

Public Health – Seattle & King County  
Pandemic Influenza Response Plan

**APPENDIX G**

Response to an Avian Influenza Outbreak in Birds

*Note: Roles and Responsibilities of the PHSKC Environmental Health Service's Zoonotic Disease, Solid Waste, and Food Safety Programs, the Communications Section, and the Communicable Disease Section*

**1. Background**

Avian influenza type A viruses have been found in over 40 species of wild and domestic birds, and avian cases occur every year throughout the world. Low pathogenicity (based on *in vivo* mortality assay and sequencing of the virus hemagglutinin cleavage site) avian influenza (LPAI) occurs periodically in North America. Outbreaks of highly pathogenic avian influenza (HPAI) have also occurred in the US and in Canada, where a significant outbreak of HPAI subtype H7N3 occurred in British Columbia in 2004.

In the British Columbia outbreak of 2004, a LPAI strain was initially identified as the cause of slightly increased mortality in one barn of a commercial chicken farm, but two weeks later there was a sudden dramatic increase in deaths in a second barn on the same premises. Canadian officials ordered culling of all poultry flocks within a 5 km radius of the infected premises, but the virus spread outside the zone. Two months after the initial identification of HPAI new cases were still arising so all poultry in the Fraser Valley were ordered destroyed. By the time the outbreak was controlled, 19 million birds had been depopulated and HPAI had been confirmed in 42 of the 600 commercial poultry farms and 11 backyard flocks in the area. This outbreak also resulted in mild flu-like illness and conjunctivitis in two poultry workers (**Ref:** Tweed SA, et al. Human illness from avian influenza H7N3, British Columbia. *Emerging Infectious Diseases* 2004; 10: 2196-99.)

Avian influenza viruses are shed in the fecal droppings, saliva, and nasal discharges of some avian wildlife species and infected domestic poultry. Contaminated water is a common source of infection for birds. Many different subtypes of type A avian influenza have been identified. The H5 and H7 subtypes are those most often associated with morbidity and mortality in birds and outbreaks can result in severe economic damages for poultry producers. Since these cause disease primarily in domestic poultry, the Washington State Department of Agriculture (WSDA), in conjunction with the US Department of Agriculture (USDA), is the lead for non-human disease surveillance and for control if and when avian influenza is detected in King County or Washington State.

Avian influenza viruses rarely infect humans; however, the H5N1 subtype has been circulating in Southeast Asia since 1997 and, according to the World Health Organization, since 2003 is responsible for the largest epizootic of HPAI ever recorded. The current H5NA outbreak is of great concern to public health

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because the virus has shown the ability to spread to people by direct contact with infected poultry or exposure to environments contaminated by infected birds. Transmission to humans may also occur from inhalation of, or mucous membrane contact with, aerosolized virus in highly contaminated environments. As of early 2006, however, the H5N1 virus had accounted for only a relatively small number of human illnesses, and apparent person-to-person spread had been documented only very rarely.

H5N1 is considered to have the potential to become pandemic because it is a novel strain for the human population (i.e., no human immunity), and it has resulted in severe morbidity and mortality (approximately 50%) in the diagnosed human cases. To cause a human pandemic, the subtype would need to become capable of spreading easily from person to person, a capacity not yet demonstrated. However, public health concern was further heightened by recent studies which strongly suggest that the historic influenza pandemic of 1918-19 was caused by a highly pathogenic avian influenza virus that jumped from birds to humans (**Ref:** Taubenberger JK, et al. Characterization of the 1918 influenza virus polymerase genes. *Nature* 2005;437:889-93 and Tumpey TM, et al. Characterization of the 1918 Spanish influenza pandemic virus. *Science* 2005;310:77-89.)

Wild birds have likely contributed to the rapid spread of the most recent H5N1 avian influenza outbreaks in eastern Asia. Infection has been documented primarily, but not exclusively, in waterfowl and shore bird species. Data suggest that H5N1 is being spread by migrating waterfowl, some of which may be asymptomatic. There are also continuing reports of the transport of domestic fowl for food and sport (such as cock fighting) from affected areas to adjacent regions. The Asian H5N1 avian influenza strain has recently been confirmed in domestic and wild birds in Europe but there is no evidence that this strain exists in birds or humans at this time (February 2006) in the Western Hemisphere.

### ***For more information:***

For current data about avian influenza worldwide from the World Health Organization:  
[http://www.who.int/csr/disease/avian\\_influenza/avian\\_faqs/en/index.html](http://www.who.int/csr/disease/avian_influenza/avian_faqs/en/index.html).

Additional avian influenza information from a public health perspective is available from the Centers for Disease Control and Prevention (CDC) at:  
<http://www.cdc.gov/flu/avian/>.

A summary of initial human cases is available in: WHO. Current concepts: Avian influenza (H5N1) infection in humans. *New England Journal of Medicine* 2005;353:1374-85.

Findings of H5N1 in Asian waterfowl are available in: Li KS, Guan Y, Wang J, et al. Genesis of a highly pathogenic and potentially pandemic H5N1 influenza virus

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in eastern Asia. *Nature* 2004; 430: 209-13 and Liu J, Xiao H, Lei F, et al. Highly pathogenic H5N1 influenza virus in migratory birds. *Science* 2005; 309: 1206.

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*Credits:* Some material in the Background section was adapted from the NY State Pandemic Influenza Plan (2/7/2006) and the WA State Department of Health Communicable Disease Epidemiology Section (1/2006) and used with permission.

## 2. Plan objectives

- A. Define how Public Health will support those agencies that have primary responsibility for avian influenza surveillance in bird populations
- B. Define how Public Health will assist in control of avian influenza in bird populations
- C. Describe how Public Health will implement and conduct surveillance for suspected and confirmed cases of avian influenza in humans
- D. Describe prevention activities to be undertaken by Public Health to reduce the risk of transmission of avian influenza from birds to humans
- E. Delineate the roles and responsibilities of Public Health and other local, state and federal agencies and interagency communication procedures
- F. Summarize Public Health's public messaging and risk communications specific to avian influenza occurring in bird populations in King County, Washington state or neighboring states or countries

## 3. Avian Influenza Surveillance and Laboratory Testing of Birds

- A. The Washington State Department of Agriculture (WSDA), in cooperation with the US Department of Agriculture (USDA), has primary jurisdiction in conducting surveillance for avian influenza in poultry in Washington State. The Washington Department of Fish and Wildlife (WDFW), in cooperation with the US Department of the Interior, Fish and Wildlife Service, has primary responsibility for conducting surveillance for avian influenza in wild free-ranging birds. The Woodland Park Zoo, in conjunction with the American Zoo and Aquarium Association, conducts post-mortem examination of animal deaths at the zoo and conducts avian influenza testing when indicated.

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- B. Public Health's Environmental Health Zoonotic Disease (EHZD) Program supports WSDA and WDFW by:
- i. Maintaining avian mortality surveillance established for West Nile virus response, including receiving citizen and agency reports of bird deaths by telephone and web-based reporting; collecting data on bird species, date and location of death; GIS mapping of bird deaths; and epidemiologic analysis of mortality data. Because of the active West Nile virus program run by EHZD for the past 4 years, Public Health is widely recognized as a source for information about zoonotic diseases of avian origin, as well as the agency for reporting of dead birds.
  - ii. Submission of geographically representative dead birds for West Nile virus laboratory testing, with the option of selected birds also being tested for avian influenza virus.
  - iii. Accepting reports of sick or dead domestic or wild birds from citizens, triaging these calls to WSDA or WDFW as appropriate and, with WSDA or WDFW direction, assisting in collection of birds and shipping or transport to the Washington State University Avian Health & Food Safety Laboratory in Puyallup or other laboratory as directed.
  - iv. Publicizing avian influenza awareness and sick and dead bird reporting to community groups, citizens and businesses involved with domestic or wild birds including: 4-H, Seattle Tilth, Audubon Society, pet shops, feed stores, fairs, and animal exhibitions.

#### 4. Avian Influenza Control in Poultry

A. WSDA Emergency Poultry Disease Management Plan

The WSDA has primary authority for control of avian influenza in poultry. In its Emergency Poultry Disease Management Plan, the agency establishes monitoring, response and recovery in the event of detection of emergency poultry diseases including highly pathogenic and low pathogenic H5/H7 avian influenza, exotic Newcastle disease (not a zoonosis), and other poultry diseases declared by the State Veterinarian. The measures that follow are specified in the Plan.

B. Incident Command

- i. In the event of identification of highly pathogenic avian influenza virus in birds, WSDA will use the standardized Incident Command

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System (ICS) and a Joint Information Center (JIC) and will include the participation of local, state and federal agencies.

- ii. Public Health—Seattle & King County will be represented if the infected bird(s) is from King County.

### C. Quarantine

- i. When a positive diagnosis of either low or highly pathogenic avian influenza in poultry is established, WSDA will issue a quarantine order for the infected premises which prohibits movement of birds, litter, and manure in or out and allows movement of other animals, equipment, vehicles, feed and table eggs only by permit subject to specific procedures.
- ii. People living or working at a quarantined premise are subject to the local health officer's directives related to disease control. Disease control measures may include medical examination, testing, treatment, vaccination, decontamination, isolation, and quarantine.
- iii. The WSDA's statutory authority for premise quarantine is contained in RCW 16.36.010, Animal Health Quarantine—Hold Order. The local health officer's authority to implement disease control measures is contained in WAC 246-100-036(3) and WAC 246-100-040 to -070.
- iv. Public Health staff from EHSD and Communicable Disease programs will support WSDA's actions in establishing animal quarantine zones by communicating to citizens how these measures seek to limit further spread of avian influenza and reduce the risk of human infection. Communicable Disease staff will determine the need to initiate disease control measures for humans.
- v. EHSD staff will assist WSDA/USDA in epidemiologic investigations including trace-back or trace-forward of potentially infected animals, carcasses, or products.

### D. Depopulation

- i. WSDA will humanely euthanize birds on infected premises, with the goal of accomplishing this within 24 hours of laboratory confirmation of infection.
- ii. Contacts of birds from infected premises and/or birds in a zone around the infected premises may also be depopulated as

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determined by the State Veterinarian and other WSDA/USDA officials.

- iii. Public Health personnel will not be directly involved in depopulation activities.

### E. Disposal

- i. Dead poultry, bird litter, and manure will be disposed by approved methods which include on-site burial, disposal in a sanitary landfill, and composting.
- ii. Rendering is not approved for infected flocks. Incineration is not a preferred method but if chosen as a disposal option it would be subject to approval by Public Health and the Department of Ecology.
- iii. Staff from the Environmental Health Services Division's Zoonotic Disease and Solid Waste programs will consult with WSDA on disposal options, assure that disposal is done in accordance with Seattle-King County statutes, monitor the disposal activities, and inspect the disposal site to assure protection of public health.
- iv. Owners of small backyard poultry flocks not in the quarantine zone established by WSDA can be expected to contact Public Health about their risk from poultry contact and some will ask for advice about voluntary depopulation and disposal of their birds.
- v. Public Health Program and Communications staff will provide information to the public describing the safeguards and legality of the disposal method(s).

### F. Cleaning and Disinfection

- i. According to WSDA protocol, cleaning and disinfection of depopulated premises is the primary responsibility of the premise owner, although the owner may be reimbursed by WSDA or USDA for certain expenses.
- ii. WSDA or USDA personnel will monitor and conduct inspections of each phase of cleaning and disinfection, assure compliance with protocols, and will document successful completion of these activities.
- iii. Public Health EHSD and Solid Waste staff will consult with WSDA on disinfection protocols and will assist in advising bird owners who

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are voluntarily conducting disinfection of their premises (i.e., not required by WSDA and not being supervised by WSDA personnel).

### G. Food safety advisories

When avian influenza is detected in poultry in the US, and especially if found in King County or elsewhere in the state, there is likely to be a high level of public concern about food safety. For example, even though properly cooked poultry and eggs do not pose a risk for avian influenza transmission, in parts of Europe with outbreaks of avian influenza in early 2006, public consumption of poultry was reported to have dropped by 70%. Of greater concern than commercially-prepared poultry are persons butchering live birds in non-commercial settings, as may be more common in some ethnic communities, because these activities have the potential to result in virus transmission.

- i. Public Health Communications specialists in consultation with the EHSD and Food Safety programs will provide public information on poultry product safety through press releases, web sites and other formats. Information will be provided for non-English speaking persons to the extent possible.
- ii. Public Health educators will help disseminate information to ethnic communities.

### H. Prevention education

- i. EHSD staff will use the USDA/APHIS materials from their "Backyard Biosecurity" campaign to educate backyard poultry flocks owners and bird hobbyists on preventing transmission of avian influenza through good sanitation and husbandry practices such as exclusion of wild birds from contact with domestic poultry.
- ii. Outreach through King County feed stores selling poultry food and chicks beginning spring, 2006.
- iii. Provision of Backyard Biosecurity materials to 4-H groups, Seattle Tilth's Chicken 101 and Chicken Coop Design classes, Small Farm Expo attendees, and to exhibitors at the King County Fair.

## **5. Human Disease Surveillance for Avian Influenza Transmitted from Birds**

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### A. Surveillance

- i. The Washington State Department of Health (WA DOH) coordinates statewide surveillance activities and operates a CDC Laboratory Response Network public health reference laboratory for novel influenza virus testing.
- ii. The Public Health Communicable Disease Section conducts county-wide surveillance to track the spread of human disease and its impact on the community.
- iii. In the event of highly pathogenic avian influenza in birds in King County, Public Health in collaboration with WA DOH and CDC will conduct surveillance to detect suspected or confirmed cases of avian influenza in humans in addition to continuing other influenza surveillance activities (see Pandemic Influenza Response Plan VIII. Concept of Operations. E. Surveillance).
- iv. Suspected or confirmed cases of avian influenza in humans acquired from birds locally or during travel to other areas will be considered notifiable as a 'Rare Disease of Public Health Significance' (Washington Administrative Code 246-101).
- v. Public Health will use surveillance forms modeled on CDC forms and a database that have been developed specifically for avian influenza for case reporting and investigation purposes.
- vi. Epidemiological characteristics and patterns will be summarized and reported frequently.

### B. Information for healthcare providers

- i. Public Health will provide healthcare providers with information on the assessment of exposure, clinical signs and symptoms, diagnosis, treatment, and infection control measures and be asked to immediately report any suspect or confirmed cases to Public Health to facilitate initiation of public health measures.
- ii. Information will be provided via direct consultation, broadcast fax, Epi-Log, listserves, the Public Health web site and other means.

### C. Laboratory testing



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- i. Clinical specimens from humans should not be submitted to commercial laboratories for avian influenza testing because, at this time, results will not be interpretable without confirmatory testing at WA Public Health Laboratory (PHL).
- ii. Avian influenza can be identified by RT-PCR at the WA PHL ONLY after reporting a case to Public Health.
- iii. The WA PHL will not accept specimens for testing without prior approval from Public Health.
- iv. Viral culture of specimens from suspected novel influenza cases should be conducted by CDC.

D. Patient management

Healthcare providers should consult with Public Health when avian influenza is suspected and before discharging patients with suspected avian influenza from hospitals.

E. Household contacts

Infection control recommendations will be provided based on the level of clinical suspicion and current CDC guidance. Close contacts of known and suspected avian influenza cases should be monitored for illness and promptly consult with a healthcare provider and public health if symptoms develop.

F. Treatment

Antiviral treatment should generally be initiated as soon as possible for symptomatic persons suspected of having avian influenza infection. In some circumstances, asymptomatic exposed persons may also be treated with antiviral drugs to prevent infection.

- G. Isolation and quarantine: See Pandemic Influenza Plan VIII. Concept of Operations H. Social Distancing and I. Isolation and Quarantine.

**6. Protection of the General Public Who May be Exposed to Infected Wild Birds**

A. Education and information

Public Health, WA DOH, CDC and other agencies provide up-to-date information on avian influenza for the general public at their web sites

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and through other publications (See Pandemic Influenza Response Plan VIII. Concept of Operations F. Public Education).

B. General public

The general public will be advised by Public Health – Seattle & King County to avoid touching any dead or live wild birds. In the case of contact, instructions will include washing hands thoroughly with soap and water and avoid rubbing eyes, eating, drinking, or smoking before washing hands.

C. Hunters

Hunters will be advised by Public Health – Seattle & King County to follow routine precautions when handling birds. They will be advised not to handle or eat sick birds, to wear gloves while handling and cleaning birds, to thoroughly wash hands and all knives, equipment and surfaces that come in contact with birds, to cook birds thoroughly (160° F), and to avoid drinking, eating and smoking while handling birds.

D. People handling apparently healthy wild birds

The public will be advised by Public Health – Seattle & King County to work in well-ventilated areas and follow the advice above.

E. Health care

Individuals who are concerned about exposure to avian influenza will be advised by Public Health – Seattle & King County to contact their healthcare provider immediately.

**7. Protection of Persons At Risk of Avian Influenza Due to Exposure to Infected Poultry**

A. Collaboration and information

- i. In the event of avian influenza in domestic poultry in King County, the Public Health Communicable Disease Section and the Zoonotic Disease Program will work closely with the WA DOH and the WSDA to disseminate information and educate persons at risk of exposure, healthcare providers and the general public.
- ii. Information will be communicated via direct consultation, broadcast fax, Epi-Log, listserves, the Public Health web site and other means (See Pandemic Influenza Response Plan VIII. Concept of Operations F. Public Education). This section is based on CDC's

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Interim Guidance for Protection of Persons Involved in U.S. Avian Influenza Outbreak Disease Control and Eradication Activities, January 14, 2006 (See <http://www.cdc.gov/flu/avian/professional/protect-guid.htm>).

B. Persons at risk

Persons at risk include anyone who is directly exposed to infected poultry, poultry products, contaminated surfaces and equipment, and their household members. Examples include:

- i. Farmers, poultry owners and caretakers.
- ii. Persons involved in disease control and eradication activities such as veterinarians, persons involved in euthanasia, carcass disposal, or cleaning premises affected by avian influenza.
- iii. Household members of above groups.

C. Basic infection control and Personal Protective Equipment

- i. Public Education campaigns will target persons at risk informing them about the importance of strict hand hygiene including washing with soap and water for 15-20 seconds or the use of other standard hand disinfection procedures.
- ii. Educate persons at risk about the correct use, disinfection or disposal of disposable gloves, protective clothing, and disposable shoe covers, safety goggles, and disposable particulate respirators.

D. Vaccination with seasonal influenza vaccine

Unvaccinated individuals will be instructed by Public Health – Seattle & King County to be vaccinated with the current season's influenza vaccine to reduce the possibility that dual infection could occur and result in viral reassortment.

E. Administration of antiviral drugs for prophylaxis

Prior to a pandemic influenza strain spreading through the human population, individuals who have direct contact with infected poultry or contaminated surfaces should receive influenza antiviral medications.

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F. Surveillance and monitoring

At risk individuals will be instructed by Public Health – Seattle & King County to monitor development of symptoms that may indicate influenza for 1 week after last exposure to infected poultry or contaminated surfaces, and to seek health care and notify their medical provider prior to arrival that they may have been exposed to avian influenza. Ill individuals will be directed to isolate themselves at home until 24 hours after resolution of fever and practice good respiratory and hand hygiene to lower the risk of transmission to others.

G. Evaluation of ill persons

Individuals who develop symptoms indicative of influenza should be tested and treated as described under Laboratory Testing above.

**8. Communication**

- A. The Washington State Department of Fish and Wildlife is the lead for surveillance and control of avian influenza in wild birds, and the Washington State Department of Agriculture is the lead for surveillance and control of avian influenza in domestic birds. Particularly before highly pathogenic H5N1 avian influenza arrives in King County, Public Health – Seattle & King County will play a key role for residents of King County with respect to risk communications messaging and public health education regarding health aspects of avian influenza.

It is believed that migrating birds may bring the H5N1 virus to Alaska, and then to Washington via the Pacific Flyway. Active surveillance is currently underway by the US Department of the Interior (Fish and Wildlife Service) in conjunction with the US Department of Agriculture. British Columbia and other parts of Canada also have active surveillance. It is expected that H5N1 avian influenza may be detected in Alaska or British Columbia before it is detected in Washington State or King County. Under this scenario, Public Health – Seattle & King County will have warning that the H5N1 avian influenza virus is nearing Washington state and King County.

- B. In advance of or at the beginning of an avian influenza outbreak among wild or domestic birds in Washington, many people will be confused about the relationship between avian influenza and human disease. This confusion may result in increased public and media inquiries. This plan's communication goals are to:
- i. Provide accurate, consistent, and comprehensive information about avian influenza in birds, including infection control options such as

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backyard biosecurity, distinctions between human and avian influenza, public involvement in surveillance (e.g. reporting dead birds), and avian premise quarantine, bird depopulation and disposal.

- ii. Provide clear and consistent information about PHSKC's role and responsibilities during an avian influenza outbreak in birds.
- iii. Address rumors, inaccuracies, and misperceptions as quickly as possible.

### C. Communications activities:

Prior to an avian influenza outbreak in birds, the Communications Section will:

- i. Conduct ongoing assessment of residents' information needs including the general public, health care providers, and persons with enhanced interactions with birds, (backyard poultry owners, hunters, bird watchers, bird clubs, etc.).
- ii. Identify any logistical constraints to effective communications, such as communications staffing and equipment needs, and public information call center staffing and capacity.
- iii. Support the Environmental Health Zoonotic Disease group and other PHSKC workgroups by supplying messaging for the website and public information materials, coordinating media responses, and coordinating with the Communications sections of other relevant agencies (Washington DOH, other local health jurisdictions, WSDA, Washington Fish and Wildlife).
- iv. Coordinate with workgroups that are in place specifically to address the needs of vulnerable populations during a pandemic, (e.g. the Vulnerable Populations Action Team) in order to ensure that non English speaking audiences are receiving relevant and useful information.

During an H5N1 avian influenza outbreak in King County, Communications will:

- i. Provide the services listed above; and

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- ii. Provide enhanced services potentially including Public Health Call Center coordination, information dissemination through newspaper editorials, flyers, bill boards, television and radio broadcasts, press conference materials, and through coordination with community based organizations and partners.
- iii. Staff and support Emergency Operations and Joint Information Center(s)