

**For information
on 15 February 2016**

Legislative Council Panel on Health Services

Prevention and Control Measures against Zika Virus Infection

Purpose

This paper sets out the latest measures adopted by the Government to prevent and control Zika virus infection.

Background

2. Zika virus infection is a mosquito-borne disease caused by Zika virus. The virus was first isolated from a rhesus monkey in Zika forest of Uganda in 1947, and then from mosquitoes (i.e. *Aedes africanus*) in the same forest in 1948 and from humans in Nigeria in 1954.

3. Zika virus is primarily transmitted to humans through bites of *Aedes* mosquitoes. Symptoms typically begin 2-7 days after the bite of an infected mosquito. It can also be transmitted through sexual encounter. People infected with Zika virus will develop symptoms including mild fever, rash, muscle pain, joint pain, headache, retro-orbital pain and conjunctivitis, which last for a few days. There is no specific medication for the disease and symptomatic treatment is given to relieve discomfort. At present, around 70% to 80% per cent of infected people are asymptomatic and most infected people can recover fully.

4. Zika virus infection is endemic in some parts of Africa and Asia, and was first identified in the South Pacific after an outbreak on Yap Island in the Federated States of Micronesia in 2007. Prevalence of Zika virus infection has been detected in the Americas since 2014, with the outbreak of Zika virus infection in Brazil starting in mid-2015.

5. In Brazil, there were reports of microcephaly and other poor pregnancy outcomes in babies whose mothers had been infected with Zika while pregnant. On 28 November 2015, the Ministry of Health of Brazil established a relation between an increase in cases of microcephaly in newborns and Zika virus infection in the country's northeast area. According to a preliminary analysis of research carried out by the Brazilian authorities, the greatest risk of microcephaly and malformations appears to be associated with infection during the first trimester of pregnancy. With the support of the Pan American Health Organization / World Health Organization ("WHO") and other agencies, the health authorities are conducting research to clarify the cause, risk factors and consequences of microcephaly.

6. In response to the rapid spreading of the Zika epidemic, the WHO declared at the emergency meeting held on 1 February 2016 that the relationship between Zika virus infection and the recent cases of microcephaly in infants and other neurological disorders constituted a Public Health Emergency of International Concern and recommended the following preventive and control measures:

Transmission of Zika

- Enhancing surveillance of Zika virus infection and providing a standard definition of case notification and analysis of support areas at risk of transmission.
- Giving priority to the development of new diagnostic techniques for Zika virus to enhance surveillance, prevention and control.
- Enhancing risk communication with the countries at risk of Zika virus transmission to address public concern, encourage community engagement, improve case notification and ensure implementation of anti-mosquito and personal precautionary measures.
- Enhancing the publicity to remind the public to take anti-mosquito and personal precautionary measures to reduce the risk of Zika virus infection.
- Providing necessary advice for women of childbearing age, especially pregnant women, to reduce the risk of Zika virus infection.
- Providing counselling and follow-up service for vulnerable pregnant women based on the existing information and policies in the affected areas.

Long-term measures

- Research efforts should be intensified for Zika virus vaccine, treatment and diagnosis.
- In areas of known Zika virus transmission, the health care system should be prepared for the potential increase in cases of neurological syndrome and/or congenital malformations.

Travel measures

- There should be no restrictions on travel or trade with countries and areas with Zika virus transmission.
- Tourists should be provided with up-to-date information about the risk of Zika virus transmission in the areas concerned and appropriate precautionary measures so as to reduce the possibility of exposure to mosquito bites.

- Standard WHO recommendations should be followed to implement disinfection measures on aircrafts and at airports.

Sharing of information

- Health authorities of all places should ensure speedy and timely communication among each other. They should share important information about public health emergencies of international concern.
- Health authorities should quickly provide WHO with the epidemiological data on the increasing spread of Zika virus, including clinical data, data on virology and those related to microcephaly or Guillain-Barré Syndrome. This will help enhance international understanding of the situation so that international support for prevention and treatment of the disease will be better co-ordinated and priority can be accorded to further research and product development related to the disease.

Preventive and control measures

7. Zika virus is primarily transmitted to humans through bites of *Aedes* mosquitoes, and *Aedes aegypti* is considered the most important vector for Zika virus transmission to humans. Although *Aedes aegypti* is currently not found in Hong Kong, other *Aedes* mosquito species such as *Aedes albopictus* are also considered potential vectors. Since *Aedes albopictus* is widely present locally, there is a risk of secondary spread of imported infection in Hong Kong. Furthermore, extensive international travel will increase the risk of imported Zika virus cases in Hong Kong. Having said that, the Government has put in place a series of preventive measures to guard against the Zika virus:

Enhancing Surveillance

- (a) With effect from 5 February 2016, Zika virus infection is a statutorily notifiable infectious disease in Hong Kong under the Prevention and Control of Disease Ordinance (Cap. 599). The Centre for Health Protection (“CHP”) of the Department of Health (“DH”) is to be notified of any confirmed case for investigation and follow-up actions.
- (b) In its letters to doctors and hospitals on 18 January 2016, the DH appeals to doctors to stay alert to the possibility of Zika virus infection in travellers returning from affected areas who present a clinically compatible picture not attributable to dengue fever or chikungunya fever. Suspected cases should be reported to the CHP’s Public Health Laboratory Services Branch for Zika virus testing.

Liaison with other Health Authorities

- (c) The International Health Regulations (2005) is an international legal instrument binding on all WHO member states, including the People's Republic of China, and therefore extends to cover Hong Kong. The CHP has been closely communicating with WHO as well as overseas and neighbouring health authorities and monitoring the latest developments regarding Zika virus infection overseas.
- (d) Moreover, the CHP has been maintaining close communication with the health authorities of Guangdong and Macao on the surveillance of Zika virus infection. A teleconference has been held among the three places to further enhance the notification and communication mechanism for exchanging information about preventive and control measures in the future. The three parties agreed to strengthen their co-operation on the prevention and control of the disease and notify each other in case of any confirmed cases.

Enhancing Port Health Measures

- (e) The DH has implemented a series of port health measures. The Port Health Office will carry out regular inspections at boundary control points ("BCPs") to ensure that good environmental hygiene is maintained and proper mosquito control measures are in place. Port Health Inspectors will enhance the training for cleansing and pest control contractors who provide services at BPCs to ensure that vector control measures are effective.
- (f) Health promotion at BCPs will be enhanced through pamphlet distribution and poster display to remind travellers of the preventive measures against Zika virus.
- (g) Temperature checks will be conducted on an ongoing basis for all inbound travellers at all BCPs. Suspected cases will be referred to medical institutions for follow-up actions. The DH has encouraged tourists travelling from the affected countries and areas and Hong Kong residents returning from those places to apply mosquito repellent for 14 days after arrival in Hong Kong to reduce the risk of disease transmission.

Prompt Control and Transparency in Dissemination of Results

- (h) At present, the CHP's Public Health Laboratory Services Branch is responsible for Zika virus testing. Application of the laboratory tests and experiment results is to be jointly assessed by clinicians and microbiologists. Their assessment will be based on the patient's epidemiological and clinical history and the time interval from exposure to the vector to onset of symptoms or seeking of medical attention. A report on preliminary positive/negative test result can be issued within one day upon receipt of the test sample, while a report to confirm diagnosis will take one more day.

Case Identification at Out-patient Clinics and Accident and Emergency Departments and Clinical and Medication Guidelines

- (i) The Hospital Authority (HA) will take active measures in response to the DH's notification guidelines, including informing frontline staff that Zika virus infection has been made a statutorily notifiable infectious disease; and updating the electronic system so that doctors can make the relevant notifications. Travellers who develop clinical symptoms within two weeks after returning to Hong Kong from affected areas will be arranged for tests for Zika virus infection. At the same time, tests for dengue fever and chikungunya fever will also be conducted. The HA will work closely with the Public Health Laboratory Services Branch of the CHP and send specimens for virus testing for early identification of confirmed cases. The relevant information has been disseminated to the Accident and Emergency Departments and out-patient clinics.
- (j) The HA and the Hong Kong College of Obstetricians are now formulating treatment option for pregnant women who have been to the affected areas for travelling and with the existence of clinical symptoms, and will release it to frontline medical colleagues as soon as possible.
- (k) Although there is no medication or vaccine against Zika virus at present, the HA will keep a close watch on relevant guidelines of the CHP and WHO, and take appropriate actions accordingly.

Enhancing Risk Communication

- (l) The CHP Controller chaired the meeting of the Interdepartmental Coordinating Committee on Mosquito-borne Diseases on 5 February to give various bureaux, government departments and relevant organisations follow-up updates on the risk of Zika virus infection as well as the necessary vector control measures in Hong Kong.

Travel Advice

- (m) In view of the rapid spread of the Zika virus infection around the world, the DH issued the relevant travel advice on 18 January 2016, suggesting that, if not necessary, pregnant women and women preparing for pregnancy should consider deferring their trip to areas with past or current evidence of ongoing Zika virus transmission. Those who must travel to any of these areas should seek medical advice of their doctor before the trip, and adopt contraception during and for 28 days after return if appropriate and strictly follow steps to avoid mosquito bites during the trip. Travellers should apply mosquito repellent for 14 days after returning from the affected areas. If his female partner has the chance of getting pregnant or is already pregnant, condom use is advised for a male traveller. Travellers should consult their doctors and reveal their travel history if symptoms develop. The travel advice has been uploaded to the website of

the CHP, the DH's Travel Health Service homepage and the Security Bureau's Outbound Travel Alert website.

- (n) In view of the latest developments in overseas areas, the DH has maintained close communication with the tourism sector and other stakeholders, especially travel agents organising tours to the affected areas and their tour leaders and tour guides, to provide them with up-to-date disease information and health advice regularly.

Vaccine against Zika virus

- (o) According to WHO, there are neither vaccine to prevent Zika virus infection nor antiviral drugs targeted at treating the disease. As reported by overseas media, some vaccine companies are conducting research on vaccine against Zika virus. However, production of such vaccine on a commercial scale is unlikely in the short run. Some of the vaccine may undergo phase one clinical trials at the end of this year and can be used in case of emergency. The DH will take note of the vaccine development.

Contingency plans and drills for concerted interdepartmental actions

- (p) The DH conducts public health exercises on a regular basis to test interdepartmental co-ordination and public health response measures. In November 2013 and March 2014, the DH conducted a table-top exercise and a ground exercise respectively in collaboration with 23 government departments for the prevention of dengue fever. The exercises mainly aimed at testing the cross-departmental response measures, including contact tracing, epidemiological investigations, vector investigation and control as well as surveillance of suspected cases. The table-top exercise was to test interdepartmental command and response capacity, while the ground exercise simulated field investigation, field intervention measures on mosquito control and health educational activities for the community involved. As the vector for transmission of Zika virus is similar to that of dengue fever, the relevant departments and bureaux have already prepared for cross-departmental exercises of similar nature.
- (q) The HA has also put in place contingency plans and upload the information of affected areas to intranet for staff's reference.

Mosquito Elimination

In response to the several local dengue fever cases which came to light in the past two years, the Food and Environmental Hygiene Department ("FEHD") has stepped up its mosquito control work particularly during the winter period. In October 2015, the FEHD increased the number of surveillance areas with ovitraps for *Aedes albopictus* from 44 to 52. Surveillance operations for *Aedes albopictus* in all port areas (except the airport where surveillance is performed once a week) have also been stepped up

from once a month to twice a month since November 2015. Since *Aedes albopictus* may carry both dengue fever and Zika virus, the above efforts will help enhance the surveillance of dengue and Zika vectors. This year, the FEHD will keep up the momentum of its work in mosquito control and elimination. This includes:

- (r) increasing the number of out-sourced pest control roving teams in winter (from December 2015 to March 2016) to 266 teams, i.e. maintaining the same number of teams as in summer 2015;
- (s) stepping up mosquito control work during the year-end clean-up campaign launched on 15 January 2016;
- (t) implementing the Anti-mosquito Campaign¹ this year in three phases. The first phase will start on 15 February and end on 18 March. To upkeep the effectiveness of the campaign, the FEHD will, immediately after each phase of the campaign, conduct thematic operations across the territory to enhance the mosquito control work in strategic areas; and
- (u) targeting at mosquito control at works sites which are prone to the breeding of mosquitoes. In this regard, the FEHD will continue to liaise with the relevant departments (e.g. the Civil Engineering and Development Department), brief the relevant parties like works departments and their contractors on the importance of mosquito prevention, and enhance the efforts to eliminate mosquitoes within particular works sites where necessary.

Publicity and Public Education

- (v) To increase the public awareness of Zika virus, the CHP will produce various health education materials, such as leaflets, booklets and posters, for distribution in the community. A dedicated webpage on Zika virus has also been launched on the CHP website to provide updates about the disease, give travel advice and answer frequently asked questions.
- (w) The FEHD will broadcast radio and TV Announcements in the Public Interest (“APIs”) between April and October every year on the prevention of mosquito breeding in housing estates, at home and during grave sweeping. Radio and TV APIs on anti-mosquito measures in winter will also be broadcasted between November and March.

¹ The campaign aims at enhancing public awareness of the potential risks of mosquito-borne diseases, as well as encouraging the community and various government departments to make concerted efforts and actively participate in anti-mosquito work.

Way Forward

8. The Government will stay vigilant, strengthen the surveillance and keep itself abreast with the latest developments of the Zika disease. In addition to the ongoing risk assessments, the Government will monitor the effectiveness of the contingency plan and step up public health measures and mosquito control work as appropriate. We will also enhance publicity to keep the public informed and alert so that they can take suitable precautions and response measures where necessary.

Advice Sought

9. Members are invited to note the content of this paper.

**Food and Health Bureau
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