

Communicable Diseases

WATCH



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FEATURE IN FOCUS

2019 Year in Review

Reported by Surveillance Division, Communicable Disease Branch, CHP.

In this issue, we reviewed communicable diseases and issues of public health concern in 2019...

Chikungunya fever

Chikungunya fever (CF) has been listed a statutory notifiable disease in Hong Kong since March 6, 2009. Since then, 33 imported cases have been recorded by the Centre for Health Protection (CHP) of the Department of Health (DH) (Figure 1). In 2019, CHP recorded 11 CF cases, as compared with zero to eight cases recorded per year from 2009 to 2018. The 11 cases involved eight males and three females, with ages ranging from eight to 66 years (median: 43 years). The most common presenting symptoms included fever (11, 100.0%), arthralgia (10, 90.9%), headache (6, 54.5%), rash (6, 54.5%) and myalgia (3, 27.3%). Ten patients (90.9%) required hospitalisation; there was no fatality recorded.

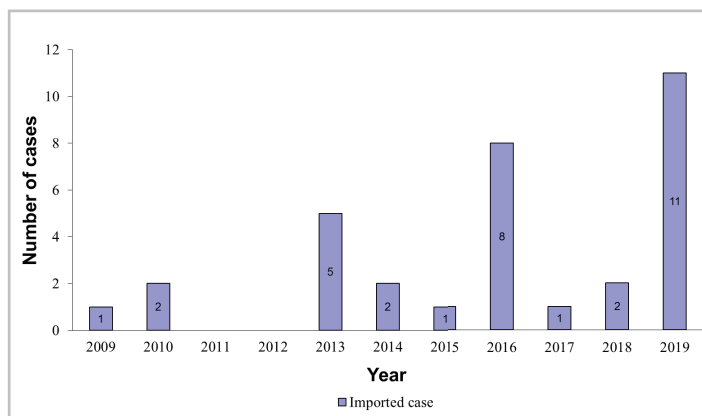


Figure 1 - Annual number of chikungunya fever cases, 2009 to 2019.

All 11 CF cases were classified as imported infections comprising seven from Thailand, three from Myanmar and one from India. Among the 11 cases, there was a cluster of four epidemiologically-linked cases affecting a family with history of travel to Thailand while the remaining seven cases were sporadic cases.

Creutzfeldt-Jakob disease

In 2019, CHP recorded 14 cases of Creutzfeldt-Jakob disease (CJD), affecting four males and 10 females, with ages ranging from 51 to 90 years. Among them, seven (50%) were possible and the other seven (50%) were probable cases according to the World Health Organization classification. No familial, iatrogenic or variant CJD cases were recorded in 2019. Three patients had passed away (as of January 28, 2020), and CJD was the underlying cause of death for these patients. Among these fatal cases attributable to CJD, the duration from symptom onset to death ranged from 106 days to 202 days (median: 189 days). All of the cases did not have history of travel to the United Kingdom. They had no family history of CJD, nor any known history of neurosurgery, corneal transplantation or injection of growth hormone.

Dengue Fever

CHP recorded a record high number of 198 dengue fever (DF) cases (197 imported cases and one local case) in 2019, as compared with 163 cases (134 imported and 29 local cases) in 2018 (Figure 2). Higher numbers of DF were also recorded in our neighbouring countries/areas in 2019, including Guangdong, Malaysia, the Philippines, Singapore, Thailand and Vietnam. The 198 cases involved 100 males and 98 females, with age ranging from three to 83 years (median: 38 years). The most common presenting symptoms included fever (194, 98.0%), headache (122, 61.6%), myalgia (120, 60.6%), rash (98, 49.5%), arthralgia (78, 39.4%) and eye pain (39, 19.7%). Among them, 159 patients (80.3%) required hospitalisation. No severe dengue or fatal case was recorded.

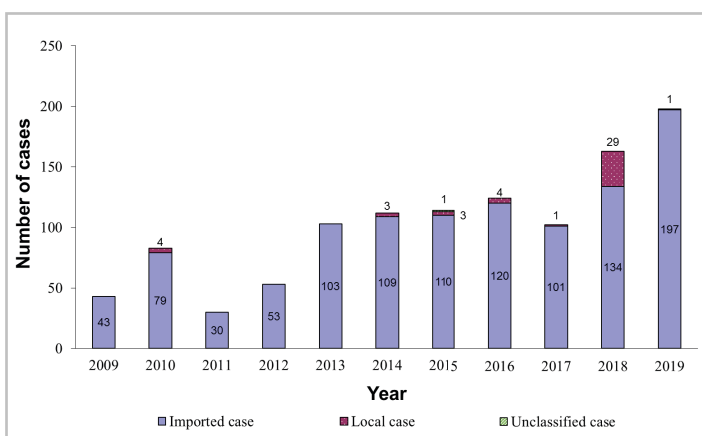


Figure 2 - Annual number of dengue fever cases, 2009 to 2019.

Of the 197 imported cases, 190 of them had travelled to: Thailand (34), Malaysia (27), the Philippines (25), Cambodia (21), Indonesia (19), India (15), Mainland China (9), Vietnam (8), Sri Lanka (7), Maldives (6), Myanmar (6), Nepal (4), Singapore (4), Fiji (2), Bangladesh (1), French Polynesia (1) and Taiwan (1).

As for the other seven imported cases, the places of infection remained undetermined as the patients had travelled to multiple countries during the incubation period.

One local DF case was recorded in November 2019 affecting a 35-year-old man who lived in Tai Po; he worked in Siu Sau Tsuen (小秀村) in Tuen Mun as well as the Hong Kong Police College in Wong Chuk Hang. No other epidemiologically-linked case was identified.

Hand, foot and mouth disease

In Hong Kong, the summer peak season of hand, foot and mouth disease (HFMD) in 2019 lasted longer than usual. The HFMD activity remained at high levels since the summer peak starting in May and only returned to baseline in late December.

In 2019, CHP recorded a total of 675 HFMD/herpangina institutional outbreaks as compared with 420 and 444 in 2017 and 2018 respectively. Among them, 449 (66.5%) occurred in kindergartens/child care centres (KG/CCC), 160 (23.7%) in primary schools, 46 (6.8%) in secondary schools and 20 (3.0%) in other institutions such as special schools, university halls and hospitals, etc. A total of 3 884 persons were affected with a range of two to 44 (median: four) persons affected in each outbreak. The causative agents were identified in 128 (19.0%) outbreaks, including coxsackievirus A6 (36, 28.1%), coxsackievirus A4 (7, 5.5%), coxsackievirus A10 (3, 2.3%), coxsackievirus A16 (3, 2.3%), coxsackievirus A5 (1, 0.8%), enterovirus 71 (EV71) (1, 0.8%) and other enteroviruses (77, 60.2%).

A total of six cases of EV71 infection were recorded in 2019 as compared with 49 and 62 cases in 2017 and 2018 respectively. The six cases involved three males and three females with age ranging from 15 months to 50 years (median: 4.5 years). Two cases developed complications with encephalitis (one case) and meningitis (one case). No fatal case due to EV71 infection was recorded in 2019.

There were eight cases of severe enterovirus infections (SE) other than EV71 and poliovirus recorded in 2019 involving four males and four females, with age ranging from 19 days to 10 years (median: two months). The complications of the SE cases included meningitis (six cases), meningoencephalitis (one case), and meningoencephalitis and septic shock (one case). No fatal case due to SE was recorded in 2019.

Invasive pneumococcal disease

In 2019, CHP recorded 187 cases of invasive pneumococcal disease (IPD), which was comparable to the case recorded from 2016 to 2018 (186 to 189). The overall incidence of IPD in 2019 was 2.5 per 100 000 population, which was within the range of 1.7 to 2.9 per 100 000 population recorded under CHP's laboratory surveillance and statutory notification systems¹ from 2007 to 2018 (Figure 3).

Among the IPD cases recorded in 2019, 46 were paediatric cases (<18 years) while 141 were adult cases (≥18 years). Two of these 46 paediatric cases (4%) were fatal, as compared with three deaths out of 50 paediatric cases (6.0%) in 2018. The incidence in 2019 was highest in children aged two to four years (13.6 per 100 000 population), followed by elderly aged 65 years or above (5.6 per 100 000 population) and children aged less than two years (4.0 per 100 000 population). The most common serotype was serotype 3 (45.9%), followed by serotypes 19A (5.9%) and 14 (4.8%).

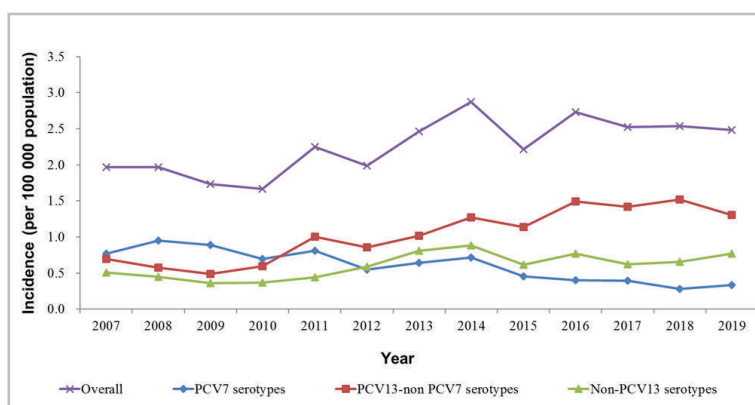


Figure 3 - Overall incidence of IPD by serotype groups in Hong Kong, 2007 to 2019.

Although the overall IPD incidence in recent years remained relatively stable, the contribution by different serotypes varied. The common serotypes covered by the 7-valent, 10-valent and 13-valent pneumococcal conjugate vaccines (PCV) (i.e. 4, 6B, 9V, 14, 18C, 19F and 23F) contributed to 39-51% of IPD cases annually in 2007-2009, and this proportion reduced to less than 20% in 2016-2019. On the other hand, IPD cases caused by serotypes covered by the 13-valent PCV but not the 7-valent PCV7 (i.e. 1, 3, 5, 6A, 7F and 19A) increased from less than 35% in 2007-2009, to around 50% in 2016-2019. Eighty-six IPD cases (46%) recorded in 2019 were caused by serotype 3 which is included in the 13-valent PCV. Serotypes not covered in all PCVs remained relatively stable over the years.

Leptospirosis

In 2019, CHP recorded a total of four cases of leptospirosis, affecting four males, with ages ranging from 45 to 67 years. Two of the cases were classified as locally acquired infection, while one case was an imported case with travel history in Thailand during the incubation period. The place of infection of the remaining case could not be determined as travel history and exposure history were not available. One of the local cases and the imported case recalled recreational activities with high risk of exposure to *Leptospira* (such as wild swimming and stream walking) during the incubation period. Rodents were observed in the vicinity of the workplace in the other local case who was a deliveryman. No fatalities were recorded in 2019.

¹IPD was listed as a notifiable infectious disease under the Prevention and Control of Disease Ordinance (Cap 599) in 2015.

Measles

Against a background of worldwide resurgence of measles especially in neighbouring countries such as the Philippines, there was a marked increase in measles cases in Hong Kong during the year 2019. A total of 91 confirmed measles cases were recorded locally, exceeding the annual number of cases recorded during 2008 to 2018 (four to 68 cases per year) (Figure 4). More than half of these cases (50 cases, 55%) were involved in outbreaks/clusters. Thirty-three cases were related to an outbreak occurring in the Hong Kong International Airport (HKIA), while seven cases were involved in another outbreak at a local retail shop. Separately, there were eight cases involved in four household clusters (each affecting two persons), and another cluster involved two Customs Officers at the Lo Wu Border Control Point (BCP). As for the remaining 41 cases, all were sporadic infections without obvious epidemiological linkage, most of them (31 cases, 76%) had history of travel to other places during the incubation period and were classified as imported cases.

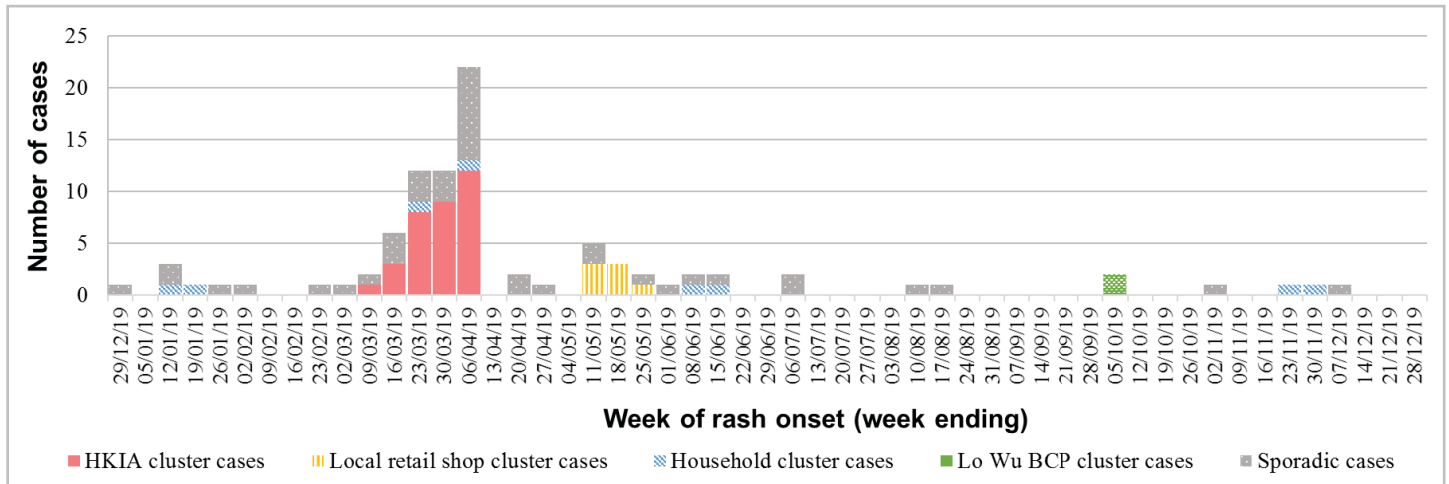


Figure 4 - Epidemic curve of 91 measles cases reported in Hong Kong, 2019.

Regarding the clinical presentation, 53 (58%) and 38 (42%) cases were typical measles and modified measles respectively. Their ages ranged from eight months to 58 years (median: 30 years), majority were adults (83 cases, 91%) and Hong Kong residents (87 cases, 96%). Of note, 36 (40%) cases were aged from 18 to 29 years and almost half (16 cases, 44%) had documented receipt of two or more doses of measles-containing vaccine (MCV). Six cases were foreign domestic helpers working in Hong Kong with history of travel to the Philippines during the incubation period.

As a public health strategy to further prevent and control measles, DH launched free mop up programmes for specific target groups including healthcare workers, airport staff, foreign domestic helpers and non-immune adults, with the aim of boosting the community's herd immunity against measles. Details are available from the following webpages of CHP:

<https://www.chp.gov.hk/en/features/101938.html> and <https://www.chp.gov.hk/en/features/102004.html>.

Rubella and Congenital Rubella Syndrome

CHP recorded 48 cases of rubella in 2019, as compared with zero to 14 cases per year between 2014 and 2018 (Figure 5). All but one case were laboratory confirmed. The increase in 2019 coincided with the local measles outbreak occurring from March to June 2019. The upsurge was partly attributed to the increased awareness and testing for patients presented with fever and rash during that period.

Among the 48 cases, 20 (42%) cases were classified as imported cases and one was classified as an import-related case. The places of infection included Mainland China (14), Macao SAR (1), Taiwan (1), Australia (1), Japan (1), Korea (1) and multiple destinations (1). The remaining 27 cases were sporadic infections without any epidemiological linkage to any imported case. There were two household clusters recorded, each affecting two siblings in a family.

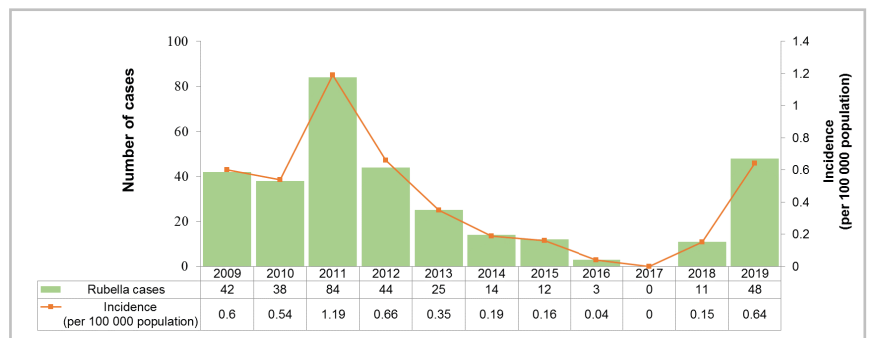


Figure 5 - Number and incidence of rubella cases reported in Hong Kong, 2009 to 2019.

More males (36, 75%) were affected. None of the female cases were pregnant. Forty-five cases affected adults (ages ranging from 18 to 65 years) while the remaining three cases affected children (ages ranging from four to 11 years). Of the 45 adult cases (23, 51% born locally), majority of them were uncertain about their vaccination status (42, 93%), while two had no history of rubella vaccination and one had received two doses of rubella vaccines. Of the three paediatric cases, two were local-born children who had received at least one dose of rubella-containing vaccine and the remaining case was an unvaccinated boy born in Mainland China.

CHP recorded one laboratory-confirmed case of congenital rubella syndrome in 2019, which was the only case recorded in the past seven years. The patient was a three-day old female neonate with severe intrauterine growth retardation, born preterm at 30 weeks of gestation in Hong Kong. She was found to have thrombocytopenia, patent ductus arteriosus and congenital glaucoma. Her mother was born in Mainland China with uncertain rubella vaccination history. She received antenatal check-ups

in both Hong Kong and Mainland China for this third pregnancy, with antenatal blood taken at 12 weeks of gestation positive for rubella virus IgG. She was asymptomatic during the antenatal period and did not have contact with known rubella cases. Upon diagnosis of the neonate, the mother's blood specimen taken at 12 weeks of gestation was retrieved and was tested indeterminate for rubella virus IgM. She lived in both Mainland China and Hong Kong during the course of pregnancy. The place of infection of this case could not be ascertained.

Scarlet fever

In 2019, CHP recorded a total of 1 602 cases of scarlet fever (SF), compared with a range of about 1 100 and 2 098 cases per year between 2012 and 2018. The epidemiological characteristics were similar to those reported in previous years with higher SF activity in winter (Figure 6). Their ages ranged from five months to 64 years (median: six years) with the majority (93%) affected children aged 10 years or below. The male-to-female ratio was 1.3:1. Five hundred and two cases (31%) required hospitalisation. Two cases developed severe complications. One severe case affected a 16-year-old boy who had scarlet fever complicated with toxic shock syndrome and recovered later. Another severe case involved a nine-year-old boy who had scarlet fever complicated with group A streptococcal pneumonia, septic shock and toxic shock syndrome and passed away subsequently. Most cases (92%) were sporadic infection while 122 cases were involved in a total of 51 clusters. These included 34 school/institutional clusters (23 KG/CCC, nine primary schools, one special school and one residential child care centre) and 17 home clusters. The number of persons affected in each cluster ranged from two to seven persons (median: two persons).

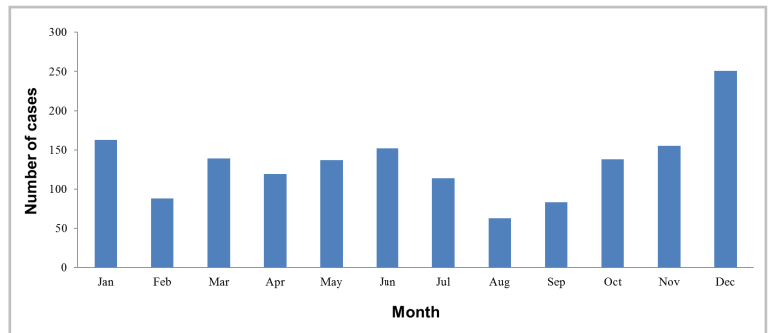


Figure 6 - Monthly number of scarlet fever cases recorded in 2019.

Seasonal influenza

The 2018/19 winter influenza season in Hong Kong started in the first week of 2019 and ended in early April. The local influenza activity then remained at a low level until late December. There was no summer influenza season in Hong Kong in 2019.

The 2018/19 winter influenza season lasted for about 14 weeks, which was largely similar to that in the 2017/18 winter season (about 12 weeks). The predominating viruses were influenza A(H1), which constituted 75% of the positive influenza detections in the Public Health Laboratory Services Branch of CHP of DH.

Young children were most affected in the 2018/19 winter influenza season, as reflected by the large number of institutional influenza-like illness (ILI) outbreaks in KG/CCC and the high influenza-associated hospitalisation rate among young children. Among the institutional ILI outbreaks recorded by CHP, 61% occurred in KG/CCC and 21% occurred in primary schools. The weekly influenza-associated hospitalisation rates in public hospitals were highest in young children aged below six years with a peak rate of 11.06 per 10 000 population, followed by elderly aged 65 years or above (3.09). The peak rate among children in young children aged below six years had exceeded those recorded in the major seasons during 2015 to 2018. Besides, the peak rates of adult patients aged 50-64 years (1.05) and 18-49 years (0.56) were also the highest when compared with the corresponding rates in previous seasons (0.38 to 0.87 and 0.16 to 0.36 respectively).

In this season, CHP totally recorded 601 cases of intensive care unit admissions or deaths with laboratory confirmation of influenza among adult patients, including 356 deaths. Their ages ranged from 18 to 109 years (median: 71 years). About 26% affected persons aged 50-64 years, which was higher than 15% in the 2017 summer season predominated by influenza A(H3) and 20% in the 2017/18 winter season predominated by influenza B. Of note, the cumulative incidences of severe cases among persons aged 18-49 years and 50-64 years were 18.50 and 85.05 per million population respectively, which were higher than the corresponding rates recorded during the major influenza seasons from 2015-2018 (6.15 to 17.08 and 37.37 to 75.51 respectively). Similar to previous seasons, most of the deaths (87%) affected elderly aged 65 years or above. Most of the severe cases (78%) had pre-existing chronic medical diseases.

For paediatric patients aged below 18 years, 41 cases (including two deaths) of influenza-associated severe complication/death were recorded in the whole year of 2019, as compared with 27 and 31 in 2017 and 2018 respectively. Twenty-four cases were reported during the winter influenza season. Among the 41 paediatric cases, 12 cases (29%) had pre-existing chronic diseases. Twenty-five out of 36 cases (69%) aged 6 months or above did not ever receive the seasonal influenza vaccine for the respective season.