supporting information to mitigate concerns
- Based on principles of communicating risk

### 7. DEVELOP PLAN TO DISTRIBUT KEY MESSAGES, TO TARGET AUDIENCES, AT PROPER TIME.

This includes conducting pre-outbreak or pre-crisis briefings of local news media and important target audiences. Channels for disseminating information:

- Radio
- Public service announcements
- Brochures
- FAQ Guides/Communication Toolkits
- Internet, web sites
- Local gatherings
- Bulletin boards
- Community/church newsletters
- Licensing
- Newspapers
**EXERCISE: ASSESS YOUR ORGANIZATION’S COMMUNICATIONS PLAN**

**Communications Preparedness Checklist**

<table>
<thead>
<tr>
<th>Communications Preparedness Component</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>1. Have assigned a communications coordinator</td>
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<td>2. Have identified reliable sources of information in your community.</td>
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<tr>
<td>3. Have identified key audiences to communicate with for prevention and during response events.</td>
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<tr>
<td>4. Have developed messages for key audiences for various scenarios. Including messages to counter rumors and misinformation.</td>
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<tr>
<td>5. Consider your organization’s unique role in addressing rumors, misinformation, fear, and anxiety.</td>
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<td>6. Have checked messages to ensure that what you communicate is appropriate for cultures, languages, and reading levels of your target audiences and persons in the communities you serve.</td>
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<td>7. Have distributed materials with basic information about H5N1 HPAI in public meetings (sermons, classes, trainings, livestock groups)</td>
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<td>8. Have conducted pre-outbreak briefings for local news reporters, so they understand the issues and risks.</td>
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List below items in the checklist that still need addressing with your organization or in your region. Then, list actions you will take to address them:

**Items to address:**

1. 
2. 
3. 

**Actions to address them:**

1. 
2. 
3. 

Global Livestock CRSP

Wildlife Health Center and Cooperative Extension

UC Davis School of Veterinary Medicine
EXERCISE 1-3: DEVELOPING MESSAGES FOR AN H5N1 HPAI COMMUNICATIONS PLAN

(SEE EXERCISE ON NEXT PAGE)

**Purpose:** This exercise is meant to assist participants in the development priority messages for targeted audiences in an H5N1 HPAI animal health emergency communications plan.

**Instructions:** Follow the steps below to conduct this exercise:

1. Direct participants to:
   - Communications Plan Matrix
   - Audience-Message Worksheet

2. Have participants form small groups of similar interests or experiences.

3. Tell participants to use the Exercise Worksheet in their Guides and work with their group to identify for their assigned scenario:
   - 2 key target audiences
   - Concerns of the audience
   - Messages and supporting information for audiences
   - Media outlets for the audiences

4. Groups will report back to the large group with their results.
5. Debrief the exercise and capture lessons learned.
**Communication Plan Matrix for Emergency Response**  
*Source: WHO Communication Guidelines*

Purpose: Use this matrix to identify stakeholders (groups or individuals) and their potential concerns during an avian flu outbreak. Your communication and emergency response preparedness plans should then focus on providing information and messages to these stakeholder groups that would address their concerns. You can also use this Matrix to prioritize communication messages for the media.

<table>
<thead>
<tr>
<th>Potential Concern</th>
<th>Health</th>
<th>Trust</th>
<th>Environment</th>
<th>Legal</th>
<th>Economy</th>
<th>Livelihood</th>
<th>Livestock</th>
<th>Information</th>
<th>Religious</th>
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<tbody>
<tr>
<td>Stakeholder</td>
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<td>Governmental agencies</td>
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<td>Non-Governmental agencies</td>
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<td>Victims and their families</td>
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<td>Emergency response personnel</td>
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EXERCISE 1-3: DESIGNING PRIORITY MESSAGES FOR TARGET AUDIENCES FOR AN H5N1 HPAI ANIMAL HEALTH EMERGENCY COMMUNICATIONS PLAN

**Purpose:** This exercise is meant to assist you in the development priority messages for various stakeholder groups or audiences for an effective H5N1 HPAI Animal Health Emergency Communications Plan.

**Action:** Work within your small groups to identify the communication needs for two target audiences (listed on the right) in the event of the outbreak scenario (right) selected for your group.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Target Audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The government reports that H5N1 HPAI has been detected in a poultry farm in your country</td>
<td>A. Governmental agencies</td>
</tr>
<tr>
<td>2. Wildlife officials warn that infected waterfowl may migrate using the flyway over your town</td>
<td>B. Ministry of health officials</td>
</tr>
<tr>
<td>3. A farm worker reports suspect poultry deaths on a neighboring farm</td>
<td>C. USAID</td>
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<tr>
<td>4. A bird with H5N1 HPAI is detected at your site</td>
<td>D. Physicians, nurse, veterinarians</td>
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<td>5. An individual presents to a clinic with severe symptoms</td>
<td>E. Public Health personnel</td>
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<td>6. A person is confirmed with the diagnosis in your community</td>
<td>F. Faith-based groups</td>
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<td>7. Other determined by your group</td>
<td>G. Public at large</td>
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<td>H. Victims and their families</td>
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<td></td>
<td>I. Community leaders</td>
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<td>J. Small poultry farmers</td>
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<td></td>
<td>K. The media</td>
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<td></td>
<td>L. Other: As determined by your group</td>
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</tbody>
</table>
## Selected Outbreak Scenarios

---

### Two target audiences selected for your group:

<table>
<thead>
<tr>
<th>Audience</th>
<th>Primary Concerns (see communications matrix for list of possible concern subject items)</th>
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<tbody>
<tr>
<td>1:</td>
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EXERCISE 1-3 CONTINUED: MESSAGE WORKSHEETS

Instructions: Follow the steps below to complete this exercise.

Scenario:

Target Audience #1:

One Potential Concern with this Audience:

<table>
<thead>
<tr>
<th>Key Message 1</th>
<th>Key Message 2</th>
<th>Key Message 3</th>
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Supporting Information

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Supporting Information

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</table>
EXERCISE 1-3 CONTINUED: MESSAGE WORKSHEETS

Scenario:

Target Audience #2:

One Potential Concern with this Audience:

<table>
<thead>
<tr>
<th>Key Message 1</th>
<th>Key Message 2</th>
<th>Key Message 3</th>
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</table>
CONCLUSION AND FINAL EXERCISE

Instructor Notes

REVIEW OF KEY POINTS

- Waterfowl and shorebirds are the reservoirs of all of the 144 possible influenza A subtypes.
- The H5 and H7 avian influenza viruses can either cause a mild or a fatal disease in commercial poultry. Those that cause mild disease, can become the fatal type if they stay in the population and change through mutation.
- Very few of the possible influenza subtypes infect humans.
- Outbreaks of highly pathogenic avian influenza have serious economic impacts.
- Effective monitoring, managing, and reporting activities are essential to mitigate or respond to H5N1 HPAI risk issues.
- National and Regional H5N1 HPAI Response Plans are highly recommended.
- Emergency response and communication plans are critical when working with the public regarding an avian influenza emergency.

MODULE OBJECTIVES

- Define Avian influenza.
- Identify Avian influenza subtypes and pathogenic forms.
- Describe how the avian flu virus is transmitted among birds.
- Identify potential health and economic risks associated with an outbreak.
- Describe purpose of surveillance.
- Describe the procedures for reporting a reportable-virus outbreak.

TIME: 15 MINUTES

START TIME: _______
END: _______

Summarize the key points from this module:

Review objectives and gather participants' input about whether course objectives and individual expectations were met.
Ask participants to identify one tip, tool, idea, strategy or resource they plan to use as a result of what they learned from this session.

<table>
<thead>
<tr>
<th>Instructor Notes</th>
<th>Course Material</th>
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<tbody>
<tr>
<td></td>
<td>• Define components of an effective National or Regional H5N1 HPAI Preparedness and Response Plan</td>
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<td>• Identify when and how to communicate with the public regarding an avian influenza emergency</td>
</tr>
<tr>
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<td>• Identify components of a communications plan</td>
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<td></td>
<td>• Develop messages to communicate to various stakeholder groups regarding the status of HPAI H5N1</td>
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</tbody>
</table>

Tips:
__________________________________________
__________________________________________
__________________________________________

Tools:
__________________________________________
__________________________________________
__________________________________________

Ideas/Strategies:
__________________________________________
__________________________________________
CONCLUSION AND FINAL EXERCISE

<table>
<thead>
<tr>
<th>Instructor Notes</th>
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**PLANNED ACTION:**

Identify one action you plan to take with regard to what you learned from this Module:

|                  |                 |
|                  |                 |
|                  |                 |

By when:

|                  |                 |
|                  |                 |
|                  |                 |

With whom will you share your planned action:

|                  |                 |
EXERCISE: TEACH BACK

THIS TEACHING EXERCISE SHOULD BE REVIEWED AT THE END OF MODULE I, BUT CONCLUDED FOLLOWING THE LAST MODULE OF THE COURSE.
OPTIONAL EXERCISE: TEACH BACK

An important part of instructor training is practicing teaching. This exercise is to practice teaching one of the lessons in the Overview Module. The purpose is to consider ways to strengthen your presentation skills.

1. Each participant picks one lesson from the overview to teach.

2. Participants divide into groups of three; one trainer, one trainee, and one observer. (Each participant will play all three roles)
   a. Trainer prepares and teaches a lesson to the trainee.
   b. The trainee listens.
   c. The observer observes and fills out an evaluation form on the trainer’s teaching.

3. Participants take 10 minutes to prepare their lesson to teach. The lesson presentation will have the following outline:
   a. Introduce the lesson topic
   b. Explain 3 key points
   c. Transition to the next lesson

To prepare lessons:
- Use materials in the Overview Module, review handouts.
- Use the Communications Audience-Message Worksheet to develop messages of their lesson.
- Identify three key messages to communicate in the lesson

4. Teach Back Presentations
   - 10 minutes for presentation by first trainer to first trainee, with observer taking notes.
   - 2-5 minutes of feedback on teaching from observer
   - Switch roles and repeat. (Each participant should play all three roles)

Consult for more information:


REFERENCES AND RESOURCES


U.S. National Incident Management System -- an emergency planning and response management model for effectively coordinating the efforts of multiple agencies. (See: http://www.fema.gov/emergency/nims/index.shtml)


World Organization for Animal Health (OIE) is an international authority and important resource for technical information regarding HPAI or other animal health emergencies. (See: http://www.oie.int/eng/AVIAN_INFLUENZA/home.htm)

http://www.pandemicflu.gov/rcommunication/

http://www.pandemicflu.gov/

Crisis and Emergency Risk Communication: By Leaders For Leaders (Centers for Disease Control and Prevention)

Course Book (PDF) (695KB)

Participant’s Manual (includes slides) (PDF) (447KB)

Communicating in a Crisis: Risk Communication Guidelines for Public Officials (Substance Abuse and Mental Health Services Administration)

Effective Media Communication during Public Health Emergencies (World Health Organization)

Terrorism and Other Public Health Emergencies: A Reference Guide for the Media (U.S. Department of Health & Human Services)

Pandemic Influenza Pre-Event Message Maps (PDF) (220KB)