Preventing Avian Influenza in Pakistan

A Guide for Preparing to Train Community Workers

DRAFT
Prepared by AED
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REVIEW OF HOW
AVIAN INFLUENZA IS SPREAD

In order to understand how avian influenza can be prevented, it’s important to review the most common ways that it can be spread. Avian influenza (also called H5N1) can be spread by birds to other birds, including chickens. Being around birds with H5N1 can make people very sick. According to the US Centers for Disease Control and Prevention (CDC) more than 330 confirmed cases of human infections with highly pathogenic avian influenza A (H5N1) viruses have been reported from 14 countries since November 2003. Most human cases of H5N1 virus infection are thought to have occurred during direct contact with sick or dead infected poultry. (Source: www.cdc.gov).

WHEN HUMANS HAVE DIRECT CONTACT WITH SICK OR DEAD POULTRY

There are several ways that people can have direct contact with sick or dead birds including:

- Cleaning a yard where there is poultry feces or litter without covering your nose or mouth. If H5N1 exists in your country it can be found in poultry feces and poultry litter. The virus can get picked up by dust through sweeping or cleaning. If you breathe in the dust that has the virus in it, you can get very sick. (See Participant Handout # 1).

- Catching, gathering or culling chickens or other poultry without covering your nose or mouth. The virus can get picked up by dust when catching and culling chickens. If you breathe in the dust that has the virus in it, you can get very sick. (See Participant Handout # 2).

- Eating unhealthy poultry, like chicken or ducks. Do not kill, cook and eat sick poultry. Do not cook or eat poultry that has died suddenly.

- Undercooking poultry meat, eggs or poultry blood before eating them.

- Eating poultry meat that is undercooked and pink in the middle. (See Participant Handouts # 3 and #4).

- Eating eggs that are runny and undercooked.
HOW BIRDS GET SICK

Birds that are infected with influenza virus, including H5N1, shed the virus in their saliva, nasal secretions and feces. Birds become infected when they have contact with contaminated secretions or excretions or with surfaces that are contaminated with secretions or excretions from infected birds. Domesticated birds, including chickens, may become infected with H5N1 through direct contact with infected water birds, other wild birds and other infected poultry. Infection can also occur from direct contact with surfaces like dirt or cages or materials like water or feed that have been contaminated with H5N1. (Source: www.cdc.gov).

There are several ways that birds can have direct contact with infected birds or contaminated surfaces including:

- Purchasing, trading or carrying any kind of poultry, chicks or eggs, from the family farm to another farm or to the market. If your poultry or eggs are infected with AI taking them to another farm or market can infect poultry or eggs there. (See Participant Handout #5).

- Purchasing, trading or carrying any kind of poultry, chicks or eggs from another farm or from the market back to your family farm. If the poultry or eggs that you buy, trade or carry are infected with AI bringing them back to your family farm may infect the poultry/eggs already on your farm. (See Participant Handout # 6).

- Purchasing wet litter from the market or a farm and then transporting it to another market or farm. If the litter happens to be from infected birds, then taking the infected litter to another market or farm can infect poultry or eggs there.

- Allowing your poultry to get too close to wild birds which may have avian influenza. That's why it's important to keep poultry in cages or fences.

- Wild birds can spread avian influenza at the places where they water like puddles, rivers, and streams. Feces, and feathers left in the water by the wild birds can make the water unhealthy for your poultry.

- Wild, migrating water birds that have avian influenza can carry it from watering place to watering place when they leave feces or feathers in the water. (See Participant Handout # 7).
• Humans can't get avian influenza but they can spread it around. This happens when their shoes, tools, rickshaw vans, bicycles, autos or other vehicles travel through feces or chicken waste where sick chickens have been.

• Pakistan has many people and poultry living in close proximity. This makes it easy for humans to spread the virus not only on their shoes and tires, but also on used handkerchiefs, used tissue paper or other things that have touched the feces, blood, mucous, saliva or other parts of an infected bird.
HOW WILL WE KNOW WHEN CHICKENS ARE SICK?

Knowing when birds have avian influenza can be difficult. This is because a flock of chickens can sometimes die off quickly with no visible signs of illness. Sometimes chickens can have avian influenza, but look perfectly healthy.

Ducks and other water fowl—like geese—can be infected and infect other poultry, but not show any signs of being sick. Ducks, if they do die, may not die as quickly as chickens. That is why it is important for households and farmers to keep ducks and ducklings fenced or caged separately from chickens and chicks. (See Participant Handouts #8 and #9).

Though spotting signs of avian influenza may be difficult, there are some common signs to look for that might mean a single bird or an entire flock has been infected. Report what you see immediately to the local officials. Everyone should be on the lookout for:

- Sudden die off of chickens for no apparent reason.
- Wattles and combs that are purple or swollen.
- Poultry with bowed heads, the birds grouping together, or appearing to be in a semi-comatose state. (See Participant Handout #10).
- Breathing problems.
- Swelling in the head or eye lids.
- Bleeding on skin in areas where there are no feathers, especially on the feet.
- Poultry does not have energy or does not want to eat.
- Decrease in the number of eggs laid.
- Profuse, watery diarrhea.
- Coughing, sneezing, nasal discharge.
- Depression.
- Lack of coordination.
• Neurological signs like staggering gait, torticollis, and ataxia (mostly in broiler chickens).

• Poultry suddenly dies in large numbers with or without signs of illness.

Resource:
Signs of how to recognize sick chickens are taken from the Food and Agriculture Organization of the United Nations (FAO). For more information visit: www.fao.org/ag

WHAT SHOULD WE DO IF WE SEE SICK OR DEAD CHICKENS?

There are several precautions to take if you see sick or dead chickens. It's important that you contact local authorities immediately. Precautions include:

• Children should not visit the farm where birds are sick or have died.

• Do not sell the sick or dead birds.

• Do not prepare the sick or dead birds to eat.

• Do not sell or eat eggs from the sick or dead birds.

• Protect the rest of your flock by taking the sick or dead birds out of the flock.

• Cover your mouth and nose with a mask or a cloth.

• Use a stick or shovel to remove dead birds from the flock.

• Avoid touching dead birds with your hands. If you do, make sure your hands are covered with gloves or a newspaper.

• Do not leave the dead birds in the farm yard or in an open field.

• Place the dead bird(s) in a bag or other container away from other farm animals. Do not dispose of the bag. The local Veterinarian will want to study the contents.
EDUCATING COMMUNITY WORKERS TO PREVENT AND CONTROL AVIAN INFLUENZA

Now that we know more about how AI is spread, let’s take a look at the importance of educating community workers to prevent and control avian influenza. Once community workers have been trained they can share information with others, including farmers, coworkers, family, friends, teachers, NGO workers, etc. Everyone needs to promote behaviors that make avian influenza prevention ongoing.

Educating people to prevent avian influenza involves promoting specific behaviors in four specific settings. The list below identifies those settings.

1. Promoting farmyard behaviors that help prevent and control avian influenza for persons involved with raising poultry/eggs.

2. Promoting selling/trading or market behaviors that help prevent and control avian influenza for persons involved with selling/trading poultry/eggs.

3. Promoting household behaviors, including food safety and good hygiene, which help prevent and control avian influenza for persons preparing chicken/eggs for human consumption.

4. Promoting bio-security measures on the farm, and in the market.
PROMOTING FARM YARD BEHAVIORS

Many of the behaviors used to prevent and control avian influenza are also known as bio-security measures. The specific behaviors that community workers should be promoting and encouraging on the farm are described below.

1. **Promote good farmyard behaviors** that help prevent and control avian influenza for persons involved with raising poultry/eggs including:

   - Wearing a cloth or mask over the nose and mouth to avoid breathing in the virus from infected bird droppings. If you do not have a mask, tie a cloth (handkerchief) over your nose and mouth when cleaning the farm yard.

   - Giving poultry fresh feed and clean water every day.

   - Cleaning the farmyard every day. Remember to wear a mask or cloth over your nose and mouth when cleaning the farmyard.

   - Keeping chickens separate from ducks. Ducks can be infected with avian influenza and spread disease, but not show signs of illness.

   - Keeping new birds in a fenced area or cage, away from the rest of your flock for at least 14 days.

   - Keeping poultry separate for at least 14 days if you have taken your birds to the market but did not sell them. This quarantine would be helpful in preventing spread to your flock in case the returning birds came in contact with the virus at the market.

   - Discourage anyone who feeds poultry waste like organs or blood to dogs, cats, scavenging birds, pigs etc.

   - Burning or burying poultry waste such as feathers, organs and blood. Be sure to bury the waste deep enough (and with slaked lime) so that pigs, foxes, dogs, or cats do not dig it up. (See Participant Handout # 11).

   - Not throwing poultry waste or droppings into water.

   - Keep poultry out of your house.

   - Keep children from playing with live or dead poultry or birds.
PROMOTING TRADING/SELLING AND MARKET BEHAVIORS

Many of the behaviors used to prevent and control avian influenza are also known as bio-security measures. The specific behaviors that community workers should be promoting and encouraging at the market are described below.

2. **Promote good trading/selling and market behaviors** that help prevent and control avian influenza by:

- Making sure that anybody who enters or exits the farmyard, washes their shoes, especially the bottom of the shoes, with soapy water (or disinfectant if you have it). If washing is not possible give visitors clean shoes at the farm gate.

- Making sure that everyone brushes off and washes with soap and water *anything that comes to their farmyard* that may have touched poultry feces from another place—such as another farm or live-bird market. This is so no one accidentally brings the virus to their home or someone else’s home on vehicle tires, clothing, shoes, tools, and cages. Encourage the use of disinfectant if farmers have it. Remember, people can carry the virus that causes avian flu on their shoes, vehicle tires, egg crates, broiler carrying nests, poultry cages or on farm equipment. This is how the virus can spread from one farm to another or from one district to another. (See Participant Handout # 12).

- Keeping farm equipment and tools, vehicles, and bicycles clean by washing them with soap and water or disinfectant everyday.

- Slaughter, pluck and cut up chickens at different work tables. (See Participant Handout # 13).

- Always wear a mask when handling chickens. (See Participant Handout # 14).

- Clean work surfaces and other areas that come into contact with poultry with soap and water, or disinfectant if you have it. (See Participant Handout # 15).

- Always wash your hands after handling chickens. (See Participant Handout # 16).

- Sell healthy, clean chickens at the market. (See Participant Handout # 17).
PROMOTING HOUSEHOLD BEHAVIORS

The specific behaviors that community workers should be promoting and encouraging in the household are described below.

3. **Promote good household behaviors** that help prevent and control avian influenza with persons in the house who prepare poultry and eggs by:

   - Cleaning kitchen surfaces and other areas that come into contact with poultry with soap and water, or disinfectant if you have it. (See Participant Handouts # 18 and # 19).

   - Eating only healthy poultry. Do not kill, cook and eat sick poultry.

   - Do not cook or eat poultry that has died suddenly.

   - Poultry meat, eggs or poultry blood should be cooked well before eating them (meat should not be pink in the middle, and eggs should not be runny or liquid like). (See Participant Handout # 20).

   - Washing hands with soap and water before and after touching poultry or any eggs. (See Participant Handout # 21).
PROMOTING BIO-SECURITY MEASURES ON THE FARM, IN THE MARKET AND AT HOME

Bio-security measures are the activities and barriers you use to keep disease away from your poultry. WHO defines bio-security in simple terms:

Bio-security means keeping germs away from your birds and keeping your birds away from germs.

Bio-security activities don’t have to be complicated or expensive. In fact, a small tub or water, some soap or disinfectant, and a brush for cleaning tires or the bottom of shoes will go a long way toward protecting your birds from diseases.

There are many bio-security measures for both small farms as well as commercial poultry farms. With the support of local government, community workers can promote and encourage bio-security measures. Some key bio-security measures include:

- Washing hands with soap and water before and after touching poultry or eggs.
- Keeping a container of water and soap for cleaning hands and feet at the entry and/or exit points of your farm or poultry house.
- Keeping poultry out of your house.
- Keeping all poultry in a fenced area or separate building so poultry does not roam free.
- Giving poultry fresh feed and clean water every day.
- Cleaning the farmyard every day. Remember to wear a mask or cloth over your nose and mouth when cleaning the farmyard.
- Keeping new birds in a fenced area or cage, away from the rest of your flock for at least 14 days. Keeping poultry separate for at least 14 days if you have taken your birds to the market but did not sell them.
- Disposing of poultry litter/feces/waste products through burial or burning.

To learn more about bio-security visit the following sites:
http://avianflu.aed.org
www.fao.org
www.wpro.who.int
FREQUENTLY ASKED QUESTIONS

Note to the Trainer:

As training participants and others ask you questions about avian influenza use this handout to help answer their questions. They are based on the most frequently asked questions and answers from other community, animal and health workers around the world.

1. What is Avian Influenza?
The disease commonly referred to as “bird flu” is an animal infection caused by the H5N1 virus. The virus occurs naturally among birds. Wild birds carry the virus in their intestines, but usually they do not get sick. But some domesticated birds—like chickens—get very sick and can die from the virus.

2. Which birds carry the virus?
Avian influenza can kill domesticated birds, including chickens, ducks, geese, and turkeys. Traditionally, wild waterfowl and shorebirds have been credited as the sources for the many strains of avian influenza, but rarely fell ill. The current H5N1 strain has caused mortality in 40 species of wild birds, including geese, storks, egrets, herons, and falcons, and some mammals.

3. How does it spread?
The virus can remain viable in droppings for long periods, spreading among birds and animals through ingestion or inhalation of the droppings. Virus can also be excreted from the eyes, nose and mouth of infected birds. Transmission from flock to flock is usually by humans—avian influenza viruses can be spread by manure, equipment, vehicles, egg flats, crates, and people whose clothing or shoes have come in contact with the virus.

4. Can humans get H5N1?
Yes. H5N1 can make humans very sick. There are several ways humans can be exposed: contact with infected poultry; eating contaminated poultry meat or eggs; drinking from water sources that have been contaminated by bird feces or feathers; and breathing in feces, blood, or mucous from infected birds.

5. Why should I worry about avian influenza when it is a bird disease?
Current outbreaks of the virus have been happening among the bird populations since 2003. Animal and human health experts are concerned that the virus is crossing the species barrier (from birds to humans) and making humans very sick. There have been reported human cases and deaths in Indonesia, Vietnam, China, Egypt, and Cambodia. Scientists and the medical community are closely
monitoring the avian influenza virus to see if it mutates which will make it easier
to spread from human to human.

6. How is Avian Influenza virus spread?
Most of the current evidence suggests that the virus spreads mainly through the
movement of poultry and birds, poultry products like eggs and feathers, people
and the vehicles used for transport. This is why human contact with poultry and
poultry products needs to be controlled and good bio-security practiced so the
virus will not spread.

7. How could avian influenza reach a country?
There are several ways that the influenza can be introduced into your country or
community:
1. By importing poultry or eggs that are infected;
2. By illegal trade and importation of live birds that are infected;
3. By a person who has been at a facility or farm that has infection and carries the
   virus on his or her clothes, shoes, or equipment such as car/truck tires.
4. Being exposed to poultry blood through the handling and slaughter of infected
   live-poultry.

Wild birds migrating are another source but studies show they are less of a threat
than earlier believed.

8. Can the virus be contained?
Yes, the most common practice to contain the spread of the virus is: culling of all
infected or exposed birds; proper disposal of carcasses; and the quarantining and
rigorous disinfection of farms and poultry markets.

Vaccination has also been used but is impractical outside commercial settings and
the vaccine requires regular updating.

The virus is killed by heat (56 degrees C for three (3) hours or 60 degrees C for 30
minutes) and common disinfectants, such as formalin and iodine compounds.
Thorough cooking of any poultry meat will destroy the virus, however, if poultry
appears sick or is dead do not prepare it for cooking or consumption. Dispose of
the poultry properly.

9. What can I do to protect my poultry?
The number one practice is to observe good bio-security practices – keep your
yard clean; your poultry separated from other wild and domestic birds; clean tires
and equipment when it enters your farm, and control the introduction of new birds
and eggs to your farm by keeping new poultry separate for at least 14 days.
10. **Is it safe to buy and eat poultry?**
Yes, poultry products should be properly cooked and properly handled during preparation – that includes covering your face with a mask or cloth so you won’t breathe in blood, mucous, feathers and feces and wear gloves or use plastic bags. Meat should be well-cooked (not pink) and eggs should not be eaten raw or with runny yolks. If poultry is cooked at normal temperatures – about 70 degrees Centigrade for about 30 minutes – the heat and cooking will kill the virus. Be safe and do not eat birds that have recently died.

11. **If my poultry dies can I eat it? We do when our birds die from Exotic Newcastle Disease.**
No, this is not like other virus that kill of your flocks. You should not prepare dead birds for eating. Preparing and eating infected poultry could make you infected too.

12. **What should I do if I think my flock is infected with avian influenza?**
Call the relevant authorities immediately. Because the signs of avian influenza are so variable, it is important to get the help of an expert for diagnosis. Keep children and pregnant women away from the birds. If you are instructed to handle or dispose of a dead or infected bird remember to wear protective equipment and clothes (including gloves) and place the dead birds into a bag. Dead birds should not be disposed of in a river or a pond, or left in the yard. Protective clothing or equipment should be kept away from other people and thoroughly disinfected after use.

13. **What can I do to protect my family and myself?**
There are many things you can do to protect your family, yourself and your community. According to the World Health Organization (WHO) the spread of bird flu can normally be prevented. Use the information below as a checklist for your family. (For more information on protecting the family and community visit [www.wpro.who.int](http://www.wpro.who.int)).

- Children are at high risk because they may play where poultry are found. Teach your children the following basic guidelines:
  - Avoid contact with any birds, their feathers, feces and other waste.
  - Do not keep birds as pets.
  - Wash hands with soap and water after any contact.
  - Not to sleep near poultry.
  - Not to gather or handle eggs.
- Keep poultry out of your house.
• During meal preparation do not cook poultry that is sick or has died for your family or animals. The slaughter and preparation of such birds for food is dangerous.

• When you come into contact with eggs or poultry:
  o wash your hands well with soap and water after each contact; and
  o remove your shoes outside the house and clean them of all dirt.

• If you encounter sick or dead poultry on your farm or in the community inform the local authorities immediately.
HANDOUTS FOR TRAINING PARTICIPANTS