

Global Livestock CRSP

AVIAN FLU SCHOOL

International Course Guide

Version: June 25, 2007

MODULE I: 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

Avian Flu School was developed by the Wildlife Health Center and Cooperative Extension of the School of Veterinary Medicine at the University of California, Davis. Development of the Avian Flu School course curriculum was supported the Global Livestock CRSP and the National Center for Foreign Animal and Zoonotic Disease Defense.

This publication was made possible in part through support provided to the Global Livestock Collaborative Research Support Program by the Office of Agriculture, Bureau for Economic Growth, Agriculture and Trade, United States Agency for International Development under terms of Grant No. PCE-G-00-98-00036-00. The opinions expressed herein are those of the author(s) and do not necessarily reflect the views of the USAID.

AFS Development Team:	David A. Halvorson, DVM, DACPV
Carol Cardona, DVM, PhD, DACPV, Principal Investigator University of California, Davis	University of Minnesota College of Veterinary Medicine, Cooperative Extension
School of Veterinary Medicine, Cooperative Extension	T.Warner Hudson, MD, FACOEM, FAAFP
David A. Bunn, MS, Project Manager	University of California, Davis, School of Medicine
University of California, Davis	Christian Sandrock, MD, MPH
School of Veterinary Medicine, Wildlife Health Center	University of California, Davis, School of Medicine
Daniel Beltrán-Alcrudo, DVM, MPVM	Deanna Clifford, DVM, MPVM, PhD
University of California, Davis	University of California, Davis
School of Veterinary Medicine	School of Veterinary Medicine, Wildlife Health Center
Walter M. Boyce, DVM, MS, PhD	Sandy Shanks, MS, writer
University of California, Davis	University of California, Davis
School of Veterinary Medicine, Wildlife Health Center	School of Veterinary Medicine, Wildlife Health Center

Permission for Use and Downloading AFS Course Materials

Visit the AFS Web site for AFS course information and instructions to order materials. Use of the materials should properly credit the AFS program. When using these materials, the cover page and this page should be attached to this module or any lessons from this module.

www.avianfluschool.org

Disclaimer

The AFS course materials are designed to be used by trained instructors to conduct training workshops. The Global Livestock CRSP and the UC Davis School of Medicine are not responsible for the incorrect use of AFS training materials.

Copyright © The Regents of the University of California, Davis campus, 2006, 2007. All Rights Reserved.

CONTENTS

Module I: Overview

Module Outline

Course Introduction

Lesson I Avian Flu Viruses

Lesson 2 History of H5N1 HPAI

Lesson 3 HPAI Transmission

Lesson 4 Risk of H5N1 to Humans

Lesson 5 Impacts of H5N1 HPAI

Lesson 6 Surveillance, Testing, and Reporting

Lesson 7 Coordination and Management

Lesson 8 Communications Planning

Conclusion and Final Exercise

INTRODUCTION

Instructor Notes	Course Material
TARGET AUDIENCES	
This module is designed for a variety of au- diences 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 I AFS Handouts for Module I 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 Exercise 1-1: Identifying the HPAI Transmission Paths Exercise 1-2: Analyzing Components of a Animal Health Emergency Preparedness and Response Plan 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.	

Instructor Notes	Course Material
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 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 custom- ize length of module as necessary.	
Answer questions, then continue.	

Course Material	
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 as- sociated with an outbreak of H5N1 HPAI Describe purpose of surveillance Describe the procedures for reporting an out- break 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 	

Instructor Notes	Course Material	
	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 activi- ties 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:

Instructor Notes

Course Material

TIME: 15 MINUTES

START TIME:

END: _____

DEFINITIONS

Avian Influenza — commonly called "bird flu"— is an infection caused by influenza viruses that occur naturally in birds, and less commonly pigs and humans. (www.pandemicflu.gov)

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

Influenza A Virus

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.

Instructor Notes	Course Material
	Reasortment. New viruses form when their genetic material com- bines, resulting in a new virus.
	MUTATION
	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:

COURSE GUIDE

Course Material
I. Low pathogenic avian influenza (LPAI)
 Causes few to no signs of sickness in infected chick- ens.
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.

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.

Photo of an influenza virion

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



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.

Additional Notes:

COURSE GUIDE

Instructor Notes	Course Material
	TAKE A MOMENT TO CHECK YOUR KNOWLEDGE:
	How do flu viruses change?
	Which virus subtypes can cause HPAI?
	How can flu viruses be destroyed?

LESSON 2 HISTORY OF H5N1

Instructor Notes Course Material HISTORY OF GLOBAL SPREAD OF H5N1 HPAI: TIME: 15 MINUTES 1996 – Precursor of current H5N1 HPAI subtype first detected in a goose in Southern China. START TIME: • 1997 – First reported outbreak of H5N1 HPAI in domestic poultry (Hong Kong), which led to the END:_____ first human infections, 18 cases resulting in 6 deaths. The outbreak was controlled through the culling of TRANSITION 1.5 million domestic birds. Now that we have talked about Avian Influenza • 2001 – H5N1 HPAI appeared again in Hong Kongin general, let's talk about the type of bird flu stamping out resulted in the culling of 1.2 million of the most concern currently, particularly its birds global spread. • 2004 – Numerous outbreaks in most Southeast Asian PRIMARY SPREAD countries: Thailand, Vietnam, Hong Kong, Cambodia, H5N1 HPAI can be introduced in a new Laos, Indonesia, China, and Malaysia. Human cases country or region by: were detected in many of these same countries. Migratory birds: H5N1 HPAI shows a May – August 2005 – H5N1 HPAI in domestic and seasonal occurrence in high-risk areas, wild birds in China, Siberia, and Mongolia resulted which coincides with migratory activity in die-offs signaling a dramatic geographic expan-• Legal and illegal poultry trade sion and possible involvement of migratory birds in Legal and illegal wild bird/pet trade transmission. October 2005 – February 2006 – H5N1 HPAI outbreaks in poultry and wild birds in Turkey, Iraq and Eastern Europe. • 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. February 2006 – H5N1 HPAI was detected in

 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.

HISTORY OF H5N1	
Instructor Notes	Course Material
DEFINITIONS:	 February 2006 – Outbreaks in poultry in the Indian sub-continent (Pakistan and India) were reported.
An outbreak is a sudden rise in the inci- dence of a disease. A pandemic is a global disease outbreak.	 Since January 2006, 70% (111) of all human cases in the world have occurred in Indonesia and Egypt.
human pandemicanimal pandemic	 2007 – Outbreaks continue in poultry, mainly in Southeast Asia and Africa. First H5N1 HPAI reports in Bangladesh, Saudi Arabia, and Ghana.
	Historical record accurate through June 1, 2007.
	Latest developments important to the region:
	TERMS AND DEFINITIONS:
	Outbreak
	Pandemic
	http://www.panglangigfile: aggr/s OF BIRD FLU

25 June 2007

LESSON 2 HISTORY OF H5N1

Instructor Notes

Course Material

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.

Country	Cases	Deaths
Azerbaijan	8	5
Cambodia	7	7
China	25	16
Djibouti	I	0
Egypt	36	15
Indonesia	100	80
Iraq	3	2
Laos	2	2
Nigeria	I	I
Thailand	25	17
Turkey	12	4
Vietnam	93	42
Total	315	191

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	Course Material
TIME: 20 MINUTES START TIME:	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
Transition We've seen how rapidly H5N1 HPAI has spread. Now, let's take a look at the mecha- nisms of how it is transmitted.	The most common transmission for influenza A viruses is from one member of a species to another member of the same species.
EXERCISE 1-1: IDENTIFYING THE TRANS- MISSION PATHS	Between species (interspecies) transmission
Purpose : This exercise allows the participants to check their knowledge about the proper transmission paths from bird to bird and birds to humans.	Iransmission of influenza A viruses from one species to another occurs rarely between most species such as chick- ens and humans and somewhat more frequently between other species, such as between ducks and turkeys.
 Instructions: Follow the steps below to conduct this exercise: Form small groups based upon similar experiences or interests. Groups should take 10–15 minutes to talk and compare thoughts among themselves. 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. 	Generally, larger doses of virus and longer-contact dura- tion is required for between-species transmission than for transmission within a species.
Global Livestock CRSP 16 Module 1: Overview	Wildlife Health Center and Cooperative Extension UC Davis School of Veterinary Medicine

LESSON 3 **HPAITRANSMISSION**



Sources of infection



Barriers to transmission

Hand-washing / good hygiene

Personal protective equipment / dedicated clothing

Vehicle and equipment disinfection

Enclosing birds / avoiding attractants

Restricting movements on and off premises

Vaccination / medication (humans only)

Avoiding contaminated environment / carcasses

LESSON 3 HPAITRANSMISSION

EXERCISE I-I: 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:

Step	Action
Ι	Study the previous illustration "Paths of Avian Influenza Transmission."
2	Identify three sources of infection from poultry to other poultry.
3	Identify three barriers to infection from poultry to other poultry.
4	Identify three sources of infection from wild birds to poultry.
5	Identify three barriers to infection from wild birds to poultry.
6	Identify sources of infection from poultry to humans.
7	Identify three barriers to infection from poultry to humans.
8	Discuss with your group:
	• What parts of the transmission paths are of most concern to you or your community?
	• What was the most valuable thing you learned about how the virus is transmitted?
	• How will you use this transmission information to help with your community's current H5N1 HPAI response?

LESSON 4 RISK OF H5N1 HPAI TO HUMANS

Instructor Notes

Course Material

TIME: 15 MINUTES

START TIME:_____

END: _____

TRANSITION

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.

LESSON 4 RISK OF H5N1 HPAI TO HUMANS

RISK OF H5N1 HPAITO HUMANS		
Instructor Notes	Course Material	
	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.	
Because these viruses do not commonly infect humans, there is little or no immune protection against them in the human popu- lation. If the H5N1 HPAI virus were to gain the capacity to spread easily from person to person, a pandemic (worldwide human	3. Most humans have no immunity to H5 viruses.	

EXPOSURES RESULTING IN HUMAN INFEC-TIONS:

outbreak of disease) could begin.

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:

EXPOSURES RESULTING IN HUMAN INFECTIONS:

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

LESSON 4 RISK OF H5N1 HPAI TO HUMANS

Instructor Notes	Course Material	
 Human symptoms may include: Diarrhea High fever Lower respiratory tract symptoms (pneumonia) Vomiting Abdominal and chest pain Conjunctivitis Bleeding from the nose and gums 	Symptoms in humans are similar to many other syn- dromes and may include:	
depend on which virus caused the infec- tion, host immunity or other infections. It is unclear why some people have died and others have not.		
	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 con- suming 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 theof birds is needed to protect the public health.	
	For more information about human H5N1 HPAI infections, see: http://www.cdc.gov/flu/avian/gen-info/avian-flu-humans. htm and http://www.who.int/csr/disease/avian_influenza/en/	
Wildlife Health Center and Cooperative Systemation	Clobal Livertock CPSP	

LESSON 5 IMPACTS OF H5N1 HPAI

Instructor Notes

Course Material

TIME: 15 MINUTES

START TIME:

END: _____

Transition

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

However, short of a human pandemic, H5N I HPAI has also been devastating economically as an animal health emergency. POTENTIAL IMPACTS OF ANIMAL HEALTH EMERGENCY OF H5N1 HPAI:

IMPORTANT POINT

An H5N1 HPAI animal disease outbreak has enormous impacts.



LESSON 5 IMPACTS OF H5N1 HPAI

IMPACTS OF H5N1 HPAI		
Instructor Notes	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	
Have participants present costs they identi- fied, and then summarize their responses.	COSTS OF BIOSECURITY List likely costs or impacts of an H5N1 HPAI outbreak in	
	your country or community:	
	1	
	2	

2._____ 3._____ 4.____

In large group, share the potential costs of an outbreak.

LESSON 6 SURVEILLANCE, TESTING, AND REPORTING

Instructor Notes

Course Material

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.

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

SURVEILLANCE, TESTING, AND REPORTING

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:	IMPORTANT POINT
What are the challenges or barriers to im- plement an effective surveillance program?	I. Surveillance efforts require expenditure
How do you prioritize surveillance activi- ties?	of resources and, as such, should be prioritized and targeted.
TRANSITION	2. In addition to detection efforts for
One of the key elements of an effective surveil- lance program is a rapid and effective diagnos- tic laboratory with a rapid reporting system.	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.

SURVEILLANCE, TESTING, AND REPORTING

Instructor Notes	Course Material
Testing	DIAGNOSTICTESTING
Review Testing guidelines (OIE) for H5N1 HPAI (See OIE handout):	Testing for H5N1 HPAI involves:
Presumptive diagnosis can be made on basis of clinical and pathological findings (fur- ther discussed in Module 4: Prevention and Response)	I. Initial Screening (Clinical Signs, Necropsy, RT-PCR)
	2. Virus Isolation (oral cavity and cloacal swabs, tis- sues)
Confident diagnosis requires confirmation	3. Virus characterization
virus	a. subtyping with RT-PCR, sequencing, or reference antisera, and
Delays in responding to an outbreak while waiting for test results can worsen the spread of disease.	b. pathotyping by bird inoculation or sequencing
	4. Laboratories need the ability to screen samples of
While waiting for diagnosis: Stop all movements in and out.	cases rapidly. How they screen and how well they do will depend on their capabilities, which may include the following:
	Necropsy of dead birds (and expert evaluation)
	 RT-PCR tests to detect Type A virus in swab samples
	• Virus isolation in eggs (SPF)
	Regional or national labs should have additional capabilities, including:
	Neuraminidase antigen identification
	 Pathogenicity testing of virus isolates using chicken inoculation; and
	Virus subtyping serologically, RT-PCR, sequencing
	Regional Laboratories to Test Diagnostic Samples
	See laboratory form on next page.

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 I:

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:

Wildlife Health Center and Cooperative Extension UC Davis School of Veterinary Medicine

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?

SURVEILLANCE, TESTING, AND REPORTING

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

Current Laboratory Testing Capability	Yes	No
Necropsy of dead birds	0	0
RT-PCR tests to detect avian influenza viruses (AIV) in swab samples	0	0
Virus isolation in eggs (SPF or SAN) for virus identification	0	0
Serology for AIV	0	0
Subtyping of AIVs	0	0
Neuraminidase typing of viruses	0	0
Pathogenicity testing of virus isolates using chicken inoculation, sequencing or RT-PCR	o	o

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?

SURVEILLANCE, TESTING, AND REPORTING

Instructor Notes	Course Material
	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 instruc- tions 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 In- ternational 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)
	Supplemental Reference: AHA (Animal Health Austra- lia). 2005. Disease strategy: Avian influenza (version 3.1). Australian Veterinary Emergency

LESSON 6 SURVEILLANCE, TESTING, AND REPORTING

REPORTING TREE



Optional Exercise: Construct a Wildlife Reporting Tree.

SURVEILLANCE, TESTING, AND REPORTING

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

- I. 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:

Instructor Notes

TIME: 60 MINUTES

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. **Course Material**

INTERNATIONAL RESOURCES AND COORDINATION

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) http://www.fao.org/ag/againfo/subjects/en/health/diseases-cards/special_avian.html
- 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:

Instructor Notes	Course Material
	Animal health agencies and veterinary service departments:
	Wildlife agencies:
	Public health agencies:
	University agricultural extension and veterinary schools:

Instructor Notes	Course Material
	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 Votorinary Sources
	Name.
	Fmail
	Phone
	NGO:
	Name:
	Email:
	Phone:

Instructor Notes	Course Material
	COORDINATION CONTACTS, CONT.
	NGO:
	Name:
	Email:
	Phone:
	NGO:
	Name:
	Email:
	Phone:
	Regional Laboratory Testing Facility:
	Name:
	Email:
	Phone:
	Shipping Address:
	National HPAI Outbreak Reporting Contact:
	Name:
	Email:
	Phone:
	District HPAI Outbreak Reporting Contact:
	Name:
	Email:
	Phone:

Instructor Notes	Course Material
	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:
	 a. Consult the UNFAO Manual on the Preparation of National Animal Disease Emergency Prepardness Plans. The manual is a guide to preparing a national response plan and much of this module is base on information presented in the manual. (See: http://www.fao.org/docrep/004/x2096e/X2096E00.htm).
	 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 <i>Terrestrial Animal Health Code,</i> 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 ref- erence within the World Trade Organization (WTO) Agreement on the Application of Sani- tary and Phytosanitary Measures (SPS Agree- ment) as an international standard for animal health and zoonoses.
	• The OIE Terrestrial Code is a reference docu- ment 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.)
	The NIMS system, utilized by agencies regionally and nationally in the U.S., describes the basic prin- ciples and components of an emergency manage- ment 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
	Prepardness activities
	Training
	Supporting technologies
[Point out the similarities of hte compo- nents of the OIE/FAO and the NIMS sys-	2. BENEFITS OF A COMMAND AND MANAGEMENT SYSTEM FOR EMERGENCY RESPONSE
tem]	 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.

Instructor Notes	Course Material
	 Establishes accountability for supervisors and lead- ers.
	 Relies on an Action Plan developed through plan- ning.
	• Provides a process for deployment of personnel and resources.
	• Provides a means to gather information and to man- age that information.
	 Uses common terminology referring to organiza- tional functions, resource descriptions, and facilities.
	• Provides modular organization—the management system is scaleable. It can be expanded as needed to cover more functions and greater geographical area.
	• Applies management by objective— objectives must be communicated to all involved in emergency man- agement effort, establishes objectives, and monitors how well those objectives are met.
	 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 effective- ly 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 ap- propriate span of control.
	 Predesignates important locations and facilities as part of planning, such as worker protective clothing, poultry farm intervention equipment, or vaccines.
	 Provides a mechanism evaluating the current status of available resources.
	• Provides a means for integrated communications.
	 Matches people and organizations to responsibilities and tasks based on their expertise and experience.

Instructor Notes	Course Material
	IMPORTANT POINT
	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.

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

I. Establish Unified Command

Establish a cooperative, empowered coordinating body to manage a disease emergency, share resources, and provide a single decisionmaking 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 ManagementSystem

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.





Step	Action						
I	REVIEW (IN SMALL GROUPS OF 4-6 AS ASSIGNED)						
	Ten Components of an H5N1 HPAI Preparedness and Response Plan						
2	ANALYZE IMPORTANCE O	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 imple- menting that component as part of a national plan.						
	Component:	Challenges to implementing the compo-					
	1.						
	2.						

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 com- ponent you and your group selected as top priority. Then, for each potential obstacle, iden-						
-	Identify any likely or potential observations of the ponent you and your group selected tify options that would help overce	MPLEMENTATION cles that might be faced when implemen as top priority.Then, for each potentia ne it.	nting the com- I obstacle, iden-				
-	Identify any likely or potential observation ponent you and your group selected tify options that would help overced Potential obstacles	PLEMENTATION cles that might be faced when implemen as top priority.Then, for each potentia ne it. Options for overcoming ob	nting the com- l obstacle, iden- ostacles				
_	Identify any likely or potential obst ponent you and your group select tify options that would help overce Potential obstacles	PLEMENTATION cles that might be faced when implement as top priority. Then, for each potentia ne it. Options for overcoming ob	nting the com- l obstacle, iden- ostacles				

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?



LIST CHANGES BELOW OR DRAW THEM ON THE CHART ABOVE:

١.

2.

3.

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

Instructor Notes

Course Material

TIME: 60 MINUTES

START TIME:____

END: _____

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:

I.ASSIGN A COMMUNICATIONS COORDINATOR FOR YOUR ORGANIZATION.

This person can:

a. Guide your organization's communication planning

I ESSON 8

COMMUNICATIONS PLANNING					
Instructor Notes	Course Material				
	effort				
	b. Coordinate with other organizations				
Review the list of information to report,	c. Serve as a public information officer				
then: Ask the group, who would they report an	2. MAKE PLANS TO GATHER ACCURATE INFORMATION OF AN H5N1 HPAI INCIDENT (SEE RECOMMENDED INFORMATION TO				
outbreak to?	REPORT, P. 33):				
How would they report an outbreak? Should they talk to a news reporter?	 the exact geographical location of the H5N1 HPAI outbreak(s); 				
,	 the names and addresses of affected farms or vil- lages; 				
	 domestic or wild species affected; 				
	• approximate numbers of sick and dead animals;				
	 brief description of clinical signs and lesions ob- served; 				
	 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				
Ask the group what problems might occur if various organizations do not coordinate their messages.	3. REVIEW INFORMATION AND MESSAGES OF OTHER ORGANIZATIONS. SEEK TO MAKE YOUR MESSAGES TO THE PUBLIC CONSISTENT WITH OTHER RESPECTED ORGANIZATIONS.				
Review WHO Risk Communication Guide- lines handout.	See OIE, UNFAO, WHO and other resources for commu- nications guidelines and recommended messages. Different messages on the same issue from multiple organizations				

public.

can cuase distrust and unnecessary anxiety among the

Instructor Notes

Course Material

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 **cred**-**ible**
- **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:

١.	
2.	
3.	
4.	
5.	

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

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

Instructor Notes	Course Material				
	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 				
Describe the importance of brief- ing reporters before there is a crisis. A well-informed reporter is likely to write a more reasoned story during a	7. DEVELOP PLAN TO DISTRIBUTE KEY MESSAGES, TO TARGET AUDIENCES, AT PROPER TIME.				
	This includes conducting pre-outbreak or pre-crisis brief- ings 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

Communications Preparedness Component			No
١.	I. Have assigned a communications coordinator		ο
2.	Have identified reliable sources of information in your community.	0	ο
3.	Have identified key audiences to communicate with for prevention and during response events.	ο	ο
4.	Have developed messages for key audiences for various scenarios. Including mes- sages to counter rumors and misinformation.	ο	ο
5.	Consider your organization's unique role in addressing rumors, misinformation, fear, and anxiety.	ο	0
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.	0	0
7.	Have distributed materials with basic information about H5N1 HPA1 in public meetings (sermons, classes, trainings, livestock groups)	ο	0
8.	Have conducted pre-outbreak briefings for local news reporters, so they under- stand the issues and risks.	0	0

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.

Instructor Notes	Course Material
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 for an H5NI HPAI animal health emergency com- munications plan.	
Instructions : Follow the steps below to conduct this exercise:	
 I. 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 informa- tion for audiences Media outlets for the audiences 	
 Groups will report back to the large group with their results. Debrief the exercise and capture les- sons 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.

	Potential Concern								
	Health	Trust	Environment	Legal	Economy	Livelihood	Livestock	Information	Religious
Stakeholder									
Governmental agencies									
Non-Governmental agencies									
Public at large									
Victims and their families									
Emergency response personnel									
Public Health Personnel									
Physicians/ nurses/ veterinarians									
Law enforcement personnel									
Hospital personnel									
Health agency employees									
Other:									
1.									
2.									
3.									

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 of target audiences (listed on the right) in the event of the outbreak scenario (right) selected for your group.				
Scenario	Target Audience			
I. The government reports that H5NI HPAI has been detected in a poultry farm	A. Governmental agencies			
in your country	B. Ministry of health officials			

2.	Wildlife officials warn that infected wa-
	terfowl may migrate using the flyway
	over your town

- 3. A farm worker reports suspect poultry deaths on a neighboring farm
- 4. A bird with H5N1 HPAI is detected at your site
- 5. An individual presents to a clinic with severe symptoms
- 6. A person is confirmed with the diagnosis in your community
- 7. Other determined by your group

3	I.	Community leaders
	J.	Small poultry farmers

C. USAID

E. Public Health personnel

H. Victims and their families

F. Faith-based groups

G. Public at large

D. Physicians, nurse, veterinarians

- K. The media
- L. Other: As determined by your group

Selected Outbreak Scenarios	
Two target audiences selected for your grou	ıp:
Ι.	
2.	
Audience	Primary Concerns (see communications matrix for list of possible concern subject items)
1:	1.
	2.
	3.
2:	1.
	2.
	3.
3:	1.
	2.
	3.

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:

Key Message I	Key Message 2	Key Message 3
Supporting Information	Supporting Information	Supporting Information
1.	1.	1.
2.	2.	2.
3.	3.	3.
Supporting Information	Supporting Information	Supporting Information

Scenario:		
Target Audience #2:		
One Potential Concern with	this Audience:	
Key Message I	Key Message 2	Key Message 3
Supporting Information	Supporting Information	Supporting Information
l.	I.	I.
2.	2.	2.
_		
3.	3.	3.
Supporting Information	Supporting Information	Supporting Information

CONCLUSION AND FINAL EXERCISE			
	REVIEW OF KEY POINTS		
Summarize the key points from this module:	 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 poul- try. Those that cause mild disease, can become the fatal type if they stay in the population and change through mutation		
Review objectives and gather participants'	 Very few of the possible influenza subtypes infect humans 		
input about whether course objectives and individual expectations were met.	Outbreaks of highly pathogenic avian influenza have serious economic impacts		
	 Effective monitoring, managing, and reporting activi- ties 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 associ- ated with an outbreak 		
	Describe purpose of surveillance		
	 Describe the procedures for reporting a report- able-virus outbreak 		

CONCLUSION AND FINAL EXERCISE

Instructor Notes	Course Material
	 Define components of an effective National or Re- gional 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 the status of HPAI H5NI
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.	Tips:
	Tools:
	Ideas/Strategies:

CONCLUSION AND FINAL EXERCISE

Instructor Notes	Course Material
	Resources:
	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:

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.

- I. 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:

CDC (Centers for Disease Control). Avian influenza infection in humans. http://www.cdc.gov/flu/avian/gen-info/avian-flu-humans.htm (accessed 04/25/2006).

CIDRAP (Center for Infectious Disease and Policy). 2006. Avian influenza (bird flu): Agricultural and wildlife considerations. http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/biofacts/avflu.html (accessed 04/25/2006).

FAO (Food and Agriculture Organization of the United Nations). 1999. Manual on the preparation of national animal disease emergency preparedness plans. http://www.fao.org/docrep/004/x2096e/X2096E00.htm (accessed 04/2006).

_. 2005. Enemy at the gate: Saving farms and people from bird flu. Rome, Italy.

_____. 2005b. Global strategy to fight bird flu in animals faces serious funding gap. http://www.fao. org/newsroom/en/news/2005/107804/index.html (accessed 04/35/2005.

_____. 2006. Preparing for highly pathogenic avian influenza: A manual for countries at risk. www.fao. org/docs/eims/upload/200354/HPAI_manual.pdf (accessed 05/30/2006).

Steneroden, K., Roth, J., Ramirez, A., and Spickler, A.R. [date?] Slide presentation on avian flu.

USAID (United States Agency for International Development). 2006. USAID advances U.S. international engagement on avian flu.

http://www.usaid.gov/press/factsheets/2006/fs060516.html (accessed 05/23/2006).

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.shtm)

WHO (World Health Organization). Cumulative number of confirmed human cases of avian influenza A/(H5N1) reported to WHO. http://www.who.int/csr/disease/avian_influenza/country/cases_table_2006_05_29/en/index.html (accessed 05/31/2006).

_____. 2006. Avian influenza ("bird flu") – fact sheet. http://www.who.int/mediacentre/factsheets/avian_ influenza/en/index.html#humans (accessed 04/25/2006).

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)