SUMMARY OF KEY INFORMATION
PRACTICAL TO COUNTRIES EXPERIENCING OUTBREAKS OF A(H5N1) AND OTHER SUBTYPES OF AVIAN INFLUENZA

FIRST EDITION
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This summary is an evolving document and will be adapted as often as new information, recommendations or publications are issued.
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DEVELOPMENT HISTORY OF THIS DOCUMENT

2008: The components of this document were first compiled with the intent to distribute them to WHO representatives in countries affected by outbreaks in animals of highly pathogenic avian influenza.

2015: With the re-introduction of highly pathogenic avian influenza viruses into animals in regions of the world that had not experienced outbreaks in several years, further efforts were made to update the practical information package.

- April-May: The information sheets in the document were updated with input from various technical departments. Web links were updated as necessary and any newly available links were added. Input was also sought from colleagues at the Food and Agriculture Organization of the United Nations (FAO).
- June: A draft of this document was sent to colleagues in the WHO Regional Office for Africa (AFRO) for their review to identify any gaps and assess its utility.
- October: Information sheets were updated with input from technical colleagues in AFRO.
- November: A first version was submitted for editing and layout improvements.

ACKNOWLEDGEMENTS

The Global Influenza Programme at WHO HQ would like to sincerely thank colleagues at WHO AFRO and HQ, and at FAO, for their valuable contributions.
INTRODUCTION

This document was developed for the country offices of the World Health Organization and national institutions, as an overview of the key information needed for advising their Member States in response to questions raised on human health due to influenza animal outbreaks or detections. It assembles the available information from WHO, FAO, other UN agencies, as well as that from the World Organisation for Animal Health (OIE), on recommendations and guidelines on avian influenza that might be relevant to a country experiencing outbreaks of influenza in poultry or facing suspicion of human infections with avian influenza viruses.
KEY ISSUES:

- Avian influenza is a disease of domestic and wild birds with severe consequences for the poultry sector when outbreaks of disease occur.
- Avian influenza viruses can also infect humans, usually as a result of direct contact between humans and infected birds. Human infections with avian influenza viruses are rare, and there is no evidence suggesting these viruses are easily transmitted from person to person.

Information Sources:
www.who.int/mediacentre/factsheets/avian_influenza/en/
www.who.int/influenza/human_animal_interface/en/
www.who.int/zoonoses/diseases/animal_influenza/en/
www.who.int/csr/don/2004_10_29/en
Avian influenza refers to a highly contagious disease of birds caused by infection with influenza A viruses that circulate in domestic and wild birds. Avian influenza viruses are classified as either low or highly pathogenic depending on the clinical signs and disease severity in infected chickens. Importantly, not all birds infected with and/or shedding avian influenza viruses show signs of disease. Outbreaks of avian influenza in poultry have immediate and severe consequences for the agricultural sector, especially if they are due to highly pathogenic avian influenza viruses, which can cause high mortality in poultry and result in the culling of many birds.

**In humans**

Avian influenza viruses can also infect humans, resulting in zoonotic infections (a disease or infection transmitted from animals to humans). Direct contact with infected animals (through handling, slaughtering or processing) or environments contaminated with bodily fluids from infected birds represents a risk for human infection, and can lead to sporadic disease (from mild, flu-like symptoms to severe, acute respiratory disease) or even death in humans, depending on factors related to the virus causing infection and the infected host.

**Recent history**

Over the past 10 years, highly pathogenic avian influenza A(H5N1) has been detected in poultry, wild birds or other animals in over 30 countries and has caused over 800 human cases in 16 of these countries. This document mainly focuses on highly pathogenic avian influenza A(H5N1), although there are other subtypes of avian influenza viruses that have infected humans without causing clinical signs in infected poultry, such as influenza low pathogenic avian influenza A(H7N9) or A(H9N2). Importantly, the classification of avian influenza viruses as low or highly pathogenic does not provide any conclusion on their ability to infect humans nor the severity of disease in humans.

While there is currently no evidence for avian influenza viruses spreading easily from person to person (like human seasonal influenza viruses do), the concern exists that these viruses could develop traits in the future that permit them to do so. Such a change, were it to occur, could lead to a new influenza pandemic, given that people generally do not have immunity against avian influenza viruses.

**Prevention**

Measures aimed at prevention and control of the disease in poultry will minimize virus circulation and thus reduce the risk of human infection and disease. These measures should be developed and implemented in an integrated way, with public health and animal health sectors working hand-in-hand at both administrative and technical levels, following the One Health concept. Please contact your local FAO office to learn more about the prevention measures being implemented in the poultry sector.

Measures to reduce human exposure to avian influenza viruses and to prevent human disease should focus on the human-animal interface (these are discussed in the section on reducing human exposure). Preventive measures should target not only occupational risk groups (e.g. health care workers, veterinarians, and poultry workers) but also anyone in contact with potentially infected birds (e.g. live bird market workers and visitors or households practicing home slaughtering of birds). In addition, surveillance to detect possible human cases needs to be intensified, and preparation for the first response to the first detection of a human case in an area should be reviewed.
KEY ISSUES:

- Know the roles and establish transparent communications with responsible partners within the animal health and human health sectors in your country.
- Understand the importance of exchanging information between animal health and public health sector on poultry outbreaks, surveillance in animals and human cases.

Information Sources:
www.oie.int
www.oie.int/eng/info_ev/en_AI_avianinfluenza.htm
www.fao.org
The animal health sector is in charge of preventing and controlling outbreaks of disease in animals, including avian influenza. Reporting new and ongoing outbreaks in animals is important for focusing human health prevention action in the affected areas and raising awareness among professionals working with potentially infected animals, as well as with the public. The sharing of information on human cases with the animal health sector is equally important so that they can target their response activities.

Below is the list of different agencies and their responsibilities in animal health.

**The Food and Agriculture Organization (FAO) of the UN**

Mandate: to promote food security and good nutrition by providing access to knowledge, policy advice and technical assistance to member countries.

FAO publishes information and guidance on avian influenza and provides direct technical assistance to countries through headquarters, regional and country offices, including expert missions, capacity building and laboratory support. FAO further promotes collaboration, communication and coordination between countries and regions.

FAO works primarily through direct collaboration with national Ministries in charge of Agriculture, Livestock, Forestry and Fisheries as well as other stakeholders such as international and regional organizations, farmer or poultry associations, veterinary professional associations or through public private partnerships.

**The World Organisation for Animal Health (OIE)**

Mandate: setting international standards for animal health and zoonoses, through the ‘OIE Code’ and ‘OIE Manual’.

OIE is responsible for collecting and disseminating official animal disease information from member countries. It collaborates with National Veterinary Services as well as with FAO at national, regional and global levels to provide technical assistance to countries (e.g. laboratory support).

Member States are required to report A(H5) or A(H7) avian influenza infections in poultry to OIE under certain conditions.

**National Veterinary Services**

National Veterinary Services are normally located within the Ministry of Agriculture, and are responsible for implementation of national avian influenza measures to control and prevent the spread of the disease in poultry. In some countries, other governmental bodies (e.g. Food Safety, Trade, Environment) are also responsible for aspects of avian influenza control.

Other organizations, including wildlife organizations and international donor and technical assistance organizations, contribute to national control and prevention activities.
KEY ISSUES:

• Have a communication strategy and plan in place.
• Prepare, agree and share talking points with different offices that will likely be asked to respond (WHO country, regional and HQ offices as well as FAO and OIE).
• Request surge capacity for risk communication through WHO’s Emergency Communications Network.
• Know who your spokespeople are and what and how they are going to communicate with external parties.
• Make an announcement early even if the facts are not yet clear or complete.
• Have mechanisms in place to gauge and monitor public and stakeholder perceptions and concerns and address these. Use the same mechanisms to assess if messages are received and understood as intended by the public and others.

Information Sources:
Risk communication:
www.who.int/risk-communication/training/en/
www.who.int/risk-communication/emergency-response/en/
Effective communications handbook:
apps.who.int/iris/bitstream/10665/249241/3/9789241509466-eng.pdf?ua=1
The first occurrence of a poultry outbreak of highly pathogenic avian influenza in a country often creates widespread concern and can disrupt social and economic life. All stakeholders (the public, decision makers and leaders, farmers, the food production sector and the media) need fast, clear, understandable information to take protective and preventive actions to limit the spread of the outbreak.

Effective communication with all stakeholders is an essential part of any outbreak response. This involves knowing about how stakeholders perceive the threat from the outbreak.

Important actions to take are detailed below.

**Be the first to communicate, communicate regularly and communicate to build trust**

People will only follow advice from trustworthy sources. Therefore, communication needs to build, maintain and/or restore trust in authorities and responders. This is achieved by announcing as early as possible, by an authoritative and credible institution or person, all the information known about the outbreak, outlining what is not currently known and explaining what is being done to protect people and their livelihoods. Public announcements should be made even if information is incomplete. Be transparent on how decisions have been made. Communicate frequently on platforms and in ways all key stakeholders can be reached.

**Listen to find out people’s concerns, what they know and what they believe**

Find out about and acknowledge people’s concerns with empathy (even when they cannot be directly addressed). This can be done by reaching out to key stakeholder representatives. Monitor media and social media to look for how stories are framed, what rumours and misinformation is circulating, and run focus group discussions with key groups or a quick perception survey or a Knowledge, Attitudes and Practices (KAP) survey. Integrate these findings in an empathetic way into official messages and communications and into the response strategy. This is also a good way to check if key messages are being understood as intended and if behavioural change is taking place.

**A comprehensive communication strategy and plan needs to be in place before the outbreak happens and needs to be reviewed at the outset of an outbreak**

This should be accompanied by standard operating procedures for the risk communications response. The strategy should include, at a minimum, knowledge, skills and procedures for spokespersons and plans for media communications, social media and mobile phone communications, community engagement, social mobilization and partner communications. Prepare and agree on talking points and share them throughout the organization and with partners for consistency and transparency. Have a template for the first announcement, which can then be adapted to the specific situation. Know whom to contact both inside and outside the organization for specific technical information and to officially clear messages. Start social mobilization and community engagement activities as soon as possible.
KEY ISSUES:

- Minimize exposure of the public to potentially infected birds and other sources of contamination.
- People with exposure to potentially infected birds should practice proper personal hygiene, especially frequent hand washing, and seek medical help if illness develops.

Information Sources:
www.who.int/influenza/human_animal_interface/en/
www.fao.org/avianflu/documents/ProtectPoultry-ProtectPeople.pdf
www.unicef.org/influenzaresources/
When avian influenza viruses circulate in an area, all the people who are exposed to infected birds are at risk, especially those who:
- keep live poultry in their backyards or homes, or purchase live poultry or birds at markets
- slaughter, de-feather, or butcher poultry
- handle and prepare raw poultry for further cooking and consumption
- transport or sell live poultry or carcasses
- are involved in culling/depopulating/disposing of poultry
- work in the poultry industry, including farmers and veterinarians
- have contact with poultry by-products (e.g. viscera, manure, feathers) or water contaminated with these by-products (e.g. waste water from a live bird market or a slaughtering facility)
- consume raw poultry products

Ministries of Health, in collaboration with Ministries of Agriculture and other governmental bodies, should develop a plan (including an integrated communications plan) and implement biosecurity and other measures to reduce exposure in people at risk.

Key messages in affected areas are included below.

**Minimize exposure**

The general public should minimize contact with chickens, ducks or other birds and avoid areas where poultry are housed, slaughtered or prepared.

Keep children away from birds and their waste, including feathers and manure.

Children should neither collect eggs nor assist with slaughtering or food preparation.

**Practice good hygiene**

Thoroughly cook poultry and poultry products.

Use adequate personal protection if you must touch birds or bird faeces from affected areas, walk on soil contaminated with faeces, or clean poultry areas (cages). Immediately afterwards, wash hands with soap and water and clean your shoes and outer clothing.

People who sell live birds or are involved in slaughtering and processing of birds at markets ideally should wear light coloured protective clothing, clean aprons, gloves and rubber boots.

It is recommended to wash thoroughly and change into clean clothes before returning home. If gloves and rubber boots are not available, plastic bags can be used to cover feet and hands. If this is not feasible, wash hands with soap and water immediately after handling birds or by-products.

**Seek assistance**

Promptly seek medical help if you feel unwell.

Report sick or unexpectedly dead poultry to the authorities immediately. Comply with all official measures (e.g. animal movement restrictions) put in place. Do not slaughter and/or consume birds that are showing signs of disease or that have unexpectedly died.
REDUCE HUMAN EXPOSURE TO AVIAN INFLUENZA: SPECIFIC MESSAGES FOR POULTRY CULLERS

KEY ISSUES:

- Provide appropriate personal protective equipment and training.
- Keep records of professionals who are exposed and monitor their health status during and seven days after exposure to possibly infected birds and contaminated environments.

Information Sources:
www.who.int/influenza/resources/documents/guidance_protection_h5n1_02_2008/en/
www.fao.org/avianflu/documents/ProtectPoultry-ProtectPeople.pdf
When avian influenza viruses are circulating in an area, some people will be involved in specific, high-risk tasks such as sampling sick birds, culling and disposing of infected birds and cleaning of contaminated premises. All individuals with occupational risks of exposure should be taught how to protect themselves maximally and be provided with appropriate personal protective equipment (PPE) and training on how to use it properly.

**Personal protective equipment**

PPE includes: waterproof protective clothing that covers the entire surface of head, body and extremities, particulate respirators (FFP2, N95 equivalent or higher quality), eye protection, gloves (heavy duty rubber work gloves depending on the task) and rubber or polyurethane boots or impermeable waterproof foot covers. PPE must be correctly removed immediately after the task is completed and disposed of safely.

Training should be provided on how to put on and take off PPE correctly, including training for fit testing of particulate respirators and training on PPE management (e.g. disposal, disinfection).

**Personal hygiene**

All persons who have been involved in these tasks should perform hand hygiene (either wash their hands with soap and running water or alcohol hand rubs) frequently, thoroughly and as often as possible, but at minimum after completion of each task.

**Monitoring of individuals**

All persons involved in these tasks should be registered and monitored closely by local health authorities for seven days following the last day of contact with poultry or their environments. Symptomatic persons should be treated according to WHO guidelines with influenza-specific antivirals. (See treatment section of this document.)

**Preventive measures**

If sufficient antivirals are available, antiviral chemoprophylaxis can be considered (recommendations for regimen of antiviral prophylaxis can be found in the WHO guidelines).

Consideration should be given to the immunization of persons with high potential to be exposed to avian influenza using the seasonal influenza vaccine. This is to protect them against seasonal influenza viruses in order to facilitate avian influenza infection identification and to minimize the risk of reassortment of the viruses in an infected individual. The seasonal influenza vaccination will not reduce the risk of avian influenza infection of these persons.
KEY ISSUES:

- Promote thorough cooking of poultry and poultry products.
- Inform the public about ways to promote safe food consumption.
- Live animal market hygiene and biosecurity should be assessed and improved where possible.
- National food safety authorities and poultry producers should develop and implement quality assurance schemes in line with HACCP principles and steps.

Information Sources:
www.who.int/foodsafety/areas_work/zoonose/avian/en/
www.who.int/foodsafety/areas_work/infosan/infosan_archives/en/index5.html
www.who.int/foodsafety/publications/stop_spread_bird_flu/en/
www.who.int/foodsafety/publications/food-businesses/en/
Food safety measures require a “farm-to-plate” approach and are a joint responsibility of consumer, retailer, producer and governmental actors. At all times, eggs, poultry and poultry products can be safely consumed provided these items are properly cooked and properly handled during food preparation.

**Separate raw meat from cooked or ready-to-eat foods**

To avoid cross-contamination, do not use the same surfaces or chopping board or the same knife for preparing raw meat and cooked or ready-to-eat foods. Do not handle either raw or cooked foods without washing your hands in between. Do not place cooked meat back on the same plate or surface it was on before it was cooked.

**Keep clean and wash your hands**

After handling raw poultry or eggs, wash your hands and all surfaces and utensils thoroughly with soap and water.

**Cook food thoroughly**

All foods from poultry, including eggs and poultry blood, should be cooked thoroughly. Cooked egg yolks should not be runny or liquid. Because influenza viruses are destroyed by heat, the cooking temperature for poultry meat should reach 70°C (158°F) in all parts, so that it is not pink anymore. Do not use raw or soft-boiled eggs in foods that will not be cooked.

**Handle and store meat properly**

Humans can be exposed to the virus through the handling and slaughter of live infected poultry. Good hygiene practices are essential during slaughter, de-feathering and post-slaughter handling to prevent direct exposure or cross contamination from poultry to other foods, food preparation surfaces, or equipment (see “reduce human exposure” sections). The influenza A(H5N1) virus, if present in poultry meat, is not killed by refrigeration or freezing.

**Biosecurity at live poultry markets**

Systems of marketing live birds to the public play an important role in the poultry industry but can also create opportunities for the spread of avian influenza viruses between animals and from animals to humans. There are market management best practices that can improve hygiene and biosecurity to minimize the risks of virus transmission in these settings.

**Hazard management for producers**

Hazard analysis critical control point (HACCP) is a process control system that identifies where hazards might occur in the food production process and puts in place stringent actions to take prevent the hazards from occurring. Such a system should include specific requirements that represent the critical control points of HACCP specifically for avian influenza A(H5N1) viruses.
KEY ISSUES:

- Carefully treat drinking water supplied from open surface water to minimize any potential risks.
- Be aware that properly treated waste water seems to pose only a small risk for humans.
- Be aware that in some cases, recreational water might be contaminated.
- Consider that faeces from infected animals can be infectious.
- Bury dead animals appropriately.

Information Sources:
www.who.int/water_sanitation_health/water-quality/guidelines/en/
www.who.int/foodsafety/areas_work infosan_archives/en/index5.html
Surface water can potentially be contaminated in areas where avian influenza viruses are circulating, especially when wild or domestic birds are present. Viable avian influenza viruses are able to persist for extended periods of time in water. There is insufficient evidence to date to evaluate the potential risk of human infection from untreated water contaminated with avian influenza A(H5N1) viruses.

Consider the following steps to minimize/eliminate the risk from drinking water and the environment.

**Water treatment**

Appropriate water treatment is strongly recommended if open water reservoirs are to be used for drinking water supply (see WHO guidelines for drinking water quality).

Consider advising the public to treat drinking water with available and acceptable household-level interventions (boiling or chlorination) if there is no community drinking water treatment system.

**Waste water**

Generally, virus concentrations are reduced when going through wastewater treatment, but are not completely eliminated. Virus concentrations may be enriched in certain treated or separated waste fractions (such as waste solids) by sedimentation and solid-liquid separation processes.

**Recreational water**

Open water can be contaminated with waterfowl faeces. The risk of bathing or swimming in contaminated water is not clear. Authorities concerned should advise the public on the potential risk and, when necessary, restrict human access to potentially contaminated sites.

**Animal faeces**

Infected birds can shed large amounts of virus in their faeces. People should reduce contact with animal faeces and/or take the precautions described in the “reducing human risk” sections of this document. Viruses can survive up to four weeks in faeces, and their survival is dependent on pH, temperature and other environmental factors.

**Burial of dead animals and solid waste**

Dead infected animals and potentially contaminated solid waste should be buried at a depth of at least one to two metres above ground water. Composting of dead animals is an alternative but access to composting sites by scavenging animals needs to be prevented. These procedures should be carried out by trained personnel and according to local regulations.
SURVEILLANCE FOR HUMAN CASES

KEY ISSUES:

- Investigate suspected cases of human avian influenza.
- Increase surveillance and awareness for human cases of avian influenza.
- Monitor health of people exposed to avian influenza-infected birds or people.

Information Sources:
www.who.int/ihr/about/en/
Avian influenza is currently not easily transmitted from infected animals to humans and there has not been sustained human-to-human transmission. However, it is important to ensure suspected human cases are investigated in order to give them the best possible treatment; to identify other potential human contacts in those cases and monitor them for occurrence of illness; and to identify if there is human-to-human transmission of the virus.

**Case investigation**

The most important goal for investigations of human cases of infections with avian influenza viruses is to assess the extent of potential human-to-human transmission, especially in clusters of human cases and contacts of confirmed cases.

Health care facilities, including private clinicians, should be informed about possible signs and symptoms of avian influenza virus infections in humans and how and to whom they should report suspect cases.

Any new suspected human case needs to be investigated, and any confirmed case should be reported to WHO under the International Health Regulations, or IHR (2005).

**Enhanced surveillance**

Enhanced surveillance should consider the health-care seeking behaviour of the population and can include a range of options such as active and passive approaches that are health care and/or community-based. For example, surveillance can be further enhanced by:

- active surveillance in hospitals, particularly targeting in-patient and emergency departments
- inclusion of other sources such as traditional healers, private practitioners and private diagnostic laboratories
- active surveillance of groups that may be at higher occupational risk of exposure (e.g. health care workers, persons exposed to live or dead birds/animals).

**Monitoring of individuals**

Persons with exposure to avian influenza should monitor their health for the duration of the known exposure period plus an additional seven days. This will facilitate early detection of illness and timely commencement of antiviral treatment and isolation precautions. All persons exposed to known infected poultry or to farms under suspicion should be under close monitoring by local health authorities. They should measure their temperature daily (preferably twice a day) and should report if their body temperature is higher than 38°C. They should report any relevant health problems to a health care facility.
COLLECTING DIAGNOSTIC SAMPLES FROM HUMANS

KEY ISSUES:

- Ensure that specimen collection materials are available and collection of specimens is done safely, correctly and in a timely manner.
- Ensure safe packaging and transport of the specimens.
- Ensure that samples are sent correctly to laboratories that can confirm avian influenza infections in humans.
- Promote virus/sample sharing with WHO laboratories.

Information Sources:
www.who.int/csr/resources/publications/surveillance/WHO_CDS_EPR_ARO_2006_1/en/
Collection of appropriate specimens from suspected human cases for identification by a qualified laboratory, together with rapid and precise characterization of virus isolates at specialized reference laboratories, is essential for early detection of cases, proper management of patients, and understanding the epidemiology of the disease. In addition, appropriate specimen collection is important for monitoring the development of resistance to antivirals, producing effective vaccines, and evaluating laboratory methods.

**Specimen collection**

Before collecting specimens, ensure that the relevant diagnostic laboratories are informed, that specimens can be taken safely (with the appropriate level of PPE) and that the specimens can be transported and stored correctly.

The following specimens are preferred:
- Upper respiratory tract: Posterior-pharyngeal (throat) swabs are the best sample for detecting A(H5N1) viruses
- Lower respiratory tract: If the patient is intubated, take a tracheal aspirate
- Blood: serum (both acute and convalescent if possible).

**Laboratory testing**

Ensure that the laboratory is capable of processing and confirming avian influenza virus infection. If not, contact an appropriate reference laboratory. There is a WHO fund to help with shipment if needed.

**Virus sharing**

In order to ensure that the evolution of the virus can be studied and diagnostics and vaccines adapted accordingly, it is important to share virus isolates with the WHO Collaborating Centres / H5 Reference Laboratories. WHO can assist with shipment of samples to these WHO laboratories.
PREPARING FOR HUMAN CASES AND TREATMENT

KEY ISSUES:

- Prevent nosocomial spread.
- Properly treat and manage cases.
- Request oseltamivir from WHO if needed.
- Report cases to WHO under the International Health Regulations, or IHR (2005).

Information Sources:
www.who.int/influenza/human_animal_interface/epidemiology_clinical/clinical_meeting_h5n1_19_03_2007/en/
www.who.int/influenza/resources/documents/clinical_management_h5n1_15_08_2007/en/
www.who.int/csr/bioriskreduction/infection_control/publication/en/
www.who.int/influenza/resources/documents/pharmacological_management_h5n1_05_2006/en/
www.who.int/csr/resources/publications/swineflu/h1n1_use_antivirals_20090820/en/
Health care facilities need to be ready to manage patients with avian influenza. This includes the following measures detailed below.

**Infection control and prevention**

Implement early infection control precautions to prevent nosocomial (originating in a hospital) spread of the disease. Raise awareness among health care workers regarding suspect cases. Implement screening and triaging (patient categorising) system in hospitals. Implement standard and droplet precautions and airborne precautions when aerosol-generating procedures are being applied to suspect cases. Monitor health care workers for fever and influenza-like illness. Provide personal protective equipment and appropriate training.

**Case management**

Manage cases properly to prevent severe illness and death. Administer oseltamivir treatment as the primary choice of antiviral treatment using the standard regimen for seasonal influenza virus infection. Use of modified regimens of oseltamivir treatment, including two-fold higher dosage, longer duration and possibly combination therapy with amantadine or rimantadine may be considered on a case-by-case basis.

If there is an insufficient in-country supply of oseltamivir, WHO can provide it from its strategic global stockpile.

Do not use corticosteroids routinely, but consider them for septic shock with suspected adrenal insufficiency. Do not use antibiotic chemoprophylaxis. However, when pneumonia is present, antibiotic treatment is appropriate initially for community-acquired pneumonia. Thereafter it should be guided by microbiological findings.

Monitor oxygen saturation whenever possible and provide supplemental oxygen to correct hypoxemia.

Implement therapy for A(H5N1) virus-associated acute respiratory distress syndrome (ARDS) upon published, evidence-based guidelines for sepsis-associated ARDS, specifically including lung-protective mechanical ventilation strategies.

**Report cases**

Laboratory-confirmed cases need to be reported to WHO under the IHR (2005). In order to gather more information on treatment and outcome, a form to report clinical data is available (see Information Sources), and the treating physician should be asked to complete and return it to WHO.
VACCINATIONS FOR HUMANS

KEY ISSUES:

- Influenza A(H5N1) vaccines are not widely available and the decision to use them would depend on the risk of infection.
- Vaccinate people with occupational exposure to A(H5N1) using seasonal influenza vaccines to reduce the risk of reassortment between viruses.
- Be aware that WHO has no stockpile of A(H5N1) vaccines.

Information Sources:
**Seasonal influenza vaccine**

WHO recommends the targeted administration of seasonal influenza vaccine to health care workers in all countries in order to protect their patients from seasonal influenza infections. In addition, WHO recommends, in influenza A(H5N1) affected countries, vaccination against seasonal influenza infection to selected groups at increased risk of exposure to the avian influenza virus, as one of several measures for reducing opportunities for the simultaneous infection of humans with avian and human influenza viruses. Fewer dual infections in turn reduces opportunities for reassortment and for the eventual emergence of a novel influenza virus with pandemic potential. Bear in mind that current seasonal influenza vaccines derived from the circulating human influenza viruses provide no protection against human infection with avian influenza A viruses.

**Influenza A(H5N1) vaccine**

Vaccines for A(H5N1) virus for human use have been developed based on WHO-recommended candidate vaccine viruses and licensed in several countries. They are not widely available and the decision to use the vaccine would depend on the risk of infection. Some countries are stockpiling these vaccines as part of their pandemic preparedness measures. WHO does not have a stockpile of A(H5N1) vaccines.

Vaccination is recommended for first responders to human or animal A(H5N1) outbreaks, and for health care workers who evaluate or manage patients with suspected or confirmed A(H5N1) virus infection in designated referral facilities.

Vaccination is not recommended for persons who may only potentially come in contact with infected animals, essential workers in areas where A(H5N1) is enzootic (an animal disease native to an area), nor the general population.

**Pandemic vaccine**

There is no method to determine which influenza virus type will cause the next pandemic. Therefore, the production of the pandemic influenza vaccine can only begin when the pandemic influenza virus has been identified. Given the current influenza vaccine technology used by most manufacturers, the first doses of the pandemic vaccine will only be available within four to six months after a pandemic influenza virus has been identified.
### INFORMATION SOURCES

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| **The animal health sector's role** | - [www.oie.int](http://www.oie.int)
- [www.oie.int/eng/info_ev/en_AI_avianinfluenza.htm](http://www.oie.int/eng/info_ev/en_AI_avianinfluenza.htm)
- [www.fao.org](http://www.fao.org)
| **Risk communication** | - [www.who.int/risk-communication/training/en/](http://www.who.int/risk-communication/training/en/)
| **Effective communications handbook** | - [apps.who.int/iris/bitstream/10665/249241/3/9789241509466-eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/249241/3/9789241509466-eng.pdf?ua=1) |
- [www.unicet.org/influenzaresources/](http://www.unicet.org/influenzaresources/)
| **Food safety** | - [www.who.int/foodsafety/areas_work/zoonose/avian/en/](http://www.who.int/foodsafety/areas_work/zoonose/avian/en/)
- [www.who.int/foodsafety/areas_work/infosan_archives/en/index5.html](http://www.who.int/foodsafety/areas_work/infosan_archives/en/index5.html)
- [www.who.int/foodsafety/areas_work/infosan_archives/en/index5.html](http://www.who.int/foodsafety/areas_work/infosan_archives/en/index5.html) |
- [www.who.int/ihr/about/en/](http://www.who.int/ihr/about/en/) |
- [www.who.int/influenza/resources/documents/pharmacological_management_h5n1_05_2006/en/](http://www.who.int/influenza/resources/documents/pharmacological_management_h5n1_05_2006/en/)
- [www.who.int/csr/resources/publications/swineflu/h1n1_use_antivirals_20090820/en/](http://www.who.int/csr/resources/publications/swineflu/h1n1_use_antivirals_20090820/en/) |
This document assembles the currently available information from WHO, FAO, and other UN agencies, as well as that from the World Organisation for Animal Health (OIE), on recommendations and guidelines on avian influenza that might be relevant to a country experiencing outbreaks of influenza in poultry or facing suspicion of human infections with avian influenza viruses.

This document aims to provide country offices of WHO and national institutions with an overview of the key information needed for advising their Member States in response to questions raised on human health due to avian influenza animal outbreaks or detections.

As more information becomes available, the document will be reviewed accordingly.