

Communicable Diseases

WATCH



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Centre for Health Protection

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FEATURE IN FOCUS

Management of institutional outbreaks of infectious diseases in Hong Kong

Reported by Dr Carol YAU, Senior Medical and Health Officer, Communicable Disease Division, Surveillance and Epidemiology Branch, CHP.

Infectious disease outbreaks are more common in institutional settings such as schools, child care centres (CCC), nursing homes and residential care homes for people with special needs. Institutional settings may facilitate the transmission of some infectious diseases. Susceptible groups such as elderly and young children are at higher risk for complications of infectious diseases. Early detection of infectious disease and prompt implementation of control measures are therefore important to prevent and limit secondary transmission in institutions.

To prevent communicable disease outbreaks in institutional setting, the Centre for Health Protection (CHP) of the Department of Health has published a set of guidelines on “Prevention of Communicable Diseases in Residential Care Homes for Elderly (RCHE)/Residential Care Homes for Persons with Disabilities (RCHD)/Schools/Kindergartens (KG)/CCC” for reference by institutions, which are available at: <http://www.chp.gov.hk/en/guideline/478/35.html>. CHP also provides regular infection control trainings for staff of RCHE and RCHD. For KG and CCC, the pre-primary institutions inspection team of CHP monitors and strengthens the implementation of infection control and preventive measures among the institutions. The team also conducts visits to these institutions to observe the compliance of infection control procedures and to give appropriate advice on any necessary improvement measures.

CHP has established a comprehensive disease surveillance system through collaborations with different health care sectors and institutions on sentinel surveillance, laboratory surveillance and hospital admission data monitoring. Information gathered from different systems provides early warning of activities of common infectious diseases, such as influenza, hand, foot and mouth disease (HFMD) and acute gastroenteritis (AGE). Results of different surveillance systems are uploaded regularly to the CHP website (http://www.chp.gov.hk/en/dns_submenu/10/26/44.html) for public information. Prior to the usual peak season of these infectious diseases, with the help of other government departments such as the Education Bureau and the Social Welfare Department, CHP will issue letters to alert management of institutions and health care providers to be vigilant and adopt preventive measures to prevent outbreak occurring in their institutions.

If an outbreak does occur in an institution, CHP has a reporting system in place to centralise all infectious disease notifications from health care sectors and community institutions. CHP encourages institutions to report suspected institutional outbreaks of infectious diseases to CHP for public health management. In 2016, CHP recorded more than 2 500 institutional outbreaks; outbreaks of HFMD (including herpangina), influenza-like illness (ILI), upper respiratory tract infection (URI), AGE and scabies accounted for more than three-quarters of all reported institutional outbreaks. HFMD and AGE outbreaks predominately occurred in pre-primary institutions (KG/CCC); while outbreaks of scabies mainly occurred in RCHE (Table I).

After receiving suspected outbreak notification, CHP will contact the institution concerned to obtain more information to verify the existence of an outbreak. Once the outbreak has been confirmed, CHP will conduct epidemiological investigation and field visit as appropriate. Relevant health advice will be provided to the institution and the condition of the affected persons will be monitored through communication with the institution, relevant health care providers, the affected persons and their relatives as appropriate. The institution will be advised to carry out infection control measures, which may be specific for different types of institutions and possible causative agents. General infection control measures should include regular hand-washing, cleaning and disinfection of the environment, excluding and isolation and/or cohorting of sick persons. Specific measures are available in the management of selected infectious disease outbreaks, such as facility-wide oseltamivir chemoprophylaxis for the control of influenza outbreak in high-risk settings.

Table I - Common institutional outbreaks* in Hong Kong, 2016.

Institution/ Types of outbreaks	HFMD Number (percentage of total)	ILI Number (percentage of total)	URI Number (percentage of total)	AGE Number (percentage of total)	Scabies Number (percentage of total)
KG/CCC	529 (60.5)	155 (23.7)	38 (27.5)	76 (47.5)	0 (0)
School	314 (35.9)	353 (53.9)	24 (17.4)	33 (20.6)	0 (0)
RCHE/ nursing home	1 (0.1)	93 (14.2)	37 (26.8)	17 (10.6)	59 (93.7)
RCHD	1 (0.1)	29 (4.4)	15 (10.9)	11 (6.9)	0 (0)
Others	29 (3.3)	25 (3.8)	24 (17.4)	23 (14.4)	4 (6.3)
All	874 (100)	655 (100)	138 (100)	160 (100)	63 (100)

*Excluding outbreaks of statutorily notifiable communicable diseases

Risk communication is one of the major components in outbreak management. The institution concerned will be advised to inform parents/guardians, staff, residents and their relatives of the outbreak and to provide relevant health advice. For major outbreaks, such as those involving a large number of persons, CHP will usually issue press release to alert the general public of the situation and provide health advice to prevent similar outbreaks. The institution will be put under medical surveillance to monitor the progress of the outbreak and to evaluate the effectiveness of control measures. CHP will also inform and liaise with other relevant government departments for outbreak control when necessary.

With all the above communication and collaboration with various institutions and relevant stakeholders, it is envisaged that everyone involved could be better prepared, and outbreaks in institutions in Hong Kong could be prevented or detected early and managed appropriately to protect the public health in Hong Kong.

Any suspected institutional outbreaks of communicable diseases can be reported to the Central Notification Office of CHP for prompt epidemiological investigations and outbreaks controls (<http://www.chp.gov.hk/en/notification/478/632.html>). For the latest information on communicable diseases, please visit CHP's website at <http://www.chp.gov.hk>.

Update of hepatitis E infection in Hong Kong

Reported by Ms Doris CHOI, Scientific Officer, Enteric and Vector-borne Disease Office, Surveillance and Epidemiology Branch, CHP.

Hepatitis E is liver disease caused by infection of the hepatitis E virus (HEV). According to the World Health Organization, a global burden of disease study estimated that HEV genotypes 1 and 2 account for approximately 20.1 million HEV infections, 3.4 million symptomatic cases and 70 000 deaths every year³.

In Hong Kong, acute hepatitis E is a notifiable infectious disease under viral hepatitis in the Prevention and Control of Disease Ordinance (Cap 599). From 2008 to 2017, as of May 31, a total of 954 hepatitis E cases were recorded by the Centre for Health Protection (CHP) of the Department of Health (DH). The number of hepatitis E cases recorded showed an increasing trend from 2008 to 2012 and peaked at 150 cases in 2012. The number of hepatitis E cases then decreased from 2012 to 2013 and remained stable between 84 and 96 cases annually from 2013 to 2016 (Figure 1).

The following section reviews the acute hepatitis E cases recorded by CHP from 2012 to 2017 (as of May 31). A total of 554 cases were recorded from 2012 to May 31, 2017 with age of the patients ranging from 15 to 96 years (median: 55 years). The majority of patients were Chinese (511, 92.2%). More males were affected (349, 63.0%) than females (205, 37.0%), and among the latter, none of them was pregnant. More cases were recorded in February and March (Figure 2). Most of the cases acquired the infection locally (464, 83.8%) while 38 cases (6.9%) contracted the disease during their travel to Mainland China (30 cases), India (2 cases), Korea (1 case), Nepal (1 case), Pakistan (1 case), Thailand (1 case), the United Kingdom (1 case) and multiple countries (1 case), respectively. The place of contracting the disease could not be determined in 52 cases (9.4%) as the patients stayed both in and outside Hong Kong during the incubation period.

The most common clinical presentation included tea-coloured urine (480, 86.6%), followed by jaundice (438, 79.1%), anorexia (368, 66.4%), nausea (314, 56.7%) and abdominal pain (310, 56.0%). Four hundred and seventy-six (85.9%) patients required hospitalisation with a median length of stay of six days. Nine fatal cases were recorded, giving a case fatality rate of 1.6%. The age of the deceased patients ranged from 59 to 79 years (median: 74 years). Most of them (7, 77.8%) had underlying illnesses while two enjoyed good past health.

During the incubation period, 163 patients (29.4%) consumed shellfish and more than half of them ingested oyster (99, 60.7%). Among them, 17 (17.1%) indicated consumption of raw oyster. Besides, 208 patients (37.5%) consumed pig offal, mainly pig liver (172, 82.7%). Eight of them indicated that they ingested pig liver with congee (4.7%) and 31 (18.0%) reported that they consumed the pig liver with hotpot. The majority of cases (552, 99.6%) were sporadic but one cluster affecting two persons were recorded in 2012. The cluster involved a 36-year-old man with good past health who presented with tea-coloured urine and anorexia in mid-May 2012. Four days later, his 62-year-old father also developed jaundice, tea-coloured urine, abdominal pain and fever. They were both

Hepatitis E is a liver disease caused by infection of the hepatitis E virus (HEV). HEV is a single-stranded RNA virus which belongs to the Hepeviridae family. HEV has only one serotype but can be distinguished into four human pathogenic genotypes, namely, genotypes 1 to 4.

HEV is mainly transmitted through the faecal–oral route. In developed countries, HEV infection is usually acquired by ingestion of raw or uncooked shellfish or undercooked meat or offal derived from infected animals; whereas in developed countries it is usually acquired by drinking faecal-contaminated water. Other routes of transmission such as transfusion of infected blood products and vertical transmission have also been reported. The incubation period ranges from two to ten weeks, with an average of five to six weeks¹. HEV-infected persons exhibit a wide clinical spectrum, ranging from asymptomatic infection through acute icteric hepatitis to fulminant hepatitis. The clinical features include fever, malaise, anorexia and vomiting, followed by jaundice, tea-coloured urine and hepatomegaly. The overall case fatality rate during HEV outbreaks is about one percent but can be up to 20% to 25% for pregnant women who are infected with HEV in their third trimester of pregnancy². Chronic infection is uncommon but has been reported in organ transplant recipients on immunosuppressive drugs.

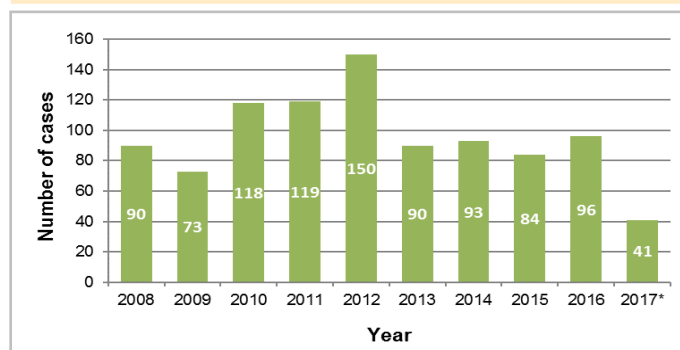


Figure 1 - Annual number of acute hepatitis E infection in Hong Kong, 2008-2017 (*provisional figure as of May 31, 2017) (n=954).

hospitalised and recovered uneventfully. As both of them shared meals frequently during the long incubation period, the incriminating food could not be identified.

There is no specific treatment that can alter the course of acute hepatitis E. Prevention is the most effective approach against the disease. Currently, effective vaccine for hepatitis E is not available in Hong Kong. The mainstay of prevention of hepatitis E is maintaining good personal hygiene, especially hand hygiene, and adherence to food and water safety.

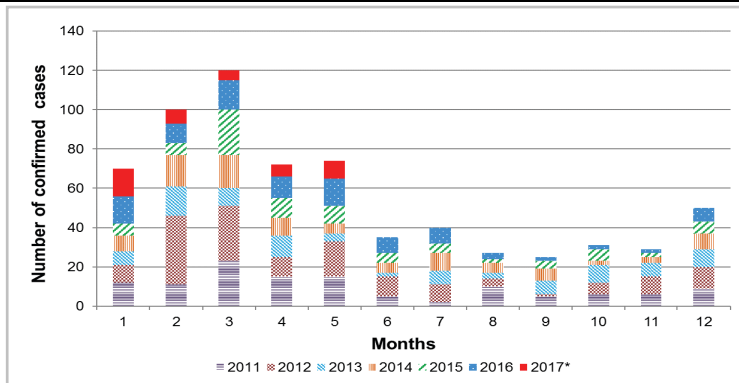


Figure 2 - Seasonality of hepatitis E infection in Hong Kong, 2012-2017 (*provisional figure as of May 31, 2017) (n=554).



Tips on food hygiene for preventing hepatitis E infection

The risk of hepatitis E infection can be reduced by adopting the five Keys to Food Safety in handling food, i.e. Choose (Choose safe raw materials); Clean (Keep hands and utensils clean); Separate (Separate raw and cooked food); Cook (Cook thoroughly); and Safe Temperature (Keep food at safe temperature) to prevent foodborne diseases:

- ◆ Maintain hygienic practices such as hand washing with safe water, particularly before handling food or eating, and after using the toilet or handling vomitus or faecal matter;
- ◆ Obtain drinking water from the mains and boil it before consumption;
- ◆ Avoid consumption of water and ice of unknown purity;
- ◆ Purchase fresh food from reliable sources. Do not patronise illegal hawkers;
- ◆ Clean and wash food thoroughly;
- ◆ Cook food, especially seafood (e.g. shellfish), pork and pig offal, thoroughly before consumption. Avoid raw food or undercooked food; and
- ◆ Use separate chopsticks for handling raw food and cooked food when having hotpot.

References

¹World Health Organization. Hepatitis E World Health Organization; 2016 [updated July 2016].

Available at <http://www.who.int/mediacentre/factsheets/fs280/en/>.

²Centers for Disease Control and Prevention. Hepatitis E FAQs for Health Professionals: Centers for Disease Control and Prevention; 2015 [updated June 24, 2017]. Available at <https://www.cdc.gov/hepatitis/hev/hevfaq.htm>.

³World Health Organization. Hepatitis E vaccine: WHO position paper, May 2015. Weekly epidemiological record. 2015;18(90):185-200.

NEWS IN BRIEF

Three sporadic cases of listeriosis

From June 20 to 28, 2017, the Centre for Health Protection (CHP) recorded three sporadic cases of listeriosis. The first case was a 46-year-old woman with underlying illness. She presented with fever and diarrhoea on June 13 and was admitted to a public hospital on June 17. Her blood culture collected on June 17 yielded *Listeria monocytogenes*. She was treated with antibiotics and her condition was stable. She lived alone.

The second case was a 69-year-old man with underlying illness. He presented with fever on June 23 and was admitted to a public hospital the next day. His blood culture collected on June 24 yielded *Listeria monocytogenes*. He was treated with antibiotics and his condition remained stable. His home contact was asymptomatic.

The third case was a 61-year-old man with underlying illnesses. He was admitted to a public hospital for management of his underlying illness on June 22. He developed fever, chills, myalgia and abdominal pain on June 24. His blood culture collected on June 25 yielded *Listeria monocytogenes*. He was treated with antibiotics and his condition was stable. His home contacts were asymptomatic.

The three cases had no recent travel history and had no history of consumption of high risk food item during the incubation period. So far, no epidemiological linkage was identified among the cases. Investigations are on-going.

A possible sporadic case of Creutzfeldt-Jakob disease

On June 30, 2017, CHP recorded a possible case of sporadic Creutzfeldt-Jakob disease (CJD) affecting a 76-year-old woman with underlying illnesses. She had presented with right side weakness and ataxia since April 2017 and was later admitted to a public hospital on May 5, 2017. She subsequently developed rapidly progressive dementia, myoclonus, extrapyramidal signs, rigidity, gait disturbance, dysarthria and dysphagia which required tube feeding. Her condition was stable. She had no known family history of CJD and there were no reported risk factors for iatrogenic or variant CJD. She was classified as a possible case of sporadic CJD.