Avian Influenza
Preparedness Plan
2013

Sabah Health Department
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ABBREVIATIONS AND ACRONYMS

ACD  Active Case Detection
ADHS Active Daily House Surveillance
AI   Avian Influenza
AMO  Assistant Medical Officer
ASAP As Soon As Possible
A&E  Accident And Emergency Department
CDC  Communicable Diseases Control
CXR  Chest X-Ray
DHO  Divisional/District Health Office
HPAI Highly Pathogenic Avian Influenza
IDRC Infectious Disease Research Center
IFA  Immunofluorescence Antibody
ILI  Influenza Like Illness
IMR  Institute Of Medical Research
MKAK Makmal Kesihatan Awam Kebangsaan
MO   Medical Officer
MOH (KKM) Ministry Of Health (Kementerian Kesihatan Malaysia)
OPD  Outpatient Department
PCR  Polymerase Chain Reaction
PUI  Patient Under Investigation
PPE  Personal Protection Equipment
SARI Severe Acute Respiratory Infection
SARS Severe Acute Respiratory Syndrome
STGG Serum Tryptone Glucose Glycerol Media
SVA  State Veterinary Authority
VTM  Viral Transport Media
WHO World Health Organization
1.0 INTRODUCTION

Avian influenza (AI) is caused by influenza virus type A (A/H5N1); the A is for type A influenza virus and not Avian. It does not normally infect species other than birds. Migrating waterfowls are a significant source of AI virus. The birds contaminate the water and environment of their resting place. Virus in faeces and water can remain viable for up to 32 days. The domestic poultry can be infected when they drink the contaminated water. The infected poultry shed virus in saliva, nasal secretion and faeces in the first two weeks of infection.

The exact mode of transmission of avian influenza to human is not known. During human outbreak in Hong Kong 1997, it showed those affected had history of close contact with the infected poultry. Human–to–human transmission of avian influenza has never been documented (WHO, 2004). Spreading of H5N1 from Asia to Europe is much more likely due to trading of legal or illegal poultry rather than from migrating birds. Controlling the disease in animals is the first step in decreasing risks to human.

Man inhales the influenza virus from the infected poultry and reproduces it in the lining of the lungs. The tissues then become swollen and inflamed. The young children and old people are at risk of getting the infection. However, the influenza viruses are very sensitive to most detergents and disinfectants.

There are many subtypes of avian influenza viruses, but only four subtypes that are highly pathogenic to man i.e. H5N1, H7N3, H7N7 and H9N2. The highly pathogenic H5N1 avian flu is an emerging threat to global pandemic. Since it first reported H5N1 outbreak in 1987, there has been an increasing number of bird-to-human transmission.

Individuals infected with AI virus are considered to be infectious starting from one day before the onset of the symptoms up to 7 days after onset. The fatality rate is much higher than influenza A H1N1. As at 2004, WHO had reported 37 cases of AI in man, 12 cases in Thailand and 25 cases in Vietnam. A total of 26 deaths reported. A few outbreak in poultry reported in 2003 in South, 2004 in Taiwan, Vietnam, Cambodia, Indonesia, Pakistan, Laos, China and Japan and late June 2004, a second wave of H5N1 infection occurred in China, Indonesia, Thailand and Vietnam.

This guideline is adopted from Sarawak Avian Influenza Preparedness Plan 2012 and partly from WHO SARS guideline, Ministry of Health “alert, enhanced surveillance and management of avian influenza in human, 2004”, and. The preparedness plan is very important because of:

1. High fatality rate: 60 – 80%;
2. The available anti-viral may not be useful for future;
3. Vaccine for avian influenza is not available.
2.0 OBJECTIVE

2.1 General

To provide a guide in management and surveillance of avian influenza cases in human

2.2 Specifics

1. A guide to case management
2. A guide to Public health response and surveillance
3. A guide to risk communication

3.0 ALERT MECHANISM

3.1 Risk Assessment

The Sabah State Health Department is recommended to collaborate with the State Veterinary Department for information / status of avian influenza in their state.

3.2 Alert Criteria

Alert criteria is an operational definition to ensure that appropriate infection control and public health measures are implemented until avian influenza has been ruled out.

The criteria include situations where:

i. There is more than 3% unexplained deaths among chicken occurring in a poultry farm as informed by State Veterinary Authority (SVA);
ii. A suspect case of H5N1 in poultry / bird without human case;
iii. A suspect case of H5N1 in poultry / bird AND human;
iv. An unusual increase of influenza-like illness(ILI) cases in a locality;
v. A cluster (two or more) of unexplained death(s) due to respiratory symptoms (acute respiratory syndrome/ atypical pneumonia) in children from same locality.
3.3 Local Alert Level

Table 1: Summary of responses involve in the alert level of avian influenza surveillance

<table>
<thead>
<tr>
<th>LOCAL ALERT LEVEL</th>
<th>PUBLIC HEALTH RESPONSE/ACTIONS TO BE TAKEN</th>
</tr>
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<tbody>
<tr>
<td><strong>LEVEL 0</strong></td>
<td>No human and poultry case</td>
</tr>
<tr>
<td></td>
<td>Compilation of daily ILI surveillance, rumours surveillance, and syndromic surveillance from all divisions/districts by CDC Section SHD. Weekly Epidemiology Meeting</td>
</tr>
<tr>
<td><strong>LEVEL 1</strong></td>
<td>Positive H5N1 in animal <strong>BUT NOT</strong> in man</td>
</tr>
<tr>
<td></td>
<td>Enhanced ILI surveillance</td>
</tr>
<tr>
<td></td>
<td>Culling of poultry (State Veterinary Authority)</td>
</tr>
<tr>
<td></td>
<td>Restrict human movement into the farm</td>
</tr>
<tr>
<td></td>
<td>Contact tracing and ACD for those who had with poultry</td>
</tr>
<tr>
<td></td>
<td>Refer case to hospital if man develops symptoms</td>
</tr>
<tr>
<td></td>
<td>Activate triaging system in health clinics</td>
</tr>
<tr>
<td></td>
<td>Activate the Operation Room</td>
</tr>
<tr>
<td><strong>LEVEL 2</strong></td>
<td>Case in man but not in poultry <strong>IMPORTED</strong></td>
</tr>
<tr>
<td></td>
<td>Contact tracing and ACD</td>
</tr>
<tr>
<td></td>
<td>Strengthen infectious control in hospitals</td>
</tr>
<tr>
<td></td>
<td>Enhanced ILI surveillance</td>
</tr>
<tr>
<td></td>
<td>Activate triaging system in health clinics</td>
</tr>
<tr>
<td></td>
<td>Activate the Operation Room</td>
</tr>
<tr>
<td></td>
<td>Alert all private health facilities</td>
</tr>
<tr>
<td><strong>LEVEL 3</strong></td>
<td>Has case in poultry AND human <strong>LOCAL TRANSMISSION</strong></td>
</tr>
<tr>
<td></td>
<td>All of the above for Level 0, 1 and 2</td>
</tr>
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</table>
4.0 CASE DEFINITION

(Based on WHO guidelines for Global surveillance of influenza A/H5)

4.1 Patient Under Investigation (PUI) For Avian Influenza:

I. Any person with fever (T > 38°C); AND

II. One or more of the following symptoms: cough, sore throat, shortness of breath; AND

III. Having contact with dead poultry or birds during the last 7 days prior to the onset of symptoms.

4.2 Suspected Case

a) Those who fit the criteria of PUI (without no.III) AND

Living within/history of visiting to 300 meter radius from the index house /farm of the confirmed H1N5 among birds/chickens in an affected area gazetted by SVA AND having been in direct contact with birds/poultry during the last 7 days prior to the onset of symptoms.

b) Those who fit the criteria of PUI (without no.III) AND

Living outside the 300 meter radius but within 10 km radius from the index house /farm of the confirmed H1N5 among birds/chickens in an affected area gazetted by SVA OR history of visiting the area AND having been in direct contact with dead or illbirds/poultry during the last 7 days prior to the onset of symptoms.

c) Those who fit the criteria of PUI (without no.III) AND

Having worked in laboratory during 7 days prior to the onset of symptoms where there is processing of samples from human or animals that are suspected of having highly pathogenic avian influenza (HPAI) infection.

d) Any death from an unexplained acute respiratory illness AND one or more of the one or more of the following:

Residing within 1 km area where HPAI is suspected or confirmed in human or animals;

Having been in direct contact during the last 7 days prior to onset of symptoms with a confirmed case of influenza H5N1 among the poultry or human during its infectious period (starting from a day before the onset of symptom up to 7 days after the onset of symptoms)
4.3 Confirmed Case

An individual for whom laboratory testing demonstrates one or more of the following:

a. Positive viral culture for influenza H5N1;

b. Positive PCR for influenza H5N1;

c. Immunofluorescence antibody (IFA) test positive using influenza H5N1 monoclonal antibodies;

d. 4-fold rise in influenza H5N1 specific antibody titre in paired serum samples.

4.4 Case Definition For Outbreak

Epidemiologically, an outbreak of H5N1 occurs when there is ONE confirmed case of H5N1 in a human; BUT declaration can only be made by Yang Berhormat Menteri Kesihatan.
5.0 CASE MANAGEMENT

5.1 Referral Of Patients

All patients with suspected avian influenza must be seen or consulted by Medical Officer before refer to designated hospitals.

Designated hospital is a hospital with adequate intensive care and isolation facilities:

1. Queen Elizabeth 1 Hospital.
2. Keningau Hospital.
3. Duchess of Kent Sandakan Hospital.
4. Tawau Hospital.

Refer patient to the hospital in an ambulance. The health care worker accompanying the patient MUST wear appropriate PPE.

5.2 Transportation Of Patient

All accompanying staff including the driver MUST use N95 mask. The patient MUST use 3- ply surgical mask.

Precautions to be taken when transporting patient by ambulance:

1. During transportation of patients, off the air-conditioner and wind down all the windows.
2. If possible, not more than one staff (with PPE) to accompany suspected case.
3. Relatives are not to accompany in the same ambulance.
4. Driver must wear N95 mask.
5. Other non AVIAN INFLUENZA patients must not share this ambulance.
6. The driver and escort must not stop anywhere upon their return trip to the clinic/hospital.
7. The ambulance and other items used during transport must be disinfected on return to the district hospital.
8. Hand washing must be done immediately after PPE removal and take a bath before going back home.
5.3 Case Management In Rural Clinics

5.3.1 Screening Of Patients

Activities include:

a) Triaging counter: to screen and segregate patient with fever $\geq 38^\circ$C and respiratory infections from general outpatient;

b) Designate a room with windows for examination and observation for suspected H5N1 patient before transferring the patient to hospital (e.g. postnatal room);
   - Open the windows when examining the suspected H5N1 patient
   - Do not allow visitor or relative into the room. Put up a signage outside the door “STRICTLY NO VISITOR/PELAWAT TIDAK DIBENAR MASUK”

c) Notify Divisional/District Health Office Operation Room

5.3.2 Handling Of Suspected H5N1 Patient For Referral To Hospital In Rural Clinics

Activities include:

a) Patients instructed to wear 3-ply surgical mask;

b) Staff handling the cases is to put on N95 mask and PPE;
   - If N95 is not available, use 3-ply mask

c) Refer all suspected H5N1 patients to designated hospital
   - Attending Assistant Medical Officer (AMO) MUST consult a Medical Officer at the nearest health clinic with MO or Divisional/District Health Officer for further instruction
   - Isolate the patients in the designated room

d) After office hours/weekend/public holidays, attending staff MUST refer through Divisional/District Health Office Operation Room for further instructions.
5.3.3 Handling Of Patients For Observation In Rural Clinics With Ward Facilities

Active daily surveillance for patients that are:
1. Not fulfilling case definition (e.g. fever < 38 °C), and clinically stable and well
2. Stays far away from the clinic where daily home surveillance by clinic staff is not practical or cannot be carried out.

Activities include:

a) Notify Divisional/District Health Office Operation Room
b) Admit the patient in designated room or ward for the patient(s) and for the family members without symptoms can use general ward to stay.
c) Take clinical specimen for virological investigation, to be discussed with Division/District Health Officers for the specimen transportation.
d) Temperature must be taken 4 hourly during daytime and once at night.
e) Observe for deterioration of respiratory signs i.e. cough, and breathing difficulty.
f) If temperature rises to $\geq 38^\circ$C or clinically worsening, refer to nearest hospital as soon as practicable.
g) If patients are well after 7 days or the virological result negative, discharge the patients and follow up appropriately or staff monitor at the village.
h) If virological result positive for H5N1, refer immediately to designated hospital and inform Divisional/District Health Office Operation Room immediately. If its negative, the surveillance can be stopped.
i) Arrange food and laundry services for the patients isolated in the rural clinic.
Figure 1: Flow Chart for Management of Suspected H5N1 at Rural Clinics

Precaution:

All staff handling or in contact with suspected avian influenza patient MUST wear appropriate PPE and take a bath after handling the patient.
5.4 Case Management In Urban Clinics

5.4.1 Screening Of Patient (refer 5.3.1)

5.4.2 Handling Of Suspected H5N1 Patient For Referral To Hospital In Urban Clinics (refer to 5.3.2).

Figure 2: Flow Chart for Management of Suspected H5N1 at Urban Clinics

**Precaution:**
All staff handling or in contact with suspected avian influenza patient MUST wear appropriate PPE and take a bath after handling the patient.
5.5 Case Management In Hospitals

5.5.1 Admission

Special counters at the Hospital Accident & Emergency (A&E) Department to handle suspected cases (triage). Patients are to be diverted to a separate designated waiting and examination area to minimize patient mix.

Patients are examined in the special triage examination room. The health care workers assessing the patient should wear surgical mask, gown and gloves. Preferably the chest x-ray (CXR) should be taken in the triaging area itself. If patient has to transferred for chest x-ray, patient should wear a surgical mask. If admission criteria is fulfilled, they should be admitted to the designated isolation ward/ area in the hospital.

Admission criteria

- Recent (<5 days) history of direct exposure* to diseased or dying poultry or birds (*direct exposure: direct contact or close proximity e.g. within 3 feet)
- Fever >38°C
- Respiratory symptoms (e.g. cough, sore throat, shortness of breath)

5.5.2 Investigation

A chest radiograph (CXR) should be done soon after admission and the appropriate laboratory specimens for screening of avian influenza should be taken (refer to guidelines by IMR on collection of specimens for screening of avian influenza). Other laboratory tests e.g. haematology, biochemistry, blood gases, etc should be sent as deemed appropriate.

Note: in situation where CXR cannot be done immediately, admission criteria will depend on the first three (3) criteria.

5.5.3 Isolation In Ward

Patients who are admitted are to be isolated as follows in order of preference;

i. Single room (with attached bathroom facilities)

ii. Single room without attached bathroom facilities

iii. Cohorting in the ward with at least 3 feet distance between each bed

For (i) and (ii) a separate toilet must be identified for patient use.

A surgical mask should be worn before entering the room or when within 3 feet of the patient. Use N95 mask when performing higher risk procedures such as oral toilet, insertion of ryles tube, intubation, resuscitation etc.
Face shields/eye protection are to be used for all procedures that are likely to generate splashes/spray of blood, body fluids, secretions, excretions use face shields and eye protection.

A gown should be worn before entering the room/attending to the patient. Change gloves between patients.

Hand washing must be done immediately after glove removal and between patients.

Visitors should be kept to the minimum. Visitors entering the room have to use the same level of personal protection as staff.

Transfer of patient within the hospital should be kept to the minimum. If transfer is necessary, patient must wear a surgical mask.

**5.5.4 Treatment**

If CXR reveals pneumonic infiltrates, empirical antibiotics as recommended for community acquired pneumonia should be commenced.

*Options would include:* 2\textsuperscript{nd} /3\textsuperscript{rd} generation cephalosporins + macrolide, B lactam/ B-lactamase inhibitors, doxycycline or the respiratory fluoroquinolones.

**5.5.4.1 Antiviral Therapy:**

If the patient has symptoms of respiratory distress e.g. tachypnoea (respiratory rate (RR)>25/min), shortness of breath, hypoxemia with pulmonary infiltrates, influenza antiviral therapy should be commenced.

Ideally, influenza antiviral therapy works best when given early. Hence when there is a high index of suspicion, antiviral drugs can be given early at the discretion of the attending physician.

The preferred agent is *oseltamivir 75mg bd*. The recommended dose for children who weigh \(\leq 15\text{kg} \) is 30mg bd, for children > 15 to 23 kg the dose is 45mg bd, for children >23kg to 40kg, the dose is 60mg bd, and for the children > 40kg, the dose is 75mg bd. The duration of therapy is usually 5 days. Because of the unknown effects of influenza antiviral drugs on pregnant women and their fetuses, *oseltamivir* should be used during pregnancy only if the potential benefit justifies the potential risk to foetus.
5.5.4.2 Supportive Care

Should be provided when necessary i.e. oxygen and ventilation support, hydration, blood gas monitoring, nutrition, etc. To reduce possible spread to healthcare workers (although no human-to-human spread has been documented during this current outbreak) nebulizer use should be avoided (if possible).
6. LABORATORY MANAGEMENT

6.1 Collection And Handling Of Specimens For The Evaluation Of Potential Cases Of Avian Influenza

6.1.1 Respiratory Tract Specimens

Respiratory specimens should be collected as soon possible in the course of the illness. The likelihood of recovering most viruses and many bacteria diminishes markedly > 72 hours after symptoms onset. Some respiratory pathogens may be isolated after longer periods.

Three types of specimens may be collected for viral or bacterial isolation and PCR. These include:

1. Nasopharyngeal wash/aspirates
2. Nasopharyngeal swabs
3. Oropharyngeal swabs
4. Throat gargle
5. Sputum

Nasopharyngeal aspirates are the specimen of choice for detection of respiratory viruses and are the preferred collection method among children aged < 2 years.

6.1.1.1 Collection Of Nasopharyngeal Wash/Aspirates

Have the patient sit with the head tilted slightly backward. Instil 1–1.5 ml of sterile, physiological saline (pH 7.0) into one nostril. Flush a 3cc syringe with 2–3 ml of saline. Insert the syringe into the nostril parallel to the palate. Flush in and out few times. Aspirate nasopharyngeal secretions. Collect specimens in sterile vials. Transport on wet ice.

* If nasopharyngeal wash is not feasible, please do throat swab and nasal swab. Smear each swab onto glass slide for direct Ag antigen. This is for diagnostic EM.
6.1.1.2 Collection Of Nasopharyngeal Or Oropharyngeal Swabs

Use only sterile Dacron or rayon swabs with plastic shafts. DO NOT use calcium alginate swabs or swabs with wooden sticks, as they may contain substance that inactivate some viruses and inhibit PCR testing.

Nasopharyngeal swabs – insert swab into nostril parallel to the palate and leave in place for a few seconds to absorb secretion. Swab both nostrils.

Oropharyngeal swabs – swab both posterior pharynx and tonsillar areas, avoiding the tongue.

Place swabs immediately into sterile vials containing 2 ml of viral transport media or a bacterial transport media, such as serum tryptone glucose glycerol (STGG) media. Break applicator sticks off near the tip to permit tightening of the cap. These swabs are for viral culture. Transport on wet ice.

6.1.1.3 Lower Respiratory Tract

Collection of broncheoalveolar lavage, tracheal aspirate, pleural tap: if these specimens have been obtained, half should be centrifuged and the cell-pellet fixed in formalin. Remaining unspun fluid should be placed in sterile vials with external caps and internal O-ring seals. Transport on wet (4°C).

6.2 Blood Components

A. Collection of leucocytes: if available, collect 8 ml whole blood in CPT-citrate (Becton Dickinson) tube. Specimens should be centrifuged at 1500-1800 relative centrifuge force. Ship on wet ice.

B. Collection of serum: acute serum specimens should be collected and submitted as soon as possible. When applicable, convalescent specimens should be collected and submitted in 3- weeks.

Collect 5-10 ml of whole blood in a serum separator tube. Allow blood to clot, centrifuge briefly and collect all resulting sera in vials with external caps and internal O-ring seals minimum of 200 microliters of serum is preferred for each test. If unfrozen, transport on wet ice (4°C). If frozen, transport on dry ice.

C. Collection of EDTA blood: collect 5-10 ml of whole blood in an EDTA (purple-top) tube. Transfer to vials with external caps and internal O-ring seals. If shipped domestically, blood specimens should be stored and transported on wet ice (4°C).
6.3 Tissue Specimens

I. **Fixed tissue** (formalin fixed or paraffin embedded) from all major organs (e.g. lung, trachea, heart, spleen, liver, brain, kidney, adrenals).

Formalin fixed tissue is not considered a biohazard or chemical hazard.

Store and ship at room temperature. **DO NOT FREEZE FIXED TISSUES.**

II. **Fresh frozen** tissues from lung and upper airway (e.g. trachea, bronchus)

Specimens should be collected aseptically as soon as possible after death. Technique and time will impact risk of post mortem contamination. Use separate sterile instrument for each collection site. Place each specimen in separate sterile containers containing small amounts of viral transport media or saline. Store and ship frozen at -70°C and shipping on dry ice is preferable.

6.4 Labelling And Documentation

A. Specimen labelling: **each specimen should be labelled with the patient ID number and date collected.**

B. Accompanying documentation: the package should include the line listing for all specimens including patient’s name and ID number, and date samples collected.

C. Clinician’s name and contact phone number, and specimens’ submitter’s name and contact phone number.

6.5 Packaging

Packing of specimens from patients with suspected AI should be treated as biohazard. Specimens should be packaged in three layers:

A. **A primary watertight non breakable container** containing the specimen
   - it must be firmly capped and the cap should then be sealed with parafilm, adhesive cloth or zinc oxide tape (not cellulose tape)
   - the container must then be cocooned in absorbent material (e.g. cotton)
   - several primary containers may be packed in one secondary container

B. **A secondary watertight non breakable container** enclosing enough absorptive material (e.g. sponge)
   - between it and the primary container to absorb all of the fluid in the specimen in case of leakage
   - it must be firmly capped and sealed in the same way as the primary container
   - the secondary container must then be packed firmly with absorbent material into the outer container
   - several secondary containers may be packed in one outer container
C. **An outer container** which is intended to protect the secondary package from outside influence, such as physical damage and water, during transportation absorbent, shockproof packing between the secondary and outer containers the lid is again sealed with tape

D. **Separate the request form** from the ice box / secondary / tertiary container.

### 6.6 Transportation

**A DIAGNOSTIC SPECIMEN** is defined as any human and animal material being transported for diagnostic or investigational purposes, BUT excluding live infected animals.

Specimens from district hospitals should be coordinated by the State Pathology laboratory (with collaboration of State Health Department Operation Room) for sending the specimens to IMR.

**For Malaysian domestic transportation, store and ship all non-tissue specimens on wet ice. Frozen tissues should be sent on dry ice.**

Address the packages to:

Virology Unit
Institute of Medical Research
Jalan Pahang, 50588 Kuala Lumpur
Tel: 03 – 2616 2671
Fax: 03 – 2693 8094

Diagram below show the flow of specimens collection from the health facilities to reference laboratory (IMR) for viral laboratory diagnosis (figure 3), the flow of work process on the clinical specimens sent to IMR for avian influenza (figure 4) and flow of information (test result) from IMR (figure 5).

Attached with these guidelines is the laboratory request form for AI as proposed by IMR (Annex A).
Figure 3: Flow of Specimen Collection for Viral Laboratory Diagnosis

Specimens
1. Nasopharyngeal swab/aspirate
2. Throat/nasal swab
3. Throat gargle
4. Sputum
5. Bronchoalveolar/tracheal lavage

Send the specimens to the laboratory ASAP in ice
Keep specimens at 4°C
DO NOT FREEZE

Transport specimens in ice

Virology Unit
Institute of Medical Research
Jalan Pahang, 50588 Kuala Lumpur
Tel: 03 – 2616 2671
Fax: 03 – 2693 8094

* Please see details
Figure 4: Flow of Work on the Clinical Specimens for Avian Influenza

SPECIMEN

REAL-TIME PCR

Plain sterile container

RESULT

Haemagglutinase (HA) subtyping

INOCULATE TO MDCK VIRO

Viral transport media (VTM)

GENETIC SEQUENCING

Neuraminidase (NA) subtyping
**Figure 5: Flow of Information from Reference Laboratory**

**RESPONSIBILITY**

- **Head of Virology Unit, IDRC**
- **Director of IDRC**
- **Deputy Director of Disease Control (Surveillance)**

**INDICATOR**

YB MK – Yang Berhormat Menteri Kesihatan
DG – Director General of Health
DDG – Deputy Director General of Health (Public Health)
DDC – Director of Disease Control
MOH – Ministry of Health
IMR – Institute for Medical Research
NPHL – National Public Health Laboratory

**Responsibility**

- Test done in IMR
  - Inform result
  - The Director of Infectious Disease Research Centre (IDRC)
  - Surveillance Section, MOH

- Test done in NPHL
  - Inform result by Virologist in-charge
  - Requesting hospital

**Update result**

- YB MK
- DG
- DDG (PH)
- DDC

**Classification**

- Confirmed H5N1 case
- Non-case Alternative diagnosis
7 PUBLIC HEALTH MEASURES

7.1 Operations Room Management

Ops Room is activated beginning at level 1 and 2 of outbreak. The terms of reference are:

i. To compile and monitor all information on activities concerning the outbreak

ii. To coordinate all activities involving inter agency cooperation and collaboration.

iii. Updating information concerning the outbreak:
   a. Number of cases reported
   b. Control activities
   c. Health education activities
   d. Current situation of the outbreak

iv. To manage the hotline

v. To prepare daily report
   a. Laporan Harian Avian Influenza – Annex B (surveillance)
   b. Patient’s Daily Progress (Annex C)- format for informing

vi. To prepare information for dissemination to relevant parties

7.1.1 Equipments required for operation room:

   i. Telephone and fax line
   ii. Computer and printer
   iii. Internet
   iv. Map
   v. Soft or white board

7.2 Notification

Any suspected case must be notified to the nearest Area/District Health Office (PKK/PKD) for case investigation and active case detection. This is using a standard form KKM/BKP/influenza/2004 Revised JKNSabah 2013 (Annex D).

Upon receiving the notification, DHO should contact the Local Veterinary Services Department for prevalence/incidence on infected or dying birds and poultry in the locality.
7.3 Case Investigation

Team: Health inspector, public health nurse, nurse, and driver.

Team to investigate a case using format AI/ACD/JKNSABAH/2013 (Annex E).

7.4 Active Case Detection (ACD)


Done within 300 meter radius from index house/farm with H5N1 positive in poultry (Figure 6).

Look for any person with symptoms of fever, flu, and cough.

To do temperature checking: if temperature $\geq 38^\circ C$ and fulfilled criteria PUI for avian influenza, to admit to designated hospital.

To distribute health alert card (Annex G)

Active daily house surveillance (ADHS) for 7 days for person with symptoms but not fulfilled avian influenza case definition and family members of PUI/suspected/confirmed case, which consists of:

i. Daily monitoring of temperature

ii. Look out for other symptoms i.e. cough, sore throat, and difficulty of breathing.

To use proper PPE (3-ply mask, boot) and to undergo decontamination before going home.

Figure 6: Diagram of Activities to be carried out at various distances from positive H5N1 in bird/poultry.
7.5. Rapid Containment

Rapid containment is an extraordinary operation involving a group of activities intended to stop a potential development of Pandemic Influenza (Phase 4). The outcome will have global effects and require measures beyond rapid response.

The rapid containment activities include the following:

i. A joint risk assessment by national authorities and WHO as to whether a local outbreak may be the first indication of an emerging influenza pandemic;

ii. A decision by national authorities, in consultation with WHO, to begin containment measures; and

iii. Application of both pharmaceutical and non-pharmaceutical interventions in

7.5.1 The Decision To Launch A Containment Operation

The decision to launch a containment operation only be undertaken by the National Committee based on the recommendation or evaluation from National and WHO.

7.5.2 Following Factors Are Considered Before Launching The Containment Operation

a) Virological: Laboratory evidence of a novel virus will be critical.
b) Epidemiological: Evidence of efficient and sustained human-to-human transmission.
c) Logistic support
d) Socio-cultural: the acceptance of the local residence
e) Interagency collaboration.

7.5.3 The Containment Strategy

1. Identify the initial case (Index Cluster) as early as possible

2. Create a geographically defined containment zone around the cases where widespread anti-viral and non-pharmaceutical interventions should be used. The Containment Zone should be the largest possible area that can be created and feasibly maintained and must be large enough to surround all known persons infected by avian influenza and as many of the people in frequent contact with them. While a circular Containment Zone is conceptually the simplest, the actual size and shape of the Containment Zone and the Buffer Zone is expected to be influenced by pragmatic considerations such as:
i. Known movements and geographical distribution of cases and contacts;
ii. Important local or national administrative boundaries as well as important natural boundaries that may limit the movement of people;
iii. Infrastructure and essential services (e.g. power, water, sanitation, food supply, communications) considerations that may substantially affect the safety and health of people within the Containment or Buffer Zones

3. A Buffer Zone will be defined surrounding the Containment Zone. The Buffer Zone is an area where active and complete surveillance should be initiated to detect any possible cases of avian influenza;

4. Follow-up of persons who have moved outside the Containment Zone: All possible measures should be taken to follow up persons who have left the containment zone before or after the start of the operation and who possibly could have come in contact with a person infected with AI (H5N1);

Once the Containment Zone and Buffer Zone have been identified the following Rapid Containment activities should be initiated.

7.5.4 Activities In The Containment Zone

1. ACD
2. Pharmaceutical Intervention
   a. Mobilization of PPE stockpile
   b. Antiviral prophylaxis strategy: All persons in the Containment Zone who are ill or not ill should be given antiviral prophylaxis. The decision is at National level.
   c. Antiviral treatment: Cases presenting with influenza-like illness should be clinically managed by designated hospitals.
3. Perimeter control

All non-essential movement of persons in and out of the Containment Zone should be discouraged.

Physical signs of the boundaries should be evident and clear.

Clear entry and exit points should be identified.

Exit screening procedures should be put into place at these points.

Exit screening procedures would include: ask about symptoms of influenza; close contact with someone with influenza; and received and took antiviral prophylaxis; Performing a visual screen for signs of influenza; Temperature measurement (e.g. thermal scanning or ear-temperature).
4. Non-Pharmaceutical Intervention: a) Isolation; b) Quarantine; c) Social distancing
5. Monitor the evolution of the outbreak
6. Risk communication:
   a. To provide the best information available in a timely and easily understood fashion;
   b. To promote compliance with containment measures, identify barriers and facilitating factors to compliance, and adapt approaches to the local context through a policy of transparent communication;
   c. Instill and maintain Public Confidence, prepare for a possible pandemic.
7. Psycho-sosial support.

7.5.5 Activities In The Buffer Zone

1. Active and complete surveillance with laboratory testing of all suspect cases
2. Isolation and treatment of suspect cases
3. Antiviral prophylaxis and quarantine of contacts of suspect cases
4. Infection control measures: Hand Hygiene, Cough etiquette, avoiding close contacts, use of face masks, disposal of sputum, and disposal of dead bodies.
5. Risk communication.

Figure 7. Diagram of containment zone and buffer zones
7.6 **Decontamination**

Any equipment and clothing (shoes, coverall, etc) taken back from the infected farm must be disinfected. The storage place must be decontaminated too.

Any vehicle used by the workers in the infected farm must be decontaminated before it can be driven out from the farm.

7.7 **Disinfection**

Recommended disinfection solution for articles**: *

1. Sodium hypochlorite 1% in dilution, 5% solution to be diluted 1:5 in clean water
2. Bleaching powder 7 g/litre with 70% available chlorine
3. Alcohol (70%) isopropl, ethyl alcohol,methylated spirit

** Notes: articles = boots, and tyres.

7.8 **Isolation/Quarantine**

Isolation / quarantine of PUI/suspected/confirmed cases must be placed in single room and nursed according to Universal Precaution for infectious diseases in designated hospital.

7.9 **Personal Protective Equipment**

Personal Protective Equipment (PPE) should be used in the event of Avian Influenza case management (Table 2).

**Table 2: Type of Personal Protective Equipment (PPEs) and when to use it**

<table>
<thead>
<tr>
<th>Type of PPE</th>
<th>When to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latex glove</td>
<td>Use when attending patient. To change with every procedures and in between patient</td>
</tr>
<tr>
<td>Hand washing</td>
<td>Before or after procedures/ before or after use glove</td>
</tr>
<tr>
<td>N95 mask</td>
<td>Procedures with high risk generating aerosols eg: oral toilet, insertion of stylestube, intubation, resuscitation, culling operation.</td>
</tr>
<tr>
<td>Full-face shield</td>
<td>Used in situation where there is a chance of splashing during procedures</td>
</tr>
<tr>
<td>Surgical mask</td>
<td>Used in areas where no direct contact patient contact</td>
</tr>
<tr>
<td>3-ply surgical mask</td>
<td>Direct patient contact or risk activities. Should be worn at all times during ACD.</td>
</tr>
<tr>
<td>Linen or disposable gown</td>
<td>Same as N95.</td>
</tr>
<tr>
<td>Boots</td>
<td>Should be worn at all times during ACD.</td>
</tr>
</tbody>
</table>
7.10 STAFF MONITORING

A register of staff attending to cases of suspected AVIAN INFLUENZA should be created. Data required includes:

a) Identification data

b) The dates when they started and stopped nursing the patient.

The number of staff directly involved in nursing the patient should be kept to the minimum.

All health staff attending to the patient should adhere to the KKM’s AVIAN INFLUENZA isolation and infection control policy at all times.

Any health staff that develops flu-like symptoms, fever, coughs and shortness of breath within 7 days of nursing the patient should be referred to hospital after consultation with MO in clinic for further management (Annex H).
8.0 HEALTH EDUCATION (FREQUENTLY ASK QUESTION)

8.1 What is Avian Flu?
Avian flu/influenza (AI), commonly called bird flu, is an infectious viral disease of birds (especially wild water fowl such as ducks and geese). Most avian influenza viruses do not infect humans; however some, such as H5N1, have caused serious infections in human. AI viruses are divided into two groups based on their ability to cause disease in poultry: high pathogenicity and low pathogenicity. High pathogenicity viruses result in high death rates (up to 100% mortality within 48 hours) in some poultry species. Low pathogenicity viruses can also cause outbreaks in poultry but are not generally associated with severe clinical disease.

The viruses currently circulating in poultry in parts of Asia and Northeast Africa, which have cause human disease and deaths since 1987. The case fatality rate for H5N1 virus infections in people is much higher compared to that of seasonal influenza infections.

8.2 What are the signs and symptoms?
Initial symptoms include fever, usually with high temperature (≥ 38°C) and other influenza-like symptoms. Diarrhoea, vomiting, abdominal pain, chest pain, and bleeding from the nose and gums have also been reported. Difficulty in breathing develops around five days following the first symptoms. Respiratory distress, a hoarse voice, and a crackling sound when inhaling are commonly seen. Sputum production is variable and sometimes bloody.

The incubation period can be from two to eight days and possibly as long as 17 days.

8.3 How did the disease get transmitted?
It is a zoonotic disease. Human become infected after in contact, either direct or indirect with infected live or dead animals or contaminated environment.

8.4 What is the treatment?
Antiviral drugs, Osetalmivir, can reduce the duration of viral replication and improve survival. It should be prescribed within 48 hours to maximize its therapeutic benefits.

8.5 Who are at risk?
The primary risk factor for human infection appears to be direct or indirect exposure to infected live or dead poultry or contaminated environments. There is no evidence to suggest that the H5N1 virus can be transmitted to humans through properly prepared poultry or eggs. Slaughter, defeathering, handling carcasses of infected poultry, and preparing poultry for consumption, especially in household settings, are likely to be risk factors.
9.0 RISK COMMUNICATION FOR AVIAN INFLUENZA

Roles and functions of other agencies during the AI outbreak

1. State veterinary authority
   
   Surveillance of AI in poultry farm
   Dissemination of information for awareness and prevention of avian influenza.

2. Royal Malaysian police
   
   To control crowd
   To co-ordinate issues related to security

3. Department of information/broadcasting
   
   To disseminate relevant information, educational materials and public information.
   To coordinate press conference.

4. Department of social welfare, national unity and community development
   
   To implement and enforce preventive and control measures in all child care centres.
   To facilitate all matters concerning families and community related to influenza.

5. Department of education
   
   To disseminate updated information on the control measures to all teachers and students.
   To help in screening at schools/institution
   To help in monitoring health status of the school children.

6. Department of immigration
   
   To facilitate in the screening of travellers at entry point.

7. Department of occupational safety and health
   
   To monitor the health of workers and to take remedial action.
   To disseminate information to all workers and work place.

8. Malaysia Medical Association Sabah branch
   
   To help in disseminate all information to all members.
   To help in screening for cases at the primary care level.
   To help in community awareness.
10.0 SURVEILLANCE ACTIVITIES FOR AVIAN INFLUENZA

The surveillance data for avian influenza is the same as any influenza surveillance. The monitoring activities include the epidemiology and virology components. The objectives of this surveillance are:

- To see the trend of influenza cases and to detect early outbreak.
- To monitor the magnitude of the disease in the community.
- To identify the circulating viruses.

The surveillance activities include:

1. Influenza like illness (ILI) surveillance in sentinel clinics, in outpatient (OPDs) and private clinics (GPS).

   In Sabah, there are 19 Sentinel Clinics/Hospitals reporting ILI.

2. Severe acute respiratory infection (sARI) surveillance in hospital

   There are 20 Sentinel Clinics/Hospital reporting sARI in Sabah.

3. Laboratory Based Surveillance

   There are three sentinel clinics for lab based surveillance. There are KK Luyang in Kota Kinabalu, KK Sandakan in Sandakan and JPLTawau in Tawau district. Any cases which fulfil the criteria for ILI, samples will be taken and send to MKAK for virus culture. Maximum number of samples per week is five.

4. Rumour surveillance

   This rumour surveillance can be monitored through newspaper, event reporting or any news reported by community.

Data flow: Both ILI and sARI are collected daily using the standard format given by Ministry of Health (MOH).
11.0 GUIDELINE FOR CULLING OPERATION

11.1. Agencies Involved

The main coordinator for the culling operation is the veterinary services department. The other agencies include:

A. Local Authorities
B. Resident Office/District Office
C. Ministry Of Defence
D. Police
E. Department of Occupational Safety And Health
F. Health Department
G. Public Works Department
H. Fire Department
I. Water Board
J. Drainage and Irrigation Department

11.2 Roles Of Health Department

Advisory to all matters regarding human health.
To assist DOSH
Provide ambulance back-up
Advised on sitting of burial grounds

11.3 Activities For Health Staff

11.3.1 Pre Culling Activities

General briefing on safety and health
Demonstration on PPEs: full body gown, head cover, N95 mask, rubber glove, wellington boot
Inspection of culler protection
Decontamination showers available-chlorinated
Take 1st blood specimen of cullers/others

11.3.2 Culling Activities

Ensure first aids facilities available
Observe use of PPEs- never remove during the culling operation
11.3.3 Post Culling Activities

Decontamination of cullers while still using the PPE - The 1st shower is with highly chlorinated water, followed by another shower using ordinary tap water, after which the PPE suits can be removed.

Disposal of used PPEs

Disinfection of farm by veterinary department - chloride of lime or Lysol

To take 2nd blood specimen of cullers and workers two weeks after culling
REFERENCES

1. SARS (Severe Acute Respiratory Syndrome) in Malaysia, Malaysia Ministry of Health, 2003
2. WHO SARS Risk Assessment and Preparedness Framework, World Health Organization, 2004
3. Alert, Enhanced Surveillance and Management of Avian Influenza in Human, Malaysia Ministry of Health, 2004
# LAB REQUEST FORM FOR AVIAN INFLUENZA (AI)

**HOSPITAL:** ____________

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1. <strong>Name:</strong></td>
<td>2. <strong>Reg. No.:</strong></td>
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</table>
| 3. **NRIC:** | 4. **Gender:** Male
Female |
| 5. **Age:** | 6. **Race:** |
| 7. **Occupation:** |   |
| 8. **Marital Status:** |   |
| 9. **Clinical Findings:** | 12. **Type of specimen:** |
| Symptoms: |   |
|   Cough |   WBC  ______________ |
|   Shortness of breath |   Platelet  ______________ |
|   Difficulty in breathing |   Chest x-ray |
|   Hypoxia |   |
|   Fever |   |
|   Runny nose |   |
|   Acute respiratory distress syndrome |   |
| Signs: |   Investigation:
| Temperature: |   |
|   |   |
| Lung: |   |
|   |   |
| 10. **History of expose / contact with infected poultry:** |   |
|   Yes □ No □ |   |
| 11. **History of contact with case of /suspect of Avian influenza:** |   |
|   Yes □ No □ |   |
| Date of onset |   |
| (dd/mm/yr) |   |
KKM/BKP/AI/2004 Revised JKN sabah 2013
PENCAPAIAN HARIAN KERJA-KERJA ACD DAN PENDIDIKAN KESIHATAN DI LOKALITI WABAK

<table>
<thead>
<tr>
<th>Daerah</th>
<th>Lokaliti / Kampung</th>
<th>Bilangan Rumah Diperiksa</th>
<th>Bilangan Penduduk Diperiksa</th>
<th>Bilangan Dengan Gejala URTI</th>
<th>Bilangan Dirujuk</th>
<th>Jum Risalah Diedarkan</th>
<th>Jum Kad Amaran Diedarkan</th>
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</tbody>
</table>
**PERKEMBANGAN PESAKIT YANG MASIH BERADA DI WAD**

| NAMA PESAKIT : ____________________________ | TARIKH : ______________ |
| KUARANTIN | RUJUKAN KKM: KES NO |
| □ DI RUMAH | □ WAD ISOLASI | □ WAD UMUM (GENERAL) |

### KEADAAN FIZIKAL PESAKIT

<table>
<thead>
<tr>
<th>Keadaan Fizikal Pesakit</th>
<th>Ya (Temp ______ °C)</th>
<th>Tidak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demam</td>
<td></td>
<td></td>
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<tr>
<td>Batuk</td>
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<tr>
<td>Sesak / Susah nafas</td>
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</tbody>
</table>

### UJIAN MAKMAL

<table>
<thead>
<tr>
<th>Ujian Makmal</th>
<th>WBC</th>
<th>Platelet</th>
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</thead>
<tbody>
<tr>
<td>CXR (Sila tuliskan hasil reporting)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FBC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hasil Ujian Bakteriologi (sila tuliskan keputusan)</td>
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</tbody>
</table>

### RAWATAN

Sama ada pesakit diberi antibiotik. Jika ya, sila nyatakan nama antibiotik.

### KELUAR WAD

Nyatakan tarikh keluar wad

### FINAL DIAGNOSIS

Nyatakan

---

*Sila fakskan maklumat ini kepada Bilik Gerakan setiap hari sebelum atau pada jam 10.00 pagi*
<table>
<thead>
<tr>
<th>1. Reporting Centre</th>
<th>Name of Hospital</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone:</td>
<td>Fax:</td>
<td>E-mail</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Information of Patient</th>
<th>Name</th>
<th>Age</th>
<th>Sex</th>
<th>Male</th>
<th>Female</th>
</tr>
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<tbody>
<tr>
<td>Address:</td>
<td>Phone (Home)</td>
<td>RN No.:</td>
<td></td>
<td></td>
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<tr>
<td>H/phone:</td>
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<thead>
<tr>
<th>Nationality</th>
<th>Ethnic: M/C/I/ Other</th>
<th>Please specify:</th>
<th>IC No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysian</td>
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<tr>
<td>Non-Malaysian</td>
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<table>
<thead>
<tr>
<th>Country of Origin</th>
<th>Passport No.:</th>
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<tbody>
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<table>
<thead>
<tr>
<th>Occupation</th>
<th>HCW</th>
<th>Poultry farmer</th>
<th>Other, Date of Symptom onset (dd/mm/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please state:</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Signs and Symptoms</th>
<th>Fever</th>
<th>Cough</th>
<th>Shortness of breath/difficulty breathing</th>
<th>Other symptom (specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature on admission:</td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Chest X-ray finding</th>
<th>Evidence of lung infiltrates consistent with pneumonia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Is there any alternative diagnosis that can fully explain patient illness?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>6. Clinical status at time of report</th>
<th>Was patient hospitalized?</th>
<th>Ward</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>( ) Yes, Date:</td>
<td>( )</td>
<td>( ) On treatment</td>
</tr>
<tr>
<td></td>
<td>( ) No</td>
<td>( )</td>
<td>( ) Died</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Isolation ward</th>
<th>General ward</th>
<th>ICU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>If patient died: Was an autopsy performed?</th>
<th>Yes</th>
<th>No</th>
<th>Pending</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>7. Exposure History</th>
<th>Did patient visit any poultry farm?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( ) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( ) No</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Did patient have history of contact with birds.</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>( ) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( ) No</td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Did patient had history of contact with deceased birds.</th>
<th>Yes</th>
<th>No</th>
</tr>
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<tbody>
<tr>
<td>( ) Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( ) No</td>
<td></td>
<td></td>
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</tbody>
</table>

7. Exposure History

<table>
<thead>
<tr>
<th>8. Similar illness</th>
<th>Anybody in the neighbourhood had similar illness?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. Diagnostic Evaluation Virology</th>
<th>Date Taken</th>
<th>Date send to IMR</th>
<th>Results</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>10. Working diagnosis (Please state)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>11. Active case finding (to be filled by District Health Office)</th>
<th>Has active case finding seen initiated?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( ) Yes</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>( ) No</td>
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<table>
<thead>
<tr>
<th>12. Reporting Officer</th>
<th>Signature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designation:</td>
<td>Date:</td>
</tr>
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<th>For Disease Control Division use only</th>
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</table>

Comments: 

Note: Please fax this form within 24 hours to District Health Office
INVESTIGATION / ACTIVE CASE DETECTION FORM FOR AVIAN INFLUENZA

Division/District

Locality

Clinic/Hospital/OPD/DHO

Date of Investigation

1 PATIENT'S/CONTACT'S DATA

1.1. Name of Patient/Contact

Age (yrs) Gender: [ ] Male [ ] Female

IC/Passport No. of Patient/Contact

1.2. Name of Parent/Guardian

IC/Passport No of Parent/Guardian

Address of Parent Guardian

1.3. Home Address

1.4. Work/Office Address

1.5. If still studying, address of school/hostel

Telephone No. (House)

Telephone No. (Office)

Telephone No. (Mobile)

1.6. Occupation

(b) Nature of work

(c) Since when (date)
2 HISTORY OF EXPOSURE TO POULTRY / BIRDS

2.1. Any contact with poultry/birds in last 1 week?

[ Yes] [ No ]

Describe nature of contact:

(a) Cooked poultry/poultry products
   Yes [ ] No [ ], If Yes, When/Where:
(b) Ate poultry/poultry products
   Yes [ ] No [ ], If Yes, When/Where:
(c) Visited wet market/cold storage
   Yes [ ] No [ ], If Yes, When/Where:
(d) Visited poultry farm
   Yes [ ] No [ ], If Yes, When/Where:
(e) Handled dead poultry/birds
   Yes [ ] No [ ], If Yes, When/Where:
(f) Slaughtered poultry/birds
   Yes [ ] No [ ], If Yes, When/Where:
(g) Others (specify) ………………………………………………………………………………………………

EXPOSURE HISTORY FOR HEALTH STAFF AND VET STAFF ONLY

(a) Involved in culling activities
   Yes [ ] No [ ], If Yes, When/Where:
(b) Involved in field investigations
   Yes [ ] No [ ], If Yes, When/Where:
(c) Involved in patient care
   Yes [ ] No [ ], If Yes, When/Where:
(d) Work in lab handling AI specimens
   Yes [ ] No [ ], If Yes, When/Where:

(FOR HEAD OF HOUSEHOLD ONLY)

2.3 Do you rear poultry/birds?

[ Yes ] [ No ]

If yes, how many & what species? ……………………………………………………………

2.3.1. Any abnormal increase (>3%) in death of chicken/birds in the past week

[ Yes ] [ No ]

If "Yes", when? Date

2.3.2 Notified to Veterinary Department?

[ Yes ] [ No ]

Date and Time notified

Notification received by (Name of officer)

Designation

2.4 Do your neighbours rear poultry/birds?

[ Yes ] [ No ] [ Don't Know ]

If yes, what species? ……………………………………………………………………………………

2.4.1 Any abnormal increase (>3%) in death of chicken/birds in the past week

[ Yes ] [ No ] [ Don't Know ]

If "Yes", when? Date

2.4.2 Notified to Veterinary Department?

[ Yes ] [ No ] [ Don't Know ]

Date and Time notified
Notification received by (Name of officer)  

Designation  

Distance of house from nearest poultry/bird farm  

(To be filled by interviewer)  

GPS longitude:  

GPS Latitude:  

GPS Datum:  

Timbalai 1948  

WGS84  

3 MOVEMENT OF PATIENT/CONTACT (to Avian Influenza infected areas/chicken farms in past 1 week)  

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<th>No.</th>
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<th>Remarks</th>
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</table>

4 FAMILY & INFLUENZA-LIKE ILLNESS (ILI) HISTORY IN FAMILY  

(FOR HEAD OF HOUSEHOLD ONLY)  

(ILI: Fever, Cough, Sore Throat or Shortness of breath)  

No. in family  

History of ILI in family  

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Date Onset</th>
<th>Sought Treatment</th>
<th>Name of Clinic/Hospital</th>
<th>Remarks</th>
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5. CLINICAL INFORMATION (based on patient interview by MO/MA/NURSE and from case notes)

5.1 History of illness in last one week

<table>
<thead>
<tr>
<th>Signs and Symptoms</th>
<th>Yes / No</th>
<th>Date</th>
<th>Duration (days)</th>
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<tbody>
<tr>
<td>(a) Fever</td>
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<td>(b) Highest body temperature °C</td>
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<td>(c) Cough</td>
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<td>(d) Sore throat</td>
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<td>(e) SOB</td>
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</table>

5.2 Physical Examination

<table>
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<tr>
<th>Signs and Symptoms</th>
<th>Date</th>
<th>Findings</th>
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<tr>
<td>(a) Temperature °C</td>
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<tr>
<td>(b) Throat</td>
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<tr>
<td>(c) Lungs</td>
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</table>

6 REFERRAL

6.1 Need referral to clinic or hospital?  
Yes [ ]  No [ ]

6.2 If yes, name of clinic/hospital referred to:

6.3 Date of referral:

7 NOTIFIED TO HEALTH OFFICE?  
Yes [ ]  No [ ]

7.1 Date and Time notified:

7.2 Notification received by:
Name of Officer:
Designation:

8 Comments and other related findings

Investigating Officer

Name:
Designation:
Date:
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<th>Nama</th>
<th>NO. IC / Passport</th>
<th>Alamat Kediaman / No. Rumah</th>
<th>Jantina</th>
<th>Bangsa / Etnik</th>
<th>Tarikh Mula Sakit</th>
<th>Kontek Dengan Poultry</th>
<th>Tanda &amp; Gejala</th>
<th>Rujukan Ke Hospital / Klinik</th>
<th>Diagnosa Dari Hospital / Klinik</th>
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Dilaporkan Oleh: 

Lokaliti Dilawati:
HEALTH ALERT CARD
To the Doctor

The person presenting this Health Alert Card may have been exposed to
Influenza or Influenza-like-illness (ILI)
(may include Avian Influenza or novel influenza)

Influenza is now a notifiable disease under the Malaysian
Prevention and Control Infectious Diseases Act 19988 (Act 342)

Please notify to the nearest Health Office
Or
Crisis Preparedness and Response Centre (CPRC)

HEALTH ALERT CARD
(NOTICE)

For visitors / Individuals coming from exiting
Influenza affected country or area
Untuk pelawat / individu yang datang / keluar dari
Negara atau kawasan dilanda influenza

If you have flu-like symptoms such as fever and cough or sore throat, you
should immediately go the nearest clinic or hospital for treatment
and present this card to the treating doctor.

Sekiranya anda mengalami tanda-tanda selesema seperti demam and batuk
atau sakit tekak, anda perlu segera mendapatkan rawatan di klinik atau hospital
berhampiran dan serahkan kad ini kepada doktor yang merawat.

Issued by.
Crisis Preparedness and Response Centre (CPRC)
Sabah State Health Department
Ministry of Health Malaysia.
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<th>Petugas Jabatan Perkh. Haiwan Di</th>
<th>Hospital (Wad Isolasi)</th>
<th>Penduduk Berisiko</th>
<th>Jumlah Dipantau</th>
<th>Jumlah Ada Gejala Dan Dirujuk</th>
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**JUMLAH**
INVESTIGATION / ACTIVE CASE DETECTION FORM FOR AVIAN INFLUENZA

Division: ___________________________ Date of Investigation: ___________________________
District: ___________________________
Locality: ___________________________
Clinic/Hospital/OPD/DHO: ___________________________

1. PATIENT’S / CONTACT’S DATA

1.1 Name of Patient/Contact: ___________________________
   Age (yrs): ___________________________ Gender: [ ] Male [ ] Female Ethnic: ___________________________
   IC/Pasport No. of Patient/Contact: ___________________________

1.2 Name of Parent/Guardian: ___________________________
   IC/Pasport No. of Patient/Contact: ___________________________
   Address of Guardian: ___________________________

1.3 Home Address: ___________________________

1.4 Work/Office Address: ___________________________

1.5 If still studying, address of school/hostel: ___________________________
   Telephone No. (House) ___________________________
   Telephone No. (Office) ___________________________
   Telephone No. (Mobile) ___________________________

1.6 Occupational: ___________________________
   a) Nature of work: ___________________________
   b) Since when (date) ___________________________
2. HISTORY OF EXPOSURE TO POULTRY / BIRDS

2.1 Any contact with poultry/birds in last 1 week?  Yes ☐  No ☐

Describe nature of contact: ________________________________________

(a) Cooked poultry/poultry products  Yes ☐  No ☐  If Yes, When/Where:
(b) Ate poultry/poultry products  Yes ☐  No ☐  If Yes, When/Where:
(c) Visited wek market/cold storage  Yes ☐  No ☐  If Yes, When/Where:
(d) Visited poultry farm  Yes ☐  No ☐  If Yes, When/Where:
(e) Handled dead poultry/birds  Yes ☐  No ☐  If Yes, When/Where:
(f) Slaughtered poultry/birds  Yes ☐  No ☐  If Yes, When/Where:
(g) Others (Specify):  ________________________________________

EXPOSURE HISTORY FOR HEALTH STAFF AND VET STAFF ONLY

(a) Involved in culling activities  Yes ☐  No ☐  If Yes, When/Where:
(b) Involved in field investigations  Yes ☐  No ☐  If Yes, When/Where:
(c) Involved in patient care  Yes ☐  No ☐  If Yes, When/Where:
(d) Works in lab. handling AI specimens  Yes ☐  No ☐  If Yes, When/Where:

(FOR HEAD OF HOUSEHOLD ONLY)

2.2 Do you rear poultry/birds?  Yes ☐  No ☐

If Yes, how many and what species?  ________________________________________

2.2.1 Any abnormal increase (>3%) in death of chicken/birds in the past week

Yes ☐  No ☐  If 'Yes', When?

Date: __________________

2.2.2 Notified to Veterinary Department?  Yes ☐  No ☐

Date and Time Notified: __________________

Notification received by (Name of Officer): __________________

Designation: __________________

2.3 Do your neighbours rear poultry/bird?  Yes ☐  No ☐  Don't Know: ☐

If yes, what species?

2.3.1 Any abnormal increase (>3%) in death of chicken/birds in the past week

Yes ☐  No ☐  Don't Know: ☐

If 'Yes', When?

Date: __________________
2.4.2 Notified to Veterinary Department? Yes [ ] No [ ]

Date and Time Notified:

Notification received by (Name of Officer):

Designation:

Distance of house from nearest poultry/bird farm [ ] meters

(To be filled by interviewer)

GPS Longitude: [ ]

GPS Latitude: [ ]

GPS Datum: [ ] Timbalai 1948 [ ] WGS84

3. MOVEMENT OF PATIENT/CONTACT
(to Avian Influenza infected areas/chicken farms in past 1 week)

<table>
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<tr>
<th>No.</th>
<th>Date</th>
<th>Place</th>
<th>Remarks</th>
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4. FAMILY & INFLUENZA-LIKE ILLNESS (ILI) HISTORY IN FAMILY
(FOR HEAD OF HOUSEHOLD ONLY)
(ILI: Fever, Cough, Sore throat and Shortness of breath)

No. in Family [ ]

History of ILI in family:

<table>
<thead>
<tr>
<th>NO</th>
<th>Name</th>
<th>Date of Onset</th>
<th>Sought Treatment</th>
<th>Name of Clinic/Hospital</th>
<th>Remarks</th>
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5. CLINICAL INFORMATION (Based on patient interview by MO/MA/Nurse and from case note)

5.1 History of illness in last one week.

<table>
<thead>
<tr>
<th>Signs and Symptoms</th>
<th>Yes / No</th>
<th>Date</th>
<th>Duration (days)</th>
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<tbody>
<tr>
<td>(a) Fever</td>
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5.2 Physical Examination

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<td>(c) Lungs</td>
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</table>

6. REFERRAL

6.1 Need referral to clinic or hospital? □ Yes □ No

6.2 If Yes, name of clinic/hospital referred to: [ ]

6.3 Date of referral: [ ]

7. NOTIFIED TO HEALTH OFFICE?

□ Yes □ No

7.1 Date and time notified

7.2 Notification received by: Name of Officer: [ ]

Designation: [ ]

8. COMMENTS AND OTHER RELATED FINDINGS

Investigation Officer

Name: [ ]

Designation: [ ]

Date: [ ]