FEATURE IN FOCUS

Update of hand, foot and mouth disease (HFMD) activities in Hong Kong

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Hand, foot and mouth disease (HFMD) is a viral infection commonly seen in children. In Hong Kong, HFMD occurs throughout the year but the disease activity usually peaks between May and July. A smaller peak may also occur from October to December.

The HFMD activity in 2018 has so far followed the usual epidemiological pattern observed in the past two years. The surveillance data of the Centre for Health Protection (CHP) of the Department of Health showed that the HFMD activity in 2018 started to increase in early May, peaked in early June, returned to baseline level in late July. It started to increase again in late September (Figures 1 to 3).

During the summer peak in 2018 (from the week ending May 12 to that ending July 28), CHP recorded a total of 208 HFMD/herpangina institutional outbreaks, as compared with 133 outbreaks recorded in the same period of 2017. The number of outbreaks recorded per week ranged from four to 38 (median: 17). Among the 208 outbreaks, 144 (69.2%) occurred in child care centres/kindergartens, 54 (26.0%) in primary schools, eight (3.8%) in secondary schools and two (1.0%) in other institutions. A total of 1,382 people were affected and the number of people affected in each outbreak ranged from two to 37 (median: four). The causative agents were identified in 37 (17.8%) outbreaks. These 37 confirmed outbreaks were associated with coxsackievirus A16 (17, 45.9%), enterovirus 71 (EV71) (5, 13.5%), coxsackievirus A6 (3, 8.1%), coxsackievirus A4 (2, 5.4%) and other enteroviruses (10, 27.0%), respectively.

In the current upsurge of HFMD activity since the week ending September 8, 72 outbreaks have been recorded (as of October 20), as compared with 115 outbreaks recorded in the same period in 2017. The number of outbreaks recorded per week ranged from six to 14 (median: 11). Among the 72 outbreaks, 40 (55.6%) occurred in child care centres/kindergartens, 18 (25.0%) in primary schools, nine (12.5%) in secondary schools and five (6.9%) in other institutions.

As of October 20, a total of 43 cases of EV71 infection have been recorded in 2018. Among them, two and 25 cases were notified before and during the summer peak respectively. Besides, nine cases were notified between the summer peak and the current upsurge. During the current upsurge of HFMD activity since mid-September (as of October 20), a total of seven EV71 cases have been recorded. The 43 cases comprised 23 (53.5%) males and 20 (46.5%) females. The patients...
As of October 20, a total of six cases of severe paediatric enterovirus infections (SE) other than EV71 and poliovirus have been recorded in 2018. Among these six cases, five were recorded during the peak season (including four in summer peak and one in recent upsurge). The six cases comprised four males and two females. The patients’ ages ranged from one month to five months (median: two months). All SE cases developed the complication of meningitis. No fatal case has been recorded in 2018 so far.

Currently, the HFMD activity in Hong Kong still remained at an elevated level. CHP will continue to closely monitor the situation. Members of the public are reminded to continue to stay vigilant and observe good personal and environmental hygiene to prevent the disease. The latest surveillance data on HFMD and EV71 are published in the weekly “EV Scan” (http://www.chp.gov.hk/en/guideline1_year/29/134/441/502.html). Further information can be found in the CHP webpage via the link: http://www.chp.gov.hk/en/view_content/16354.html.

**Prevention of HFMD**

Good hygiene practices are the mainstay of prevention:

✦ Maintain good personal hygiene;

✦ Wash hands with liquid soap and water especially:
  - before touching eyes, nose and mouth;
  - before eating or handling food;
  - after touching blister;
  - after using the toilet;
  - when hands are contaminated by respiratory secretions e.g. after coughing or sneezing; and
  - after changing diapers or handling soiled articles;

✦ Cover both the nose and mouth with tissue paper when coughing or sneezing, and wash hands thoroughly afterwards. Dispose of soiled tissue paper in a lidded rubbish bin;

✦ Do not share towels and other personal items;

✦ Regularly clean and disinfect frequently touched surfaces such as furniture, toys and commonly shared items with 1:99 diluted household bleach (mixing one part of 5.25% bleach with 99 parts of water), leave for 15 to 30 minutes, and then rinse with water and keep dry. For metallic surfaces, disinfect with 70% alcohol;

✦ Use absorbent disposable towels to wipe away obvious contaminants such as respiratory secretions, vomitus or excreta, and then disinfect the surface and neighbouring areas with 1:49 diluted household bleach (mixing one part of 5.25% bleach with 49 parts of water), leave for 15 to 30 minutes and then rinse with water and keep dry. For metallic surfaces, disinfect with 70% alcohol;

✦ Avoid group activities when HFMD outbreak occurs in the school or institution. Besides, minimise staff movement and arrange the same group of staff to take care of the same group of children as far as possible; and

✦ Avoid close contact (such as kissing and hugging) with patients.

**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.

On August 1, 2018, less than 10 days after the declaration of the end of the previous Ebola Virus Disease (EVD) outbreak in the Democratic Republic of Congo (DRC), a new EVD outbreak was notified to the World Health Organization (WHO) by the Ministry of Health (MoH) of DRC. The last outbreak in DRC, which began as a cluster of 21 cases of acute haemorrhagic fever in one health zone (Bikoro) in a northwestern province (Equateur) during mid-late May 2018 and affected 54 persons in total, was just declared over on July 24, 2018.

The new outbreak is the tenth EVD outbreak occurring in DRC since the virus was discovered in 1976. When the new outbreak was officially declared on August 1, four cases were confirmed by laboratory testing. Genetic analysis confirmed that the current outbreak was caused by Zaire ebolavirus but it was not linked to the previous outbreak in May-July 2018.

As of October 21, 2018, a total of 238 confirmed and probable cases, including 155 deaths, have been reported, with an increasing trend in weekly number of cases since late September. The cases occurred in two northeastern provinces (North Kivu and Ituri).
which border with Rwanda, South Sudan and Uganda (Figure 1). The majority of cases have been reported in Beni (104 cases, 44%) and Mabalako (92 cases, 39%) health zones of North Kivu province. Among all the cases, 203 have been confirmed by laboratory testing. A total of 21 healthcare workers were affected. The epidemic curve and age distribution of the cases are shown in Figures 2 and 3 respectively.

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 polio, etc.

In view of the situation, a meeting of the International Health Regulations (IHR) Emergency Committee was convened by WHO on October 17, 2018. The Committee concluded that a Public Health Emergency of International Concern (PHEIC) should not be declared at the present stage. WHO has also advised against any international travel or trade restrictions to DRC. However, the Committee emphasised that intensified response activities and ongoing vigilance were critical. Despite the challenges faced by DRC, the Committee has nonetheless commended the rapid and comprehensive response of the DRC government and other non-governmental organisations in supporting surveillance, infection prevention and control, patient care, community engagement and risk communication throughout this disease outbreak.

Similar to the response mounted to the EVD outbreak in May-July 2018, the MoH of DRC has initiated ring vaccination campaign with the support of WHO in the affected areas since August 8, targeting vaccination for the contacts of infected people, including health care workers. The vaccine used was the recombinant vesicular stomatitis virus–Zaire ebolavirus (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. As of October 20, 2018, a total of 20,789 people have been vaccinated.

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 (CHP) of the Department of Health all suspected or confirmed cases of EVD. As of October 24, 2018, there has been no confirmed case of EVD recorded in the locality.

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 the 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\(^4\). The largest outbreak of EVD occurring from 2014 to 2016 in West Africa since its discovery in 1976 was caused by the 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 the 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\(^5\).

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**Two local cases of listeriosis**

On October 12, 2018, CHP recorded two local cases of listeriosis affecting a 35-year-old woman and her newborn baby boy. The woman with good past health presented with decreased fetal movement at 35 weeks of gestation on October 9 and was admitted to a public hospital on the same day. Emergency caesarean section was performed for suspected fetal distress. The baby presented with respiratory distress after birth on October 9 and was transferred to neonatal intensive care unit (NICU) for further management. Placental swab from the mother and the blood specimens of the baby grew *Listeria monocytogenes*. Both the mother and the baby were treated with antibiotics and remained in stable condition. The mother was discharged on October 12 while the baby was still staying in NICU at the time of reporting. Investigation revealed that the mother had consumed cheese during incubation period and further investigation is underway. She had no recent travel history and her other household contacts remained asymptomatic. So far, no other epidemiologically linked cases are identified.

**A local sporadic case of leptospirosis**

On October 19, CHP recorded a local case of leptospirosis affecting a 63-year-old man with underlying illness. He presented with fever, chills, rigor, arthralgia, myalgia and productive cough on September 2, and was admitted to a public hospital on September 10. Blood tests showed acute kidney injury and deranged liver function. He was treated with antibiotics. His condition was stable and he was discharged on September 18. Paired sera taken on September 12 and October 11 showed more than four-fold rise in antibody titre against *Leptospira* by microscopic agglutination test. Apart from a day trip to Macau on August 30, he had no travel history during the incubation period. He had history of contact with mud and stream water with bare feet in Pat Heung and noticed abrasion over his lower limbs afterwards. He kept three dogs and two cats at his home. His home contacts were asymptomatic.

**A domestic cluster of pertussis**

CHP recorded a domestic cluster of pertussis in mid-October 2018, affecting a three-month-old girl and her three-year-old sister. The three-month-old girl had been admitted to a public hospital on October 13 for paroxysmal cough, post-tussive vomiting, runny nose, shortness of breath and cyanotic spell since September 24. Her nasopharyngeal swab collected on October 13 was tested positive for *Bordetella pertussis*. She was treated with azithromycin and her condition was stable. She was discharged on October 18.

Contact tracing revealed that patient’s elder sister presented with cough on October 12 and she was referred by CHP to a public hospital for management. Her per-nasal swab collected on October 16 was also tested positive for *Bordetella pertussis*. She was treated with azithromycin and did not require hospitalisation. Her condition was all along stable.

The two children had no travel history during the incubation period and they both had received Diphtheria, Tetanus, acellular Pertussis & Inactivated Poliovirus Vaccine according to the schedule of Hong Kong Childhood Immunisation Programme. Of note, the patients’ parents also reported to have on and off cough during mid-September and mid-October respectively, and their per-nasal swabs collected on October 16 were all tested negative for *Bordetella pertussis*. The other home contact was asymptomatic and chemoprophylaxis was given to all home contacts.

**CA-MRSA cases in September 2018**

In September 2018, CHP recorded a total of 98 cases of community-associated methicillin resistant *Staphylococcus aureus* (CA-MRSA) infection, affecting 67 males and 31 females with ages ranging from 14 days to 85 years (median: 36.5 years). Among them, there were 76 Chinese, 6 Caucasian, 6 Filipinos, 3 Nepalese, 3 Pakistani, 2 Indian, 1 Indonesian, and 1 Sri Lankan.

Ninety-seven cases presented with uncomplicated skin and soft tissue infections while the remaining case had severe CA-MRSA infection. The severe case affected a 59-year-old woman with underlying medical illnesses. She presented with blood-stained sputum since August 1. She attended the general outpatient clinic (GOPC) of a public hospital on September 8. Her sputum collected on September 10 was cultured positive for CA-MRSA. She was referred by the GOPC to the accident and emergency department of a public hospital on September 21 and was admitted for management. She was diagnosed with CA-MRSA pneumonia and was treated with antibiotics. She remained in a stable condition and was discharged on October 3.

Among the 98 cases, two sporadic cases involved healthcare workers (a nurse and a healthcare assistant) who worked in different hospitals and investigation did not reveal any epidemiological linkage. Besides, three household clusters, with each affecting two persons, were identified in September.

**Scarlet fever update (September 1, 2018 – September 30, 2018)**

Scarlet fever activity increased in September. CHP recorded 96 cases of scarlet fever in September as compared with 69 cases in August. The cases recorded in September included 56 males and 40 females aged between one and 40 years (median: five years). There were two institutional clusters occurring in two kindergarten-cum-child care centres, affecting five children in total. No fatal cases were reported in September.