

CDC Interim Guidance for Landfill Workers in the United States Disposing of Poultry Carcasses During Outbreaks of Highly Pathogenic Avian Influenza

A. Purpose and Background

The purpose of this document is to provide information and guidance for workers at landfill sites in the United States where poultry carcasses are disposed of during outbreaks of highly pathogenic avian influenza (HPAI) A(H5N2) virus. Landfill workers include mechanical equipment operators, individuals standing on the surface of the landfill when carcasses are deposited, and personnel having direct physical contact with AI virus-infected bird carcasses or potentially infected materials.

Avian Influenza (AI) Viruses

- Avian influenza (AI) viruses circulate naturally among wild birds, particularly the waterfowl reservoir, and readily enter domestic bird/poultry populations.
- Most AI viruses are low pathogenic and do not cause serious illness among infected birds or people.
- Highly pathogenic AI viruses often cause severe illness and death in infected poultry.
- AI viruses can spread quickly among birds.
- AI virus infections of people are rare, but can occur.

The HPAI H5N2 virus that caused poultry outbreaks during 2014-2015 in North America is an emerging virus. Preliminary laboratory studies indicate that this HPAI H5N2 virus is not well-adapted to humans. However, sporadic severe and fatal human respiratory illness from infections with other closely related HPAI A(H5) viruses (e.g. H5N1, H5N6) have occurred in other countries. Most human infections with avian influenza A viruses have occurred in persons not using appropriate personal protective equipment (PPE) who had exposures consisting of either 1) direct physical contact with infected birds or surfaces contaminated by the viruses; 2) being in close proximity (e.g. within 2 meters) to infected birds; or 3) visiting a live poultry market. Although no human infections with HPAI H5N2 virus have been reported to date, direct or close (e.g. within 2 meters) contact without PPE to infected birds or virus-contaminated environments may increase the risk of human infection. To reduce their risk of HPAI H5N2 virus infection, landfill workers should use appropriate PPE when disposing of poultry carcasses during outbreaks of HPAI. The following guidance, although developed for an outbreak of HPAI A(H5N2) virus, also applies to disposal of poultry carcasses during outbreaks of HPAI H5N8 and HPAI H5N1 viruses. Consultation and close coordination with public health departments are recommended.

Key points: To reduce the risk of HPAI virus infection, landfill workers should do all of the following:

Wear recommended personal protective equipment (PPE): gloves, boots, protective coveralls, goggles and a respirator) when in direct contact with infected birds, poultry carcasses, and/or poultry feces or litter;

- Avoid unprotected direct physical contact with ill birds or poultry carcasses;
- Avoid unprotected direct physical contact with bird droppings/feces from HPAI virus-infected birds;
- Wash hands with soap and water after removing gloves and other PPE. If soap and water are not readily available, alcohol-based hand rubs may be used, but must be followed by washing with soap and water once it becomes available because hand sanitizers do not reduce organic load (e.g., dirt);

- Report any illness that occurs within 10 days of the past exposure to poultry carcasses or potentially-infected materials (see section C. below for more details).

B. Guidance for landfill workers disposing of poultry carcasses

1. Bury the AI virus-infected bird carcasses and materials immediately (within 30 minutes) after unloading at the landfill.
2. Whenever possible, avoid physical handling of the carcasses by using mechanical equipment such as trucks and back hoes with enclosed cabs.
3. All landfill workers should:
 - a) Use PPE including: properly-fitted safety goggles, disposable gloves, boots, a NIOSH-certified respirator (e.g., N95), and disposable fluid-resistant¹ coveralls.

- (1) NIOSH-certified N95 (or higher) respirators are recommended for landfill workers who have contact with AI virus-infected carcasses or potentially infected materials.

Respirator use should be in the context of a complete respiratory protection program in accordance with the Occupational Safety and Health Administration (OSHA) Respiratory Protection standard (29 CFR 1910.134) and other requirements. Staff that will need to wear N95 (or higher) respirators should be medically-cleared, trained, and fit-tested for respirator use. Detailed information on respiratory protection programs, including fit testing procedures, can be accessed at OSHA's Respiratory Protection eTool: (www.osha.gov/SLTC/etools/respiratory).

Training topics should include all of the following:

- (a) Proper fit-testing, wearing and use of respirators;
 - (b) Safe removal of respirators;
 - (c) Safe disposal of disposable respirators or cleaning and disinfection of reusable respirators;
 - (d) Medical contraindications to respirator use.
- (2) Reusable PPE should be:
 - (a) Cleaned until visible dirt is removed, and then

¹ Fluid-resistant coveralls should be made of fabric that passes:

- AATCC 42 \leq 1 g and AATCC 127 \geq 50 cm H₂O or EN 20811 \geq 50 cm H₂O; or
- ASTM F1670 (13.8 kPa); or
- ISO 16603 \geq 3.5 kPa

- (b) Disinfected with an EPA approved disinfectant that has label claims against influenza A viruses (<http://www.epa.gov/oppad001/influenza-disinfectants.html>) according to the manufacturer's instructions.
- (3) Respirator use is not necessary inside enclosed cabs when the cab's filtration system has been independently evaluated against the NIOSH leak test method for enclosed cab filtration systems and it can be demonstrated that the cab provides the same, or higher level, of protection as an N95 respirator. The NIOSH leak test method for enclosed cab filtration systems are available on the web at <http://www.cdc.gov/niosh/mining/UserFiles/works/pdfs/2012-145.pdf>.
- (4) All PPE should be used in accordance with OSHA regulations found at 29 CFR 1910 Subpart I (Personal Protective Equipment). Workers should receive training on and demonstrate an understanding of when to use PPE; what PPE is necessary; how to properly put on, use, take off, properly dispose of, and maintain PPE; and the limitations of PPE.
- (5) Landfill workers who may have direct contact with carcasses or potentially infected materials (e.g. individuals responsible for opening the roll-off container for unloading) should wear a disposable impermeable² coverall in place of the fluid-resistant coverall referenced above or an apron over the fluid-resistant coverall to protect against exposure to liquids.
- b) Safely remove PPE after burial in sequence:
- (1) Remove and dispose of the apron, if worn;
 - (2) Clean and disinfect boots;
 - (3) Remove boots;
 - (4) Remove and dispose of the coverall;
 - (5) Remove and dispose of gloves;
 - (6) Wash hands with soap and water;
 - (7) Remove goggles and respirator;
 - (8) Clean and disinfect reusable goggles and respirator;
 - (9) Wash hands with soap and water again.
- c) Put on and take off PPE in separate clean areas;
- d) Perform good hand hygiene such as hand-washing with soap and water or using an alcohol-based hand rub after removing PPE;
- e) Avoid touching eyes, mouth, nose after touching any contaminated material while wearing PPE;
- f) Do not eat, drink, smoke, or use the bathroom while wearing PPE.

² Impermeable coveralls should be made of fabric and seams/closures that pass

- ASTM F1671 (13.8 kPa); or
- ISO 16604 \geq 14 kPa

C. Reporting of illness

1. Workers at the landfill should monitor their health starting on the first day of exposure and for ten days after the last exposure to material and poultry carcasses from affected farms, and report any illness signs or symptoms (e.g. fever or feeling feverish, cough, runny nose, sore throat, headache, muscle aches, eye redness, difficulty breathing, shortness of breath, diarrhea, etc.) to the local and state public health department as soon as possible.
2. Additional information about avian influenza and worker protection can be found at:
 - a) NIOSH Avian Influenza: <http://www.cdc.gov/niosh/topics/avianflu/>
 - b) OSHA Guidance for Protecting Employees Against Avian Flu: <https://www.osha.gov/dsg/guidance/avian-flu.html>
 - c) CDC Information on Avian Influenza: <http://www.cdc.gov/flu/avianflu/>
 - d) CDC H5 Viruses in the United States: <http://www.cdc.gov/flu/avianflu/h5/index.htm>
 - e) CDC Prevention and Treatment of Avian Influenza A Viruses in People <http://www.cdc.gov/flu/avianflu/prevention.htm>
 - f) CDC Interim Guidance on Influenza Antiviral Chemoprophylaxis of Persons Exposed to Birds with Avian Influenza A Viruses Associated with Severe Human Disease or with the Potential to Cause Severe Human Disease <http://www.cdc.gov/flu/avianflu/guidance-exposed-persons.htm>
 - g) OSHA Guidance Update on Protecting Employees from Avian Flu (Avian Influenza) Viruses: <http://www.osha.gov/Publications/3323-10N-2006-English-07-17-2007.html>
 - h) OSHA Safety and Health Topics Page for Avian Flu: <http://www.osha.gov/dsg/guidance/avian-flu.html>
 - i) OSHA Avian Flu Fact Sheet: http://www.osha.gov/OshDoc/data_AvianFlu/avian_flu_factsheet.pdf
 - j) OSHA Avian Flu Quick Card: <http://www.osha.gov/Publications/3306-10-06-english-06-27-2007.html>
 - k) OSHA Safety and Health Information Bulletin (SHIB) on Avian Flu: <https://www.osha.gov/dts/shib/shib121304.html>

D. References

1. Senne DA, Panigrahy B, Morgan RL. Effect of composting poultry carcasses on survival of exotic avian viruses: highly pathogenic avian influenza (HPAI) virus and adenovirus of egg drop syndrome-76. Avian Dis. 1994 Oct-Dec;38(4):733-7.
2. Guan J, Chan M, Grenier C, Wilkie DC, Brooks BW, Spencer JL. Survival of avian influenza and Newcastle disease viruses in compost and at ambient temperatures based on virus isolation and real-time reverse transcriptase PCR. Avian Dis. 2009 Mar;53(1):26-33.