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WORKERS' COMPENSATION BOARD OF BC

General Information about Avian Influenza

Introduction

Recently, the Canadian Food Inspection Agency (CFIA) announced that both low and high pathogenic forms of avian influenza were found in chickens on farms in the Fraser Valley of British Columbia. In response, the CFIA has required depopulation of flocks in high-risk region of British Columbia's Fraser Valley.

Simultaneously, the World Health Organization (WHO) has been monitoring outbreaks of avian influenza in Canada and other parts of the world through its Global Influenza Surveillance Network.

The following information has been compiled in order to assist workers who may work in areas where there is avian influenza. The information has been excerpted from the following web sites. You can obtain additional information from these web sites:

Canadian Food Inspection Agency: http://www.inspection.gc.ca/english/toce.shtml

Health Canada: http://www.hc-sc.gc.ca/dc-ma/avia/index_e.html

World Health Organization: http://www.who.int/csr/disease/avian_influenza/en/

U.S Occupational Safety and Health Administration (OSHA):
http://www.osha.gov/dsg/guidance/avian-flu.html

What is avian influenza?

Avian influenza is a contagious viral infection that can affect all species of birds (chickens, turkeys, guinea fowl, pet birds, and wild birds). In intensive poultry-rearing systems, young fattening turkeys and laying hens are usually the species that are most affected.
Wild birds may carry influenza viruses without becoming ill because of natural resistance. Wild waterfowl present a natural reservoir for these viruses and can be responsible for the primary introduction of infection into domestic poultry. Signs of the disease range from a mild infection with no symptoms to a severe epidemic that kills up to 100 percent of infected birds.

(Source: Health Canada)

What's the difference between high and low pathogenicity?

Avian influenza viruses can be classified into two categories: low pathogenic (LPAI) and highly pathogenic (HPAI) forms based on the severity of the illness caused in birds, with HPAI causing the greatest number of deaths in birds. Most avian influenza viruses are low pathogenic and typically cause little or no clinical signs in infected birds. The affected birds often recover. However, some low pathogenic viruses are capable of mutating into highly pathogenic viruses. There are many influenza subtypes, including H5 and H7. Historically, only the H5 and H7 subtypes are known to have become highly pathogenic in avian species.

Highly pathogenic avian influenza escalates rapidly from the onset of symptoms to severe illness and death in the bird population. Deaths in the bird population can approach 100% when the virus is highly pathogenic.

(Source: CFIA)

What strain of avian influenza has been found in B.C.?

The H7N3 virus has been found in B.C. Both low and high pathogenic H7N3 were found. This is not the same virus that currently exists and is causing human illness in Asia. It is also different from the strains of avian influenza found in the United States.

(Source: Health Canada)

Is avian influenza transmissible to humans?

In rare instances people can contract avian influenza. To date, only the H5N1, H7N7, and H9N2 subtypes of the avian influenza virus have been known to cause illness in people, with H5N1 associated with the most serious illness in humans. The exact mode of transmission from birds to people is not known, but most human cases of avian flu have been traced to direct contact with live infected birds or their droppings.

(Source: Health Canada)

Is there evidence of efficient human-to-human transmission now?

No. WHO teams in Vietnam and Thailand are supporting governments in the design and conduct of studies needed to detect the earliest stage of human-to-human transmission. In parallel activities, laboratories in the WHO Global Influenza Surveillance Network are urgently conducting studies on both human and avian viruses, obtained in the current outbreaks. These studies are also expected to shed some light on the origins and characteristics of the currently circulating H5N1 strain.

Because a new virus adapted for efficient human-to-human transmission would spread very rapidly, health authorities would know very quickly that a completely new virus had emerged. There is no evidence, to date, that this has occurred.

(Source: WHO)

How do outbreaks of avian influenza spread within bird populations?

Within a country, the disease spreads easily from farm to farm. Large amounts of virus are secreted in bird droppings, contaminating dust and soil. Airborne virus can also spread the disease from bird to bird, causing infection when the virus is inhaled. Contaminated equipment, vehicles, feed, cages, or clothing – especially shoes – can carry the virus from farm to farm. The virus can also be carried on the feet and bodies of animals, such as rodents, which act as "mechanical vectors" for spreading the disease. Limited evidence suggests that flies can also act as mechanical vectors.

Droppings from infected wild birds can introduce the virus into both commercial and backyard poultry flocks. The risk that infection will be transmitted from wild birds to domestic poultry is greatest where domestic birds roam freely, share a water supply with wild birds, or use a water supply that might become contaminated by droppings from infected wild-bird carriers.

So called "wet" markets, where live birds are sold under crowded and sometimes unsanitary conditions, can be another source of spreading infection.

In summary, avian infection most commonly results from:

- Contact with wild birds, especially waterfowl, which may transmit the disease yet show no symptoms
- Contact with infected poultry and poultry products
- Contaminated clothing and footwear
- Contaminated vehicles and equipment
- Contaminated feed and water
- High concentrations of virus in manure and litter
- Insects can act as carriers of the disease
- Rodents or farm dogs and cats which may act as mechanical vectors

(Sources: Health Canada, WHO)

How can farm workers protect themselves from avian influenza?

Exposure to infected poultry or their feces or dust contaminated with feces has been associated with human infection; however, this is a rare occurrence. The following summarizes the recommendations developed by the U.S. Centers for Disease Control (CDC), the BC Centre for Disease Control (BCCDC), and the World Health Organization.

1. All persons who have been in close contact with the infected animals or contaminated surfaces, and after they remove their gloves, should wash their hands frequently. Hand hygiene should consist of washing with soap and water for 15–20 seconds or the use of other standard hand-disinfection.

2. All workers involved in the culling, transport, or disposal of avian influenza-infected poultry should be provided with appropriate personal protective equipment:

    - Protective clothing capable of being disinfected or disposed of, preferably coveralls plus an impermeable apron or surgical gowns with long, cuffed sleeves plus an impermeable apron.
    - Gloves capable of being disinfected or disposed of. Gloves should be carefully removed and discarded or disinfected and hands should be cleaned.
    - Respirators: The minimum recommendation is a disposable particulate respirator (for example, N95, N99, or N100) used as part of a comprehensive respiratory protection program. The elements of a respirator program are described in Part 8 of the Occupational Health and Safety Regulation. Workers should be fit-tested for the model and size respirator and be trained to do a seal check to make sure the facepiece seals with the face.
    - Goggles
    - Boots or protective foot covers that can be disinfected or disposed of.

3. Environmental clean-up should be carried out in areas of culling, using the same protective measures as above.

4. Unvaccinated workers should consider receiving the current season's influenza vaccine to reduce the possibility of dual infection with avian and human influenza viruses. In some cases, for workers at high risk of exposure, the medical health officer may require additional preventive measures, such as taking an antiviral medication (such as Tamiflu). Check with your employer or local health unit for more information.

5. Potentially exposed workers should monitor their health for the development of fever, respiratory symptoms, and/or conjunctivitis (eye infection) for one week after their last exposure to birds that are infected with avian influenza or exposed to the virus or after their last exposure to surfaces that may be contaminated with avian influenza. Individuals who become ill should seek medical care and, prior to arrival, notify their health care provider that they may have been exposed to avian influenza.

6. If symptoms develop, workers should also immediately notify their local health unit and their joint health and safety committee or workplace health and safety representative. Except for visiting their physician, infected workers should stay home and minimize contact with others until advised by the local health unit that they can resume normal activities (usually 24 hours after symptoms have cleared).

(Sources: OSHA, BCCDC)

How can other workers in high-risk areas protect themselves from avian influenza?

Workers entering into high-risk areas designated by the Canadian Food Inspection Agency (CFIA) should follow the biosecurity procedures established for that location by the CFIA and use the following personal protective equipment (PPE):

- Rubber boots that are impervious to mud and water and easily cleaned.
- Coveralls that are impervious to water. Reusable protective clothing must be washed immediately after use. If this is not possible, disposable coveralls should be used.
- Gloves that are impervious (for example, latex, nitrile, PVC, or hospital gloves).
- A properly fit-tested particulate N95 respirator, or better.
- A face shield to protect against splashes to eyes, nose, etc., or goggles/eye protection.
- Disposable head or hair covers to keep hair clean.

Workers must be trained in proper techniques of putting on, removing, and disposing of PPE without contaminating themselves. Hand hygiene must be performed after removing PPE.

In addition, certain workers who may be at high risk of exposure may be required by the medical health officer to be protected by having a recent influenza vaccination, as well as taking an antiviral medicine, such as Tamiflu, to prevent development of an infection. Workers in designated CFIA “hot zones” should contact the CFIA to obtain the biosecurity procedures for working in those areas.

(Sources: Health Canada, BCCDC)

What protection do workers in low-risk exposure situtations need?

BC Centre for Disease Control (BCCDC) has health information http://www.healthandsafetycentre.org/PDFs/General/BCCDC_avianflu.pdf (PDF 28 KB) for workers who are at low risk of exposure, such as truckers or disposal workers who are involved indirectly with the culling process and workers involved in the processing of non-infected birds.