

Preparedness Plan for Influenza Pandemic
The Government of the Hong Kong Special Administrative Region
(2014)

A. Introduction

An influenza pandemic is a global spread of disease caused by a novel influenza virus against which the human population has low or no immunity. The pandemic may not necessarily be caused by avian influenza virus, as seen from the human swine influenza pandemic in 2009.

2. This document sets out the Hong Kong Special Administrative Region Government's preparedness and response plan in case of an influenza pandemic. It defines the response levels, the corresponding command structures to be set up, and measures to be taken having regard to the development of the pandemic situation at each response level. Relevant agencies, companies and organisations should take note of this plan in devising their contingency plans and response measures.

3. This plan was updated in 2014 and includes the following key features –

- three response levels, each representing a graded risk of the pandemic affecting Hong Kong and its health impact on the community;
- examples of possible scenario depicting each response level;
- the standing down mechanism for each response level; and
- fine-tuned response measures based on the latest practical experience.

B. The Government's Response Systems

4. The Government's plan includes three response levels – Alert, Serious and Emergency. These response levels are based on risk assessment of an influenza pandemic that may affect Hong Kong and its health impact on the community. Key factors to be considered in the risk assessment include –

- transmissibility of the infection, such as evidence of human-to-human transmission capable of sustaining community level outbreaks;
- geographical spread of the disease in humans or animals, such as the global distribution of affected areas, the volume of trade and travel between the affected areas and Hong Kong;
- clinical severity of the illness, such as serious complications, hospitalisations and deaths;
- vulnerability of the population, including pre-existing immunity, target groups with higher attack rates or increased risk of serious disease;
- availability of preventive measures, such as vaccine and antiviral agents; and
- recommendations by international health authorities, such as the World Health Organization (WHO).

5. The assessment of risk is based on the prevailing situation. It should be noted that information available at the beginning of a pandemic is often limited. As the pandemic progresses, crucial information to support assessment of the aforementioned factors, such as the population at increased risk, case fatality ratio, complication rate, reproductive number and other transmission characteristics, will gradually come to light. The Government will review the risk assessment from time to time, having regard to the development of scientific knowledge and evolving situation, to ensure that the appropriate response level is activated and corresponding measures are adopted.

Alert Response Level

6. Alert Response Level corresponds to a situation where the risk of a novel influenza virus causing new and serious health impact in Hong Kong is **low**. Generally, it depicts the existence of a novel influenza virus capable of causing more serious illness than seasonal influenza in neighbouring regions of Hong Kong, but without imminent risk of causing any human infection in Hong Kong. Illustrative scenarios are provided in Box 1.

Box 1: Illustrative scenarios of Alert Response Level

Examples of scenarios under this level include the following –

- (a) confirmation of outbreaks of highly pathogenic avian influenza (HPAI) or low pathogenic avian influenza (LPAI) with the ability to cause severe human infection in poultry populations **outside** Hong Kong;
- (b) confirmation of HPAI or LPAI with the ability to cause severe human infection in imported birds in quarantine, in wild birds, in recreational parks, in pet bird shops or in the natural environment **in** Hong Kong;
- (c) confirmation of novel influenza known to have caused human infection with serious health outcome in other wild/pet animals **in** Hong Kong;
- (d) confirmation of sporadic or small cluster of human case(s) of novel influenza in areas that have insignificant travel and trade relationships with Hong Kong; or
- (e) confirmation of sporadic imported human case(s) of novel influenza **in** Hong Kong in which the virus does not have the ability of efficient human-to-human transmission and is known to be sensitive to existing anti-viral chemoprophylaxis.

Under these scenarios, human-to-human transmission has not been sufficient to sustain community level outbreaks.

7. For scenarios involving infection in animals, the Secretary for Food and Health (SFH) may activate or stand down this response level upon the advice of the Director of Agriculture, Fisheries and Conservation (DAFC). For scenarios involving infection in humans, SFH may activate or stand down this response level upon the advice of Director of Health (DoH).

8. DAFC and DoH will consider the key factors mentioned in paragraph 4 in conducting the risk assessment for formulation of the advice.

Serious Response Level

9. Serious Response Level corresponds to a situation where the risk of a novel influenza virus causing new and serious impact to human health in Hong Kong is **moderate**. Generally, it depicts a moderate risk of serious human infections caused by the novel influenza virus in Hong Kong, but serious infections are not expected to be widespread in the short term. Illustrative scenarios are shown in Box 2.

Box 2: Illustrative scenarios of Serious Response Level

Examples of scenarios under this level include the following –

- (a) confirmation of outbreaks HPAI or LPAI with the ability to cause severe human infection **in** Hong Kong in the environment of or among poultry population in retail markets, the Cheung Sha Wan Temporary Wholesale Poultry Market (the Wholesale Poultry Market) or poultry farms in Hong Kong, due to a strain with known human health impact;
- (b) confirmation of outbreak of novel influenza **in** Hong Kong among other food animals in farms, due to a strain known to have caused human infection with serious health impact; or
- (c) confirmation of clusters of imported human case(s) of novel influenza or sporadic locally acquired human case(s) of novel influenza, known to have caused human infection with serious health outcome **in** Hong Kong.

Under these scenarios, human-to-human transmission has not been sufficient to sustain community level outbreaks.

Other examples include the confirmation of a novel influenza virus, capable of efficient human-to-human transmission, spreading in an area that has insignificant trade and travel relationship with Hong Kong; or a sporadic or small cluster of human case(s) of novel influenza that may have been

historically known to be of mild nature but is capable of efficient human-to-human transmission in Hong Kong.

10. For scenarios involving outbreaks in animals or the environment (such as the environment of poultry population), SFH may activate or stand down this response level upon the advice of DAFC or the Director of Food and Environmental Hygiene (DFEH). For scenarios involving human infection, SFH may activate or stand down this response level upon the advice of DoH.

11. DAFC, DFEH and DoH will consider the key factors mentioned in paragraph 4 in conducting the risk assessment for formulation of the advice.

Emergency Response Level

12. Emergency Response Level corresponds to a situation where the risk of a novel influenza virus causing new and serious impact to human health in Hong Kong is **high and imminent**. Generally, it depicts a high risk of serious human infections caused by the novel influenza virus in Hong Kong, and serious infections may be widespread. Illustrative scenarios are depicted in Box 3.

Box 3: Illustrative scenarios of Emergency Response Level

An example of a scenario under this level is the confirmation of human case of HPAI or novel influenza, known to have caused human infection with serious health outcomes, occurring in Hong Kong or in a place with considerable level of trade and travel relationship with Hong Kong, and there is evidence of human-to-human transmission sufficient to cause sustained community level outbreaks.

13. The Chief Executive or a delegate may activate or direct stand down from this response level upon the advice of SFH. DoH will consider the key factors mentioned in paragraph 4 in conducting the risk assessment to support SFH in the formulation of advice.

Adjustment of Response Levels

14. Information about the emergence of novel influenza viruses is likely to be scarce during the initial stages of an influenza pandemic. Risk assessment under these circumstances requires flexibility and possibly erring on the side of caution. The response level will be suitably adjusted when better risk assessment can be made in light of more available information.

C. Command Structure

Alert Response Level

15. At the Alert Response Level, a simplified emergency response command structure will be put in place. The Food and Health Bureau (FHB) will coordinate and steer Government response with the following as the main parties assessing the nature and level of risks –

- Department of Health (DH);
- Hospital Authority (HA);
- Agriculture, Fisheries and Conservation Department (AFCD); and
- Food and Environmental Hygiene Department (FEHD).

Serious Response Level

16. At the Serious Response Level, a Steering Committee chaired by SFH will be set up to coordinate and steer Government response with FHB providing secretariat support.

17. The Steering Committee will have the following as its core members –

- Permanent Secretary for Food and Health (Food) (PS(F));
- Permanent Secretary for Food and Health (Health);
- Under Secretary for Food and Health;
- Permanent Secretary for Commerce and Economic Development (Commerce, Industry and Tourism);
- Permanent Secretary for Education;
- Permanent Secretary for Security;
- DAFC;
- DFEH;
- DoH;
- Director of Home Affairs;
- Director of Information Services;

- Director of Leisure and Cultural Services;
- Director of Social Welfare;
- Controller, Centre for Health Protection (CHP);
- Controller, Centre for Food Safety (CFS);
- Commissioner for Tourism; and
- Chief Executive of HA.

The Steering Committee will co-opt other senior officials and non-Government experts as circumstances warrant. Members may send their representatives to attend the meetings as appropriate.

Emergency Response Level

18. At the Emergency Response Level, the Steering Committee will be chaired by the Chief Executive with FHB providing secretariat support.

19. As the situation warrants, the Steering Committee will have the following as its core members –

- Chief Secretary for Administration;
- Financial Secretary;
- Secretary for Justice;
- Director, Chief Executive's Office;
- All secretaries of bureaux;
- DoH;
- Director of Information Services;
- Controller, CHP; and
- Chief Executive of HA.

The Steering Committee may co-opt other senior officials and non-Government experts as members. Members may send their representatives to attend Steering Committee meetings as circumstances warrant.

20. Sub-committees chaired by SFH may be set up under the Steering Committee as appropriate, to look after operational matters and specific issues and to make recommendations to the Steering Committee. Representatives from DH and HA should be the core members of the sub-committees. SFH may invite members from relevant bureaux/departments and non-Government experts to join the sub-committees.

D. Preparedness for and Response to an Influenza Pandemic

21. Preparedness and response activities for an influenza pandemic should include the following key areas –

- Planning and coordination;
- Surveillance;
- Investigation and control measures;
- Laboratory support;
- Infection control measures;
- Provision of medical services;
- Antiviral stockpile;
- Vaccination;
- Port health measures; and
- Communication.

The following paragraphs set out the major activities and measures to be carried out by key departments/organisations at normal times and under each response level.

Ongoing measures

22. The following measures are carried out on an ongoing basis –

22.1 Planning and coordination

- All Government bureaux and departments have been advised to draw up contingency plans. Plans are ready to ensure coordinated responses and essential services in the Government and in major business sectors.
- DH and all relevant bureaux and departments periodically conduct exercises and revise related contingency plans.
- The Scientific Committees under CHP regularly review documented evidence and recommend applied research on the effectiveness of public health control actions in preparation for an influenza pandemic.
- DH maintains close networking with private hospitals, professional medical organisations and other non-governmental organisations (NGOs) to mobilise community resources when needed.
- DH has set up mechanisms for cross-boundary public health cooperation with the Mainland and Macao health authorities.
- FHB and DH have put in place legislation and communication mechanisms to ensure smooth responses under the International Health Regulations (2005).

22.2 Surveillance

- Influenza with possible pandemic potential has been designated as a notifiable disease in Hong Kong under the Prevention and Control of Disease Ordinance (Cap. 599). All practitioners are required to report any suspected or confirmed cases to DH.

- DH has put in place a sentinel surveillance system to monitor influenza-like illness (ILI). The system operates through the support of a network of general out-patient clinics, private clinics, Chinese medicine clinics, elderly homes and child care centres. DH also collects specimens from patients for isolation and typing of influenza virus.
- DH and HA collect information on hospital discharges, admission to intensive care units and deaths due to diagnosis of influenza or pneumonia from public and private hospitals on a weekly basis.
- DH monitors hospital admissions of elderly home residents with provisional diagnosis of pneumonia or chest infection.
- HA arranges Community Geriatric Assessment Teams to visit residential care homes for the elderly, managing episodic illness and sub-acute problems among residents, as well as assisting in medical surveillance of infectious diseases.
- DH exchanges monthly figures on ILI with Guangdong and Macao health authorities.
- DH exchanges information on unusual patterns of infectious diseases with Guangdong and Macao health authorities on an ad-hoc basis.
- AFCD, FEHD and Leisure and Cultural Services Department (LCSD) maintain surveillance and monitoring at all levels of the live poultry supply chain (including farms, the Wholesale Poultry Market, retail outlets and the import level), pet bird shops, recreational parks and the wild bird environment including wild bird parks.
- AFCD closely monitors the quantity of live poultry stocked in the Wholesale Poultry Market.

22.3 *Investigation and control measures*

- DH conducts epidemiological investigation and implements control measures when institution outbreaks occur.

- AFCD, FEHD or LCSD conducts investigation and implements control measures in premises where poultry or other birds are kept, to watch out for any suspected cases.

22.4 *Laboratory support*

- DH and HA collect specimens from patients with clinical indication in public and private sectors and conducts tests for influenza virus.
- DH provides confirmatory testing for influenza to both public and private sectors.
- DH performs typing and subtyping of all influenza isolates at the Public Health Laboratory Services Branch of CHP. Antigenically atypical isolates will be genetically characterised and forwarded to WHO Collaborating Centres for further analysis.
- AFCD performs typing and subtyping of all influenza viruses of animal origins at the Tai Lung Veterinary Laboratory (TLVL) and service contractors such as the University of Hong Kong. DH and AFCD will forward selected isolates to WHO Collaborating Centres or reference laboratories of the World Organisation for Animal Health (OIE) for further analysis.
- DH will subject specimens from all patients with clinical/epidemiological suspicion of avian influenza to laboratory investigations for viral detection, confirmation and characterisation as appropriate.

22.5 *Infection control measures*

- DH and HA provide risk-based clinical management and infection control guidelines to healthcare providers, and enforce infection control policies in hospitals and clinics to reduce the spread of infectious diseases.

- DH provides guidelines on infection control for child care centres, residential care homes for the elderly and persons with disabilities, with the assistance of the Social Welfare Department (SWD).
- DH, HA and other relevant departments maintain supplies of personal protective equipment (PPE) for their healthcare staff. DH also reminds private hospitals to assess the requirements of PPE and maintain sufficient stock as required.
- DH and HA provide training on infection control to the community, Government departments and healthcare workers in public and private sectors.

22.6 Antiviral stockpile

- DH stockpiles antiviral agents for the public sector, and advises private hospitals to maintain a stockpile of antivirals.
- DH develops strategies for administration of antivirals and defines the prioritisation target groups for antiviral administration in the scenario of influenza pandemic.

22.7 Vaccination

- The Scientific Committee on Vaccine Preventable Diseases of CHP reviews and advises on the high risk target groups for influenza vaccination regularly.
- FHB and DH develop vaccination strategies and principles for prioritisation of target groups for vaccine administration.
- DH and HA implement the influenza vaccination programme every year.

22.8 *Port health measures*

- DH prepares strategies to prevent and control human cases of avian or novel influenza at boundary control points. This includes the provision of travel health advice in relation to possible threats of influenza pandemic, as well as the enforcement of port health measures including temperature screening on arriving passengers.
- DH will assess travellers with fever or reporting sick, and refer suspected cases of novel influenza to hospitals for further management.

22.9 *Other control measures*

- AFCD has agreed on a protocol with the Mainland on the importation of pet birds into Hong Kong and will put in place control measures.
- FEHD has agreed on a protocol with the Mainland on the importation of poultry and poultry products into Hong Kong and will put in place control measures.
- AFCD enforces biosecurity measures in local poultry farms and the Wholesale Poultry Market, and enforces the ban on keeping backyard poultry.
- AFCD arranges vaccination of local live chickens against H5 avian influenza.
- FEHD enforces the laws and adopts stringent hygiene requirements for retail outlets (including daily cleansing and disinfection), and prohibits the keeping of live poultry overnight at retail level.
- AFCD conducts regular exercises to test the preparedness of culling operations at the wholesale and farm levels.
- SWD and other NGOs reach out to vulnerable elders and needy persons and assist them to improve their home living environment and hygiene conditions.

- The Housing Department conducts regular cleaning of public areas of public rental housing blocks, encourages residents to maintain good hygiene practices, and takes enforcement action against hygiene offences.
- FEHD carries out regular inspection to ensure that operators of licensed food premises keep their premises and equipment clean, and maintain hygiene practices in handling food. It also enforces hygiene and food safety requirements.
- FEHD takes enforcement action against people who cause environmental hygiene problems in public places by littering, spitting and other unhygienic practices.

22.10 Communication

- DH, FEHD, the Home Affairs Department (HAD) and other relevant departments organise health education activities and provide health advice on influenza prevention, personal hygiene and environmental hygiene, targeting the general public as well as specific sectors of the community. Members of the public are encouraged to adopt preventive measures, some examples as follows –
 - Receive seasonal influenza vaccination;
 - Observe good personal hygiene, such as keeping hands clean by washing hands properly and maintaining cough manners;
 - Pursue a healthy lifestyle to develop good body resistance;
 - Keep the environment clean, maintain good indoor ventilation, and avoid going to crowded or poorly ventilated public places when influenza is prevalent;
 - Pay attention to food hygiene, including cooking poultry and eggs thoroughly before eating;
 - Avoid touching live birds, poultry or their droppings, because they may carry avian influenza virus; and
 - Consult a doctor promptly and wear a mask if flu symptoms develop.
- DH works with the Risk Communication Advisory Group to develop risk communication strategy and action plan.

- DH keeps members of the medical profession informed through e-mails, fax and post.
- The Education Bureau (EDB) disseminates information to schools on preventing the spread of influenza in the premises.
- SWD disseminates information to child care centres, residential care homes for the elderly and persons with disabilities, drug treatment and rehabilitation centres, on preventing the spread of influenza in the centres.
- The Labour Department disseminates information to employers, employees and associations on preventing the spread of influenza in the workplace.
- The Transport Department disseminates information to the public transport sector on preventing the spread of influenza on public transport service vehicles and ferries.
- HAD disseminates information to property management companies, owners' corporations and mutual aid committees through District Offices network on influenza prevention measures.

Alert Response Level

23. For scenarios involving confirmation of HPAI or novel influenza in animals or the environment, AFCD and FEHD will carry out the following activities –

23.1 *When there is confirmation of outbreaks HPAI or LPAI with the ability to cause severe human infection in poultry populations **outside** Hong Kong and **outside** the Mainland*

- AFCD will continue with all normal activities related to surveillance, farm and Wholesale Poultry Market biosecurity measures, communication with farmers, poultry wholesalers and poultry transporters, and strategic planning in medication, PPE, training and response.
- In addition, AFCD and FEHD will undertake further actions related to import control of pet birds and live poultry respectively as necessary –
 - monitor the outbreaks in animals outside Hong Kong;
 - liaise with OIE or animal health authorities of the affected countries to ascertain the latest surveillance and epidemiological information; and
 - suspend the import of live birds from places with notifiable avian influenza (NAI)¹ outbreaks in poultry.
- FEHD will stay vigilant in monitoring the implementation of preventive measures and ongoing surveillance of poultry population in retail outlets, and review the stock of PPE.
- In addition, FEHD will undertake further actions related to the import of poultry meat/products –
 - monitor NAI outbreaks outside Hong Kong; and
 - suspend the import of poultry meat/products from places with NAI outbreaks.

23.2 *When there is confirmation of HPAI outbreaks in poultry populations in the Mainland*

- AFCD will –
 - Step up surveillance and monitoring of local poultry farms, particularly sentinel birds.
 - Strictly enforce local poultry farm biosecurity measures.
 - Continue vaccinating local chickens against H5 avian influenza.

¹ NAI refers to avian influenza subtypes such as H5 and H7 that must be reported to OIE upon confirmation in birds.

- Remind farmers of the importance of good biosecurity and the penalties for non-compliance.
- FEHD will –
 - Step up surveillance and monitoring of imported poultry.
 - Stay vigilant in monitoring the implementation of preventive measures and ongoing surveillance programme of the poultry population in retail outlets.
- AFCD and FEHD will jointly carry out the following activities –
 - Issue reminders to all livestock farmers and retailers to immediately report the presence of sick and dead birds for collection and laboratory examination.
 - Inspect and review the stock of PPE for poultry culling operations.
 - Suspend the import of live birds (including live poultry, day-old chickens and pet birds) and poultry meat/products from the Mainland based on the zonal approach.

23.3 When there is confirmation of HPAI or LPAI with the ability to cause severe human infection in imported pet birds in quarantine in Hong Kong

- AFCD will depopulate all quarantined birds, and suspend the import of live birds from the place of origin.

23.4 When there is confirmation of HPAI or LPAI with the ability to cause severe human infection in the natural environment in Hong Kong (such as in wild birds)

- AFCD will –
 - Step up surveillance and monitoring of local poultry farms, particularly sentinel birds.
 - Strictly enforce farm biosecurity measures.
 - Continue vaccinating local chickens against H5 avian influenza.
 - Remind farmers of the importance of good biosecurity and the penalties for non-compliance.

- FEHD will –
 - Stay vigilant in monitoring the implementation of preventive measures and ongoing surveillance programme of the poultry population in retail outlets.
 - Increase frequency of cleansing and disinfection in public places at specific locations concerned.
- AFCD and FEHD will jointly carry out the following activities –
 - Issue reminders to all livestock farmers and retailers to immediately report the presence of sick and dead birds for collection and laboratory examination.
 - Inspect and review the stock of PPE for poultry culling operations.
 - Remind the public through the media to avoid contact with wild bird faeces.
- LCSD will strengthen the precautionary measures to ensure the health condition of bird collections.

23.5 *When there is confirmation of HPAI or LPAI with the ability to cause severe human infection in wild birds in wild bird parks (e.g. Hong Kong Wetland Park) or recreational parks in Hong Kong*

- In addition to the activities carried out for local farms as in the case of confirmed HPAI or LPAI with the ability to cause severe human infection in the natural environment (scenario 23.4 above), AFCD and LCSD will undertake the following measures –
 - Step up monitoring and surveillance of wild birds at the location where the infected wild bird(s) was/were found.
 - Close and quarantine the infected area(s) as necessary according to the prevailing protocol.
 - Remind the public through the media to avoid contact with wild bird faeces.

23.6 *When there is confirmation of HPAI or LPAI with the ability to cause severe human infection in pet bird shops in Hong Kong*

- In addition to the activities carried out for local farms and retail outlets as in the case of confirmed HPAI or LPAI with the ability to cause severe human infection in the natural environment (scenario 23.4 above), AFCD will undertake the following measures –
 - Step up monitoring and surveillance of pet bird shops.
 - Close and quarantine the affected pet bird shop(s) as well as any adjacent pet bird shops.
 - Depopulate affected pet bird shop(s).

23.7 *When there is confirmation of novel influenza in other wild/pet animals in Hong Kong, due to a strain known to have caused human infection with serious health outcome*

- AFCD, FEHD and LCSD, in consultation with DH, will consider carrying out corresponding activities set out in scenario 23.3 to 23.6 above having regard to the type of affected animals and the prevailing circumstances.

23.8 *Other measures*

- When there is confirmation of HPAI or LPAI with the ability to cause severe human infection in birds in Hong Kong, DH will conduct contact tracing and medical surveillance for persons who come into contact with sick or dead bird(s) confirmed to be positive. Depending on the risk assessment, empirical antiviral treatment (post-exposure chemoprophylaxis) and home confinement may be considered for persons who have direct contact with the sick or dead bird(s).
- TLVL of AFCD will review veterinary laboratory diagnostic strategy and enhance testing capacity as appropriate.

23.9 *Communication*

- AFCD will –
 - Liaise with other animal care providers (including poultry farmers, wholesalers and transporters), as well as NGOs involved in wild animal work (e.g. World Wide Fund for Nature and Ocean Park).

- Inform OIE and local consulates about the local situation, and FHB will inform the Mainland authorities, as necessary.
- HAD will gauge community concerns with regard to the local situation.

24. When there is confirmed human case(s) of novel influenza occurring **outside** Hong Kong, the following actions will be taken –

24.1 *Surveillance*

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

24.2 *Laboratory support*

- DH and HA will –
 - Conduct laboratory testing for rapid detection of novel influenza on specimens from human cases with epidemiological links such as exposure to infected poultry and with clinical features consistent with avian influenza infection.
 - Review laboratory diagnosis strategy and enhance capacity in laboratory diagnostic services, with stockpile of necessary reagents.
- DH will –
 - Conduct virus isolation and characterisation.
 - Adopt the diagnostic criteria between the Public Health Laboratory Centre and HA's Laboratory Network and transfer rapid test technology to HA.
 - Develop rapid testing (if not available) to assist diagnosis.

24.3 *Infection control measures*

- DH will –
 - Issue guidelines and health advice to residential institutions, schools and the general public, with the support of EDB and SWD.
 - Update healthcare workers’ knowledge on infection control measures for the type of influenza concerned.
- DH and HA will review and promulgate enhanced infection control measures where necessary.
- DH, SWD and HA will inspect and review stock of PPE.
- LCSD and DH will be prepared for the outbreak of novel influenza and be ready to convert the suitable holiday camps into quarantine centres upon advice from FHB and DH.

24.4 *Provision of medical services*

- HA will –
 - Stockpile appropriate medications for public hospitals and clinics.
 - Formulate clinical management guideline on ILI and community acquired pneumonia.
 - Monitor daily bed occupancy, and review bed mobilisation and compliance with admission guidelines. Assess and plan for scaling down non-emergency activities.

24.5 *Antiviral stockpile*

- DH will review the antiviral stockpile.

24.6 *Vaccination*

- DH will liaise with WHO and relevant experts on latest development and recommendations on the use of pre-pandemic or pandemic vaccines.

24.7 *Port health measures*

- DH and Tourism Commission will liaise with tourism industry and disseminate health information to outbound travellers.

24.8 *Communication*

- DH, HA and SWD will liaise with medical professionals and other healthcare providers.
- HAD will gauge community concerns with regard to the local situation.
- DH will disseminate information and step up health advice to public through various means including press releases, pamphlets, announcements in the public interest, website, and incorporate health messages in ongoing health education activities.
- HA will promulgate health advice to clients.

Serious Response Level

25. When there is confirmation of outbreaks of HPAI or LPAI with the ability to cause severe human infection in the environment of *or* among the poultry population in retail markets, the Wholesale Poultry Market or farms in Hong Kong, due to a strain with known human health impact, the following activities will be carried out in addition to the measures related to surveillance of farms and retail outlets as in the case of confirmed HPAI or LPAI with the ability to cause severe human infection in the natural environment (i.e. scenario 23.4 under the Alert Response Level above) –

- AFCD will –
 - Step up monitoring and surveillance of pet bird shops.
 - Step up monitoring and surveillance of wild birds in recreational parks in association with LCSD and wild bird parks.
 - Give advice on and monitor pets in contact with infected poultry or human cases as appropriate.

- Monitor local pig farms as required.
 - Suspend the export of non-food birds from Hong Kong.
 - Suspend the import of day-old chickens to Hong Kong.
 - Enhance the diagnostic capacity of TLVL as appropriate.
- FEHD will –
 - Suspend the import of all live poultry.
 - Step up monitoring and surveillance of live poultry retail outlets.
 - Step up cleansing of live poultry market.

25.1 *Major culling operation (Operation Season)*

- Upon activation of the operational order for the culling of live poultry in Hong Kong (Operation Season) by PS(F), AFCD will implement the culling of live poultry in farms and the Wholesale Poultry Market, while FEHD will carry out culling at retail outlets. DH, the Hong Kong Police Force, the Environmental Protection Department and other relevant departments will also assist in the implementation of Operation Season. HA may provide treatment to staff or contacts presenting symptoms.

25.2 *Surveillance*

- DH will –
 - With the support of HA, monitor hospital admission due to ILI for poultry workers.
 - Conduct surveillance for poultry workers of affected farms.
 - Conduct sero-prevalence study on poultry workers.
 - Monitor health status of cullers.

25.3 *Laboratory support*

- DH will –
 - Enhance laboratory testing for rapid detection of novel influenza, virus isolation and characterisation on specimens from human cases with epidemiological links to infected poultry and with clinical features consistent with novel influenza infection.

- Coordinate with HA and private laboratories on testing arrangements and testing strategy.

25.4 *Antiviral stockpile*

- DH will –
 - Review the stockpile of antiviral agents and other medications and make initial preparations for mobilising the stockpile.
 - Provide empirical antiviral treatment (post-exposure prophylaxis) to cullers if necessary.

25.5 *Communication*

- AFCD and FEHD will –
 - Liaise with other animal care providers (including poultry farmers, poultry retailers and poultry wholesalers), as well as NGOs involved in wild animal work (e.g. World Wide Fund for Nature, Ocean Park)
 - Inform OIE and local consulates; and also brief legislators, the community, the media and relevant businesses about the local situation as necessary.
- DH will –
 - Set up telephone hotlines to answer enquiries from poultry workers and cullers.
 - Inform WHO, Mainland authorities (such as the Ministry of Health and the General Administration of Quality Supervision, Inspection and Quarantine), other health authorities and medical professionals and healthcare workers of the updated situation of local infection among poultry.

26. When there is confirmation of outbreaks of novel influenza among other food animals in farms **in** Hong Kong due to a strain known to have caused human infection with serious health impact, AFCD and FEHD, in consultation with DH, will consider carrying out appropriate activities as set out in the preceding paragraph, including culling operation, having regard to the type of affected animals and the prevailing circumstances.

27. When sporadic or small cluster of human case(s) of novel influenza in Hong Kong are confirmed, but human-to-human transmission has not been sufficient to sustain community level outbreaks, in addition to the activities conducted at the Alert Response Level, the following activities will be carried out –

27.1 *Surveillance*

- DH will –
 - Enhance surveillance activities, including zero reporting from public and private hospitals on cases due to influenza A (H5) or novel influenza virus.
 - Notify WHO in accordance with International Health Regulations (2005).
- DH and HA will –
 - Review surveillance criteria.
 - Activate “e-flu” and other information systems to monitor cases and contacts in real-time.
- AFCD and FEHD will step up surveillance of wild birds, recreational parks, pet bird shops and all levels of the live poultry supply chain.

27.2 *Investigation and control measures*

- DH will –
 - 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.
 - Conduct contact tracing and medical surveillance +/- provide antiviral chemoprophylaxis/empirical treatment as appropriate.
 - Enforce quarantine measures on contacts of cases as appropriate to the situation, in cooperation with SWD.
- HAD will assist in the implementation of quarantine/relief measures in cooperation/coordination with DH and SWD as appropriate.

- Upon the directive of FHB, LCSD and DH will immediately convert relevant holiday camps into quarantine centres.
- The location of close contacts to be put under quarantine depends on factors such as clinical condition of the close contacts, the duration of stay and the number of close contacts.

27.3 *Laboratory support*

- DH will –
 - Conduct rapid avian or novel influenza testing on ILI and pneumonia cases.
 - Transfer rapid test technology to HA.
 - Perform avian or novel influenza specific serology on close contacts.
 - Perform antiviral resistance testing on novel influenza isolates.
 - Coordinate with universities to perform gene sequencing on all avian or novel influenza isolates.
 - Send isolates to WHO Collaborating Centres for further analysis and comparison and to discuss on diagnostic and vaccine development.
- DH and HA will increase laboratory capacity for rapid testing to assist diagnosis.

27.4 *Infection control measures*

- DH and HA will –
 - Review stock of PPE.
 - Enhance and/or review infection control measures according to the latest knowledge on the transmission route of avian or novel influenza.
- HA will review visiting policy in its hospitals.

27.5 *Provision of medical services*

- HA will –
 - Consider setting up designated clinics and protocol for triaging patients with ILI at primary care level.
 - Isolate and treat confirmed cases in designated hospitals.
 - Update/revise clinical guidelines on management and related admission criteria for various specialties. Further reduce non-urgent and non-emergency services where necessary.
 - In collaboration with DH provide situation updates to private sector and start discussion with private hospitals on patients transfer/diversion.

27.6 *Antiviral stockpile*

- DH will review the stockpile of antiviral agents and other medications and make initial preparations for mobilising the stockpile.

27.7 *Vaccination*

- DH will liaise with WHO and relevant experts on the latest development and recommendations on the use of pre-pandemic or pandemic vaccines.
- FHB and DH will decide on priority target groups and prepare for procurement of vaccine if considered appropriate.

27.8 *Port health measures*

- DH will review and modify port health measures and enact legislation, where necessary, in light of WHO latest guidelines.

27.9 *Communication*

- DH will activate relevant centres for information, monitoring and response, if necessary.

- HA will activate Major Incident Control Centre for information, monitoring and response, if necessary.
- DH will communicate with and disseminate information to hospitals, medical professionals in the private sector and other healthcare workers.
- Public communication will be strengthened –
 - DH and HAD will set up a telephone hotline as required.
 - FHB and DH will conduct regular briefings to the press and legislators.
 - HAD will help disseminate information to public through District Offices network.
- DH will also –
 - Together with HA, educate the public on use of personal protective equipment and practices.
 - Together with HAD, monitor community response and concerns.
 - Brief consulates and relevant businesses about the local situation.
 - Liaise with WHO, Mainland authorities (such as the Ministry of Health and the General Administration of Quality Supervision, Inspection and Quarantine), and other health authorities on the local situation.
 - Liaise with WHO on international practice regarding travel advice.

27.10 *Other measures*

- SWD will provide relief measures, counselling services and temporary residential placement for needy persons.

27.11 *Major culling operation (Operation Season)*

- On detection of a local human case of HPAI (e.g. H5) infection which cannot be confirmed to be an imported case, PS(F) may activate the operational order (Operation Season). AFCD, FEHD, DH, the Hong Kong Police Force, the Environmental Protection Department and other relevant departments will assist in the implementation of Operation Season. HA may provide treatment to staff or contacts presenting symptoms. Depending on circumstances, pet birds may also be included in the culling operation.

Emergency Response Level

28. When the Emergency Response Level is activated, in addition to the measures taken at Serious Response Level, the following actions will be conducted –

28.1 *Surveillance*

- DH will –
 - Monitor daily the number of novel influenza isolates from Public Health Laboratory Services Branch of CHP.
 - Together with HA, monitor daily number of patients seen at Accident & Emergency Departments of hospitals and hospital admissions due to ILI.
 - Together with HA, adjust surveillance mechanisms with reference to the latest recommendation(s) of the WHO.

28.2 *Investigation and control measures*

- DH will assess the state of disease spread and potential for pandemicity jointly with WHO and relevant experts, where appropriate.
- FHB and DH will enact legislation as appropriate to enable enforcement of control measures.

28.3 *Laboratory support*

- DH will –
 - Conduct virus isolation, typing and characterisation.
 - Monitor antiviral resistance by performing antiviral resistance testing on selected avian or novel influenza isolates.
 - Review strategy in antiviral resistance monitoring.
 - Perform vaccine efficacy study if vaccine is available.

28.4 *Infection control measures*

- HA will mobilise the PPE stockpile.

28.5 *Provision of medical services*

- HA will –
 - Mobilise the capacity of isolation beds and management of confirmed and suspected cases.
 - Monitor closely the territory-wide utilisation of public hospital services and further re-organise or reduce non-urgent services to meet the surge in workload due to the influenza epidemic.
 - Mobilise convalescent hospitals/wards to increase capacity to treat acute cases.
 - Review and promulgate updated guidelines and protocols on diagnosis, treatment and admission criteria.
- DH, HA and HAD will mobilise designated clinics and/or community centres in collaboration with the private sector and voluntary agencies where necessary.
- DH and HA will review and update protocols on research projects in collaboration with academia, private sectors and international organisations, if necessary.
- HA will reprioritise its non-urgent and non-essential services.

28.6 *Antiviral stockpile*

- DH and HA will mobilise the antiviral stockpile to provide treatment to patients in defined target groups with presumptive diagnosis of novel influenza and administer empirical treatment (post-exposure chemoprophylaxis) for defined target groups if necessary.

28.7 *Vaccination*

- DH and HA will procure suitable pandemic vaccines and implement vaccination programme according to defined priorities.
- DH will monitor vaccination reactions and any adverse effects.

28.8 *Port health measures*

- DH will –
 - When necessary, require inbound travellers from affected areas to declare health status and undergo temperature check, and require transit travellers to have temperature screened.
 - When necessary, require outbound travellers to declare health status and undergo temperature check.

28.9 *Communication*

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

- FHB will facilitate the steering and implementation of a joint Government public relations strategy.

28.10 *Other Measures*

- DH, EDB and LCSD will assess the need for closure of schools, public places, stopping public gatherings and curtailing non-essential activities and services.
- FEHD will prepare for the 24-hour operation of the six crematoria.
- AFCD will 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. Novel animal populations implicated in disease transmission, if any, will have to be dealt with on a case by case basis.
- FHB will prompt all Government agencies to respond according to their respective contingency plans.

29. The actions to be taken at Emergency Response Level will 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 community outbreaks and a high attack rate in the population, containment strategies may become no longer effective in stopping disease spread. There may be a heavy burden of excessive morbidity and mortality overwhelming the healthcare system; a shortage of medical supplies (e.g. antiviral); and territory-wide infrastructures (including transportation, utilities, commerce and public safety) may be disrupted. The purpose of emergency response at this stage will be to slow down progression of the epidemic and minimise the loss of human lives, in order to buy time for the production of an effective vaccine against the novel pandemic influenza strain (i.e. mitigation). Specifically, surveillance activities will be limited to essential elements. Case investigation and quarantine measures will be scaled down or abolished. Confirmatory testing will not need to be performed on all patients with influenza symptoms. Antigenic analysis will be carried out on all isolates while gene sequencing will be performed for selected isolates.

**Food and Health Bureau
Department of Health
Centre for Health Protection
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List of Abbreviations

AFCD	Agriculture, Fisheries and Conservation Department
DAFC	Director of Agriculture, Fisheries and Conservation
DFEH	Director of Food and Environmental Hygiene
DH	Department of Health
DoH	Director of Health
EDB	Education Bureau
FEHD	Food and Environmental Hygiene Department
FHB	Food and Health Bureau
HA	Hospital Authority
HAD	Home Affairs Department
HPAI	Highly Pathogenic Avian Influenza
ILI	Influenza-like Illness
LCSD	Leisure and Cultural Services Department
NAI	Notifiable Avian Influenza that must be reported to OIE upon confirmation in birds
NGOs	Non-governmental organisations
OIE	World Organisation for Animal Health (Office International des Epizooties)
PPE	Personal Protective Equipment
PS(F)	Permanent Secretary for Food and Health (Food)
SFH	Secretary for Food and Health
SWD	Social Welfare Department
TLVL	Tai Lung Veterinary Laboratory
WHO	World Health Organization