

Communicable Diseases WATCH

HP 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

EDITORIAL BOARD **Editor-in-Chief** Dr SK Chuang **Members** Dr Yonnie Lam / Dr Albert Au / Dr TY Wong / Dr Gladys Yeung / Dr Benjamin Fung / KK So / Sheree Chong / Doris Choi / Chloe Poon **Production Assistant** Amy Fung. This biweekly publication is produced by the Centre for Health Protection (CHP) of the Department of Health, 147C, Argyle Street, Kowloon, Hong Kong **ISSN** 1818-4111 **All rights reserved** Please send enquiries to cdsinfo@dh.gov.hk.

FEATURE IN FOCUS

Vaccination against pertussis for pregnant women

Reported by Ms Fanny WS HO, Scientific Officer, Vaccine Preventable Disease Office, Surveillance and Epidemiology Branch, CHP.

Pertussis vaccination was first introduced in Hong Kong in 1957. Under the current Hong Kong Childhood Immunisation Programme, children receive a total of six doses of pertussis-containing vaccines, including the three primary doses at two, four and six months old and three booster doses at 18 months, Primary one and Primary six. The immunisation coverage rate of pertussis has been maintained at a very high level of over 95 percent for many years.

In recent years, resurgence of pertussis has been observed in countries with high vaccination coverage, e.g. Australia, Japan, the United States and a number of European countries including Portugal and the United Kingdom¹. Regionally, there have also been significant increases in the number of reported pertussis cases in Mainland China including Guangdong province^{2,3}.

Since 2017, there has also been an upsurge in the notified pertussis cases in Hong Kong, and the increasing trend continued in 2018 and 2019. The number of pertussis recorded by the Centre for Health Protection (CHP) of the Department of Health (DH) has increased from 20 to 50 cases per year during 2011-2016 to 69 cases in 2017, and further to 110 cases in 2018 (Figure 1). In 2017-2018, 72 (40%) of the cases affected infants aged below six months and all had not completed the primary series of pertussis vaccination. Thirty-five cases (20% of all cases) were infants aged below two months who were not yet due for the first dose of pertussis-containing vaccine. Among the 93 adult cases recorded in 2017-2018, 77 (83%) had no or unknown history of pertussis vaccination and 45 (48%) were not born in Hong Kong and might not have received pertussis vaccine during their childhood, including some mothers of infant pertussis cases. As of March 10, a total of 26 pertussis cases were reported in 2019. Nine (35%) of them were infants below six months of age who had not yet completed the primary series of pertussis vaccination, including three cases aged less than two months who did not receive first dose of the vaccine yet.

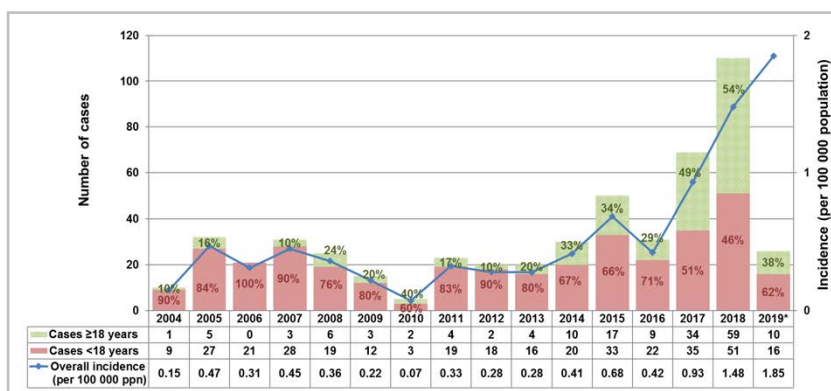


Figure 1 - Annual number and incidence of notified pertussis cases by age group, 2004 to 2019 (*Provisional figures as of March 10, 2019).

The number of clusters (defined as two or more pertussis cases with epidemiological link identified) also surged in 2017 and 2018 with seven and 12 clusters respectively. The clusters were generally small in size (each affecting two to three persons) with almost all (except one nosocomial cluster in 2018) occurred in household setting. The household clusters mostly affected infants, their family members and other household contacts, in which five of them involving both mothers and their infants aged less than six months. One household cluster was recorded in 2019 involving two siblings aged one month and 16 months respectively.

According to the World Health Organization (WHO)'s position paper on pertussis vaccines⁴, vaccination of pregnant women is likely the most cost-effective additional strategy for preventing pertussis in infants too young to be vaccinated. Maternal immunisation during pregnancy directly protects the infant primarily through transplacental transfer of maternal vaccine-induced antibodies from mother to foetus, and also offers some indirect protection through reduced risk of transmission of peri-partum pertussis from nursing mother.

Substantial evidence supporting the effectiveness of diphtheria (reduced dose), tetanus and acellular pertussis (reduced dose) (dTap) vaccination in pregnancy was documented in countries where maternal pertussis vaccination was implemented. Depending on study design, settings and outcomes, dTap vaccine was estimated to be around 70% to over 90% effective in

preventing infant pertussis⁵⁻⁸. Moreover, there has been an increasing amount of evidence on the safety of maternal pertussis immunisation from different countries in recent years, and available evidence so far did not suggest an elevated risk or increase in adverse events in both mothers and infants.

After reviewing the local epidemiology of pertussis, recommendations of WHO, overseas practices, as well as scientific evidence on the effectiveness and safety of maternal pertussis vaccination, the Scientific Committee on Vaccine Preventable Diseases (SCVPD) under CHP of DH made the following recommendations regarding the use of pertussis-containing vaccine for pregnant women in Hong Kong:

(i) To provide direct protection for infants against pertussis, pregnant women are recommended to receive one dose of acellular pertussis-containing vaccine during each pregnancy as part and parcel of routine antenatal care regardless of previous vaccination and natural infection history against pertussis.

(ii) The timing of vaccination is recommended to be anytime in the second or third trimester, preferably before 35 weeks of gestation for transplacental transfer of maternal vaccine-induced antibodies.

(iii) dTap vaccine is recommended to be used while diphtheria (reduced dose), tetanus, acellular pertussis (reduced dose) & inactivated poliovirus (dTap-IPV) vaccine can also be used if available.

(iv) For women who have not received any pertussis-containing vaccine during pregnancy, they would still be benefited by receiving one dose of dTap or dTap-IPV vaccine as early as possible after delivery, for indirect protection to infants, preferably before discharge from the hospital.

Of note, it requires two weeks for antibodies to develop after the vaccination and WHO recommended that the vaccine to be given preferably at least 15 days before the end of pregnancy. Moreover, pregnant women are recommended to receive annual inactivated seasonal influenza vaccine available for the season all along, and pertussis-containing vaccine and seasonal influenza vaccine can be administered at the same visit.

For details of the SCVPD's Consensus Recommendations, please visit CHP website:

https://www.chp.gov.hk/files/pdf/recommendations_on_pertussis_vaccination_for_pregnant_women_in_hk_formatted.pdf.

References

¹World Health Organization. WHO SAGE pertussis working group. Background paper. SAGE, April 2014.

Available at: https://www.who.int/immunization/sage/meetings/2014/april/1_Pertussis_background_FINAL4_web.pdf.

²National Health Commission of the People's Republic of China. 2018年12月全国法定传染病疫情概况.

Available at: <http://www.nhc.gov.cn/jkj/s3578/201901/7ba54ed285484474a881584606aa8c94.shtml>.

³Health Commission of Guangdong Province. 广东省卫生健康委公布2018年全省法定报告传染病疫情.

Available at: <http://www.gdwt.gov.cn/Pc/Ywdt/show/id/18905/t/yqxx.html>.

⁴World Health Organization. Pertussis vaccines: WHO position paper - August 2015. WER 2015;35:433-60.

Available at: <https://www.who.int/wer/2015/wer9035.pdf?ua=1>.

⁵Amirthalingam G, Andrews N, Campbell H, et al. Effectiveness of maternal pertussis vaccination in England: an observational study. Lancet 2014;384:1521-8.

⁶Amirthalingam G, Campbell H, Ribeiro S, et al. Sustained Effectiveness of the Maternal Pertussis Immunization Program in England 3 Years Following Introduction. Clin Infect Dis 2016;63:S236-S43.

⁷Baxter R, Bartlett J, Fireman B, Lewis E, Klein NP. Effectiveness of Vaccination During Pregnancy to Prevent Infant Pertussis. Pediatrics 2017;139.

⁸Skoff TH, Blain AE, Watt J, et al. Impact of the US Maternal Tetanus, Diphtheria, and Acellular Pertussis Vaccination Program on Preventing Pertussis in Infants <2 Months of Age: A Case-Control Evaluation. Clin Infect Dis 2017;65:1977-83.

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

Reported by Dr KONG Wai-chi, Scientific Officer, Enteric and Vector-borne Disease Office, Surveillance and Epidemiology Branch, CHP.

Hand, foot and mouth disease (HFMD) is a viral infection commonly seen in children. In Hong Kong, HFMD occurs throughout the year with the usual peak season occurring from May to July (summer peak) and a smaller peak from October to December (winter peak). This article describes the HFMD activities in the winter peak starting in late September 2018 in Hong Kong.

In 2018, the summer peak of HFMD followed the usual epidemiological pattern with the activity starting to increase in early May, peaking in early June and returning to the baseline level in late July. However, the winter peak lasted longer than usual with the activity starting to increase in late September, peaking in late October and remaining at an elevated level above the baseline throughout November 2018 to January 2019, only returning to the baseline level in mid-February 2019 (Figures 1 to 3).

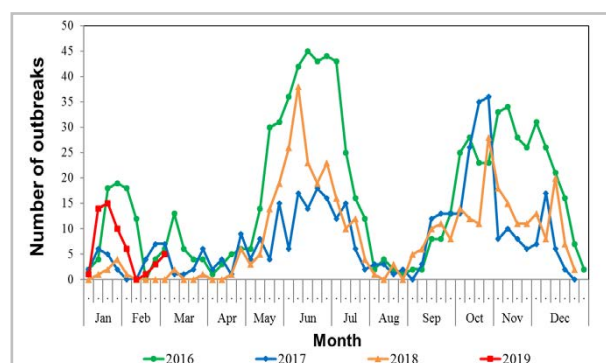


Figure 1 - Number of institutional HFMD/herpangina outbreaks, 2016 to 2019 (as of March 5, 2019).

This winter peak of HFMD lasted for 21 weeks (from the week ending September 29, 2018 to that ending February 16, 2019), as compared with 19 and eight weeks in the 2016* and 2017 winter peaks, respectively. During this winter peak, CHP recorded a total of 225 HFMD/herpangina institutional outbreaks, as compared with 337 and 142 outbreaks recorded in the 2016 and 2017 winter peaks, respectively. The number of outbreaks recorded per week ranged from zero to 28 (median: 11). Among the 225 outbreaks, 123 (54.7%) occurred in CCC/KG, 54 (24.0%) in primary schools, 41 (18.2%) in secondary schools and seven (3.1%) in other institutions such as education centres and tertiary institutions. A total of 1 225 persons were affected with a range of two to 48 (median: four) persons affected in each outbreak. The causative agents were identified in 35 (15.6%) outbreaks, including coxsackievirus A6 (14, 40.0%), enterovirus 71 (EV71) (9, 25.7%), coxsackievirus A16 (2, 5.7%) and other enteroviruses (10, 28.6%).

During this winter peak, a total of 24 cases of EV71 infection were recorded, as compared with 21 and two cases in the 2016 and 2017 winter peaks, respectively. The 24 cases involved 16 (66.7%) males and eight (33.3%) females, with ages ranging from two months to 32 years (median: 4.5 years). Among the 24 cases, two developed complications of encephalomyelitis and meningoencephalitis, respectively. No fatal case due to EV71 infection was recorded. No case of severe enterovirus infections other than EV71 and poliovirus was recorded in this winter peak, as compared with three cases in both 2016 and 2017 winter peaks, respectively.

Currently, the HFMD activity in Hong Kong is at the baseline level. 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 CHP webpage via the link: http://www.chp.gov.hk/en/view_content/16354.html.

* The 2016 winter peak lasted until January 2017.

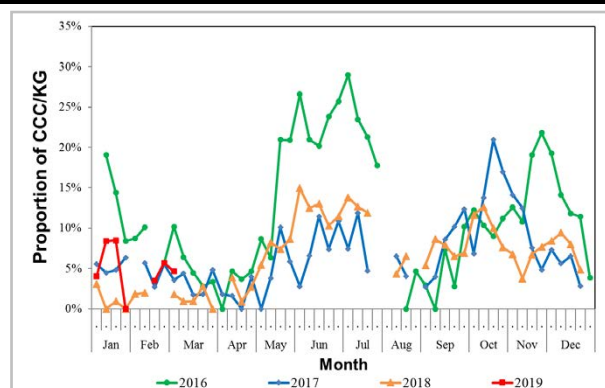


Figure 2 - Occurrence of HFMD in sentinel child care centres/kindergartens (CCC/KG) under sentinel surveillance of infectious diseases, 2016 to 2019 (as of March 5, 2019). (Note: Gaps in the graph represented suspension of reports due to school holidays)

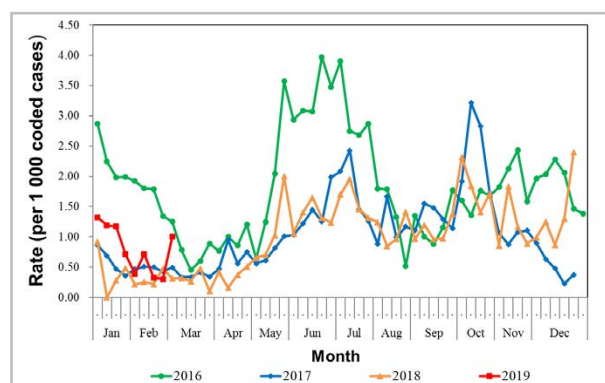


Figure 3 - Consultation rate of HFMD syndrome at Accident and Emergency Departments in public hospitals under the Hospital Authority, 2016 to 2019 (as of March 5, 2019).

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.

NEWS IN BRIEF

Sentinel Surveillance Conference 2019

The Sentinel Surveillance Conference 2019, organised by the Surveillance and Epidemiology Branch of CHP, was held on March 8, 2019. Over 110 partners of various sentinel surveillance systems (including private medical practitioners, representatives from clinics of Chinese Medicine practitioners, child care centres/kindergartens and residential care homes for the elderly) participated in this Conference. Sentinel private medical practitioners were briefed on the enhancement of antimicrobial resistance surveillance in sentinel clinics launched since 2019. Besides, representatives of CHP shared on “Epidemiology of seasonal influenza and estimation of seasonal influenza vaccine effectiveness” and “Updates on infection prevention and control in institutions” in the Conference.



Photos - Over 110 partners of various sentinel surveillance systems (including private medical practitioners (upper left), representatives from clinics of Chinese Medicine practitioners (upper right), child care centres/kindergartens (lower left) and residential care homes for the elderly (lower right)) participated in the Sentinel Surveillance Conference 2019.

Two sporadic cases of listeriosis

CHP recorded two cases of listeriosis in February 2019.

The first case was a 60-year-old woman with underlying illnesses. She had presented with diarrhoea, fever, chills, myalgia and back pain since February 18 and was admitted to a public hospital on February 21. Her blood culture collected on February 21 yielded *Listeria monocytogenes*. She was treated with antibiotics and her condition was stable. She had no travel history and did not recall consumption of high risk food during the incubation period. Her home contacts remained asymptomatic.

The second case was a 64-year-old woman with underlying illnesses. She was admitted to a public hospital for management of her underlying illnesses on January 21. She had developed fever, headache and malaise since February 25. Her blood culture collected on February 25 yielded *Listeria monocytogenes*. She was treated with antibiotics and her condition was stable. She had no travel history and did not recall consumption of high risk food during the incubation period. Her home contacts remained asymptomatic.

A domestic cluster of pertussis

CHP recorded a domestic cluster of pertussis in early-March, affecting a one-month-old boy and his 16-month-old elder sister. The boy had presented with cough with sputum, runny nose and shortness of breath since March 2 and was admitted to a public hospital on March 5. His nasopharyngeal aspirate collected on March 5 was tested positive for *Bordetella pertussis*. His condition was all along stable. He was treated with antibiotics and was discharged on March 9.

Epidemiological investigation revealed that his elder sister had developed cough since March 3 and she was referred by CHP to a public hospital for management. Her pernasal swab collected on March 8 was tested positive for *Bordetella pertussis*. She was treated with antibiotics and did not require hospitalisation. Both parents also reported recent history of cough. Their mother had recovered after receiving symptomatic treatment from a private general practitioner. Their father had been referred to a public hospital for further management. However, three other asymptomatic close contacts refused screening and chemoprophylaxis by CHP.

The two patients had no travel history during the incubation period. The boy was yet to receive the first dose of diphtheria, tetanus, acellular pertussis and inactivated poliovirus vaccine (DTaP-IPV Vaccine), while his elder sister had received three doses of DTaP-IPV Vaccine according to the Hong Kong Childhood Immunisation Programme.

A sporadic case of psittacosis

On March 8, 2019, CHP recorded a sporadic case of psittacosis affecting a 50-year-old man with underlying illness. He had presented with fever, cough with sputum and chest pain since February 26 and was admitted to a public hospital on March 2. His chest X-ray showed right lower zone consolidation. The clinical diagnosis was pneumonia. His sputum collected on March 3 was tested positive for *Chlamydia psittaci* DNA by polymerase chain reaction. He was treated with antibiotics. He remained stable and was discharged on March 7. He had no recent travel history. He did not keep any pets at home and did not recall any contact with birds or bird droppings during the incubation period. His home contacts remained asymptomatic.

CA-MRSA cases in February 2019

In February 2019, CHP recorded a total of 92 cases of community-associated methicillin resistant *Staphylococcus aureus* (CA-MRSA) infection, affecting 55 males and 37 females with ages ranging from 14 months to 87 years (median: 37 years). Among them, there were 75 Chinese, 5 Pakistani, 4 Filipinos, 3 Indian, 2 Caucasian, 1 Vietnamese, and 2 of unknown ethnicity.

Eighty-nine cases presented with uncomplicated skin and soft tissue infections while the remaining three cases had severe CA-MRSA infections. The first severe case was a 65-year-old woman with underlying illnesses. She presented with fever and cough with sputum since January 13. She was admitted to a public hospital on January 20. Her Chest X-ray showed pneumonic changes. Her sputum collected on January 20 was cultured positive for CA-MRSA and the isolate was resistant to mupirocin. The clinical diagnosis was CA-MRSA associated pneumonia. She was treated with antibiotics and had been discharged. The second severe case was a 67-year-old man with underlying illnesses. He presented with shortness of breath, decreased general condition and slurred speech since January 17. He was admitted to a public hospital on January 19. His blood specimen collected on January 19 was cultured positive for CA-MRSA. Despite antibiotics treatment, he developed septic shock, metabolic acidosis and acute kidney injury subsequently. He passed away on January 20. The third severe case was a 51-year-old woman with good past health. She presented with cough since February 12. She developed shortness of breath and was admitted to a private hospital on February 14. Her Chest X-ray showed pneumonic changes. Her sputum collected on February 14 was cultured positive for CA-MRSA. The clinical diagnosis was CA-MRSA associated pneumonia. She was treated with antibiotics and had been discharged.

Apart from the above mupirocin-resistant case, the isolate of one case affecting a 28-year-old man was found to be resistant to mupirocin. The patient presented with right thigh abscess at the end of January. He was treated with antibiotics and surgical drainage. His condition remained stable and no hospitalization was required.

Among the 92 cases, two sporadic cases involved healthcare workers (a nurse and a physiotherapist) who worked in different hospitals and investigation did not reveal any epidemiological linkage. Besides, two household clusters, with each affecting two persons, were identified in February 2019.

Scarlet fever update (February 1, 2019 – February 28, 2019)

Scarlet fever activity continued to decrease in February. CHP recorded 92 cases of scarlet fever in February as compared with 164 cases in January. The cases recorded in February included 51 males and 41 females aged between one and 48 years (median: six years). There were two institutional clusters occurring in a kindergarten and a primary school, affecting three and two children respectively. No fatal cases were reported in February.