

Communicable Diseases

WATCH



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FEATURE IN FOCUS

Updated Situation of Seasonal Influenza

Reported by Ms Vera CHOW, Scientific Officer, Respiratory Disease Office, Surveillance and Epidemiology Branch, CHP.

Overview

The 2018/19 winter influenza season has already started in Hong Kong and most areas in the northern hemisphere. Influenza activity has continued to increase or remained elevated worldwide. Locally, the influenza activity has continued to increase rapidly in the past few weeks. The predominating virus in this season is influenza A(H1). Young children aged below six years were particularly affected, as reflected by the large number of influenza-like illness (ILI) outbreaks in kindergartens/child care centres (KG/CCC) and high influenza-associated admission rate in public hospitals among children aged below six years.

Local seasonal influenza activity

Laboratory surveillance

The weekly percentage tested positive for seasonal influenza viruses among respiratory specimens received by the Public Health Laboratory Services Branch (PHLSB) of the Centre for Health Protection (CHP) of the Department of Health has increased steadily since mid-November 2018 and rose to 14.46% in the last week of December, which exceeded the baseline threshold (Figure 1). The weekly influenza positive percentage has further increased to 24.97% last week (January 6 to 12). In typical winter seasons in the past few years, the positive percentage had reached a peak level around 25% to 40%.

Influenza A(H1) virus has predominated in this season (Figure 2). Among the influenza viruses detected in the past two weeks (December 30 to January 12), the majority were influenza A(H1) (84.7%), followed by influenza A(H3) (14.1%). The activity of influenza B has remained low. Locally, the last season with significant circulation of influenza A(H1) was the 2015/16 winter season in which influenza A(H1) accounted for about 49% of the positive influenza detections. The activity of influenza A(H1) had remained low throughout 2017 and 2018. Of note, past epidemiological data showed that children and adults aged 50 to 64 years were relatively more affected in seasons predominated by influenza A(H1).

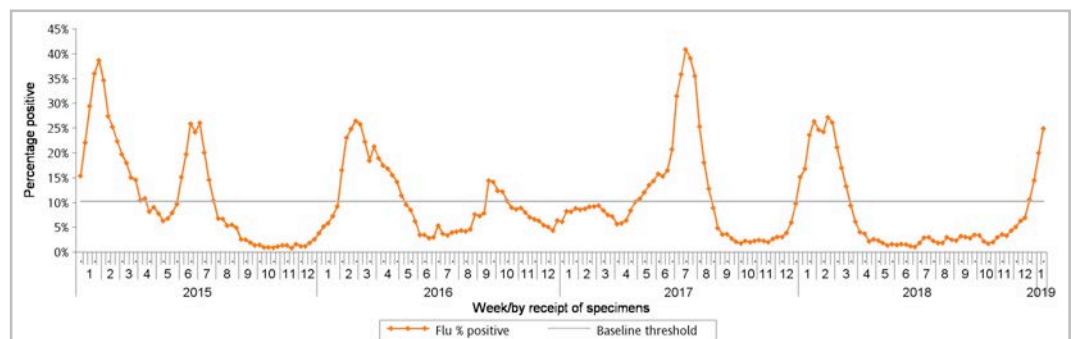


Figure 1 - Percentage of respiratory specimens tested positive for influenza viruses, 2015-2019.

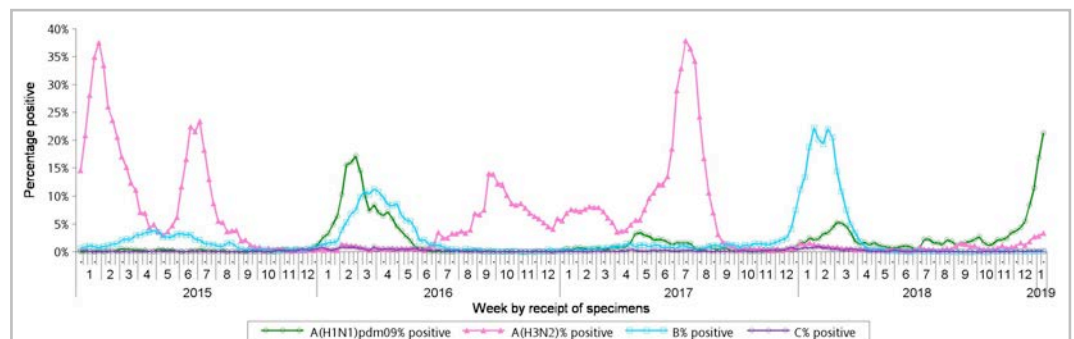


Figure 2 - Percentage of respiratory specimens tested positive for influenza virus subtypes, 2015-2019.

Antigenic characterisation by PHLSB showed that the circulating influenza viruses in Hong Kong, mainly influenza A (H1) and (H3), were antigenically similar to the components of the northern hemisphere seasonal influenza vaccine (SIV) used in the 2018-19 season in Hong Kong. Overseas health authorities also reported that the circulating viruses including influenza A(H1) and influenza (H3) remained antigenically similar to the SIV components.

ILI outbreaks in schools and institutions

The weekly number of institutional ILI outbreaks reported to CHP increased sharply in the second week of January, from six outbreaks in the first week to 121 outbreaks in the second week (Figure 3). In the first four days of this week (January 13 to 16), 124 ILI outbreaks have already been recorded. The 251 outbreaks recorded from December 30 to January 16 occurred in KG/CCC (70%), primary schools (16%), secondary schools (3%), residential care homes for the elderly (RCHE) (4%), residential care homes for persons with disabilities (2%) and other institutions (6%). This is in contrast to the pattern observed in the 2017 summer season predominated by influenza (H3) in which most outbreaks (51%) occurred in RCHE.

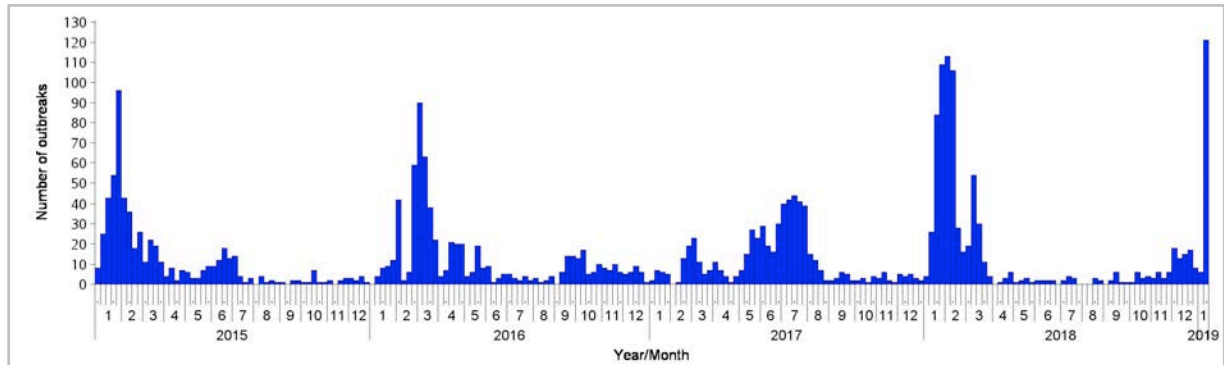


Figure 3 - Weekly number of institutional ILI outbreaks reported to CHP, 2015-2019.

For the assessment of ILI outbreaks by the Moving Epidemic Method (MEM), the number in KG/CCC last week has reached the **very high** intensity level while that in primary schools and RCHE was still at the medium and low intensity level respectively (Figure 4).

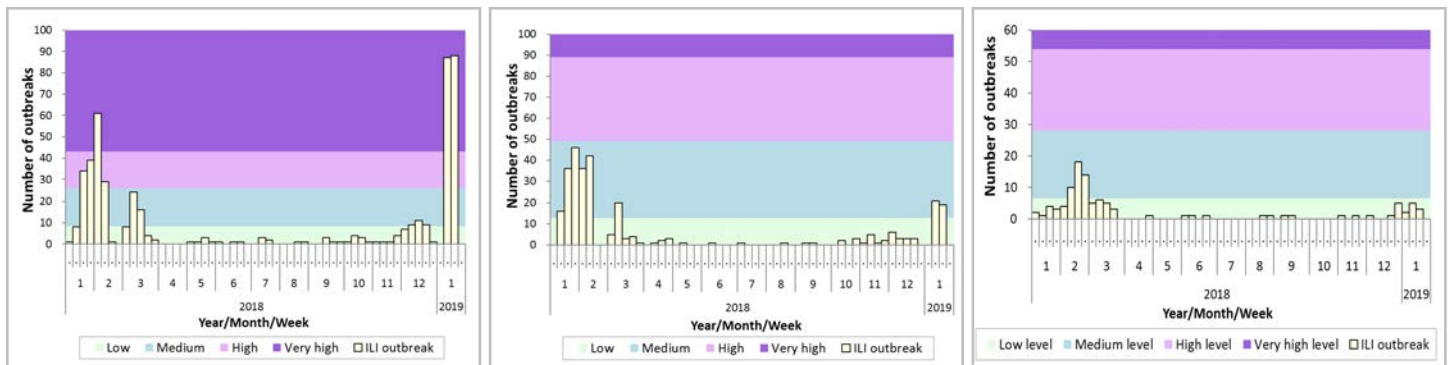


Figure 4 - Weekly number of ILI outbreaks in KG/CCC (left), primary schools (middle) and RCHE (right).

From 2019, CHP has piloted to use intensity levels established by Moving Epidemic Method (MEM) for two influenza surveillance parameters in Hong Kong: (i) weekly number of ILI outbreaks (reflecting the transmissibility of seasonal influenza in the community); and (ii) weekly influenza-associated admission rate in public hospitals (reflecting the clinical severity of season influenza). Three intensity thresholds, namely medium, high and very high, were calculated using MEM for each of the above surveillance parameters based on the corresponding historical data for objective comparisons of the current data with the historical data.

MEM is an internationally adopted mathematical method for establishing epidemic and intensity thresholds to monitor the impact and severity of seasonal influenza epidemics. It is promulgated by the World Health Organization (WHO) and the European Centre for Disease Prevention and Control, and has been used in overseas countries such as the United States, Europe (e.g. United Kingdom, Ireland), Australia and New Zealand.

References

Vega T, Lozano JE, Meerhoff T, et al. Influenza surveillance in Europe: comparing intensity levels calculated using the moving epidemic method. *Influenza Other Respi Viruses*. 2015;9(5):234-46.

Influenza-associated hospital admission rates in public hospitals

The overall admission rate with principal diagnosis of influenza in public hospitals increased sharply in the past few weeks from 0.54 admitted cases per 10 000 population in the week ending December 29, 2018 to 1.19 last week (Figure 5). The admission rate was highest among children aged below six years (9.23 admitted cases per 10 000 population last week), which has already exceeded the highest weekly rate recorded in the past four years (Figure 6 and Table 1). The rate among elderly aged 65 years or above and children aged 6-11 years was 1.89 and 1.84 per 10 000 population respectively last week.

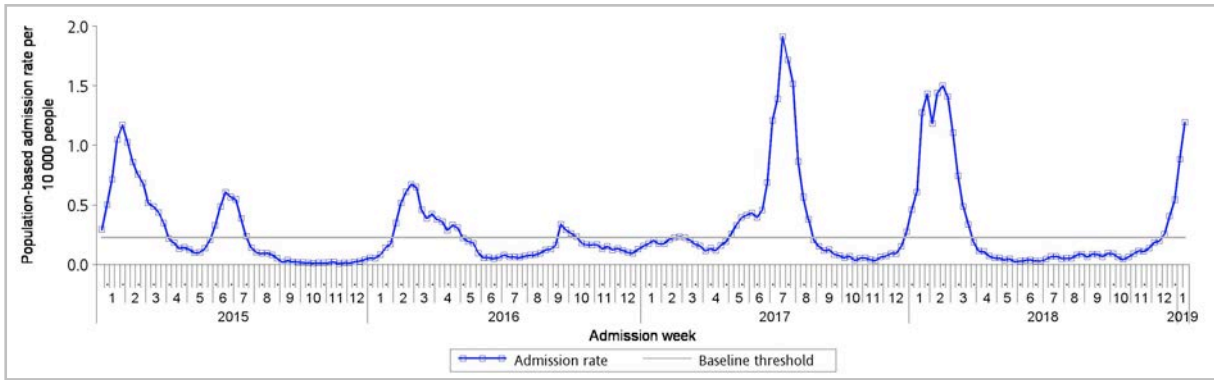


Figure 5 - Weekly admission rates with principal diagnosis of influenza in public hospitals, 2015-2019.

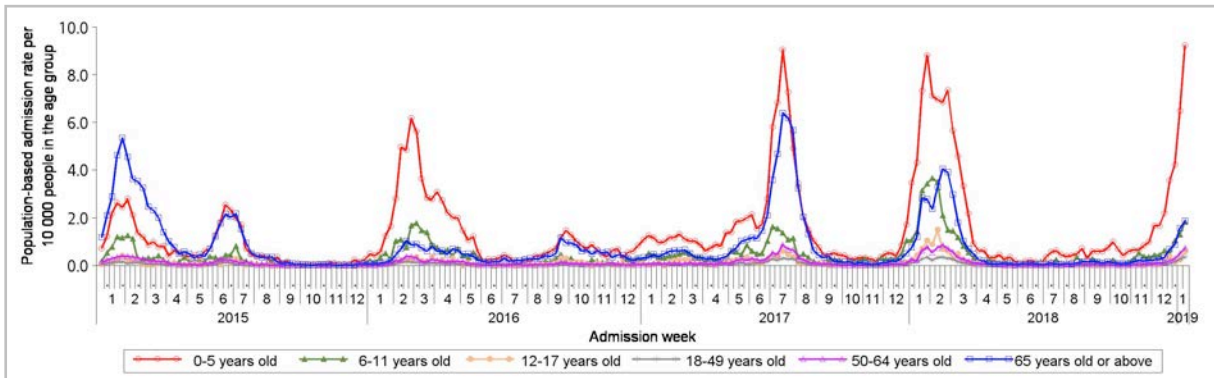


Figure 6 - Weekly admission rates with principal diagnosis of influenza in public hospitals by age groups, 2015-2019.

Table 1 - Highest weekly admission rate with principal diagnosis of influenza in public hospitals (per 10 000 population) in major influenza seasons, 2015-2019.

Influenza season	0 to 5 years	6 to 11 years	50 to 64 years	65 years or above
Current season (data of the week ending January 12)	9.23	1.84	0.74	1.89
2017/18 winter season	8.82	3.66	0.86	4.03
2017 summer season	9.07	1.63	0.88	6.40
2015/16 winter season	6.18	1.79	0.38	1.04
2014/15 winter season	2.78	1.26	0.39	5.34

For the assessment of influenza-associated admission rates by MEM, the rate among young children 0-5 years last week has reached the **high** intensity level while those among children 6-11 years and elderly ≥65 years were still at the medium level (Figure 7).

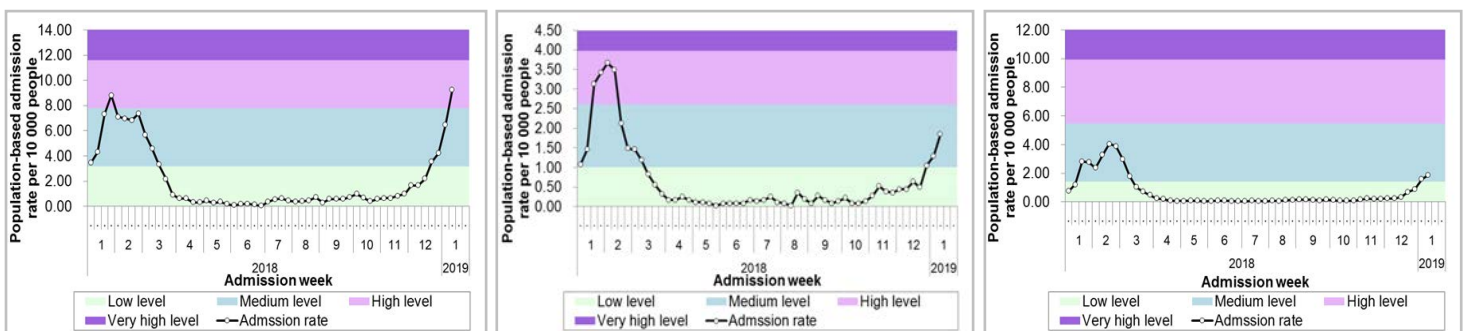


Figure 7 - Weekly influenza-associated admission rates by age group of 0-5 years (left), 6-11 years (middle) and 65 years or above (right).

Severe influenza cases

CHP has collaborated with the Hospital Authority and private hospitals to monitor intensive care unit (ICU) admissions and deaths with laboratory confirmation of influenza among adult patients as routine surveillance. For surveillance purpose, the cases refer to laboratory-confirmed influenza patients who required ICU admission or died within the same admission of influenza infection. It should be noted that their causes of ICU admission or death may be due to other acute medical conditions (e.g. stroke, acute myocardial infarction, etc.) or underlying diseases (exacerbation of chronic obstructive airway disease, renal failure, malignancy, etc.).

Since the start of the winter influenza season in the first week of January, a total of 113 adult cases of ICU admissions or deaths with laboratory confirmation of influenza (including 46 deaths) were recorded (as of January 16). Most of them contracted infection of influenza A(H1N1) virus (88), followed by influenza A(H3N2) (17) and influenza A (pending subtype) (8). In particular, 36% of the adult severe cases affected persons aged 50-64 years, which was higher than that recorded in season predominated by influenza A(H3N2) (e.g. 10% and 15% in the 2014/15 winter season and 2017 summer season respectively) and influenza B (e.g. 20% in the 2017/18 winter season). Nonetheless, most of the deaths (87%) still affected elderly aged 65 years or above. Among all the adult severe cases recorded in the current season, 79 (70.5%) had underlying medical diseases. For cases with vaccination history information, only 14% were known to have received the SIV for this season.

Separately, nine paediatric cases of influenza-associated severe complication among persons aged below 18 years have been recorded in 2019, involving six boys and three girls with ages ranging from 11 months to eight years (median: six years). Five cases had influenza A(H1N1) infection, one had influenza A(H3N2) and three had influenza A (pending subtype). Eight of them enjoyed good past health. Their complications included encephalopathy (4), severe pneumonia (2), encephalitis (1), and meningoencephalitis (1). Another case of severe pneumonia had concomitant invasive pneumococcal disease. Six patients (67%) did not receive the SIV for this season.

Overseas situation of seasonal influenza

According to the latest update by WHO, influenza activity continued to increase slowly in the temperate zone of the northern hemisphere. Worldwide, seasonal influenza A viruses accounted for the majority of detections.

North America

The 2018/19 winter influenza season in Canada started in late October last year, which was earlier than in recent years. The laboratory detections declined in the first week of January suggesting that nationally the influenza season may have reached peak levels in the last week of December. However, the overall influenza activity remained high in Canada. The majority of influenza detections and hospitalisations have been among individuals under the age of 65. In the United States, the influenza season started in the week ending December 15, 2018. Influenza A(H1N1)pdm09 virus has predominated in Canada and most areas of the United States.

Europe

Influenza activity in Europe has started to increase in late December with co-circulation of both influenza A(H1N1)pdm09 and A(H3N2). Most of the hospitalised laboratory confirmed influenza infections were associated with influenza A(H1N1)pdm09 and were in persons aged 15-64 years. In the United Kingdom, influenza activity has increased steadily since December and activity indicators have breached the baseline threshold levels in the first week of January. The most frequently identified influenza subtype was influenza A(H1N1)pdm09.

Neighbouring areas

The 2018/19 winter influenza season in Korea and Japan has started in early November and mid-December respectively. The predominating viruses were influenza A(H1N1)pdm09. In Mainland China, influenza activity increased in both southern and northern provinces in last two weeks of December, signaling the arrival of the influenza season. The proportion of ILI cases in emergency and outpatient departments reported by sentinel hospitals continued to rise to about 5% in the first week of January. Majority of influenza detections were influenza A(H1N1)pdm09 virus, followed by influenza A(H3N2) virus.

In Macao and Taiwan, the influenza seasons arrived in the first week of 2019. The proportions of ILI cases in emergency departments in Macao among both adults and children increased to 42 and 135 per 1 000 consultations in last week of December respectively. Among the respiratory specimens tested positive for influenza, influenza A(H1N1) and influenza A(H3N2) constituted about 81% and 19% respectively. In Taiwan, the proportions of ILI cases in emergency departments increased to a level higher than the seasonal threshold in the first week of January. Both influenza A(H1N1) and influenza A(H3N2) viruses have co-circulated in equal proportion in the community in the recent few weeks.

Summary

Hong Kong currently experiences the winter influenza season with high influenza activity. The predominating virus has been influenza A(H1N1). Surveillance data in the past few years revealed that it took about four to six weeks to reach the peak in major influenza seasons. As such, it is anticipated that the local seasonal influenza activity may further increase in the coming few weeks and will remain elevated for some time. During the influenza season, the public should observe strict personal, hand and environmental hygiene. All persons aged six months or above except those with known contraindications are urged to receive SIV for personal protection as early as possible, particularly children, persons aged 50-64 years, the elderly and chronic disease patients. They should also promptly seek medical advice if influenza-like symptoms develop so that appropriate treatment can be initiated as early as possible to prevent potential complications. Parents and carers are reminded to render assistance in prevention, care and control for vulnerable people.

Fight AMR – Together we can

Reported by Ms FUNG Ching-shan, Registered Nurse, and Ms LAU Siu-in, Registered Nurse, Infection Control Branch, CHP.

Antimicrobial Resistance (AMR) is posing increasing threats to global public health, leading to prolonged illness and hospital stays, the use of more aggressive treatment, increased deaths, loss of productivity, and increased healthcare and social costs. The World Health Organization (WHO) warned in 2015 that the world was on the edge of a post-antibiotic era and the time had come for decisive action. In Hong Kong, different sectors have been implementing control measures with a common view to contain its spread.

In a 2016/17 General public's knowledge, attitude and practice survey on AMR (KAP Survey), half of the respondents considered themselves incapable of stopping the AMR problem¹. In fact, fighting AMR is not rocket science. Everyone can help prevent antibiotic resistance by making small changes in our daily life.

Maintain personal hygiene

Practice hand hygiene and maintain cough etiquette is what we can all practice to prevent illness, infections and AMR. It helps stop germs from spreading in the community. Clean your hands with water and soap before eating and taking medicine, and after using the toilet. Alcohol-based handrub (70% to 80% alcohol content) is an effective alternative if hands are not visibly soiled. Always cover your nose and mouth when sneezing or coughing. Wear a mask if you have respiratory symptoms.



Teach your kids to keep hands clean.



Always clean your hands after sneezing or coughing.



Wear a mask if you have respiratory symptoms.

Keep vaccination up-to-date

WHO emphasised that vaccination is a key element in preventing infections, alongside with other factors such as improved sanitation and infection control. Pneumococcal vaccine has been shown by studies to be effective in reducing overall antibiotic prescription². Another vaccine in focus is flu vaccine. The role of seasonal flu vaccination in fighting AMR is two-fold. It is not uncommon for people with flu symptoms to take antibiotics unnecessarily. According to the KAP survey, 54% of respondents had the mistaken belief that cold and flu were treatable by antibiotics. Flu vaccination can therefore not only prevent the inappropriate primary use of antibiotics but also their use for secondary bacterial infections, which translates into fewer opportunities for resistance to occur.



Get your flu jab annually.

Use antibiotics wisely

Do not use antibiotics when it is not needed. Antibiotics do not work for viral infections, like colds and flu. Only use antibiotics when prescribed by a qualified health professional, and never get antibiotics without a prescription from pharmacies. Adhere to doctors' instructions. Do not stop taking antibiotics by yourselves even if you are feeling better.



Never get antibiotics from pharmacies without a prescription.

References

¹Centre for Health Protection, Department of Health, Hong Kong SAR Government. General Public's Knowledge, Attitude and Practice Survey on Antimicrobial Resistance 2016/17. 2017.

²Fleming-Dutra K.E. Prevalence of inappropriate antibiotic prescriptions among US ambulatory care visits, 2010–2011. JAMA. 2016;315(17):1864–1873.

NEWS IN BRIEF

A local sporadic case of leptospirosis

On December 29, 2018, the Centre for Health Protection (CHP) recorded a local sporadic case of leptospirosis affecting a 49-year-old man with good past health history. He presented with fever, headache, diarrhoea, shortness of breath, myalgia and arthralgia on December 9 and was admitted to a public hospital on December 14. Blood tests showed thrombocytopenia, renal and liver impairment. He developed respiratory failure and was transferred to intensive care unit. His condition improved with antibiotics and he was subsequently discharged on December 22. His paired sera collected on December 17 and December 20 showed a four-fold increase in antibody titre against *Leptospira* by Microscopic Agglutination Test (MAT). He had an abrasion wound at his right hand but he denied any direct contact with rodents or stray animals. The patient did not keep any pets at home. He noticed rodents at the vicinity of his workplace in Yuen Long, and rodents and stray dogs in a village in Tai Wai where he frequently visited. He had no travel history during the incubation period. His family members and colleagues remained asymptomatic. Investigations are on-going.

Two sporadic cases of listeriosis

CHP recorded two sporadic cases of listeriosis in early January 2019. The first case was an 81-year-old woman with underlying illnesses. She presented with fever, chills, vomiting, diarrhoea and abdominal pain on January 2. She was admitted to a public hospital on the same day. Her peritoneal fluid collected for culture on January 2 yielded *Listeria monocytogenes*. She was treated with antibiotics and her current condition was stable.

The second case was an 87-year-old man with underlying illnesses. He presented with fever, chills and generalised weakness on January 1. He was admitted to a public hospital on January 7. His blood specimen collected on January 7 grew *Listeria monocytogenes*. He was treated with antibiotics and his current condition was stable.

Both cases did not recall consuming high-risk food during the incubation period. They had no travel history during the incubation period and their household contacts remained asymptomatic. So far, no epidemiological linkage has been identified among the two cases.

CA-MRSA cases in December 2018

In December 2018, CHP recorded a total of 72 cases of community-associated methicillin resistant *Staphylococcus aureus* (CA-MRSA) infection, affecting 45 males and 27 females with ages ranging from two months to 87 years (median: 38 years). Among them, there were 51 Chinese, 7 Filipinos, 3 Nepalese, 1 African, 1 Indian, 1 Indonesian, 1 Pakistani, and 7 of unknown ethnicity. All cases presented with uncomplicated skin and soft tissue infections.

Besides, one household cluster, affecting two persons, was identified. No cases involving healthcare worker were reported in December.

(Note: One case involving healthcare worker in a private hospital was reported in November 2018. Investigation did not reveal any epidemiologically linked cases.)

Scarlet fever update (December 1, 2018 – December 31, 2018)

Scarlet fever activity remained elevated in December. CHP recorded 190 cases of scarlet fever in December as compared with 205 cases in November. The cases recorded in December included 108 males and 82 females aged between 16 days and 31 years (median: six years). There were five institutional clusters and all occurring in kindergartens/child care centres, affecting 11 children in total. In view of the elevated scarlet fever activity, parents have to take extra care of their children in maintaining strict personal, hand and environmental hygiene. Scarlet fever can be effectively treated with antibiotics. People presenting with symptoms of scarlet fever (such as fever, sore throat and skin rash) should consult a doctor promptly for early diagnosis and treatment. Besides, children suffering from scarlet fever should refrain from attending school or child care setting until fever has subsided and they have been treated with antibiotics for at least 24 hours.