

Legislative Council Panel on Health Services

Exercises and drills for infectious disease outbreak

PURPOSE

This paper outlines the scope of inter-departmental and internal exercises/drills conducted by the Centre for Health Protection (CHP) of the Department of Health and Hospital Authority (HA) in the past year to review the Administration's and HA's preparedness plans for infectious disease outbreaks, and the coordination as well as information flow within and outside the government in preparation for and during an outbreak situation.

BACKGROUND

2. In the past year, CHP and HA have conducted the following drills and exercises (in reversed chronological order) –

- (a) Exercise POPLAR (conducted by CHP in November 2005);
- (b) Exercise Flamingo (conducted by HA in November 2005);
- (c) Exercise CEDAR (conducted by CHP in July 2005);
- (d) COMMS 1 (conducted by the CHP in March 2005); and
- (e) Exercise MAPLE (conducted by CHP in November 2004).

The details of these exercises are set out in the ensuing paragraphs.

THE EXERCISES

Exercise POPLAR

Objective

3. Exercise POPLAR aimed to review contingency plans for managing outbreaks of Avian Influenza (AI) in Hong Kong in the event that the World Health Organization (WHO) announced efficient human-to-human transmission of the disease in a place outside Hong Kong. The exercise focused

on communication between different government departments. There was no ground movement.

Details

4. This inter-departmental communication exercise was conducted on 24 November 2005. The exercise started with a scenario that a Hong Kong resident developed symptoms of influenza after visiting a fictitious country in the region where 41 people were confirmed to have been infected with AI. The Secretary for Health, Welfare and Food (SHWF) chaired an inter-departmental meeting to steer Government's response. In response to the WHO's declaration of human-to-human transmission in that country, SHWF activated the Emergency Response Level under the Government's Preparedness Plan for Influenza Pandemic. The Emergency Response Level Steering Committee, chaired by the Chief Executive (CE), was convened to formulate and oversee the implementation of the overall territory-wide disease control strategy.

Participants

5. More than 250 players from over 30 bureaux/departments/organizations took part in this exercise (see [Annex A](#)). Apart from players, umpires were stationed at strategic locations to monitor the flow of the exercise. Simulators were also involved to provide information and facilitate the story flow.

Preliminary observations

6. Since the exercise was conducted in less than two weeks, the Administration has yet to receive feedbacks from participating bureaux/departments/organizations. Nevertheless, some initial feedback received indicates that players considered that the exercise provided a valuable opportunity for them to further enhance their understanding of their organization's contingency plan and how information would channel to relevant parties. The inter-departmental meeting and the Emergency Response Level Steering Committee meeting operated smoothly and adequate and timely information were available to allow relevant parties to take decisions and steer the Government's response in an outbreak of public health emergency. Participants also observed that preparation for the Exercise was just as useful as the actual conduct of the Exercise, as prior to the Exercise, they all revisited their contingency plans and identified gaps where improvements or clarifications were required.

7. Some players opined that in order to maintain the provision of

essential services but minimise chances of infection, consideration should be given to arrange staff to work in smaller groups and in different localities. Some players also suggested that there could be a wider application of communications technology. For example, video-conferencing might be adopted to replace physical inter-departmental/steering committee meetings. Others considered that their own communication systems could be further improved by, for example, modelling on the logging system of the Emergency Response Centre (ERC) of CHP.

Exercise Flamingo

Objective

8. The aim of the exercise was to review and evaluate the preparedness and response of the HA to the emergence of human AI in Hong Kong. The drill was designed to evaluate the following aspects of the HA's response -

- (a) implementation of proper infection control measures for AI;
- (b) communication efficiency;
- (c) line of accountability; and
- (d) logistic consideration including patient transfer and material supply.

Details

9. Exercise Flamingo was held in the morning of 8 November 2005. The background scenario was about two policemen who were admitted to Tuen Mun Hospital (TMH) and United Christian Hospital (UCH) with fever and respiratory symptoms after handling a person who was found to be confused on the street and subsequently died of unknown respiratory disease in TMH. The exercise started off upon the laboratory confirmation of one of the policemen as a case of influenza A (H5). A series of events unfold subsequently and the players were expected to respond to such events.

Participants

10. The drill involved the following places :

- (a) TMH – the Major Incident Control Centre (MICC), Accident & Emergency (A&E) Department and the paediatric isolation ward D5;
- (b) UCH – the MICC, A&E Department and the adult isolation ward

- 13B;
- (c) the HA Head Office (HAHO) and the other five cluster MICCs; and
 - (d) Exercise Planning Team at the Conference Room of the Infection Control Branch (ICB) of Centre for Health Protection (CHP).

11. The drill mobilised approximately 200 participants including frontline and administrative staff in the HAHO and hospitals. There were players comprising Cluster Chief Executives (CCEs), MICC room managers, Infection Control Officers (ICOs) in the clusters and those staff members involved in the alerting cascade for Red Alert under infectious disease outbreak. Nine umpires participated in the drill.

Preliminary Observations

12. Overall, the drill ran smoothly. The participating hospitals and the HAHO demonstrated a clear line of command and efficient flow of communication. All players knew their role well and carried out most of their expected actions as stated in the contingency plan. The ground movement drill at TMH and UCH also ran smoothly without affecting normal service. Frontline staff paid full effort and demonstrated their professionalism during the exercise.

13. Some minor technical and operational issues were identified during the drill and the HA had responded promptly with recommended improvement measures as outlined in the paragraphs below.

14. There were occasions when the facsimile machines were jammed by the massive amount of information transmitted. Additional facsimile machines and a more reliable short message delivery system were installed to facilitate better and more reliable and timely communication. It is noted that email system is deployed as an efficient and effective means of communication in HA's contingency plans for disasters and outbreaks.

15. One hospital did not form the Hospital Outbreak Control Team (HOCT) upon confirmation of an AI case in their hospital. The HA would see that HOCT would be formed even if there was only a single confirmed case of AI in the hospital concerned. To ensure effective discussion and timely follow up to be taken by the CHP, the HA considered that HOCT meetings should be convened and attended by representatives from relevant teams in the CHP so that issues such as contact tracing and post-exposure prophylaxis of healthcare workers could be discussed more effectively.

16. The HA considered that notification could be strengthened on two fronts : in respect of notification to the CHP, hospitals would be reminded that the notification should be made as soon as possible to enable the CHP to initiate public health actions accordingly. The notifications to the CHP should be made by the infection control teams of hospitals rather than by different persons in the hospitals as in the case of what had happened during the drill. At HA Head Office, reporting mechanism were reviewed and strengthened. The notification channel to all senior staff in HA and other Government departments have been streamlined.

17. While the HA has clear guidelines on the transfer of patients to the designated hospitals (in the case of the drill, the PMH), some questions, such as the number of isolation beds available, whether patients with strong epidemiological link with confirmed AI case and with compatible symptoms should be transferred and whether confirmed AI case under respiratory assistance should be transferred, were raised during the drill. The HA would promulgate the prevailing patient transfer and infection control guidelines at the appropriate forum.

18. Hospitals would also be reminded that given the fast and evolving situation in the event of an outbreak of influenza pandemic, they would need to follow notifications to policy as determined by the HA's Central Command Committee from time to time and to follow the infection control guidelines in the management of suspected and confirmed AI patients.

Exercise CEDAR

Objective

19. Exercise CEDAR aimed to consider how best to manage initially asymptomatic passengers of an aircraft aboard which an unknown disease has spread during a long haul flight and those with symptoms have already been taken from the aircraft to hospital.

Details

20. This desktop exercise was conducted in the afternoon of 19 July 2005 with developments input to players by means of PowerPoint slides and oral responses from other players. Observers from relevant departments were also invited by the facilitators to comment or raise questions to players relating to exercise development. The debriefing followed immediately after the end of the exercise.

Participants

21. About 20 players from more than 10 bureaux/ departments/orgnizations participated in this exercise (see Annex B). More than 20 observers from about 10 departments/orgnizations also took part in this exercise.

Observations

22. The Exercise demonstrated the importance of contingency planning. It also highlighted a number of issues that needed to be further explored, such as the source and provision of personal protective equipments, defined procedures and resources for immigration control, provision of emotional support etc, so as to enhance Hong Kong's preparedness in this area.

COMMS 1

Objective

23. COMMS 1 was a simple exercise which aimed to review the effectiveness of various agreed and proposed communication protocols between the ERC and Outbreak Intelligence Centre (OIC) of CHP.

Details

24. Both ERC and OIC are newly established units under the CHP. This communication drill, which took place on 16 March 2005, was related to the scenario of an influenza outbreak.

Participants

25. A majority of members responsible for manning ERC and OIC participated in this drill. Umpires and simulators also took part in the drill.

Observations

26. As ERC and OIC would need to work closely during public health emergencies, they should preferably be located in close proximity. The communication drill helped to clarify the roles and improve the communication flow between the two centres.

Exercise MAPLE

Objective

27. Exercise MAPLE was an inter-departmental exercise aiming to test out the Government's preparedness plan for combating SARS-like infectious diseases. It should be noted that when this exercise was conducted in November 2004, Government's Preparedness Plan was still being developed.

Details

28. Exercise MAPLE was conducted on 18 and 19 November 2004. The Exercise involved over 30 bureaux, departments and organizations. The Exercise commenced with Hong Kong having been hit by an unknown infectious disease, and two clusters of health care workers in two public hospitals who developed fever and gastroenteritis symptoms. The situation triggered the government's overall emergency response mechanism on the possible outbreak of an unknown communicable disease. Subsequently, local transmission of the disease in the community was confirmed. The disease was later defined by the WHO as Severe Haemorrhagic Fever Syndrome (SHFS, a notional name designed for the purpose of the exercise). The Exercise came to the end with a mock evacuation of residents from a building affected by SHFS located in an exercise venue.

29. During the Exercise, overall coordination among bureaux/departments/agencies was tested out through an inter-departmental Steering Committee meeting chaired by the SHWF to review the adequacy and coordination of control and response measures, and to decide on additional measures as necessary. The Acting Chief Executive (CE) also convened a high-level meeting with major Principal Officials when local transmission of the disease was confirmed to formulate an overall disease control strategy. The decision to evacuate the affected building was made at the meeting.

30. A total of nine public health experts from the UK, Australia, the Mainland, Macau and local professional/academic institutions participated in the Exercise as observers. They observed major events/operations during the Exercise including SHWF's Steering Committee Meeting, operation of the Emergency Responses Centre (ERC) of the CHP, the evacuation operation, etc. A list of the observers is at Annex C.

31. The experts were very positive about the Exercise in terms of achieving its aims and the enthusiasm of those participating in the running and

playing in the Exercise. They commented that the Exercise was well-planned and executed, and that the criteria for activating different alert/response level were clearly defined. They were impressed with the smooth handling of the evacuation phase of the Exercise. They also considered that the Exercise enabled a thorough review of the relevant contingency plans and offered the opportunity to identify some aspects of those plans which require improvement.

32. As far as participating bureaux and departments are concerned, there was wide agreement that the Exercise was successfully run and the aims of the Exercise were achieved. Nonetheless, as the first of such a large scale inter-organisational exercise relating to a public health emergency, Exercise MAPLE shed light to some areas requiring improvements in respect of contingency planning. The following are the major observations :-

- (a) a clearly defined protocol be established for the dissemination of information relating to, for example, the activation of response levels to bureaux/departments/agencies;
- (b) protocols established in contingency plans be reviewed to ensure that any action proposed has a firm legal basis; and
- (c) efforts be made to familiarise bureaux/departments on the work and role of the DH's ERC.

33. HWFB, CHP and relevant departments/agencies have taken into account the above recommendations when enhancing/drafting relevant preparedness plans for infectious disease outbreaks. Actions have also been taken to improve the exercise planning phase for subsequent exercises and, more importantly, address the system pitfalls identified in the Exercise MAPLE. Our view is that the relevant areas and inter-departmental coordination before and during a "pandemic outbreak" have been greatly improved since Exercise MAPLE.

WAY FORWARD

34. Participating bureaux/departments/orgnizations will submit a post-exercise report for Exercise POPLAR to the Exercise Planning Team of the CHP. A wash-up meeting will then be held with major players before finalising the post-exercise report. Individual bureaux/departments/orgnizations, taking into account experience from the exercise and recommendations in the post-

exercise report, will review how their contingency plans can be further improved.

35. Moreover, Exercise Flamingo has tested the ability of the HA's system to respond to AI cases in our locality. Remaining alert and responsive is important in the event of outbreak of influenza pandemic when circumstances would change quickly.

36. Further drills/exercises will be conducted to enhance our preparedness to public health emergencies. Subject to the observations/feedback of the Exercise POPLAR, future exercises/drills can focus on operations in a specific premise, such as outbreak control in institutions. Experts from outside Hong Kong may also be invited to participate in these exercises as observers. Besides, the HA will conduct further drills as and when appropriate so as to prepare itself adequately for different kinds of challenges.

Health, Welfare and Food Bureau
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Exercise POPLAR
List of participating bureaux/ departments/orgnizations

1. Agriculture, Fisheries and Conservation Department
2. Auxiliary Medical Service
3. Buildings Department
4. Constitutional Affairs Bureau
5. Civil Aid Service
6. Chief Executive's Office
7. Commerce, Industry and Technology Bureau
8. Civil Service Bureau
9. Department of Health
10. Department of Justice
11. Drainage Services Department
12. Economic Development and Labour Bureau
13. Education and Manpower Bureau
14. Electrical and Mechanical Services Department
15. Environmental Protection Department
16. Environment, Transport and Works Bureau
17. Food and Environmental Hygiene Department
18. Fire Services Department
19. Financial Secretary's Office
20. Financial Services and the Treasury Bureau
21. Government Logistics Department
22. Hospital Authority
23. Home Affairs Bureau
24. Home Affairs Department
25. Housing Department
26. Hong Kong Monetary Authority
27. Hong Kong Police Force
28. Housing, Planning and Lands Bureau
29. Health, Welfare and Food Bureau
30. Immigration Department
31. Information Services Department
32. Leisure and Cultural Services Department
33. Secretary for Justice's Office
34. Security Bureau
35. Social Welfare Department
36. Transport Department
37. Tourism Commission

Exercise CEDAR
List of participating bureaux/ departments/orgnizations

1. Aviation Security Company Limited
2. Civil Aid Service
3. Customs & Excise Department
4. Department of Health
5. Government Flying Service
6. Health, Welfare and Food Bureau
7. Home Affairs Department
8. Hong Kong Airport Authority
9. Hong Kong International Airport
10. Hong Kong Police Force
11. Hospital Authority
12. Immigration Department
13. Social Welfare Department

**Exercise MAPLE
List of Observers**

Overseas:

Dr. Sean TOBIN	Department of Health and Ageing, Australia
Dr. John SIMPSON	Health Protection Agency, UK
Dr. FENG Shaomin	Health Department of Guangdong Province, PRC
Mr. WU Yueqi	Health Department of Guangdong Province, PRC
Dr LAM Chong	CDC, Department of Health, Macao

Local:

Prof. Joseph SUNG	Director, Centre for Emerging Infectious Diseases The Chinese University of Hong Kong
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