

SURVEILLANCE (REPORTING) OF AVIAN INFLUENZA (AI) CASES

Every medical practitioner or person who professes to treat or attend on any person suffering from suspected, possible, probable and confirmed cases of Avian Influenza should immediately report the case to the Epidemiologist, Regional Epidemiologist/MOH by telephone (**Epidemiology Unit emergency telephone number for AI: 011-4740491**).

Case definitions;

Possible Avian Influenza case

I. Any individual presenting with fever (Temperature > 38°C)

AND

one or more of the following symptoms:

- a) Cough,
- b) Sore throat
- c) Shortness of breath

AND

one or more of the following:

- a) Laboratory evidence of influenza A by a test that does not sub-type the virus
- b) Having been in contact, during the 7 days prior to the onset of symptoms, with a confirmed case of influenza A H5N1 while this case was infectious (*Individuals infected with Influenza H5N1 virus are considered to be infectious starting from one day before the onset of symptoms up to 7 days after onset of symptoms*)
- c) Having been in contact, during the 7 days prior to the onset of symptoms, with birds, including chickens, which have died of an illness
- d) Having worked in a laboratory, during the 7 days prior to the onset of symptoms, where there is processing of samples from persons or animals that are suspected of having Highly Pathogenic Avian Influenza Infection (HPAI)

OR

II. Death from an unexplained acute respiratory illness

AND

one or more of the following:

- a) Residing in an area where HPAI is suspected or confirmed
- b) Having been in contact during the 7 days prior to the onset of symptoms with a confirmed case of Influenza H5N1 while this case was infectious

Probable Avian Influenza Case

Any individual presenting with fever (Temperature > 38°C)

AND

one or more of the following symptoms:

- (a) Cough,
- (b) Sore throat,
- (c) Shortness of breath

AND

Limited laboratory evidence for Influenza A H5 (H5 specific antigens detected in a single sample)

Confirmed Avian Influenza Case

An individual or a deceased* for whom laboratory testing demonstrates **one or more** of the following;

- (a) Immunofluorescence antibody (IFA) test positive using Influenza A/H5 monoclonal antibodies
- (b) Positive PCR for Influenza A/H5
- (c) Positive viral culture for Influenza A/H5
- (d) 4-fold rise in Influenza A/H5 specific antibody titre in paired serum samples

**Laboratory investigations for Influenza A/H5 may also be undertaken on deceased individuals and in the context of targeted epidemiological studies. Laboratory confirmed cases identified under these circumstances should also be reported.*

Collection of Human Specimens for Diagnosis of Avian Influenza Infection

Diagnosis of respiratory viral infections depends on the collection of high-quality specimens, rapid transport to the laboratory and appropriate storage before transport to the laboratory. Virus is best detected in specimens containing infected cells and secretions. Specimens for the direct detection of viral antigens or nucleic acids and those for virus isolation in cell cultures should be taken preferably during the first 3 days after the onset of clinical symptoms. Specimens should be packed in ice soon after the collection or stored at 2-8°C until transported to the laboratory. If specimens cannot be processed within 48-72 hours of collection, they should be kept at or below -70°C. All the samples should be labeled and sent to the laboratory with a request form.

Type of Specimens

A variety of specimens are suitable for the diagnosis of virus infections of the upper

respiratory tract.

These are: Nasal swab
Nasopharyngeal swab
Nasopharyngeal aspirate
Nasal wash
Throat swab

In addition to swabs from the upper respiratory tract, specimen obtained through invasive procedures can be used for the diagnosis of virus infections of the lower respiratory tract where clinically indicated.

These are: Transtracheal aspirate
Bronchoalveolar lavage
Lung biopsy
Post-mortem lung or tracheal tissue

Specimens for the laboratory diagnosis of avian influenza A should be collected in the following order of priority.

1. Nasopharyngeal aspirate
2. Acute serum
3. Convalescent serum

Specimens for direct detection of viral antigens by immunofluorescent staining of infected cells should be refrigerated and processed within 1-2 hours of collection. Specimens for commercial near-patient tests should be stored in accordance with the manufacturer's instructions. Specimens for virus isolation should be refrigerated immediately after collection and inoculated in to susceptible cell cultures as soon as possible. If specimens cannot be processed within 48-72 hours, they should be kept frozen at or below -70°C .

Respiratory specimens should be collected and transported in virus transport media (VTM). A number of media that are satisfactory for the recovery of a wide variety of viruses are commercially available.

Procedures for Specimen Collection

Materials required: Sputum/mucus extractor
Suction machine
Polyester fibre-tipped applicator
Plastic vials with VTM
Tongue depressor
Sterile cotton swabs

Preparing to Collect Specimens

Clinical specimens should be collected as described below and added to transport medium. Nasal or nasopharyngeal swabs can be combined in the same vial of virus transport medium. When possible, the following information should be recorded on the request form: general patient information, type of specimens, date of collection, and contact information of person completing the form, etc.

Standard Universal precautions should be followed during collection of specimens and barrier protections applied whenever samples are obtained from patients. All specimens should be regarded as potentially infectious and staff should adhere to protective measures rigorously in order to minimize exposure to the virus.

Nasal Swab

A dry polyester swab is inserted into the nostril, parallel to the palate, and left in place for a few seconds. It is then slowly withdrawn with a rotating motion. Specimens from both nostrils are obtained with the same swab. The tip of the swab is put into a vial containing 2-3ml of virus transport medium and the applicator stick is broken off.

Nasopharyngeal Swab

A flexible, fine-shafted polyester swab is inserted into the nostril and back to the nasopharynx and left in place for a few seconds. It is then slowly withdrawn with a rotating motion. A second swab should be used for the second nostril. The tip of the swab is put into a vial containing 2-3ml of virus transport medium and the shaft cut.

Nasopharyngeal Aspirate

This is the best method of collection of specimens for diagnosis of avian influenza. Nasopharyngeal secretions are aspirated through a catheter connected to a mucus trap and fitted to a vacuum source. The catheter is inserted into the nostril parallel to the palate. The vacuum is applied and the catheter is slowly withdrawn with a rotating motion. Mucus from the other nostril is collected with the same catheter in a similar manner. After mucus has been collected from both nostrils, the catheter is flushed with 3ml of transport medium.

Nasal Wash

Materials required: Sterile screw capped specimen cups
Petri dish

The patient sits in a comfortable position with the head slightly tilted backward and is advised to keep the pharynx closed by saying "k" while the washing fluid (usually physiological saline) is applied to the nostril. With a transfer pipette, 1-1.5ml of washing fluid

is instilled into one nostril at a time. The patient then tilts the head forward and lets the washing fluid flow into a specimen cup or a Petri dish. The process is repeated with alternate nostrils until a total of 10-15ml of washing fluid has been used. Washing fluid should be diluted in the ratio of 1:2 in approximately 3ml of transport medium.

Throat Swab

Both nostrils and the posterior pharynx are swabbed vigorously, and the swab is placed in transport medium as described above (WHO 2006).

Transport of Specimens

Specimens for transport must be placed in leak-proof specimen bags, which have a separate sealable pocket for the specimen (i.e. **plastic biohazard specimen bag**). Ziplock bags could also be used as an alternative. Personnel who transport specimens should be trained in safe handling practices and decontamination procedures in case of a spill.

The accompanying request form should be clearly marked as “suspected or probable HPAI” and the receiving laboratory notified by telephone that the specimen is “on its way.” Specimens should be hand delivered where possible.