Practical interim guidance to reduce the risk of infection in people exposed to avian influenza viruses

5 June 2024

World Health Organization

Background

People exposed to influenza viruses circulating in animal populations – either directly through contact with infected animals or their by-products or indirectly through environmental contamination – are at risk of infection and should take necessary precautions. Human infection with avian influenza viruses such as A(H5N1) can cause clinical disease ranging from conjunctivitis, mild upper respiratory tract infection and gastrointestinal issues to more severe outcomes, including encephalitis, encephalopathy and death.

To minimize the risk of such human infections, interventions should be implemented to reduce human exposure to birds and mammals potentially infected with avian or other animal influenza viruses. It is recommended that national authorities conduct scientific investigations and enhanced surveillance to monitor, understand the extent of, and assess the risk among occupationally exposed individuals, including those with or without clinical signs and/or symptoms.

Health authorities, in collaboration with agriculture/livestock and wildlife authorities, and with other governmental bodies and agencies, should:

- identify at-risk groups with potential exposure to animal influenza viruses, especially those who may have been exposed to infected animals;
- assess and monitor the risk and extent of infection in such groups;
- develop a risk-mitigation plan (including an integrated risk communications and community engagement plan) and implement risk-based measures to reduce exposure for at-risk groups and the general public;
- provide appropriate clinical management for suspected and confirmed cases; and
- assess and prevent further spread – for example, through scientific investigations (including contact tracing) and enhanced surveillance.

This interim guidance will be updated as more information becomes available.

Risk assessment

Based on currently available information, WHO assesses the overall risk to the general population posed by avian influenza viruses – including the recently detected A(H5N1) virus in dairy cattle in the United

States of America – to be low. For those exposed to infected birds or animals or contaminated environments, the risk of infection is considered to be low-to-moderate. *(1,2)*

Activities associated with increased risk

When influenza viruses are circulating in animals in a given area, people who are exposed to infected or potentially infected animals or their environments through certain activities, including through their work, are at risk of infection – especially those who:

- keep live poultry in their backyards or homes, or who purchase live birds at markets;
- slaughter, de-feather and/or butcher poultry or other animals at home;
- handle and prepare raw poultry for further cooking and consumption;
- have contact with poultry or other animal by-products (such as raw milk, viscera, manure and contaminated/unwashed feathers) or with water contaminated with such by-products (such as wastewater from a live bird market or slaughtering facility);
- consume raw poultry, raw milk or other raw animal meat or by-products;
- engage in outdoor activities (for example, shooting, hunting, animal watching or animal conservation/rescue) that may involve exposure to wild animals;
- work in the poultry or other livestock industry or fur farms or zoos (including farmers and veterinarians), or who visit animal farms or premises in the course of their work (such as animal and public health responders), or who transport or sell live poultry or other animals or carcasses or slaughter animals, or who are involved in culling/depopulating/disposing of poultry or other animals or in the decontamination of contaminated premises.

Recommendations

1. Minimize exposure

General public and those whose activities may put them at increased risk of infection

Given the observed extent and frequency of avian influenza in poultry, wild birds and some wild and domestic mammals, the public are recommended to:

- avoid contact with animals that are sick or dead from unknown causes, including wild animals;
- report sick or unexpectedly dead animals to their veterinarian or local authorities;
- follow good food safety and personal hygiene practices (especially hand washing);
- properly handle and cook eggs, poultry meat and other animal products;
- only slaughter healthy animals for human consumption – animals that have unexpectedly died should not be consumed and should be disposed of appropriately in accordance with national regulations;
- avoid consuming raw/unpasteurized milk;
- seek health care if feeling unwell and inform their health care provider of any possible exposure to sick animals; and
- comply with all other national or local official measures put in place (for example, animal movement restrictions).

People who have direct or indirect contact with infected or potentially infected animals or their environments through the course of their work that puts them at increased risk of infection

People at risk of exposure to infected or potentially infected animals through the course of their work should wear appropriate personal protective equipment (PPE). PPE must be correctly fitted, used and removed, and safely disposed of or decontaminated. Individuals needing to use PPE should be provided with it and trained in its appropriate use. PPE may include the following depending on the risk assessment specific to the work involved:

- fluid-resistant coveralls
- particulate respirators (single-use FFP2, N95 equivalent or higher quality)
- eye protection (googles or face shield)
- gloves (heavy duty gloves depending on the task)
- boots.

People whose work includes activities that may put them at increased risk of exposure to potentially infected animals (such as selling live animals, or slaughtering and processing animals) should ideally wear light-coloured and clean protective clothing, aprons, gloves and rubber boots to ensure that any soiling is obvious. Eye protection should also be considered whenever possible, and good food safety and hygiene practices followed (especially hand washing).

In addition to frequent environmental cleaning and disinfection, individuals in at-risk groups should perform hand hygiene, either with alcohol-based hand rub or by washing their hands with soap and water if visibly soiled. This should be done regularly – but especially before and after contact with animals and their environments. Efforts should be made to avoid touching the nose, eyes or mouth with the hands during work. Showering and changing into clean clothes after work, if feasible, is also recommended.

2. Assess the extent of infection and prevent further spread

Following confirmation of a case of human infection with an avian influenza virus, it is recommended that national authorities conduct investigations and enhanced surveillance in order to detect any additional cases, assess the risk and prevent further spread. This should include active and passive case finding through contact tracing, event-based surveillance, and routine and enhanced surveillance, taking into consideration local resources and context, and the health care seeking behaviour of the population. Activities could include:

- enhanced surveillance within local influenza-like illness (ILI)/severe acute respiratory infection (SARI) systems;
- active screening in hospitals and among groups that may be at higher risk of occupational exposure;
- active investigation of clusters of illness; and
- inclusion of data from other sources, such as traditional healers, private practitioners and private diagnostic laboratories.

Serological methods may be used to explore the extent of, and risk factors for, infections in humans (symptomatic and asymptomatic) if accompanied by epidemiological and virological investigations, and depending on available resources. WHO guidance on conducting influenza investigations and studies (Unity Studies) is currently being updated to ensure that appropriate protocols will be available.

Epidemiological and virological surveillance and the follow-up of suspected and confirmed human cases should be conducted systematically. Public health and animal health authorities should work together and share information during investigations of zoonotic influenza cases. Specimen collection materials and appropriate packaging for specimen transport should be available to ensure that collection and transport are performed safely, correctly and in a timely manner. Samples should be shared with laboratories capable of accurately and promptly confirming zoonotic influenza infections and should also be shared with a Global Influenza Surveillance and Response System (GISRS) WHO Collaborating Centre for further characterization.

3. Provide appropriate clinical management

Anyone who may have been exposed to infected or potentially infected animals should be advised to promptly seek health care if they feel unwell, and to inform their health care provider of their possible exposure, including through the activities listed above. Following prompt testing, early and appropriate clinical management should be initiated, and precautionary measures put in place to assess and prevent potential further spread among humans and animals.

The WHO Clinical Practice Guidelines for influenza virus infections are currently being updated to include zoonotic influenza virus exposure and infection. This upcoming guidance emphasizes the identification of individuals at high risk due to either their exposure (to zoonotic influenza viruses associated with high mortality in humans) or to their personal risk factors for poor outcomes (for example, age, comorbidities or immunocompromise). It is notable that these factors are better understood for seasonal influenza, with high mortality rates due to zoonotic influenza seen even in relatively younger and healthier individuals.

Multiple antiviral medications are available. Current WHO guidelines make a conditional (weak) recommendation for the use of oseltamivir as soon as possible in people with suspected or confirmed influenza virus infection with, or at risk of, severe illness. *(3)* At present, WHO conditionally recommends not to administer corticosteroids or macrolide antibiotics due to insufficient evidence of their effectiveness. *(3)*

References

1. Joint FAO/WHO/WOAH preliminary assessment of recent influenza A(H5N1) viruses. Geneva: World Health Organization; As of 23 April 2024 (https://www.who.int/publications/m/item/joint-fao-who-woah-preliminary-assessment-of-recent-influenza-a(h5n1)-viruses).
2. Global Influenza Programme. Human-animal interface [website]. Geneva: World Health Organization (https://www.who.int/teams/global-influenza-programme/avian-influenza).
3. World Health Organization. (2022). Guidelines for the clinical management of severe illness from influenza virus infections. World Health Organization. https://iris.who.int/handle/10665/352453.

Further reading

Avian influenza and wildlife – Risk management for people working with wild birds (World Organisation for Animal Health, 2022)

High pathogenicity avian influenza in cattle (World Organisation for Animal Health, 8 May 2024)

Practical guide for authorised field responders to HPAI outbreaks in marine mammals (World Organisation for Animal Health, February 2024)

Protocol to investigate non-seasonal influenza and other emerging acute respiratory diseases (WHO, 2018)

Public health resource pack for countries experiencing outbreaks of influenza in animals: revised guidance (WHO, 2023)

Testing and detection of zoonotic influenza virus infections in humans in the EU/EEA, and occupational safety and health measures for those exposed at work (European Centre for Disease Control and Prevention, 3 October 2022)

Updated interim recommendations for worker protection and use of personal protective equipment (PPE) to reduce exposure to novel influenza A viruses associated with disease in humans (United States Centres for Disease Control and Prevention, 24 May 2024)

Suggested citation. Practical interim guidance to reduce the risk of infection in people exposed to avian influenza viruses. Geneva: World Health Organization; 2024. https://doi.org/10.2471/B09116