

**For discussion on
13 December 2004**

Legislative Council Panel on Health Services

Draft Preparedness Plan for Influenza Outbreak

Introduction

This paper sets out the draft Framework of Government's Preparedness Plan for Influenza Outbreak.

Background

2. According to the World Health Organization (WHO), influenza pandemics are sudden, unpredictable and yet inevitable events. Influenza has been the cause of several global health emergencies during the last century and experts anticipate that the next pandemic, whenever it happens, will produce a considerable strain on public health resources. Increasing globalization is likely to exacerbate the problem. Only those who prepare well can respond well. Planning and implementation of preparatory activities must therefore start well in advance.

3. At the WHO and Health Ministers Meeting on Avian Influenza held in late November in Thailand, Health Ministers have agreed to endorse the Joint Ministerial Statement on Prevention and Control of Avian Influenza and pledged commitment to, amongst others, develop and implement effective influenza pandemic preparedness plans. Hong Kong participated in the Meeting as part of the PRC delegation.

Current Measures

4. Drawing on from our experience in the handling of the SARS outbreak in 2003 and taking into account the strategies and plans developed in other places, the Centre for Health Protection (CHP) has drawn up the draft Preparedness Plan for Influenza Outbreak (**annexed**). The draft Plan envisages three response levels: Alert, Serious and

Emergency and a clear command and response co-ordination structure is in place to cater for these different Response Levels¹.

5. In normal times, major measures in relation to human influenza and avian influenza that are in place include –

- (a) The surveillance (local and global) network;
- (b) Investigation and control measures;
- (c) Laboratory support;
- (d) Infection control measures;
- (e) Anti-viral stockpile;
- (f) Vaccination;
- (g) Port Health measures; and
- (h) Communication

In the context of surveillance, for example, notification requirements for influenza H5N1, sentinel surveillance system for human influenza covering outpatient clinics and private doctors, exchange of information with Guangdong and Macao health authorities, etc. are already in place. In relation to human influenza, annual influenza vaccination programme has been organized. This year, for example, free vaccination is provided for targeted high risk groups including health care workers, poultry workers, the needy chronically ill, institutionalized elderly and elderly (aged over 65) with chronic diseases attending public clinics. In relation to the possible advent of pandemic influenza, anti-viral agents are being stockpiled. As part of the preparedness action, we also conducted a drill on an infectious disease outbreak in mid-November to test our co-ordination and response system.

The draft Preparedness Plan

6. The draft Preparedness Plan envisages that once a certain Response Level is triggered by the occurrence of a particular event, the relevant activities stipulated in the Plan would be carried out as

¹ Three Response Levels are envisaged under the Plan –
Alert Response Level, scenarios include where there is confirmation of highly pathogenic avian influenza (HPAI) outbreaks in poultry population or human cases **outside Hong Kong**;
Serious Response Level, scenarios include where there is confirmed HPAI cases among poultry population **in Hong Kong**; or where there is confirmation of human case(s) of avian influenza **in Hong Kong** without evidence of efficient human to human transmission; and
Emergency Response Level, scenarios include where there is evidence confirming efficient human-to-human transmission of novel (new virus) influenza **occurring overseas or in Hong Kong** or where there is a pandemic influenza (the influenza strain is beginning to cause several outbreaks **in at least one country, and spread to other countries**, with consistent disease patterns indicating serious morbidity) declared by the WHO.

appropriate. The details are set out in paragraphs 19-23 in the **Annex**. For example, where there is confirmed human case(s) of avian influenza occurring outside Hong Kong, the surveillance programmes would be enhanced. Doctors will be alerted to report suspected case with recent exposure in the affected country to CHP/Department of Health (DH) for investigation. Hospital Authority (HA) will conduct continuous surveillance of staff sickness for early identification of disease clusters within workplace. Infection control measures would also be stepped up, including issuing guidelines and health advice to general public and residential institutions, review and promulgate enhanced infection control measures and update health care workers' knowledge on infection control measures for avian influenza, inspect and review stockpile of PPE. In terms of Port Health measures, DH would also liaise with tourist industry and disseminate health information to outbound travelers. On medical services for example, the Hospital Authority would monitor daily bed occupancy and review bed mobilization and compliance with admission guidelines. They would also assess and plan for scaling down non-emergency activities. In terms of public communication, DH would also disseminate information and step up health advice to the public through various means including press releases, pamphlets, APIs, websites and incorporate health messages in ongoing health education activities.

Serious Response Level

7. Where there are confirmed case(s) of avian influenza in Hong Kong **without** evidence of efficient human-to-human transmission, the Serious Response Level would be triggered. For example, the scenario may involve one or several confirmed human cases of avian influenza arising from contact with infected chickens in a local chicken farm. In this case, a culling plan for chickens will be activated according to the Health Welfare and Food Bureau's operational order for the culling of live poultry in farms, wholesale markets and retail outlets. Symptomatic farm workers will be hospitalized in isolation ward, while asymptomatic farm workers will be removed from the farm and put under home confinement/camp confinement and observed for symptoms of infection. Persons who have close contact with the cases, such as their household members, will also be put under home confinement and observed for symptoms of infection. At this level, HA will activate electronic reporting system to monitor cases and contact in real-time manner. Hospital visit policy will also be reviewed. Hospital infection control measures will be enhanced. Confirmed cases will be isolated promptly and receive treatment in designated hospital.

Emergency Response Level

8. Where there is evidence of efficient human-to-human transmission of novel avian influenza occurring overseas OR in Hong Kong, the Emergency Response Level would be triggered. Efficient human-to-human transmission may be defined as the ability of the virus to readily spread from person to person in the general population. This can cause multiple outbreaks, for example, with numerous secondary cases arising from contact with an index human case. At this response level, in addition to the baseline surveillance activities, DH would also monitor daily the number of novel influenza isolates from its Public Health Laboratory Services Branch, and the daily number of patients seen at Accident and Emergency Departments of hospitals and hospital admissions due to influenza-like illness. Port Health measures would also be stepped up to require inbound travelers from affected areas to declare health status and undergo temperature checks and require transit travelers to have temperature screened. Contact tracing, medical surveillance and quarantine measures would be enforced. DH and HA would also mobilize anti-viral stockpile to provide treatment to patients in defined target groups. In terms of essential medical services, depending on the need, additional hospitals would be designated for isolation and management of confirmed and suspected cases; we would also monitor closely the territory-wide utilization of public hospitals services and further re-organize or reduce non-urgent services to meet the surge in workload and demand, where necessary, more designated clinics and or community centres would be mobilized. We would also assess the need for closure of schools, public places, stop public gatherings and curtail non-essential activities and services. Where necessary, legislation to enable enforcement of control measures would also be enacted.

9. We envisage that even in an Emergency Response Level situation, the response actions and strategies would need to be reviewed and revised in the light of the development of the events to ensure the most efficient use of health resources. For example, if the situation were to evolve into an epidemic with multiple communities in the population being affected, there might be heavy burden of excessive morbidity and mortality overwhelming the health care system, shortage of medical supplies (anti-virals), disruption of territory-wide infrastructures (including transport, utilities, commerce etc.) The emergency response at this stage will be targeted to slow down progression of the epidemic, minimize loss of human lives in order to buy time for the production of an effective vaccine against the novel pandemic influenza strain.

10. In the advent of the winter influenza peak season, and the continuous warnings issued by the WHO, pro-active actions are being taken in other places to step up their preparedness. Apart from developing overall preparedness plans, strengthening surveillance and expanding influenza vaccine use, many countries are increasing the antiviral stockpile. We find it prudent to adopt a more extensive stockpile policy in Hong Kong and we are now considering increasing the stockpile of antiviral.

Conclusion

11. Members are invited to comment on the annexed draft Preparedness Plan. WHO is devising a list of recommended measures to be adopted before and during an influenza pandemic and in this connection, a Conference will be held in mid December 2004 in Geneva. We would take into consideration WHO's advice and revise our draft Preparedness Plan as appropriate.

Health Welfare and Food Bureau
Department of Health

December 2004

Draft Framework of Government's Preparedness Plan for Influenza Outbreaks

Hong Kong Government Response Systems

The Government's draft plan includes a three-level response system (Alert Response Level, Serious Response Level and Emergency Response Level). These levels are based on different risk-graded epidemiological scenarios relevant to Hong Kong, and each of them prescribes a given set of public health actions required. They are designed to match with the World Health Organization (WHO)'s guideline¹ for pandemic influenza planning.

Alert Response Level

2. Alert Response Level depicts two possible scenarios. The first scenario depicts confirmation of highly pathogenic avian influenza (HPAI) outbreaks in poultry populations outside Hong Kong. Upon the advice of the Director of Agriculture, Fisheries and Conservation (DAFC), the Secretary of Health Welfare and Food (SHWF) will activate this Response Level.

3. The second scenario depicts confirmation of human case(s) of avian influenza **outside** Hong Kong. SHWF will activate this Response Level upon the advice of DoH.

Serious Response Level

4. Serious Response Level depicts two possible scenarios. The first scenario depicts confirmation of HPAI outbreaks among poultry population **in** Hong Kong due to a strain with known human health impact. Upon the advice of DAFC, SHWF will activate this Response Level.

5. The second scenario depicts the confirmation of human case(s) of avian influenza **in** Hong Kong **without** evidence of efficient human-to-human transmission. Upon the advice of DoH, SHWF will activate this Response Level.

Emergency Response Level

6. Emergency Response Level depicts two possible scenarios. In the first scenario, there is evidence confirming efficient human-to-human transmission of novel² influenza occurring overseas or in Hong Kong.

7. Efficient human-to-human transmission is defined as the ability of the virus

¹ World Health Organization, Influenza Pandemic Plan. The role of WHO and Guidelines for National and Regional Planning. Geneva, Switzerland, April 1999. WHO/CDS/CSR/EDC/99.1

² Novel influenza refers to 'the emergence of an influenza A virus with different haemagglutinin sub-type than strains circulating in humans for many preceding years'.

to readily spread from person to person in the general population and causes multiple outbreaks of disease leading to epidemics.

8. Clear evidence of human-to-human spread in the general population may be inferred when secondary cases result from contact with an index case, with at least one outbreak lasting over a minimum 2-week period in one country. In confirming efficient human-to-human transmission, one must not overlook other possible explanations, such as acts of terrorism, or an unusual ecological situation with an animal vector spreading virus to humans in different locations.

9. The second scenario under Emergency Response Level is pandemic influenza. The declaration of pandemic comes from WHO. It means the influenza strain is beginning to cause several outbreaks in at least one country, and spread to other countries, with consistent disease patterns indicating serious morbidity and mortality is likely in at least one segment of the population.

10. SHWF will activate this Response Level upon the advice of DoH.

Command Structure

Alert Response Level

11. At the Alert Response Level, a simplified emergency response command structure will be put in place. The Health, Welfare & Food Bureau (HWFB), Department of Health (DH), Hospital Authority (HA), Agriculture, Fisheries and Conservation Department (AFCD) and the Food & Environmental Hygiene Department (FEHD) are the main parties assessing the nature and level of risks.

Serious Response Level

12. At Serious Response Level, a Steering Committee chaired by SHWF will be set up to steer Government response.

13. The Steering Committee will have as its core members the Permanent Secretary for Health, Welfare & Food, Permanent Secretary for Education and Manpower, Permanent Secretary for Economic Development and Labour (Economic Development), DAFC, Director of Food and Environmental Hygiene, DoH, Controller, Centre for Health Protection (CCHP), Director of Home Affairs, Director of Information Services (DIS), Director of Social Welfare, Commissioner for Tourism and Chief Executive of the Hospital Authority. The committee would co-opt other senior officials and non-Government experts as circumstances warrant.

Emergency Response Level

14. At Emergency Response Level, the Steering Committee will be chaired by the Chief Executive.

15. The Steering Committee will have the Chief Secretary for Administration, the Financial Secretary, the Secretary for Justice, SHWF, the Secretary for Economic Development and Labour, the Secretary for Education and Manpower, the Secretary for Environment, Transport and Works, the Secretary for Home Affairs, the Secretary for Housing, Planning & Lands, the Secretary for Security, Director of Chief Executive's Office, DoH and DIS as its members; and will co-opt other senior officials and non-Government experts as circumstances warrant.

Activities for responding to influenza pandemic

16. According to WHO, activities for responding to an influenza pandemic should include the following key areas:

- Surveillance
- Investigation and control measures
- Laboratory support
- Infection control measures
- Provision of essential medical services
- Anti-viral stockpiling
- Vaccination
- Port health measures
- Communication

Normal Times

17. The following describes major activities/ measures in relation to influenza illness that are already in place:

Surveillance

- Influenza A (H5N1) has been a notifiable disease in Hong Kong since 30 January 2004 and all practitioners are required to report any suspected or confirmed cases to DH.
- Sentinel surveillance system is in place to monitor influenza-like illness (ILI). The system operates through the support of a network of 64 general outpatient clinics in the public sector and some 50 doctors in the private sector. Specimens are also collected from patients for isolation and typing of influenza virus.
- Infectious disease sentinel surveillance is set up in residential care homes for

the elderly, which collects information on the number of residents with ILI on a weekly basis.

- Information on hospital discharges, admission to intensive care units and deaths due to diagnosis of influenza or pneumonia are collected from public and private hospitals on a weekly basis.
- Hospital admissions of elderly home residents with provisional diagnosis of pneumonia or chest infection are being monitored.
- Monthly figures on ILI are exchanged with Guangdong and Macao health authorities.
- Information on unusual patterns of infectious diseases is exchanged with Guangdong and Macao health authorities on an ad hoc basis.
- Ongoing surveillance programme at live poultry retail outlets and monitoring of poultry farms, pet bird traders, imported birds, recreational parks and wild birds.
- Close monitoring of the number of chicken present in Cheung Sha Wan Temporary Wholesale Poultry Market and at retail outlets.

Investigation & Control measures

- Epidemiological investigation and control measures are being conducted and implemented respectively in institution outbreaks.

Laboratory support

- Confirmatory testing for influenza is being provided to both public and private sectors.
- Typing and subtyping of all influenza isolates are performed at the Public Health Laboratory Services Branch (PHLSB) of DH. Antigenically atypical isolates would be genetically characterized and forwarded to the WHO Collaborating Centres for further analysis.

Infection control measures

- Risk-based clinical management and infection control guidelines are provided to health care providers.
- Supplies of personal protective equipment (PPE) are being maintained.
- Training on infection control are being provided to community, government departments and healthcare workers in public and private sectors.

Anti-viral

- Anti-viral agents are being stockpiled.
- Strategies for administration of anti-viral are developed and prioritization of target groups for anti-viral administration is defined in the scenario of pandemic influenza.

Vaccination

- Annual influenza vaccination programme is being organized around November/ December each year.

- Vaccination strategies for avian influenza epidemics are developed and prioritization of target groups for vaccine administration is defined, in case a vaccine is available for avian influenza.

Port Health measures

- Prepare strategies to prevent and control human cases of avian influenza at immigration control points.

Other control measures

- Agreed protocol with the Mainland on importation of live poultry.
- Import control of live poultry and poultry product to Hong Kong.

Communication

- Health education activities are organized and health advice on prevention of influenza is provided through various means to educate the public on personal and environmental hygiene.
- Working group on risk communication formed to develop risk communication strategy and action plan.

18. On the occurrence of a particular event, a certain Response Level might be triggered off and the major activities/measures that will be carried out under different Response Levels by key departments/organizations are set out in the ensuing paragraphs below.

Alert Response Level

19. When there is confirmation of HPAI outbreaks in poultry populations OR when there is confirmed human case(s) of avian influenza occurring OUTSIDE Hong Kong, in addition to the regular activities/ measures, the following activities would be carried out:

- *When there is confirmation of HPAI outbreaks in poultry populations outside Hong Kong:*

Surveillance

- Liaise with other authorities and international animal health authorities to monitor outbreaks of HPAI outside Hong Kong. (AFCD)
- Increase surveillance on wild birds. (AFCD)
- Increase vigilance and surveillance for imported birds (depending on the geographical area of the outbreak), local chicken farms, pet bird shops, birds and live poultry retail outlets. (AFCD & FEHD)
- If the HPAI outbreak is occurring in the neighbouring areas, such as the Mainland:

- Re-issue guidelines to all livestock farmers to remind them of the importance of good biosecurity and penalties for non-compliance. Strict enforcement of farm biosecurity measures. (AFCD)
- Remind all livestock farmers to immediately report the presence of sick and dead birds for collection and laboratory examination. (AFCD)
- Increased monitoring of chicken numbers to ensure all birds are accounted for. (AFCD)
- Arrange for influenza vaccination for staff who might be potentially involved in culling operations. (AFCD)

Infection Control Measures

- Suspend the import of live birds and/or poultry products from countries/places with on-going outbreaks of HPAI. (AFCD & FEHD)
- Review the import of live birds and/or poultry products from other as yet unaffected countries/places and impose any additional measures as appropriate. (AFCD & FEHD)
- If an imported bird in quarantine is confirmed to have HPAI, then depopulation of all birds in quarantine centre. (AFCD)
- Review stock of PPE. (AFCD & FEHD)

Communication

- Liaise with veterinary professionals and other animal care providers. (AFCD)
- Liaise with NGOs involved in wild animal work e.g. World Wide Fund for Nature, Ocean Park etc. (AFCD)
- Gauge community concerns with regard to the local situation. (HAD)

➤ *When there is confirmed human case(s) of avian influenza occurring outside Hong Kong:*

Surveillance

- Enhance surveillance programmes. (DH & HA)
- Liaise with WHO and international health authorities to monitor the global spread and impact of the infection. (DH)
- Keep in view any new surveillance definitions issued by WHO and modify local surveillance activities accordingly. (DH)

Laboratory Support

- All specimens positive for influenza A virus from cases with clinical/epidemiological suspicion of avian influenza would be forwarded to the PHLSB for identification and characterization. (DH)
- Review laboratory diagnosis strategy and enhance capacity in laboratory diagnostic services, with stockpile of reagents for rapid antigen testing. (HA)

Anti-viral

- Review stockpile of anti-viral. (DH)

Vaccination

- Liaise with WHO on latest development on avian influenza vaccine, with a view to examine and update vaccination strategies and prioritization for target groups, should the vaccine become available. (DH)

Infection Control measures

- Issue guidelines and health advice to residential institutions and the general public. (DH & SWD)
- Review and promulgate enhanced infection control measures where necessary. (DH & HA). Update health care workers' knowledge on infection control measures for avian influenza. (DH)
- Inspect and review stock of PPE. (DH, SWD & HA)

Port Health measures

- Liaise with tourist industry and disseminate health information to outbound travelers. (DH)

Medical Services

- Stockpile appropriate medications for public hospitals and clinics. (HA)
- Formulate clinical management guideline on influenza-like illness and community acquired pneumonia. (HA)
- Monitor daily bed occupancy, and review bed mobilization and compliance with admission guidelines. Assess and plan for scaling down non-emergency activities. (HA)

Communication

- Liaise with medical professionals and other health care providers. (DH, HA & SWD)
- Gauge community concerns with regard to the local situation. (HAD)
- Disseminate information and step up health advice to public through various means including press releases, pamphlets, APIs, website, and incorporate health messages in ongoing health education activities. (DH & HAD)
- Promulgate health advice to clients. (HA)

Serious Response Level

➤ *Outbreaks among poultry population in Hong Kong:*

20. When there is confirmation of HPAI outbreaks among poultry population in Hong Kong due to a strain with known human health impact, in

addition to the activities conducted at the Alert Level, the following activities will be undertaken:

Surveillance

- Monitor hospital admission due to flu-like illnesses for poultry workers. (DH, HA)
- Conduct surveillance for poultry workers of affected farms. (DH)
- Conduct sero-prevalence study on poultry workers. (DH)
- Increase monitoring and surveillance of birds in pet bird shops, recreational parks and wild bird parks. (AFCD)
- Consider quarantine and monitoring of pets in contact with infected poultry or human cases. (AFCD)
- Consider monitoring and testing of local pig farms. (AFCD)

Export Control

- Suspension of exports of non-food birds from Hong Kong. (AFCD)

Culling operation

- Activate and implement the operational order for the culling of live poultry in farms, wholesale markets and retail outlets. (HWFB, AFCD, DH, FEHD, HA & HAD)

Laboratory support

- Conduct laboratory testing for rapid detection of avian influenza on specimen from human cases with epidemiological link to infected poultry and with clinical features consistent with AI infection. (DH)

Antiviral

- Review stockpile of antiviral agents and other medications and make initial preparations for mobilizing stockpile. (DH)

Communication

- Set up telephone hotlines to answer enquiries from poultry workers and cullers. (DH)
- Brief Consulates, legislators, community, media and relevant businesses about the local situation. (AFCD & HAD)
- Inform WHO, World Organisation for Animal Health (OIE) and other health /animal health authorities outside Hong Kong of the updated situation of local infection among poultry. (AFCD & DH)
- Communicate with the animal health authority of the suspected country/region of origin of imported cases. (AFCD)

➤ *Confirmed human cases in Hong Kong (without evidence of efficient human-to-human transmission)*

21. When there is confirmed human case(s) of avian influenza in Hong Kong without evidence of efficient human-to-human transmission, in addition to the activities conducted at Alert Level, the following activities would be carried out:

Surveillance

- Enhance surveillance activities, including zero reporting from public and private hospitals on cases due to influenza A (H5) or novel influenza virus.
- Review surveillance criteria. (DH & HA)
- Activate “e-flu” and other information systems to monitor cases and contacts in real-time. (DH & HA)
- Enhance surveillance of wild birds, bird parks, pet birds and poultry. (AFCD)

Investigation and control measures

- Conduct epidemiological investigation to determine whether the case is acquired locally or outside Hong Kong; identify the source of infection and ascertain the mode of transmission. (DH)
- Conduct contact tracing, medical surveillance and enforce quarantine measures on contacts of cases as appropriate to the situation. (DH, SWD & HAD)

Laboratory support

- Conduct rapid avian influenza testing on ILI and pneumonia cases. (DH)
- Transfer of rapid test technology to the Hospital Authority. (DH)
- Increase laboratory capacity for rapid testing to assist diagnosis. (DH & HA)
- Confirmation of all rapid test positive test cases by PHLSB. (DH)
- Perform avian influenza specific serology on close contacts. (DH)
- Perform antiviral resistance testing on avian influenza isolates. (DH)
- Coordinate with universities to perform gene sequencing on all avian influenza isolates. (DH)
- Send isolates to WHO Collaborating Centres for further analysis and comparison and to discuss on diagnostic and vaccine development. (DH)

Infection control measures

- Review stock of Personal Protection Equipment (PPE). (DH & HA)
- Review visiting policy in HA hospitals. (HA)
- Enhance and/or review infection control measures according to the latest knowledge on the transmission route of avian influenza. (DH & HA)

Antiviral

- Review stockpile of antiviral agents and other medications and make initial preparations for mobilizing stockpile. (DH)

Port Health Measures

- Review and modify port health measures in the light of WHO latest guidelines. (DH)

Vaccination

- Liaise with WHO on the latest development and supply of the new vaccine. (DH)

Essential medical services

- Set up designated clinics and protocol for triaging patients with influenza-like illness at primary care level. (HA)
- Isolate and treat confirmed cases in designated hospitals. (HA)
- Update / revise clinical guidelines on management and related admission criteria for various specialties. Further reduce non-urgent and non-emergency services where necessary. (HA)
- Start discussion with private hospitals on patients transfer/ diversion and sharing of clinical workload. (HA)

Other measures

- Provide relief measures, counseling services and temporary residential placement for needy persons. (SWD)

Communication

- Communicate with and disseminate information to hospitals, medical professionals in the private sector and other health care workers. (DH)
- Strengthen public communication including set up telephone hotlines, conduct regular press briefings, briefings to legislators and community leader, etc. (DH & HAD)
- Educate the public on use of personal protective equipment and practices. (DH & HA)
- Monitor community response and concerns. (DH & HAD)
- Brief Consulates and relevant businesses about the local situation. (DH)
- Liaise with WHO and other health authorities on the local situation. (DH)
- Liaise with WHO on international practice regarding travel advice. (DH)

Culling operation

- Activate and implement the operational order for the culling of live poultry in farms, wholesale markets and retail outlets, on detection of a local human case of H5N1 infection which cannot be confirmed to be an imported case. (HWFB, AFCD, DH, FEHD, HA & HAD)

Emergency Response Level

22. When there is evidence of efficient human-to-human transmission of novel influenza occurring overseas OR in Hong Kong, in addition to the measures taken at Serious Response Level, the following activities would be conducted:

Surveillance

- Monitor daily the number of novel influenza isolates from PHLSB. (DH)
- Monitor daily number of patients seen at Accident & Emergency Departments of hospitals and hospital admissions due to influenza-like-illness. (DH & HA)

Laboratory support

- Perform vaccine efficacy study if vaccine is available. (DH)

Port Health Measures

- Require inbound travelers from affected areas to declare health status and undergo temperature check, and require transit travelers to have temperature screened. (DH)
- Require outbound travelers to declare health status and undergo temperature check. (DH)

Anti-viral

- Mobilize anti-viral stockpile to provide treatment to patients in defined target groups with presumptive diagnosis of novel influenza and administer chemoprophylaxis for defined target groups. (DH & HA)

Vaccination

- Liaise with WHO regarding the latest development in vaccine production and supply. (DH)
- When new influenza vaccine is available, set up vaccination posts and administer vaccine according to defined priorities. (DH)
- Monitor vaccination reactions and adverse effect. (DH)

Essential medical services

- Designate additional hospitals for isolation and management of confirmed and suspected cases. (HA)
- Monitor closely the territory-wide utilization of public hospital services and further re-organize or reduce non-urgent services to meet the surge in workload due to the influenza epidemic. (HA)
- Mobilize convalescent hospitals/wards and private sector to increase capacity to treat acute cases. (HA).

- Review and promulgate updated guidelines and protocols on diagnosis, treatment and admission criteria. (HA)
- Mobilize more designated clinics and/or community centres in collaboration with the private sector and voluntary agencies where necessary. (DH, HA & HAD)
- Review and update protocols on research projects in collaboration with academia, private sectors and international organizations. (DH & HA)

Public Health Measures

- Assess the need for closure of schools, public places, stopping public gatherings & curtailing non-essential activities & services. (DH)
- Enact legislation to enable enforcement of control measures. (DH)
- Prepare for the 24-hour operation of the six crematoria. (FEHD)

Other measures

- Handle animals abandoned by households who are concerned about animal involvement and conduct surveillance and monitoring on animal populations which have not yet been shown to be significant in disease transmission. Should novel animal populations become implicated in disease transmission, these will have to be dealt with on a case by case basis. (AFCD)

Communication

- Provide daily updates of the course of the epidemic and governmental response plans and actions. (DH)
- Step up public education on use of personal protective equipment and practices. (DH)
- Educate the public on the use of chemoprophylaxis and vaccination programmes. (DH)
- Educate the public regarding self-management of influenza like illness and when and how to seek treatment. (DH)
- Communicate closely with private health sector for sharing of expertise and workload. (HA)

23. When there is efficient human-to-human transmission occurring locally resulting in high attack rate among the population, actions taken at Emergency Response Level would be reviewed and the strategy revised as appropriate to ensure the most efficient use of health resources. As the situation evolves to epidemic with multiple communities in the population being affected, the following scenarios might occur: heavy burden of excessive morbidity and mortality overwhelming the health care system; shortage of medical supplies (e.g. anti-viral); disruption of territory-wide infrastructures (including transportation, utilities, commerce and public safety). The purpose of emergency response at this stage will be to slow down progression of the epidemic, minimize loss of human lives, in order to buy time for the production of an effective vaccine against the novel pandemic influenza strain. Specifically, surveillance activities would be limited to

essential elements, case investigation and quarantine measures would be scaled down or abolished, and avian influenza testing would not need to be performed on all patients with influenza symptoms. Antigenic analysis would be carried out on all isolates while gene sequencing would be performed for selected isolates.

Centre for Health Protection
Department of Health

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