

## **Attachment O: Clinical Evaluation Algorithm**

### Recommended Clinical Evaluation for Possible H5N1 Influenza During Pandemic Alert Period (April 2006)

**Pandemic Alert (pre-pandemic)**

- No human cases of H5N1 avian influenza infection occurring in community.
- Human cases may be present elsewhere in world or other region of U.S. but no pandemic declared and no widespread human-to-human transmission.
- Goals of clinical evaluation in this period are to identify possible cases of H5N1 influenza, establish that diagnosis or an alternate etiology.
- First, question patients with influenza-like illness (ILI) about travel in past 10 days, and occupation.*

**Epidemiologic criteria** for possible H5N1 avian influenza currently\* include:

- Travel to/resident of area affected by H5N1 avian influenza (animals or humans) within 10 days of onset of symptoms†

AND

- Contact with birds or poultry, including touching birds (well-appearing, sick, or dead) or consuming uncooked poultry (including blood) in the affected area; or
- Close contact‡ with someone known or suspected to have H5N1 avian influenza, during or one day prior to that person's illness; or
- Close contact‡ with a person who died or was hospitalized due to a severe respiratory illness

OR

- Had possible occupational exposure to H5N1 virus, including:
  - Healthcare workers (HCWs) in contact with patients known or suspected to have H5N1 infection; or
  - Worker in a laboratory that contains H5N1 virus; or
  - Poultry worker (farm, market, or processing), with known or suspected H5N1 avian influenza infections among poultry

**Clinical criteria** include:§

- Temperature > 38° C (100.4° F); and
- Cough, sore throat or dyspnea; and
- Hospitalized with radiographically confirmed pneumonia, Acute Respiratory Distress Syndrome (ARDS) or other undiagnosed severe respiratory illness.

**If both Epidemiologic and Clinical Criteria met:**  
 Institute full barrier precautions (airborne, contact, and standard precautions, plus face/eye protection), a negative pressure room (if available) or a private room with door closed. Place a surgical mask on patient, if it can be tolerated.  
**Notify the Minnesota Department of Health (MDH) at 651-201-5414 or 1-877-676-5414 (24 hours).**

Make note of healthcare workers (HCWs) who had contact with patient and as much as possible, limit patient's contact with other HCWs.

**If any epidemiologic criteria met and some/all clinical criteria met, notify MDH of case at 651-201-5414 or 1-877-676-5414 (24 hours), to discuss possible testing and follow-up.** Those with all criteria met should be tested, others on a case-by-case basis. Minimally, patient should be instructed to self-monitor and seek medical attention if changes in symptoms.

**Initiate Clinical Evaluation (should be guided by clinical presentation):¶**

**Use full barrier precautions (airborne, contact, and standard precautions, plus face/eye protection) and place patient in a negative pressure room, if possible, when obtaining respiratory specimens. Consider use of a positive air purifying respirator (PAPR) for procedures that may generate aerosols.**

- Pulse oximetry, chest radiograph, complete blood count with differential, blood cultures, serum chemistries, as indicated. Serum for acute serology (convalescent serology after 3 weeks).
- Testing at MDH: Collect specimens for PCR testing for H5N1 virus. For swabs, use a dacron or rayon swab with a plastic or aluminum shaft. Store in viral transport media and hold at 4° C (39° F) until transport to MDH Laboratory can be arranged (MDH epidemiologist will assist in arranging transport). Specimens will be used for H5N1 evaluation and for evaluation of other respiratory pathogens by PCR at MDH including other influenza, adenovirus, parainfluenza, RSV, human metapneumovirus, *Legionella* spp., *M. pneumoniae*, and *C. pneumoniae*. Other specimens may be requested depending on clinical features. **Do not attempt to perform viral culture. Culture for H5N1 should only be done at a BSL3+ or BSL4 facility.**
  - 1 nasopharyngeal swab or a nasal wash or aspirate
  - 2 throat swabs||
  - Tracheal aspirate (if intubated)
  - Other respiratory specimens obtained as part of clinical care may be submitted (BAL, pleural fluid, etc.)
- Sputum culture and gram stain (and/or tracheal aspirate, if intubated, pleural effusion aspirate, if present). Antimicrobial susceptibility testing for bacterial isolates.
- In adults with radiologically confirmed pneumonia, consider urine antigen testing for *Legionella pneumophila* and *Streptococcus pneumoniae*.

**Treatment, contact tracing and ongoing monitoring:**

- Clinical treatment including antibacterial agents and antiviral agents (neuraminidase inhibitors) as indicated. Antivirals should be started as soon as possible (most efficacious if used within 48 hours). Note: antiviral recommendations are evolving. Standard adult treatment dose of oseltamivir is 75 mg bid x 5 days. See product information for pediatric dosing. Some clinicians recommend a higher dose and duration of oseltamivir for seriously ill patients (150 mg bid x 7-10 days for adults). Consultation with ID clinician recommended.
- Complete H5N1 Avian Influenza Screening Form (MDH website: www.health.state.mn.us), including any initial information on contacts of the patient, from one day before the case's onset of illness to the present.
- MDH will provide assistance with diagnostic evaluation and results, isolation/quarantine issues, and case status.

**Footnotes**

\* Changes in epidemiologic criteria or clinical evaluation recommendations will be posted at: <http://www.cdc.gov/flu/avian/index.htm> and <http://www.health.state.mn.us>.

† The latest information on the geographic locations of H5N1 in humans can be found at the World Health Organization (WHO) website: [https://www.who.int/csr/disease/avian\\_influenza/country/en/index.html](https://www.who.int/csr/disease/avian_influenza/country/en/index.html) and geographic locations of H5N1 in animals can be found at the World Organization for Animal Health (OIE) website: [http://www.oie.int/download/AVIAN%20INFLUENZA/A\\_Al-Asia.htm](http://www.oie.int/download/AVIAN%20INFLUENZA/A_Al-Asia.htm).

‡ Close contact is defined as having cared for or lived with a person known to have avian influenza or having a high likelihood of direct contact with respiratory secretions and/or body fluids of such a person. Examples of close contact include kissing or embracing, sharing eating or drinking utensils, close conversation (<3 feet), physical examination, and any other direct physical contact between persons. Close contact does not include activities such as walking by a person or briefly sitting across from a patient in a waiting room or office.

§ Typical symptoms are respiratory; however, note that some cases have presented with encephalitis or diarrhea. In such cases other specimens may be submitted to MDH for evaluation.

¶ Rapid influenza assay results should be viewed with caution. The sensitivity and specificity of these assays are not known for H5N1.

|| H5N1 may be more easily detected from a throat swab.

Infectious Disease Epidemiology, Prevention and Control  
 651-201-5414 – TDD/TTY 651-215-8390  
[www.health.state.mn.us](http://www.health.state.mn.us)

