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Communicable Diseases WATCH

衛生防護中心 Centre for Health Protection 保障市民健康 Protecting Hong Kong's health

30 衛生署 Department of Health

FEATURE IN FOCUS

Exercise "Zircon" tests Government's response against Legionnaires' Disease

Reported by Emergency Response and Information Branch, CHP.

The Centre for Health Protection (CHP) of the Department of Health (DH), in collaboration with other government departments and organisations, tested the Government's preparedness against Legionnaires' Disease (LD) at a purpose-built housing block for the elderly on April 30, 2019 during a public health exercise code-named "Zircon".

The exercise aimed at strengthening the inter-departmental response and collaboration mechanism in regard to the occurrence of LD, evaluating the effectiveness of DH's standard operating procedures on LD as well as enhancing awareness among stakeholders on the prevention and control of an outbreak of LD.

The exercise consisted of two parts. The first part was a table-top exercise conducted on April 12, 2019, in which relevant departments and organisations discussed and co-ordinated the communicable disease response measures required in the simulated scenario of detection of two cases of LD in the same housing block.

The second part was a ground movement exercise conducted on April 30, 2019. Under the exercise simulation, CHP was notified by the Hospital Authority of two confirmed cases of LD.

DH conducted immediate epidemiological investigations which revealed that both patients were elderly people residing in the same housing block and had used the Jacuzzi there during the incubation period. CHP co-ordinated with relevant government departments and organisations to conduct a site visit, collected water and environmental samples from potential sources of infection for testing and advised on relevant infection control measures.

About 50 participants from relevant government departments and organisations took part in the exercise, with 31 experts from the Mainland and Macao health authorities attending as observers. The exercise provided a valuable platform to test the preparedness of relevant government departments and organisations to respond effectively in the occurrence of an infectious disease outbreak. It also helped to refine the response plans for communicable diseases and revealed room for improvement.

Legionellae are found in various environmental settings and grow well in warm water (20 to 45 degrees Celsius). They can be found in aqueous environments such as water tanks, hot and cold water systems, cooling towers, whirlpools and spas, water fountains and home apparatus which support breathing. People may get infected when they breathe in contaminated droplets (aerosols) and mist generated by artificial water systems, or when handling garden soil, compost and potting mixes.

Men, people aged over 50, smokers, alcoholics and persons with weakened immunity are more susceptible to LD. Some situations may also increase the risk of infection, including poor maintenance of water systems leading to stagnant water; living in areas with old water systems, cooling towers or fountains; using electric water heaters, whirlpools and spas or hot water spring spas; and recent stays in hotels or vessels.

Photo 1 - Officers from DH and Electrical & Mechanical Services Department were examining the water supply layout plan of the housing block.

Photo 2 - Occupational Hygienist was collecting water samples from a water dispenser at the housing block.

Photo 3 - Service contractor was conducting chemical disinfection at the Jacuzzi of the housing block.

Photo 4 - Controller, Centre for Health Protection, Dr Wong Ka-hing (right), was inspecting the exercise.

Updated situation of Ebola Virus Disease in Democratic Republic of Congo

Reported by Dr Eric LAM, Medical and Health Officer, Communicable Disease Surveillance and Intelligence Office, Surveillance and Epidemiology Branch, CHP.

The 10th Ebola virus disease (EVD) outbreak in the Democratic Republic of Congo (DRC) was first notified to the World Health Organization (WHO) by the Ministry of Health (MoH) of the country on August 1, 2018. After more than eight months, the outbreak is still on-going. The incidence of cases remained confined to a limited geographical area within two northeastern provinces - North Kivu and Ituri, bordering with Rwanda, South Sudan and Uganda (Figure 1).

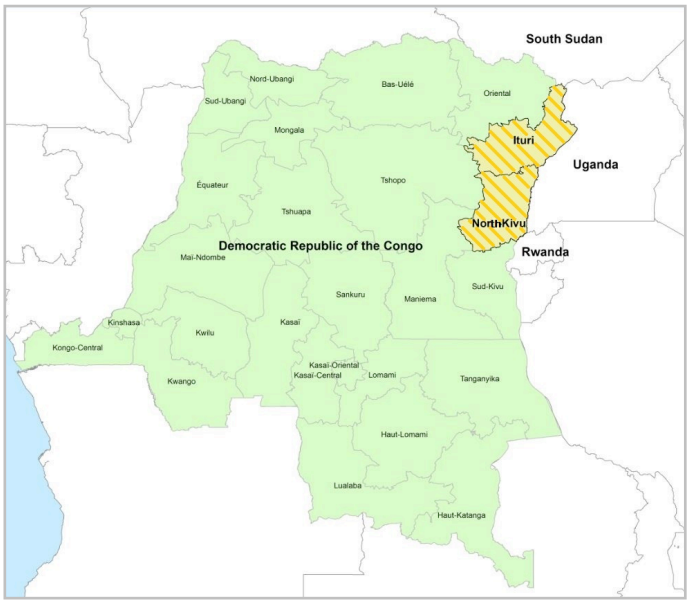

Figure 1 - Affected provinces of DRC and neighbouring countries.

As of April 28, 2019, a total of 1 466 EVD cases, including 1 400 confirmed and 66 probable cases, were reported in this outbreak. There were a total of 957 deaths (overall case fatality rate: 65%), including 891 deaths among confirmed cases. Of the 1 466 confirmed and probable cases with reported age and sex, 56% (815) were female, and 28% (416) were children aged less than 18 years. The number of healthcare workers affected has risen to 92, including 33 deaths. The epidemic curve is shown in Figure 2[1].

In view of the continual increase in number of reported cases, a meeting of the Emergency Committee regarding EVD in DRC was convened by WHO Director-General under the International Health Regulations (IHR) (2005) on April 12, 2019. The Committee was of the view that the ongoing Ebola outbreak in North Kivu and Ituri provinces of DRC did not constitute a Public Health Emergency of International Concern (PHEIC). However, the Committee expressed their deep concern about the recent increase in transmission in specific areas, and therefore the potential risk of spread to neighbouring countries[2].

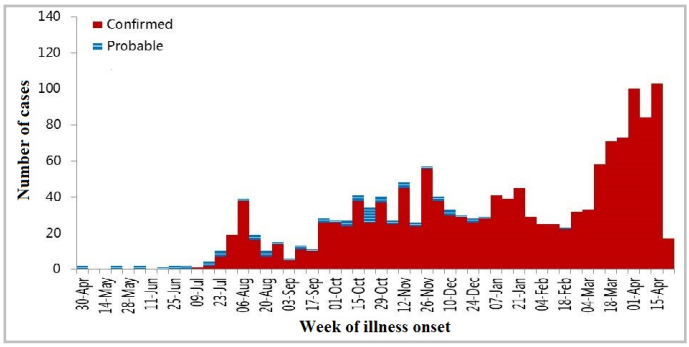

Figure 2 - Confirmed and probable Ebola virus disease cases by week of illness onset, as of April 28, 2019.

According to the latest risk assessment by WHO, the risk of EVD spread was very high at national and regional levels, but remained low at global level. There are various risk factors for possible spread of EVD beyond the affected areas, including proximity to transportation links with neighbouring countries, compromised security to supporting staff, community resistance to engagement, high population mobility, and other concurrent epidemics including cholera, vaccine-derived poliomyelitis, etc. WHO advises against any restriction of travel to and trade with DRC based on the currently available information[3].

MoH of DRC has initiated ring vaccination campaign with the support of WHO in the affected areas since August 8, 2018. The vaccine used was the recombinant vesicular stomatitis virus–Zaire Ebola virus (rVSV-ZEBOV) vaccine which had been shown to be highly protective against Ebola virus in a major trial led by WHO in Guinea in 2015[4]. As of April 20, 2019, a total of 104 342 contacts and contacts of contacts have been vaccinated. About 30 000 healthcare workers and front-line workers have also been vaccinated in the health areas affected by the outbreak. A preliminary analysis of the efficacy of rVSV-ZEBOV vaccine emerging from DRC outbreak data suggested high efficacy of this vaccine and of the ring vaccination in this outbreak[1].

In Hong Kong, EVD has become a notifiable disease under the disease group of "viral haemorrhagic fever" since 2008. All registered medical practitioners are required to notify the Centre for Health Protection of the Department of Health all suspected or confirmed cases of EVD. As of April 30, 2019, there has been no confirmed case of EVD recorded in Hong Kong.

All along the Hong Kong Government has been duly vigilant of the latest development concerning EVD around the globe. To prepare for the potential risk imposed by importation of any EVD case and inform the appropriate public health measures in Hong Kong, continuous risk assessment and regular review on the Preparedness and Response Plan for EVD are conducted.

At present, there is neither specific treatment nor locally licensed vaccine for EVD yet. To prevent EVD, it is important to observe the following:

- Observe good personal and environmental hygiene;
- Wash hands with liquid soap or clean with alcohol-based handrub;
- Avoid close contact with feverish or ill persons, and avoid contact with blood or bodily fluids of patients, including items which may have come in contact with an infected person's blood or bodily fluids;
- Cook food thoroughly before consumption; and
- Avoid contact with animals.

EVD is caused by *Ebolavirus* which belongs to the virus family *Filoviridae*. There are five species within the genus *Ebolavirus*, but historical outbreaks in Africa were caused by three of them, namely: *Bundibugyo ebolavirus*, *Sudan ebolavirus* and *Zaire ebolavirus*[5]. The largest outbreak of EVD occurring from 2014 to 2016 in West Africa was caused by *Zaire ebolavirus*. It has resulted in over 28 000 cases and more than 11 000 deaths. The current outbreak in DRC is also caused by *Zaire ebolavirus*.

Ebolavirus is transmitted to humans through close contact with blood, secretions, organs or other bodily fluids of its natural host (fruit bats), infected animals or infected humans. The incubation period ranges from two to 21 days. Clinical manifestation is characterised by sudden onset of fever, intense weakness, muscle pain, headache and sore throat, followed by vomiting, diarrhoea, rash, impaired kidney and liver function, and in some cases, internal and external bleeding. There is no specific treatment for the disease. EVD in humans has an average case fatality rate of around 50%.

Sexual transmission has been reported with *Ebolavirus*. Based on present evidence, WHO recommends that survivors of EVD and their sexual partners should either abstain from all types of sex, or practise safe sex through correct and consistent condom use for 12 months from onset of symptoms or until the semen tests negative twice for *Ebolavirus*[5].

References

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NEWS IN BRIEF

Two sporadic cases of listeriosis

CHP recorded two cases of listeriosis in April 2019.

The first case was a 64-year-old man with underlying illnesses. He had presented with fever, productive cough, chills and rigors since April 15 and was admitted to a public hospital on April 16. His blood culture collected on April 16 yielded *Listeria monocytogenes*. He was treated with antibiotics and his current condition was stable. He had no recent travel history and did not recall consuming any high-risk food during the incubation period. His home contacts remained asymptomatic.

The second case was a 90-year-old woman with underlying illnesses. She had presented with fever, chills and rigor since April 16 and was admitted to a public hospital on the same day. Her blood culture collected on April 17 yielded *Listeria monocytogenes*. She was treated with antibiotics and her current condition was stable. She had no recent travel history and did not recall consuming any high-risk food during the incubation period. Her home contacts remained asymptomatic. Investigation so far did not reveal epidemiological linkage between the two cases.

Two cases of sporadic Creutzfeldt-Jakob disease

CHP recorded two cases of sporadic Creutzfeldt-Jakob disease (CJD) in May 2019.

The first case affected a 59-year-old woman with good past health. She had presented with dizziness since March 2019 and was admitted to a public hospital on April 17. She was found to have progressive dementia, ataxic gait and visual disturbance. Findings of the magnetic resonance imaging (MRI) of the brain were compatible with CJD. She was classified as a possible case of sporadic CJD.

The second case affected a 61-year-old man with underlying illnesses. He had presented with progressive dementia and unsteady gait since December 2018 and was admitted to a public hospital on April 11. He was found to have myoclonus and extrapyramidal dysfunction. Findings of the MRI of the brain and electroencephalography were compatible with CJD. He was classified as a probable case of sporadic CJD.

Both cases had no known family history of CJD and no risk factors for either iatrogenic or variant CJD were identified.

A sporadic case of psittacosis

On May 2, 2019, CHP recorded a sporadic case of psittacosis affecting a 63-year-old man with good past health. He had presented with fever, cough, shortness of breath and myalgia since April 14 and was admitted to a public hospital on April 21. The clinical diagnosis was pneumonia. His tracheal aspirate taken on April 26 was tested positive for *Chlamydia psittaci* DNA. He was treated with antibiotics and remained stable. He kept a pet parrot (lovebird) at home for four years. According to the patient, the parrot was healthy all along. After he was diagnosed to have psittacosis, the parrot was returned back to the pet shop for disposal but he refused to disclose further details of the shop. He had travelled to the Philippines during the incubation period and his home contact remained asymptomatic.

Hand Hygiene Day 2019

The World Health Organization (WHO) designated May 5 of each year as Hand Hygiene Day. Hand Hygiene is the single most important measure in reducing the spread of diseases. Proper hand hygiene can remove more than 99% of bacteria on our hands. Generally, we should wash hands with soap and water when hands are visibly soiled. If not visibly soiled on hands, or hand washing facilities are not available, we can perform hand hygiene with alcohol-based handrub.

"Don't Pass on the Bugs. Wash or Rub with 7 Steps for 20 seconds is a MUST" has been set as the theme for Hand Hygiene Day 2019. The Infection Control Branch (ICB) of CHP designed a new poster to remind members of the public to perform hand hygiene properly. To clean both hands effectively, we must wash or rub for at least 20 seconds and cover seven areas of our hands.

Photo - Poster and whatsApp stickers for Hand Hygiene Day 2019.

To echo Hand Hygiene Day 2019, ICB has set up a thematic webpage (https://www.chp.gov.hk/en/features/101481.html), publicised a new poster at healthcare facilities and bus shelters all around Hong Kong. E-banners can be seen on CHP and the Hospital Authority websites. A WhatsApp sticker pack has also been created for promotion on social media. The public is invited to support the campaign and share the health message to family and friends.

Scarlet fever update (April 1, 2019 – April 30, 2019)

Scarlet fever activity in April was comparable to March. CHP recorded 123 cases of scarlet fever in April as compared with 142 cases in March. The cases recorded in April included 74 males and 49 females aged between 20 months and 40 years (median: six years). There was one institutional cluster occurring in a kindergarten, affecting two children. No fatal cases were reported in April.

CA-MRSA cases in April 2019

In April 2019, CHP recorded a total of 91 cases of community-associated methicillin resistant *Staphylococcus aureus* (CA-MRSA) infection, affecting 54 males and 37 females with ages ranging from 18 days to 85 years (median: 34 years). Among them, there were 68 Chinese, 6 Filipinos, 4 Pakistani, 3 Indian, 2 Nepalese, 1 Indonesian, 1 Malaysian, and 6 of unknown ethnicity.

Eighty-eight cases presented with uncomplicated skin and soft tissue infections while the remaining three cases had severe CA-MRSA infections. The first severe case affected a 37-year-old man with good past health. He presented with fever and right loin pain since March 31. He attended a public hospital on the same day and was admitted for management. His blood specimen collected on March 31 was cultured positive for CA-MRSA. Computed tomography of his thorax on April 3 showed bilateral pleural effusion. The clinical diagnoses were CA-MRSA sepsis and lung abscess with bilateral pleural effusion. He was treated with antibiotics and pleural fluid drainage. He was transferred to another public hospital for further management on April 3. His condition improved and he was discharged on May 5.

The second severe case affected a 49-year-old man with good past health. He presented with fever and swelling and redness of left flank since April 9. He attended a private hospital on April 10 and was admitted for management. He developed septic shock and required admission to intensive care unit. He was transferred to a public hospital on April 12 for further management. His blood specimen collected on April 11 was cultured positive for CA-MRSA. The clinical diagnoses were cellulitis and CA-MRSA sepsis. He was treated with antibiotics. He remained in a stable condition and was discharged on April 30.

The third severe case affected an 80-year-old woman with underlying illness. She was admitted to a public hospital for management of her underlying illness. She had on and off fever since April 14. Her chest X-ray showed left lower zone haziness. Her sputum collected on April 15 was cultured positive for CA-MRSA. Her clinical diagnosis was CA-MRSA associated chest infection. She was treated with antibiotics and remained in a stable condition.

Among the 91 cases, one case involving a healthcare worker in a public hospital was reported. Investigation did not reveal any epidemiologically linked cases. Besides, one household cluster, affecting two persons, was identified.