REPORT OF
"AVIAN FLU SIMULATION EXERCISE 2011"
MUAR, JOHOR
20th - 22nd SEPTEMBER 2011

DISEASE CONTROL DIVISION
DEPARTMENT OF PUBLIC HEALTH
MINISTRY OF HEALTH MALAYSIA
2013

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LIST OF CONTRIBUTORS

MINISTRY OF HEALTH MALAYSIA

Disease Control Division
Dr. Khebir Verasahib
Dr. Husna Maizura Ahmad Mahir
Dr. Rohani Jahis
Cik Ong Chia Ching
Haji Abdul Jamil Ali

Allied Health Division
En. Mohamad Farouk bin Abdullah

Health Education Division
En. Sasitheran Nair

Corporate Communications Unit
En. Harun B. Maddaha

STATE HEALTH DEPARTMENTS

JOHOR

Dr. Mohd Khairi B. Yakub
Dr. Badrul Hisham B. Abd Samad
State Health Departments

Dr. Kan Foong Kee
Hosp Sultanah Aminah, Johor Bharu

Dr. Shaharom Nor Azian Bt. Che Mat Din
Johor Bharu District Health Office

Dr. Zuhaida Bt. A. Jalil
Kluang District Health Office

Dr. Hj. Mohd. Zulkipli B. Othman
Muar District Health Office

Dr. Norasikin Mahdan
Pontian District Health Office

Dr. Mohtar B. Ahmad
Segamat District Health Office

Dr. Noorhaida Bt. Ujang
Bandar Maharani Health Clinic, Muar

Dr. Yunus Sharif
Batu Pahat Health Clinic

KELANTAN

Dr. Suhaiza Sulaiman
State Health Department

Dr Anilawati Mat Jelani
Hospital Raja Perempuan Zainab II, Kota Bharu

KUALA LUMPUR

Dr. Zainal Abidin B.Abu Bakar
Putrajaya District Health Office

PAHANG

Dr. Hj Mohamed Sapian B. Mohamed
State Health Department

MELAKA

Dr. Ismail B. Ali
Jasin Health District Office

NEGERI SEMBILAN

Dr. Hamizar Iqbal B. Abdul Halim
State Health Department

Dr. Rosemawati Ariffin
Seremban District Health Office

PERAK

Dr. Hjh. Masliza Bt. Mustafa
Dr. Hairul Izwan B. Abdul Rahman
State Health Department

Dr. Ker Hong Bee
Hospital Raja Permaisuri Bainun, Ipoh

PERLIS

Dr. Zulhizzam B. Hj. Abdullah
State Health Department

PULAU PINANG

Dr. Saraswathi Bina Rai
State Health Department

SELANGOR

Dr. Anita Suleiman
State Health Department

Dr Leong Chee Loon
Hospital Sungai Buloh

TERENGGANU

To' Puan Dr. Rahmah Elias
State Health Department

Dr. Balkis Abdul Karim
Kuala Terengganu District Health Office

SABAH

Dr. Maria Suleiman
State Health Department

DEPARTMENT OF VETERINARY SERVICES

Dr. Azri Adzhar
SPS and Biosecurity Management Division, Putrajaya

Dr. Kamarudin B. Md Isa
Dr. Lokman Hakim B. Idris
Johor State Veterinary Services Department

NATIONAL SECURITY COUNCIL

Pn. Siti Zubaidah Bt. Hj Abu Bakar
National Security Council (Johor)

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REPORT OF "AVIAN FLU SIMULATION EXERCISE 2011" MUAR, JOHOR 20 – 22 SEPTEMBER 2011

1. INTRODUCTION

The Ministry of Health, Malaysia (MOH) and the Department of Veterinary Services, Malaysia (DVS) held a field simulation exercise in dealing with an outbreak of Avian Influenza/ HPAI / H5N1 from 20th to 22nd September 2011 in Muar, Johor. Planning of the simulation exercise involved MOH and DVS staff at national, state and district levels since March 2011. In total, 34 officers were appointed as committee members including controllers and evaluators for this exercise. The planning committee also met with Muar District Officer and other related agencies. Twenty officers from the State Health Departments participated as observers in this exercise. In addition, the Director of Communicable Diseases Control Division, the Ministry of Health, Singapore was present as an external observer. Three Agriculture and Veterinary Authorities (AVA), Singapore officers were observers to the DVS field exercise.

The scenario of the exercise depicted a hypothetical outbreak of avian influenza amongst poultry in one village in Muar, Johor, as well as the occurrence of a clustering of human influenza cases presenting to the local health facilities. The scope of the exercise was limited to, and consequent opportunities for containment of the influenza outbreak in animals and amongst human. The exercise was designed to facilitate understanding and identify strengths and opportunities for improvement of the decision making process to launch rapid response and coordination and communication arrangement between all levels. The exercise was controlled by the progressive release of, and request for, information by the exercise management team.

2. OBJECTIVES

The objectives of the exercise were:

a) To validate established roles, responsibilities and decision-making processes in the event of an avian influenza outbreak.

b) To verify effectiveness of coordination and communication arrangement between all levels of the MOH and with the DVS.

c) To practice development and implementation of risk communication.

d) To build capacities and giving the opportunity for sharing experiences with other states.

3. BACKGROUND AND PROCEEDINGS

3.1 Type of exercise

The exercise was a modified field exercise. It required participants to respond as they would during a real event, following their existing plans and procedures where appropriate under time constraints.

3.2 Exercise management team

The exercise management team includes the exercise planning, control and evaluation teams. The primary reponsibility of the exercise management team was to design the exercise and monitor, manage and control exercise activity to meet the objectives. The exercise management team developed the exercise materials and handled the logistics of the exercise. The organisation of the exercise management team is as in Annex 1. The terms of reference of the exercise management team are in Annex 2.

3.3 Exercise scope

The scope of the exercise depicted a scenario of an avian influenza outbreak in poultry in Muar, Johor (Phase 3 of Avian Influenza Pandemic Phase) with consequent opportunities to contain the outbreak both in human and animal which include case management, infection control, barrier nursing, isolation ward, using of personal protective equipment (PPE), active case finding, creating buffer zone, disposing and culling of infected poultry, decontamination and disinfection, and risk communication.

3.4 Agenda

The agenda of the exercise is as in Annex 3. The exercise was conducted over a three day period, commencing with a briefing on the exercise management as well as reference documents to be used on 20 September 2011. The actual field exercise was conducted on 21 September 2011 from 7.30am to 4.30pm at the various exercise locations. The exercise management team had a short review discussion on the events of the day at 8 pm to 9.30pm.

A debriefing and panel discussion session was held on 22 September 2011 at Hospital Sultanah Fatimah, Muar. The panel discussion was chaired by the Johor State Health Director with three panelists which include the Head of Zoonosis Sector, Disease Control Division, MOH, the Director of Johor DVS and the Assistant Undersecretary of the Johor State National Security Council.

3.5 Exercise scenario

“In August, 2011, WHO issued a health alert on a confirmed case of avian influenza in humans in neighbouring countries, including Indonesia and Cambodia. All states of Malaysia were put on heightened alert for the possible spread of the virus.

In September 2011, the District Veterinary Office investigated a complaint of an unusual number of chicken deaths in one village. On investigation there were sick people in a neighbouring house with dead chickens. Teams from the district health and veterinary offices were dispatched to the affected area. The veterinary team later reported that based on post mortem examination, evidence of H5 bird flu infection was detected.

At the same time, there were several patients who presented to the primary health clinic and hospitals in the district with influenza-like illness (ILI). The patients reported that there were an unusual number of chicken deaths in their home vicinity. The District Health Office also received information from the public about a cluster of ILI in a training institution in the district."

The detailed scenario portrayed in the exercise is attached as Annex 4.

3.6 Exercise participants and locations

The exercise participants were staff from the respective health facilities at the various identified locations as follows:-

i) Hospital Pakar Sultanah Fatimah, Muar
ii) Hospital Tangkak, Ledang
iii) Kampung Sungai Renggam, Panchor, Muar
iv) Klinik Kesihatan Bukit Pasir, Muar
v) Pejabat Kesihatan Daerah Muar
vi) Pejabat Kesihatan Daerah Ledang
vii) Institut Kemahiran Belia Negara (IKBN), Pagoh
viii) Jabatan Kesihatan Negeri Johor

In addition, there was interface with DVS staff from *Pejabat Veterinar Daerah Muar, Jabatan Veterinar Negeri Johor,* and *Makmal Kesihatan Awam Veterinar, Johor Bahru* as part of the joint exercise with DVS.

4. EXERCISE EVALUATION

The evaluation framework comprised of an evaluation checklist based on reference documents of the expected actions to be taken for each scenario. The reference documents for the evaluation include the Johor State National Influenza Pandemic Preparedness Plan, and the Alert, Enhanced Surveillance and Management of Avian Influenza in Human. Controllers and evaluaters were assigned to each scenario locations to capture the information required and provide recommendations for improvement. The evaluation checklists are attached as Annex 5. The key findings and comments presented by exercise controllers and evaluators at the debriefing session are as in Annex 6.

4.1 Summary findings and evaluation at scenario locations

4.1.1 Hospital Pakar Sultanah Fatimah, Muar

Evaluation Objective:

The main objective of the evaluation was to assess the hospital's preparedness plan and ability to manage suspected cases of avian influenza, infection control measures, as well as internal and external communications. The exercise involved players from the surgical and isolation wards, as well as the Accident and Emergency Department (A & E).

Findings:

Overall, the staff and management of the hospital were able to manage the simulation accordingly with some potential areas for improvement. There was fast recognition of case and exposure history in the surgical ward. Upon case detection, the specialists and hospital management team was informed and infection control measures instituted. Prompt support was received from the diagnostic and laboratory services to manage the case in the ward. A portable x-ray was ordered for the case and a laboratory staff came with cold box packed with an ice pack and specimen bag with tube. The 'suspected' case was then transferred to the isolation ward which was well organized and equipped.

The line of communication was good, including notification to the higher levels. There was fast response from the hospital director who called for a hospital stakeholders' meeting informing the heads of department regarding the emergency. An operations centre was set up and the logistics and manpower arrangement was made accordingly. The documentation process and coordination of activities was satisfactory. The medical specialist ordered a registry of patients and staff be kept. Line listing of cases was updated including the numbers of contacts in wards as kept by registry. However, it was observed that there was no notification form kept in the surgical ward. Notification was made eventually to the district health office through phone call and notification form which was obtained from the isolation ward.

Communications with the district health office was good. However, it seemed that there was no proper risk communication to staff until the medical specialist came in. Doctors in charge of ward isolation should have been clear about case definition and criteria for admission.

Coordination of infection control practices could have been improved to minimize risk of further exposure to infectious cases. For example;

i) Infection control team should be alerted to coordinate infection control practice in isolation ward so that patient can be transferred smoothly and quickly without waiting too long at the public area outside the ward.
ii) Although the designated route for transferring patient was appropriate, security officer was not informed to secure the transfer route, including the dedicated elevator, to avoid public coming into contact with case.

iii) There was immediate closure of the ward but there should be signage indicating ward lock-down.
iv) Health care workers found not using the dedicated medical equipment for infectious cases and not wearing PPE appropriately. Gowning and degowning areas and decontamination room was not made known to staff from other departments. This resulted in a delay in wearing proper PPE among staff who handled the suspected cases.
v) In the A & E, it was observed that there was no telephone or intercom in the screening room for contacting doctors in the main A&E areas resulting in further exposure of staff to suspected infectious cases.
vi) Support staff such as ambulance driver was involved in transferring of 'suspected' case without taking standard infection control precautions.

4.1.2 Hospital Tangkak

Evaluation Objective:

The main objective was to assess the district hospital's preparedness plan and ability to manage suspected cases of avian influenza, infection control measures, internal and external communications, notification, case transfer to referral hospital and decontamination measures.

Findings:

Overall, the response from *Hospital Tangkak* was satisfactory. Staff at the A & E department was able to detect and respond immediately upon arrival of 'patients'. Case identification was made after prompting followed by appropriate case management including history taking, examination and taking of clinical specimens. Infection control measures were instituted and risk communication was made to other staff and patients in the hospital.

Cases were taken to a separate examination room from the other waiting patients. A designated route was identified and sealed with help from security officer to avoid public coming into contact with cases. The attending doctor made the arrangements to transfer the three cases separately to *Hospital Pakar Sultanah Fatimah, Muar*. Case transfer was done appropriately with designated staff, equipment and ambulance. Notification form was available at A&E, and notification was made immediately via phone and form to *Pejabat Kesihatan Daerah Ledang.*

There were several areas that require improvement. There should be emphasis on proper history taking to establish a case definition to avoid missing cues such as contact with dead chickens. The examination room set up can be further improved with the provision of proper PPE, waste disposal facilities and phone line for communication. Appropriate waiting area should be identified whilst waiting for case transfer. Staff involvement should be minimized during patient's transfer.

4.1.3 Kampung Sungai Renggam

Evaluation Objective:

The village was the location of the field simulation exercise. The main objective of the evaluation at the field was to assess the district health office's response with regard to multiple injects given suspected avian influenza cases in the field including established roles and responsibilities of various investigation teams (Rapid Assessment Team (RAT), Rapid Response Team (RRT), Medical Team, control activities and internal and external communications. The evaluation team also assessed the interface with the DVS response teams in the field.

Findings:

Overall the teams from the district health office performed well on the field. Upon receiving notifications, the RAT set out to the field to investigate with GPS.

The RAT consists of two assistant environmental health officers (AEHO) who conduct the assessment and communicate the findings back to the district health office by phone. The RRT and medical teams then arrived consisting of one nursing sister, two staff nurses and two AEHO. They were caring staff and very professional on how they dealt with the patients and the occupants of the home. There was good communication between staff and public. Health alert card and health education materials were given to family members. However, the health promotion team could have been more efficient in terms of delivering their health talk if they have a checklist of what to distribute or what important points to tell the public.

It seemed that crucial information from the operations centre in the state health department or district health office did not reach the investigating teams in a timely manner. There seems to be a need to train investigating officers and first responders in the skills of gathering data during their investigation. Important information such as 'laboratory results' from DVS which were found to be positive for HPAI, should have been relayed to the staff on the ground so that appropriate precautionary measures could be taken immediately. It also appears that there was no communication between the response teams from the health and veterinary departments on the field. As a result, there seemed to be an opportunity loss to coordinate and share available resources between the two agencies on the ground. The veterinary team should also be considered as 'exposed' cases in the district health team investigations and thus put under list for health surveillance.

It was observed that infection control practices in the field could be improved upon to minimize risk of exposure to staff and other contacts. Various infection control aspects such as proper use of PPE, disposal of used or contaminated PPE and decontamination of boots or vehicle should be emphasized.

4.1.4 Klinik Kesihatan Bukit Pasir

Evaluation Objective:

The main objective was to assess the ability of the primary care clinic to manage a cluster of influenza cases with consequent opportunities to test triaging, case management, infection control measures, internal and external communications.

Findings:

Generally, the staff at the clinic was well prepared and able to respond immediately upon receiving a cluster of influenza cases. A triaging centre was set up at a strategic location within the clinic's compound with appropriate signage. Case screening and identification was done smoothly at the triaging centre by a designated team.

There was good communication between staff and patients. A designated route was assigned for symptomatic cases. Health education materials were available for the public. However, an appropriate waiting area should be identified whilst cases were waiting to be examined. There was no separate examination room available and clinical examination was conducted in a shared room.
Case management including history taking and examination was done appropriately.
Notification was made to the district health office through phone call and notification form was filled.

An arrangement for case transfer was made to *Hospital Pakar Sultanah Fatimah, Muar* according to procedure. A designated route, equipment and ambulance were identified. However, infection control practices such as proper use of PPE in outbreak management could be improved upon.

4.1.5 Pejabat Kesihatan Daerah Muar

Evaluation Objective:

The objective of the evaluation was to assess outbreak management by the district health office such as operation room and logistics management, deployment of rapid assessment and response teams, internal and external communications, and documentation with regard to 'notifications' of suspected avian influenza cases.

Findings:

Overall, given the multiple injected scenarios, the district health office was able to respond satisfactorily during the simulation exercise. Generally, the district's operations centre management was organized with clear line of command and equipped with maps, one fixed telephone line and fax machine. As part of the scenario, the District Medical Officer of Health was made 'unavailable' during the exercise to test the line of command. It was observed that in his 'absence', there seemed to be a delay in the district's outbreak response and management.

Upon receiving notifications, the RAT and RRT were deployed to investigate on the ground. Assembling and mobilizing of RRT including for active case detection (ACD), control, laboratory, and health education teams to the events were relatively fast. However important preparations were found to be lacking such as case definition, formatted questionnaire, PPE, criteria for referrals, pre-packed medication, and samples to take.

It was observed that there was good internal communication between the teams on the ground and operations centre through the usage of walkie talkie. In addition, alert messages were sent to all health centers, hospitals and general practitioners in the district. However, it was found that the existing communication system is unable to cope to manage multiple incoming calls and notifications as injected during the simulation exercise. It seemed that there is a need to re-examine the speed of system used via *Infoblast* and persistently update the receivers' list as some recipients, such as the Director of *Hospital Tangkak* and staff on the ground, claimed they did not receive the information sent.

The alert message was sent to the State Health Department upon prompting. There was also a delay in communication to higher level and other relevant agencies, such as the District Officer (DO), DVS and National Security Council Once the operations centre in the district level was activated, the person in charge should provide basic information such as number of cases, area affected, history of exposure, to the DO.

4.1.6 Pejabat Kesihatan Daerah Ledang

Evaluation Objective:

The objective of the evaluation was to assess the district's response and internal and external communications with regard to 'notifications' of suspected avian influenza cases.

Findings:

Overall, the response from *Pejabat Kesihatan Daerah Ledang* was very satisfactory. The district health office received two 'notifications' through telephone. The first notification was from *Hospital Tangkak* (3 cases) and the second notification was from *Klinik Kesihatan Payamas* (1 case). All information was relayed to the District Medical Officer of Health immediately. The Medical Officer of Health promptly conducted a meeting to inform and deploy a RAT to the sites for case verification.

Generally, staff was well prepared during the exercise and staff response was fast. Within 15 minutes from the first notification, two Assistant Environmental Health Officers, went to *Hospital Tangkak* to investigate the cases. Another team was ready to investigate the second notification at the village. The Medical Officer of Health reminded her staff to verify information of all cases including the address, list of contacts and villages in Ledang where the cases visited.

Alertness of staff was also commendable. There was an 'inject' where the State Deputy Director of Health (Public Health) sent a text message informing that the dead chickens in *Kampung Sungai Renggam, Muar* were found to be HPAI. The

investigating officer was able to immediately relate the information with the three cases notified by *Hospital Tangkak* earlier. Another staff suggested to the District Medical Officer of Health, to verify with the District Veterinary Officer whether there were any chicken deaths in the *Ledang* district. The staff then called the District Veterinary Office and confirmed that there was no similar event in the district.

Line of command and communication was good. The District Medical Officer of Health and the Epidemiology Officer were present at the operations centre throughout the exercise. Decision-making by appropriate staff was timely. 'Skype' communication was used by staff to communicate among themselves in different rooms at the district health office. 'Skype' was also used with the Deputy State Health Director in Johor Bahru. The Medical Officer of Health also suggested having a meeting involving relevant district agencies; to alert them on the event chaired by the District Officer. Other relevant agencies that should be included in the meeting were; Hospital Tangkak, District DVS, Education Department, local authority and the Information Department.

One recommendation is with regards to the logistics of the operations centre. The operations centre should be well equipped with telephone, important telephone numbers and log book to record all activities in an outbreak.

4.1.7 Institut Kemahiran Belia Negara (IKBN), Pagoh

Evaluation Objective:

The main objective of the evaluation was to assess the management of an influenza cluster in an institution by teams from the district health office including established roles and responsibilities, health education, infection control and internal and external communications.

Findings:

The Director, staff and students of the training institution agreed to participate as 'players' in the field simulation exercise. Upon receiving notification by the Director of IKBN, the district health office deployed the RAT, RAT and medical teams to the IKBN. Event verification and field investigation was done by the teams. An isolation room was set up and health education was given. However, there was poor communication between RAT and RRT during the field investigation which resulted in unnecessary movement of the students.

There was also incoordination with case management at the institution such as cases that have been screened earlier being re-examined, as well as establishing cases and contacts for isolation. It was observed that risk communication was lacking with regard to allaying public anxiety (in this case the Director and staff of the institution) about the outbreak. It was also observed that the terms 'isolation' and 'quarantine' was used interchangeably during health education activities.

4.1.8 Johor State Health Department

Evaluation Objective:

The main objective was to assess the state preparedness plan and ability to handle an avian influenza outbreak situation and its related conditions. Three core functions evaluated were risk communication at the state level, co-ordination of medical and public health actions.

Findings:

Upon receiving notifications from the district health offices, the action of setting-up the operations centre was satisfactory. The operations centre was well organized and equipped. The documentation process and coordination of activity was satisfactory. In terms of risk communication, alert and early notification to the National Crisis and Preparedness Centre (CPRC) as well as district health offices was made. There was timely communications to the State Health Director and Johor DVS regarding the notifications. Health Education materials, PPE stockpiles and antiviral stockpiles were updated.

In terms of risk communications, the operations centre was able to handle the injected scenario of a 'fake reporter' asking for information via telephone. The operations centre staff was also able to advise the public (injected scenario) regarding the vaccination needs for the public planning to travel to high risk areas. With regard to the advice given, various issues such as no currently available vaccine for avian influenza, vaccination with seasonal influenza vaccine and preventive measures from infection was fairly explained.

The operations centre reasonably encountered some difficulties in verification of information and data within the limited time of the exercise leading to some limitation with regard to giving technical advice and coordinating medical and public health actions in all districts. Case definitions, criteria for action was unable to be determined. There was some confusion with regard to the issue of containment activity which was not well explored in the guideline documents. Questions were raised when DVS issued the implementation of control measures such as limitation of animal movement, destroying live animals, export ban and animal border control; on whether there should be similar guidance in terms of limitation of human movement, border control, road block and any other forms of containment activities.

Overall, based on the available information given from the districts, the Johor State Health Department managed to respond appropriately within the limited period of the exercise.

4.2 Evaluation of risk communication

Evaluation of risk communication practices was one of the main objectives of the simulation exercise.

Findings:

Overall, communication was good, especially at the state CPRC level, between the personnel and teams involved in the simulation exercise. Health education materials, such as health alert cards, pamphlets and signages were available and used appropriately. However, there are several observations that suggest for improvements as follows;

i) Teams going to the grounds did not have a checklist on what to distribute or what important points to communicate to the affected persons, accompanying person(s) and members of the management at the institution. Instruction to students sent back to their hostel for observation was not clear.

ii) Communication between the district health office and staff on the ground and, between team members on the ground was lacking which resulted in unnecessary movement of 'patients'. Communication and networking between staff from the district health and veterinary offices can be improved to coordinate field investigation.

iii) The terms 'quarantine' and 'isolation' were interchangeably used by staff on the ground when explaining to public.

iv) The district operations centre lacked additional communication logistics such as telephone and list of telephone numbers of priority agencies (health and non-health) for prompt communication in a crisis situation.

5. RECOMMENDATIONS

The following is a consolidated list of recommendations of the exercise.

5.1 Recommendations for exercise play

i) Reminder to all exercise players on key rule in a simulation exercise, i.e.,'Don't argue about the scenario!'

ii) Communication among relevant players, controllers and evaluaters should be more effective and should follow the stipulated formalities in view of the time constraints and exercise parameters and guidelines involved. Stopping of the simulation exercise should be by event not by timeline.

iii) Controllers need to inform Chief Exercise Controller of any changes to the scenario during the exercise as well as when their scenario end (stand down).

iv) All players in the exercise should note that the exercise requires them to perform their ordinary work roles as usual rather than focusing solely on achieving the goal of the exercise.

v) It would be better to consider not to involve key persons in the system as evaluator/controller in the next simulation exercise to avoid disruption to the system.

vi) Need to prepare for worst case scenario but help should be sought in an overwhelming situation. Examples include designation of officer in-charge, as well as activation and deployment of backup rapid response teams from state or other districts to assist the affected district health office in an overwhelming crisis situation.

5.2 Technical Recommendations

5.2.1 Preparedness

i) Review of the existing guideline for management of avian influenza outbreak in humans. Guidance is needed in terms of limitation of human movement, border control, road block and other forms of containment activities to complement DVS measures on limitation of animal movement, culling, export ban and animal border control.

ii) Regular simulation exercises should be conducted at all levels to test the national and state influenza pandemic preparedness plans. By participating in the exercise, staff will be able to deepen their understanding of the plans and improve response, coordination, and communication during an outbreak.

5.2.2 Training

i) Refresher training on outbreak management including public health risk assessment and prioritization of activities should be conducted regularly. Issues include proper history taking, risk assessment, establishment of diagnosis or case definition, investigation of all contacts, monitoring of exposed staff (including those from other agencies such as from DVS).

ii) Regular training and simulation on infection control measures in health facilities is required as spelt out in the guideline documents. Training should also include practice of universal precautions, proper use of PPE in the field during investigation of an outbreak and decontamination of vehicles before leaving infected area.

iii) Training in various aspects of risk communications especially for new staff and those who did not have experience during the H1N1 2009 pandemic. Examples include skills in handling communication lines in the operations room or hotlines.

iv) Health care workers must update their knowledge and be able to give correct information and advice to the public to avoid confusion. Examples include information about different types of influenza, influenza vaccination, the terms 'isolation' versus 'quarantine', etc.

5.2.3 Communication

i) Regular multidisciplinary discussions between hospital and public health staff on issues related to the management of the cases/outbreak in the ward and field.

ii) Regular meetings of the State Interagency Committee on Control of Zoonotic Diseases to strengthen interagency communication and collaboration at the state and district levels. Benefits include coordination of available resources to facilitate rapid response to an outbreak on the ground.

iii) A checklist of information and health education materials to be provided to various clients in an outbreak should be prepared prior to an activity.

5.2.4 Logistics

i) Provision of infection control set up at the A & E as required in the guideline documents.

ii) Additional communication logistics at the operation rooms to improve communication traffic to the relevant stakeholders in a crisis situation. Important telephone numbers and log book to record all activities in an outbreak should be available in the operation room.

iii) Suitable method of communication such as intercom, radio, walkie-talkie or telephone to communicate between screening and main areas to minimize exposure to infectious cases.

iv) The use of current information and telecommunication technologies such as 'Skype' and GPS can be considered as 'best practice' examples.

6. CONCLUSION

Overall, "AVIAN FLU SIMULATION EXERCISE 2011" was successfully conducted by MOH, with cooperation of DVS in Muar, Johor from 20th to 22nd September 2011. This joint activity incorporated the One Health approach in reducing risks of infectious diseases at the animal–human–ecosystems interface through improved communication, cooperation and collaboration across disciplines and institutions. The exercise was able to achieve the objectives set and should now be continued with regular annual exercise at the national and state levels.

Prepared by:

Dr. Husna Maizura Ahmad Mahir
Principal Assistant Director
Zoonoses Sector
Disease Control Division

Reviewed by:

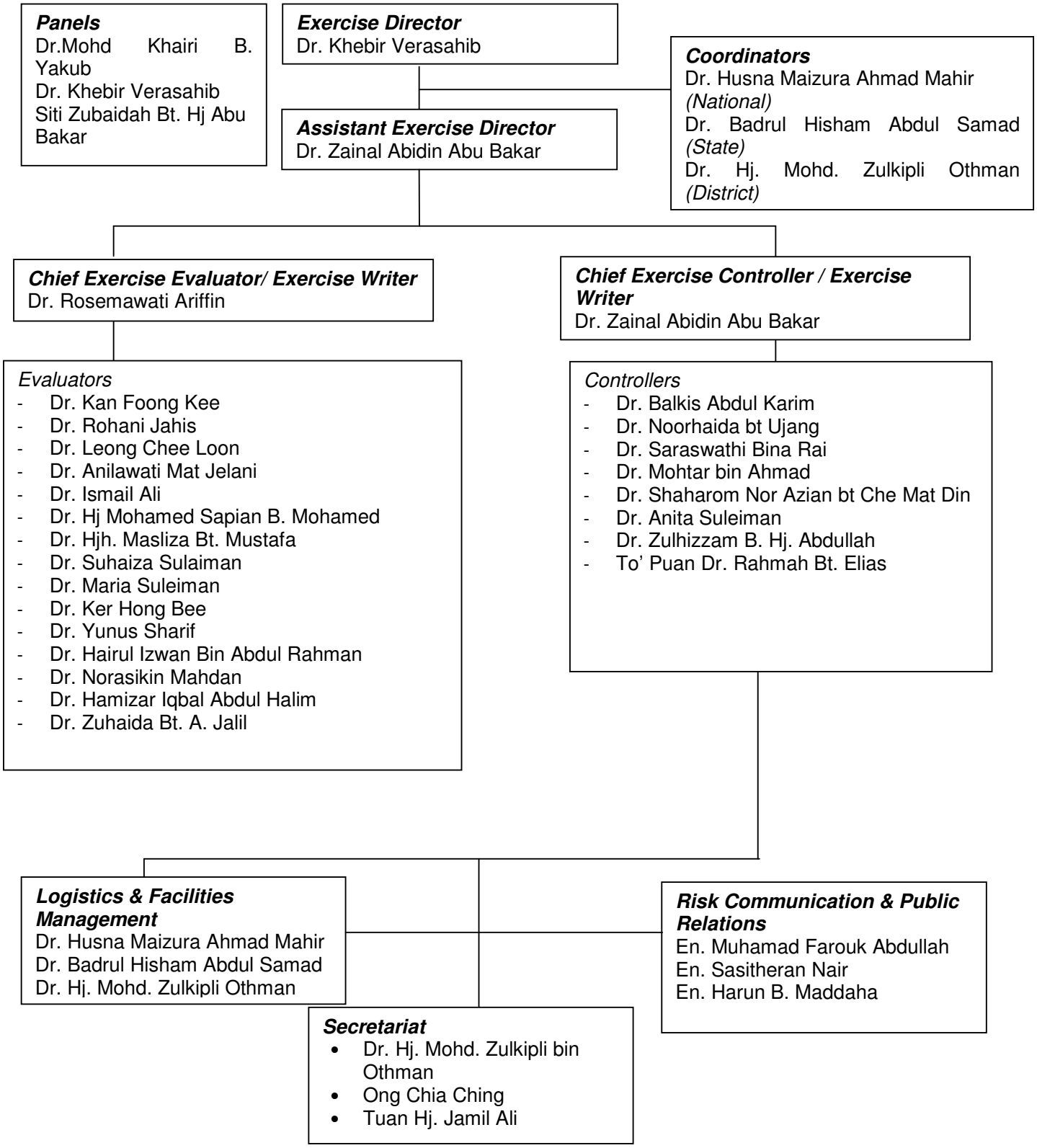
Dr. Khebir Verasahib
Head
Zoonoses Sector
Disease Control Division

13 December 2011

7. PHOTO GALLERIES

Annex 1

EXERCISE MANAGEMENT TEAM



Annex 2

TERMS OF REFERENCE

1. EXERCISE PLANNING TEAM

The exercise planning team is a group that has primary responsibility for the design, conduct and evaluation of the exercise. The team manages this responsibility through a range of planning meetings. The functions include establishing the Exercise Writing, Control and Evaluation Teams, and the Logistics/Facilities Managements, and Risk Communications and Public Relations Teams. The team should also identify staff that can assist with administrative support and exercise related issues.

2. EXERCISE WRITING TEAM

The exercise writing team reports to the Exercise Planning Team. The team is responsible for the detailed development of the scenario and documentation that is required as inputs or reference material during the conduct of the exercise.

3. EXERCISE CONTROL TEAM

The exercise control team will operate during part or all the Conduct phase led by an Exercise Director, who is appointed by and is a member of the Exercise Planning Team. The main responsibility of the team is to ensure that the exercise purpose and objectives are achieved in a realistic manner. Activities that may be undertaken by the Exercise Control Team include:

i) Facilitate the flow of exercise information in accordance with the Master Schedule.

ii) Simulate activities that are not performed by exercise participants.

iii) Contribute towards the exercise Debriefing.

4. EXERCISE EVALUATION TEAM

The exercise evaluation team reports to the Exercise Planning Team. The team is responsible to provide checklists, evaluate all aspects of the exercise and documenting its findings for the Post Exercise Report.

5. LOGISTICS AND FACILITIES MANAGEMENT

The team should be appointed to undertake the role of Facilities Managers in the Exercise Control Team during the conduct of the exercise. The team will report to the Exercise Planning Team and is responsible for identifying, sourcing, establishing (or set up), maintaining and repatriating the physical resources and services required for the conduct of the exercise and related activities.

6. RISK COMMUNICATION AND PUBLIC RELATIONS

The team will report to the Exercise Planning Team. This committee will play its role in the simulation exercise by planning, coordinating and executing the following aspects:

i) Risk Communication

a. Carry out a quick community/audience analysis to obtain back ground information such as demographic composition, educational, economic and social status.

b. Identify potential communication channels/community leaders who can assist MOH to disseminate information to community.

c. Coordinate with relevant parties/technical officers to prepare specific information/messages for target groups such as, health staff, residents in the affected area, health care providers, visitors/travelers and other agencies.

ii) Health Education

a. Plan, produce and distribute (make available) IEC materials appropriate to the target groups.

b. Formulate messages to addresses certain behaviors that contribute to the health crisis.

iii) Public Relations

Organize and coordinate matters related to media involvement, such as organize press conferences, assist in preparing press statements/release and coordinate with technical experts to prepare standard information/messages for specific target groups from the public.

7. ADMINISTRATIVE SUPPORT

Functions of the administrative support include ensuring that a range of support activities are dealt with such as:

i) Transport and accommodation arrangements of visiting exercise staff and participants

ii) Receptions, social and after hours activities

iii) Exercise stationeries, memorabilia, etc

iv) May be appointed to undertake the role of, or assist, Facilities Managements during the conduct of the exercise.

v)

Annex 3

EXERCISE AGENDA

DATE: 20 SEPTEMBER 2011 (TUESDAY)		
Time	**Activities**	**Location**
9.00 am – 12.30 pm	• Registration of evaluators and controllers • Briefing on guideline documents	Mann Chalet, Muar
12.30 – 2 pm	Lunch	
2 pm – 5 pm	• Briefing on exercise play • Discussion	
DATE: 21 SEPTEMBER 2011 (WEDNESDAY)		
7.00 am – 4 pm	"AVIAN FLU SIMULATION EXERCISE 2011"	Scenario locations
8.00 -10.00 pm	Discussion and '*wrap up'*	Klinik Kesihatan Bandar Maharani, Muar
DATE: 22 SEPTEMBER 2011 (THURSDAY)		
9.00 am – 12.00 pm	Debriefing session • Presentations - Overview of exercise by Exercise Director - Summary of findings by evaluators • Panel Discussion • Closing	Hospital Pakar Sultanah Fatimah, Muar
12.30 pm	Lunch and dismiss	

Annex 4

EXERCISE SCENARIO

"In August, 2011, WHO issued a health alert on a confirmed case of avian influenza in humans in neighbouring countries, including Indonesia and Cambodia. All states of Malaysia were put on heightened alert for the possible spread of the virus."

Location 1: *Hospital Pakar Sultanah Fatimah, Muar*

TIME	SCENARIO	ASPECT TO BE EVALUATED
8.30am- 10.00 am	**Surgical Ward** Patient A: A Malay man, 30 years old admitted to surgical ward on 20 September 2011 due to "acute abdominal pain" with symptoms of fever and vomitting. Diagnosis: TRO Appendicitis Patient A have history of visiting a friend in District A, Indonesia with another 2 friends. During his stay in Indonesia, patient A visited a wet market in District A. Condition of Patient A becoming worse. He suffers from difficulty breathing. Physical check up shows that patient has respiratory failure.	• *Case management* • *Infection control* • *PPE* • *Transfer of patient to isolation ward* • *Communication (internal & external)* • *notification*
10.00 – 11.30 am	**Isolation Ward** Received an ILI case with *severe acute respiratory infection* (sARI) from Hospital Tangkak, Ledang. Patient comes in with i/v drip & oxygen mask. He is one of the staff for Mr. Yasak, a noodle *siput* seller From Kampung Sungai Renggam, Muar, Johor.	• *Case management* • *Samples, X-ray* • *Infection control* • *PPE* • *Transfer of patient to isolation ward* • *Communication (internal & external)* • *Notification*
12.00 pm	**A&E** A patient admitted with references letter from Hospital Tangkak. Patient was escorted by a staff nurse. Another patient was admitted to A& E escorted by a medical assistant.	

Location 2: Hospital Tangkak, Ledang

TIME	SCENARIO	ASPECT TO BE EVALUATED
9.00-10.30 am	3 to 4 residents from Kg. Sg. Renggam went to A&E Hosp Tangkak due to ILI symptoms. There have been incidents of dead chickens in the village since last week. Patient 1 : Mr X, gets treatment in A & E Hospital with wife, Ms. Y. Patient suffering from fever, cough and sore throat. Patient suspected to get infection from wife (*H2H). Note: *H2H = *human to human transmission* Patient 2 : Ms. Y, wife for patient 1. Gets treatment with husband due to fever, cough and sore throat.Patient had history of buying noodles siput in Kg. Sg. Renggam. She saw some one throwing dead chickens. Patient 3 : Mr Z, staying in Kg. Sg. Renggam. He is a neighbour for Patient 1 & 2. Patient suspected to get infection from patient 1 (H2H). Patient gets treatment in Hospital due to fever, cough and sore throat.	• Notification from Hospital to PKD Ledang & from PKD Ledang to PKD Muar • Case management • Communication • Transfer patient from Hospital Tangkak to Hospital Muar • Infection control • Decontamination of ambulance

Location 3: *Kampung Sungai Renggam (Field)*

TIME	SCENARIO	ASPECT TO BE EVALUATED
8.00 am By 10.30 am RAT from PKD Muar	*Ketua Kampung* called and informed Pejabat Kesihatan Daerah (PKD) Muar at 9.00am about death of chickens in the village since last week and few people have the symptoms of fever, cough and flu symptoms. ***INTERFACE 1* with scenario from DVS:** Incident of dead chickens in the village since last week (HPAI positive, result inform by Muar Veterinary Office to PKD around 9:30-10.00am). ***INTERFACE 2* with scenario from DVS:** Neighbour of Mr. Yasak a noodles maker, reported to Muar Veterinary Office saying that "Yesterday, a lot of chicken from my friend's house (Mr. Yasak) died. His family members suffer from flu symptoms too." Actor 1 : Mr. Yasak's son, complaints suffering from flu, cough and sore throat. Gave history of holding and throwing dead chicken. Actor 2: Mr. Yasak's staff, Complaints suffering from flu, cough and sore throat. Helped Actor 1 threw dead chicken. ***INTERFACE 3* with scenario from DVS** Rapid Action Team DVS went to owner's house with RAT from PKD. Rapid Action Team DVS conduct field investigation, samples taken and send to Veterinary Lab in Johor. Infection control by DVS. RAT from PKD investigate Mr. Yasak family. Suspected avian flu and send to hospital.	• Investigation by RRT, RAT • Flow of information • Medical team • ACD • PPE • Control activities • Communication with DVS • Decontamination of vechicles Distribution of Health Alert Card

Location 4: *Klinik Kesihatan Bukit Pasir*

TIME	SCENARIO	ASPECT TO BE EVALUATED
9.00 – 11.00 am	2 residents from Kg. Sg. Renggam went to clinic to get treatment for cough, fever and flu. Actor 1: Ms P, gave history of buying noodles from Mr Yasak in Kg. Sg. Renggam, She held many dead chickens. Actor 2: Ms Q. Suspected with human to human transmission. 10 students with ILI symptom from IKBN get treatment in health clinic.	• Case managemnt • Communication • Transfer patient from KK to Hosp Muar • Infection control

Location 5: *Pejabat Kesihatan Daerah (PKD) Muar*

TIME	SCENARIO	ASPECT TO BE EVALUATED
9.00 am -2.00 pm	Received notifications from: 1. PKD Ledang - After investigation, 3 cases notified to PKD Ledang from Hospital Tangkak stay in Muar 2. Hospital Muar - received 2 notifications, 1 case transfer from Hospital Tangkak and 1 case in surgical ward. 3. Director IKBN 4. KK Bukit Pasir - 10 cases of ILI in IKBN and 2 cases from Kg. Sg. Renggam. Scenario: 1. *Influenza Like Illness* (ILI) cluster at IKBN 2. Incident of dead chickens in village 3. Handling phone call from media and public. (Actor act as reporter form local paper visit PKD to get information on dead chickens and situation in Kg. Sg. Renggam).	• Preparation of RAT & RRT • Managemnet of operation room and logistic • Communication with State • Investigation • PPE • Health education • Daily returns/progress • Preminary Outbreak Report

Location 6: *Pejabat Kesihatan Daerah Ledang*

TIME	SCENARIO	ASPECT TO BE EVALUATED
9.30-10.00	Received notification from Hospital Tangkak and KK Paya Mas. 1. Hospital Tangkak- 3 cases of uspected avian influenza 2. KK Paya Mas – 1 case from Kampung Gersik, Ledang suffering from ILI 2 days ago. History of visiting family members in Kg. Sungai Renggam.	• Verification of cases • Notification to PKD Muar

Location 7: *IKBN*

TIME	SCENARIO	ASPECT TO BE EVALUATED
10.00 am – 2.00 pm	At 10.15 am IKBN Director, called PKD Muar to inform 10 students down with fever and cough. They just came back from Bandung, Indonesia last Sunday for a study tour. A total of 20 students joined the study tour with their tutor. 15 students out of 20 suffer from fever, cough and sore throat. All 15 students stay in the same block in IKBN. 10 students brought to Health Clinic using IKBN bus.	• Outbreak management • communication • Medical team (ACD) • Health Education • Infection control • Distribution of Health Alert Card

Location 8 : Johor State Health Department

TIME	SCENARIO	ASPECT TO BE EVALUATED
8.00 am – 2.00 pm	Received notification from PKD Muar and Ledang about ILI cases and suspected AI cases. Received phone call from reporter (same reporter in PKD Muar)	• Management of Operation Room • Communication with CPRC MOH • Preparation of preliminary report • Daily return • Coordinate control activities

Annex 5

EVALUATION CHECKLISTS

Location 1a: Isolation Ward, *Hospital Pakar Sultanah Fatimah*

No.	STEPS TAKEN	CHECKLIST (Yes/No)	COMMENTS
1.	Designated team ready to receive the patient		
2.	Isolation room – switch on negative pressure unit, BP sets, stethoscope, thermometer, emergency trolley, consumables etc.		
3.	Case management History taking Physical examination Respiratory sample collection & handling X rays		
4.	Personal Protective Equipment Availability of PPE Mask Gloves Disposable gowns Aprons Goggles / face shields Gowning & degowning Disposal of PPE Available of disinfectant for disinfection		
5.	Communication Internal Referral to other departments Isolation ward staff Head of Department Hospital Director External Patients and relatives Media		
6.	Notification to Health Office / Bilik Gerakan Phone call Filling up notification forms Faxing notification forms		
7.	Designated PI team and other staff registry Staff surveillance		
	Additional Comments		

Location 1b: Surgical Ward & A&E, *Hospital Pakar Sultanah Fatimah*

No.	STEPS TAKEN	CHECKLIST (Yes/No)	COMMENTS
1.	Identify case with case definition		
2.	Prompt institution of appropriate infection control measures Index patient and adjacent patients Mask Isolate index pending transfer to isolation ward HCWs PPE		
3.	Transfer of patient to isolation ward Designated route Traffic control		
4.	Risk communication Internal Designated PI team Isolation ward staff Head of Department Hospital Director External Patients and relatives Media		
5.	Notification to Health Office / Bilik Gerakan Phone call Filling up notification forms Faxing notification forms		
6.	Designated PI team and staff registry ED staff Concession company staff Staff surveillance		
7.	Disinfection activities after index patient transfer out Isolation of adjacent patients		
	ADDITIONAL COMMENTS		

Location 2: *Hospital Tangkak*

No.	STEPS TAKEN	CHECKLIST (Yes/No)	COMMENTS
1	Case Identification - Triage System - Appropriate waiting area / room - Counter and Registration - Designated Staff - Designated Route and Room for examination - Designated Instruments		
2	Case Notification to District Health Office - Mode of Notification - Forms - Information required for notification - Designated staff to notify		
3	Case Management - History Taking - Clinical Examination - Clinical Specimen		
4	Transferring of patient Hospital Muar - Procedure - Designated route - Designated wheelchair or trolley - Designated ambulance		
5	Risk Communication - Communication with patients - Communication with staff - Communication with designated hospital and District Health Office - Communication with Managers		
6	Infection Control - Availability of PPE and appropriate usage - Availability of Disinfectant - Disinfection activities after patients transfer out - Decon ambulance - Staff registry attending patients		
	ADDITIONAL COMMENTS		

Location 3: *Kampung Sungai Renggam*

No.	STEPS TAKEN	CHECKLIST (Yes/No)	COMMENTS
1.	Rapid assessment team (RAT) conducting investigation arrive at the kampong -Composition of team: Epid Officer/AEHO and PHA - PPE ie. Gloves, facemask 3 ply, boots, camera		
2.	Verify/Ascertain the place the chicken had died - Interview villagers - Make spot map and outline 200m radius		
3.	Communication of Information - Epid Officer/AEHO relay information to MOH		
3.	Rapid Response team (RRT) conduct Active case detection (ACD). - Team comprise of AEHO, PHA, Nurse, Driver - Start with house nearest to place chicken died - Use PPE i.e Gloves, facemask 3 ply, boots - Nursing bag : Thermometer with disposable cover - Bio hazards disposable bags - Take occupant particulars - Ask about signs and symptoms of suspected Influenza H5N1 : *fever>38^{0}C, and one or more of the following- cough,sorethroat, shortness of breath And history of direct contact to poultry with confirmed AI during last 7 days* - Apply 3 ply mask to patients - Fill in AI referral form - Call designated ambulance from KK/Hospital - Call A&E designated hospitals to inform case referral - Inform District MOH about situation - Give health education to patient and family i.e mode of transmission, personal hygiene, daily self monitoring for 1 week and to inform health personnel if having signs and symptoms of AI - HEALTH ALERT CARD - Case with Signs and symptoms but no history of contact with dead poultry, treat and put under house surveillance for 1 week. - Personnel disposed mask, gloves into biohazard disposable bags, wash hands with hand rub - disinfect boot before entering vehicle or leaving area		
4.	Disinfection - Done by controlled team comprise of AEHO , PHA - Equipment: spray can, Sodium hypochlorite solution (cholorox)/70% alcohol - Disinfect place of dead poultry - Vehicle tyres.		
5.	Health Education Team - Dissemination of Pamphlet/posters etc on AI - Hold talk in group/individual on AI		
	ADDITIONAL COMMENTS		

Location 4: *Klinik Kesihatan Bukit Pasir*

No.	STEPS TAKEN	CHECKLIST (Yes/No)	COMMENTS
1	**PREPARATION** Triage appropriateness Location Signage Case screening & identification Patient flow Manpower / staff Education materials		
2	**CASE MANAGEMENT**		
2.1	Instruction and communication with patients		
2.2	Designated route for patients to examination room		
2.3	Appropriateness of waiting room for patients		
2.4	Designated examination room and instruments (BP set, stethoscope, thermometer, emergency trolley, consumables, etc)		
2.5	History taking		
2.6	Clinical management & clinical specimen		
3	**COMMUNICATION**		
3.1	Communication with Health Office		
3.2	Communication with Hospital Muar		
3.3	Notification to Health Office Phone Filling of notification form Faxing the notification form		
4	**PATIENT'S TRANSFER**		
	Procedure Designated route for transfer of patients Designated wheel chair / trolley / ambulance		
5	**INFECTION CONTROL**		
5.1	Availability of PPE Surgical mask Gloves Disposable gowns Aprons Goggles / Face masks		
5.2	Use of PPE		
5.3	Availability of disinfectant for disinfection		
5.4	Disinfection activities after patient has been transferred out		
ADDITIONAL COMMENTS			

Location 5 : *Pejabat Kesihatan Daerah Muar*

No.	STEPS TAKEN	CHECKLIST (Yes/No)	COMMENTS
1	Availability RAT team Availability RRT team Availability of Operational Room		
2	Activation RAT team a. Case verification b. Communication with PKD		
3	Activation Operational Room a. Chairperson/committee b. Communication channel c. Logistics d. Daily report/return		
4	Implementation operational room Availability of ;- a. Telephone/hotline/fax/walkie talkie/ hand phone b. Computer/printer/internet c. Map/spot map d. Log book e. Whiteboard f. List of dedicated staff with phone number g. Check list – case definition h. Check list for contacts i. Format daily return j. Format daily report k. Epid curve l. Notification form		
5	Risk communication a. Receiving notification b. Communication with Hospital Director c. Communication with staff d. Communication with JKNJ/ MOH e. Communication with community f. Communication with media g. Communication with public		
6	Availability of PPE a. Surgical masks b. Gloves c. Disposable gowns d. Aprons e. Goggles/ Face mask f. Boots		
7	Appropriateness of PPE usage		

No.	STEPS TAKEN	CHECKLIST (Yes/No)	COMMENTS
8	Availability of disinfectant for disinfection		
9	Disinfection activities after investigation and contact tracing		
10	Alert triage at health clinics		
11	Case Investigation and contact tracing a. Definition suspected case/ contact b. Investigation of cases c. Contact tracing d. Surveillance for contacts Isolation and Quarantine (self monitoring kits consist of assessment form for signs and symptoms of ILL, oral thermometer, surgical masks and information pamphlets) e. Instruction and communication with case and contact f. Distribution of health Alert card and educational material g. Report daily activities		
12	Health education a. Availability of health Alert card b. Availability of education material c. Transportation d. Dedicated staff		
13	Self health monitoring and reporting if ill for health workers		
	ADDITIONAL COMMENTS		

Location 6 : *Pejabat Kesihatan Daerah Ledang*

No.	STEPS TAKEN	CHECKLIST (Yes/No)	COMMENTS
I	PKD Ledang received 1st notification - RAT formed		
	Verify Case -High fever (>38℃) -Cough - Sorethroat - have contact with dead birds/chicken		
	Place of residence/travel history		
	Contact among family /friends		
	Classify case- mild/moderate/ severe		
	Further management –referral/ home isolation		
	RAT inform PKD		
	Inform / transfer case to PKD Muar		
II	PKD Ledang received 2nd notification		
	Verify Case -High fever (>38℃) -Cough - Sorethroat - have contact with dead birds/chicken		
	Place of residence/travel history		
	Contact among family /friends		
	Classify case- mild/moderate/ severe		
	Further management –referral/ home isolation		
	Inform PKD		
	Inform / transfer case to PKD Muar		
III	Inform JKN Johor		
IV	Alert KK/GP		
	ADDITIONAL COMMENTS		

Location 7: *IKBN, Pagoh*

BIL	STEPS TAKEN	CHECKLIST (Yes/No)	COMMENTS
1	Verification of the event • Need to confirm the outbreak • The normal number of URTI/ILI cases in IKBN • The severity of cases • Early information to stakeholder		
2	Investigate the outbreak • Activate operational room • Define the cases / case definition • Established the RAT and RRT • Do ACD(by Medical Team) to detect more cases • Prepare the logistic – VTM, Throat swab, PPE • Field investigation to IKBN ✓ Interview the cases for history of travelling, date of onset, symptoms, contact with similar cases, ✓ Locate the cases by dorm / class ✓ Establihed the attact rate ✓ Do risk assessment ✓ Identify room for isolation of cases ✓ Use PPE (face mask) during investigation. • Prepare the line listing of cases • Communicate to State Health Department		
3	Control activities • Strict isolation of cases • Alert to hospital, health centers and private practitioners. • Health promotion – hand hygiene, cough etiquette, • Distribute the health alert card. • Use of PPE, cases must use mask • Infection control		
4	**ADDITIONAL COMMENTS**		

Location 8: Johor State Health Department

NO	STEPS TAKEN	CHECKLIST (Yes/No)	COMMENTS
1	**RISK COMMUNICATION**		
	Operations Room:		
	1. Receiving notifications		
	2. Setting-up Ops Room Decision		
	3. Ops Room Organization		
	4. Coordination of Early Report and Daily Report: (a) From Districts (hospitals if necessary) (b) To CPRC		
2	**Communication:**		
	1. Communicating with CPRC		
	2. Communicating with State NSC		
	3. Communicating with State Health Exco		
	4. Communicating with Veterinary Department		
	5. Communicating with Media		
3	**Giving Alert:**		
	1. Alerting all Government Hospitals		
	2. Alerting all Health Districts and Clinics		
	3. Alerting all Private Practitioners/ Hospitals		
4	**Organizing Health Education Activity:**		
	1. Press Release		
	2. HE via mass media		
	3. Printed HE		
	4. Others:_____		
	COORDINATION OF MEDICAL ACTION		
1	**Case Definition & Case Management:**		
	1. Verification and synchronizing case definitions (case under investigation, suspected case, probable case, confirmed cased) to be used as well as case management practiced (criteria for admission, criteria for antiviral Rx, criteria for discharge)		
	2. Coordinating case referral systems from clinics to hospital / designated hospital.		

NO	STEPS TAKEN	CHECKLIST (Yes/No)	COMMENTS
2	**Laboratory Support:**		
	1. Coordinating samples logistic and sending specimens to designated Labs		
	2. Coordinating results		
3	**Antiviral Stockpile:**		
	1. Antiviral stockpile status & needs at hospitals		
	2. Antiviral stockpile status & needs at health clinics		
4	**PPE Stockpile:**		
	1. PPE stockpile status & needs at hospitals		
	2. PPE stockpile status & needs at clinics		
5	**Vaccination:** Coordination on status & needs		
6	**Staff Health Monitoring:** Getting feedback on staff handling cases (hospitals / clinics) health monitoring		
	COORDINATION OF PUBLIC HEALTH ACTION		
1	**Coordinating and Giving Technical Advice On Field Investigation Activity** [ACD; PCD; Environmental Investigation; Culling; etc]		
2	**Coordinating and Giving Technical Advice On Containment Activity** [PMA Activity; Premises Closure; Public Gathering; Social Distancing; Disinfection; Surveillance (Notifications & Rumours Surveillance); Home Surveillance; Health Education; Health Enforcement; etc]		
3	**PPE Stockpile:** PPE stockpile status & needs for field activity		
4	**Staff Monitoring:** Getting feedback on staff (health / veterinary) health monitoring		
	ADDITIONAL COMMENTS		