
Communicable Diseases Watch

Communicable Diseases Watch (CDW) is an online bi-weekly on communicable diseases published by the Centre for Health Protection (CHP). The publication aims at providing healthcare professionals with up-to-date infectious disease news and knowledge relevant to Hong Kong. It is also an indication of CHP's commitment to responsive risk communication in addressing the growing community interest on infectious diseases.

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Communicable Diseases Watch

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Communicable Diseases

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FEATURE IN FOCUS

Updates on Pneumonia Cases in Wuhan Associated with Novel Coronavirus

Reported by Dr Joanna LEUNG, Senior Medical and Health Officer and Dr Shirley TSANG, Scientific Officer, Respiratory Disease Section, Surveillance Division, Communicable Disease Branch, CHP.

A cluster of pneumonia cases in Wuhan of Hubei Province (湖北省武漢市) was reported by the Wuhan Municipal Health Commission on December 31, 2019. Initial information revealed that the cluster of pneumonia cases was linked to a seafood market named "Hua Nan Seafood Market" [華南海鮮城 (華南海鮮市場)] ("the market") in Wuhan¹. The Wuhan Municipal Health Commission has carried out active case finding and retrospective investigations in medical facilities in Wuhan. The concerned market was closed on January 1, 2020 for environmental sanitation and disinfection.

On January 9, 2020, the National Health Commission announced that relevant Mainland laboratories have isolated a virus from a sample of a patient. Under electron microscopy, the virus showed the typical appearance of coronavirus. Whole genome sequencing of the virus revealed a novel coronavirus (nCoV) not known to infect humans before. The expert group in Mainland China has preliminarily determined that this virus is associated with the cluster of viral pneumonia cases occurring in Wuhan. Upon further testing, 41 patients were diagnosed to have infection of nCoV (as at January 14)². They had onset of illness between December 8, 2019 and January 2, 2020³. They presented with fever, malaise and cough, with some having shortness of breath. All have been receiving treatment under isolation. As at January 14, seven patients have been discharged, six patients were in serious condition and one died, while the remaining patients were in stable condition². The fatal case affected a 61 years old man with abdominal tumour and chronic liver disease who was admitted to a hospital due to respiratory failure and severe pneumonia³. The diagnoses included severe pneumonia, acute respiratory distress syndrome, septic shock and multi-organ failure.

Epidemiological investigations revealed that most patients had exposure history to the market while some denied any exposure to the market³. Among the patients, there was at least one family cluster which involved a couple⁴. The index case was a man who was a business operator at the market. His wife, who denied any exposure to the market, had onset of symptoms subsequently. A total of 763 close contacts (including healthcare workers) have been identified². All have been put under medical surveillance with 450 of them having completed the surveillance. No related cases have been detected and no healthcare workers have been affected so far. Of note, environmental samples were collected from the market and some of them were tested positive for nCoV. Initial investigation of other markets has been conducted but did not identify any evidence on the source⁴.

For the time being, the Mainland's investigation has not identified any clear evidence of human-to-human transmission. However, the possibility of limited human-to-human transmission cannot be excluded⁴.

Separately, Thailand reported the first imported case of nCoV infection on January 14, 2020⁵. The case involved a 61-year-old Chinese woman from Wuhan, who developed fever with chills, sore throat and headache on January 5. She took a direct flight to Thailand from Wuhan together with five family members in a tour group of 16 persons. She arrived at Suvarnabhumi International Airport in Bangkok on January 8 and was detected to be having high fever. The patient was subsequently taken to a local medical institute for isolation and management. Laboratory tests there showed a positive result for the nCoV on January 12. She denied having visited Hua Nan Seafood Market but reported a history of visiting a local fresh market in Wuhan on regular basis prior to the onset of illness. The patient has recovered and no epidemiological linked cases have been identified by Thailand health authority so far. Contact tracing and medical surveillance is on-going⁴.

On January 16, 2020, Japan reported an imported case of nCoV infection involving a male in his thirties who is living in Kanagawa, Japan⁶. He had earlier travelled to Wuhan and developed fever on January 3. He returned to Japan on January 6 and sought medical attention on the same day. He was admitted to a local hospital on January 10 and was discharged on January 15. Laboratory tests there showed a positive result for the nCoV on January 15. According to the patient, he did not visit the Hua Nan Seafood Market in Wuhan but had contact with a pneumonia patient.

According to the risk assessment of the World Health Organization (WHO), the evidence is highly suggestive that the outbreak in Wuhan is associated with exposures in one seafood market in Wuhan, and the reported link to a wholesale fish and live animal market could indicate an exposure link to animals^{7,8}. WHO pointed out that the possibility of cases being identified in other countries was not unexpected. However, additional investigation is needed to ascertain the presence of human-to-human transmission, modes of transmission, common source of exposure and the presence of asymptomatic or mildly symptomatic cases that are undetected⁵. WHO does not recommend any specific measures for travellers and advises against travel or trade restrictions on China based on the information currently available⁷⁻⁹.

Local surveillance

In response to the reporting of the cluster of pneumonia cases, the Government remains vigilant and has enhanced surveillance, prevention and control measures on multiple fronts. Severe Respiratory Disease associated with a Novel Infectious Agent, which refers to the cluster of pneumonia cases in Wuhan, has been listed as a notifiable disease. With the collaboration of public and private healthcare sectors, any suspected cases fulfilling the reporting criteria would be notified to CHP and referred to public hospitals for testing, isolation and management. Since December 31, 2019, CHP has received reports of a total of 78 cases fulfilling the reporting criteria and 71 have already been discharged (as at January 16, 2020, 12 noon). Most have tested positive for different respiratory viruses such as seasonal influenza viruses, adenoviruses, human rhinovirus/enterovirus and parainfluenza viruses, etc. The reporting criteria may be updated from time to time in view of the latest situation.

In addition, port health measures have been strengthened and temperature screening of travellers has been enhanced with increased frequency of random checking at all boundary control points. Febrile travellers with acute respiratory symptoms and had compatible travel and/or exposure within 14 days prior to the onset of illness will be immediately referred to public hospitals for isolation, treatment and follow-up.

CHP is closely monitoring the latest situation of the disease and continues to maintain close contact with WHO, the Mainland and overseas health authorities for updated information and risk assessment. CHP will adjust the prevention and control measures as and when appropriate.

To prevent pneumonia and respiratory tract infection, members of the public are advised to adopt the following measures:

- ◆ Perform hand hygiene frequently, especially before touching the mouth, nose or eyes; after touching public installations such as handrails or door knobs; or when hands are contaminated by respiratory secretion after coughing or sneezing;
- ◆ Maintain drainage pipes properly and add water to the U-traps regularly to ensure environmental hygiene;
- ◆ Wash hands with liquid soap and water, and rub for at least 20 seconds. Then rinse with water and dry with a disposable paper towel. If hand washing facilities are not available, or when hands are not visible soiled, performing hand hygiene with 70 to 80 per cent alcohol-based handrub is an effective alternative;
- ◆ Cover mouth and nose with tissue paper when sneezing or coughing. Dispose of soiled tissues into a lidded rubbish bin, then wash hands thoroughly;
- ◆ When having respiratory symptoms, wear a surgical mask, avoid going to crowded places and seek medical advice promptly;
- ◆ Avoid visiting hospitals. If it is necessary to visit a hospital, put on a surgical mask and observe strict personal and hand hygiene;
- ◆ Avoid making close contact with patients, especially those with symptoms of acute respiratory infections;
- ◆ Avoid touching animals (including game), poultry/birds or their droppings;
- ◆ Avoid visiting wet markets, live poultry markets or farms;
- ◆ Do not consume game meat and do not patronize food premises where game meat is served;
- ◆ Adhere to food safety and hygiene rules such as avoiding consuming raw or undercooked animal products, including milk, eggs and meat, or foods which may be contaminated by animal secretions, excretions (such as urine) or contaminated products, unless they have been properly cooked, washed or peeled.
- ◆ If feeling unwell when outside Hong Kong, especially if having a fever or cough, wear a surgical mask, inform the hotel staff or tour escort and seek medical advice at once; and
- ◆ After returning to Hong Kong, consult a doctor promptly if having a fever or other symptoms, take the initiative to inform the doctor of recent travel history and any exposure to animals, and wear a surgical mask to help prevent spread of the disease.

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- ⁹World Health Organization. WHO Statement Regarding Cluster of Pneumonia Cases in Wuhan, China. January 9, 2020. Available at: <https://www.who.int/china/news/detail/09-01-2020-who-statement-regarding-cluster-of-pneumonia-cases-in-wuhan-china>.

Updated Situation of the 2019/20 Winter Seasonal Influenza

Reported by Ms Vera CHOW, Scientific Officer and Dr Chloe LAU, Medical and Health Officer, Respiratory Disease Section, Surveillance Division, Communicable Disease Branch, CHP.

Overview

In Hong Kong, the 2019/20 winter influenza season started in early January this year. The overall seasonal influenza activity has shown a rising trend in the past two weeks with significant increases in laboratory detection of influenza viruses among respiratory specimens, institutional influenza-like illness (ILI) outbreaks and influenza-associated hospitalisation rate in public hospitals. It is anticipated that the local influenza activity will further increase in the coming weeks and remain at an elevated level for some time.

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 started to increase since mid-December 2019, and rose steadily to 10.35% in the first week of January, which exceeded the baseline threshold of 9.21% (Figure 1). It has further increased sharply to 17.46% in the week ending January 11. In typical winter seasons in the past few years, the positive percentage reached a peak level at around 25% to 40%.

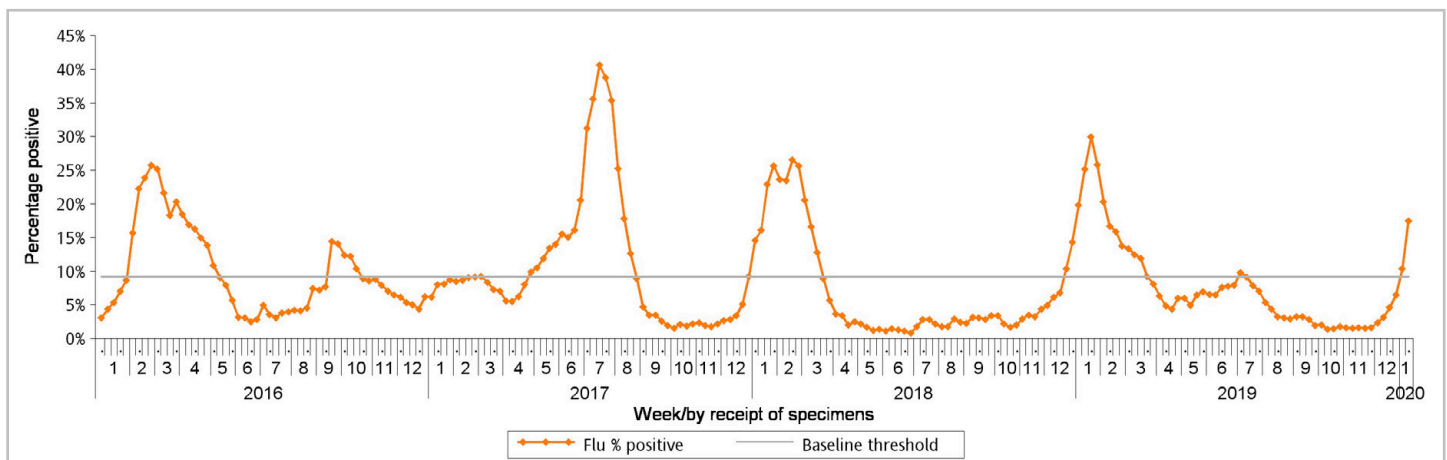


Figure 1 - Percentage of respiratory specimens tested positive for influenza A and B viruses, 2016 to 2020.

Influenza A viruses are predominating in this season (Figure 2). Among the positive influenza detections in the past two weeks (December 29, 2019 to January 11, 2020), the most common subtypes was influenza A(H1N1) (70%), followed by influenza A(H3) (27%), while very few influenza B viruses were detected.

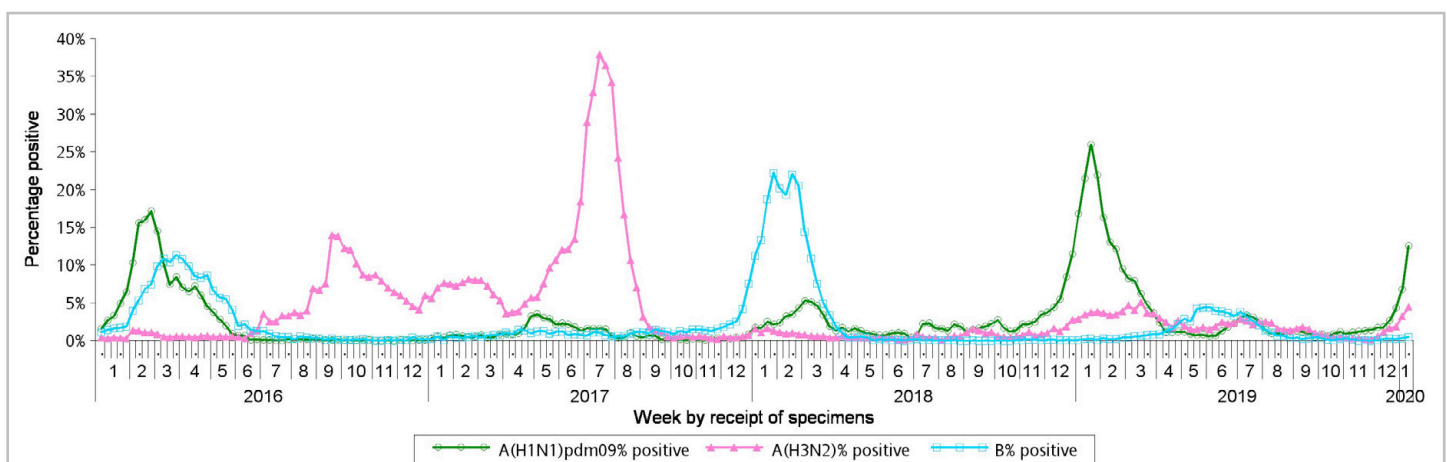


Figure 2 - Percentage of respiratory specimens tested positive for influenza virus subtypes, 2016 to 2020.

Antigenic characterisation of influenza viruses performed by the PHLSB revealed that the majority of influenza A(H1N1) and influenza B viruses detected since late November 2019 (as of January 8) were antigenically similar to the vaccine strains contained in the 2019/20 Northern Hemisphere seasonal influenza vaccine (SIV) used in Hong Kong. However, majority (86%) of the influenza A(H3) viruses tested were antigenically dissimilar from the H3 vaccine strain. The results were largely similar to the findings in Mainland China and some overseas countries such as Canada.

Influenza-associated hospital admission rates in public hospitals

The overall admission rate with principal diagnosis of influenza in public hospitals started to increase in December 2019, and continued to rise to 0.46 admitted cases per 10 000 population in the week ending January 4, which exceeded the baseline of 0.25 (Figure 3). It further increased to 0.70 cases per 10 000 population in the week ending January 11. So far, the admission rate was highest among children aged below six years (4.45 admitted cases per 10 000 population in the age group) (Figure 4). The rates among elderly aged 65 years or above and children aged 6-11 years were 1.25 and 1.08 respectively last week. For the assessment of influenza-associated admission rates by the moving epidemic method (MEM), the overall rate in the week ending January 11 was at the medium intensity level (Figure 5). The rates among children aged below six years and 6-11 years were both at the medium intensity level while the rate among elderly aged 65 years or above was still at the low intensity level.

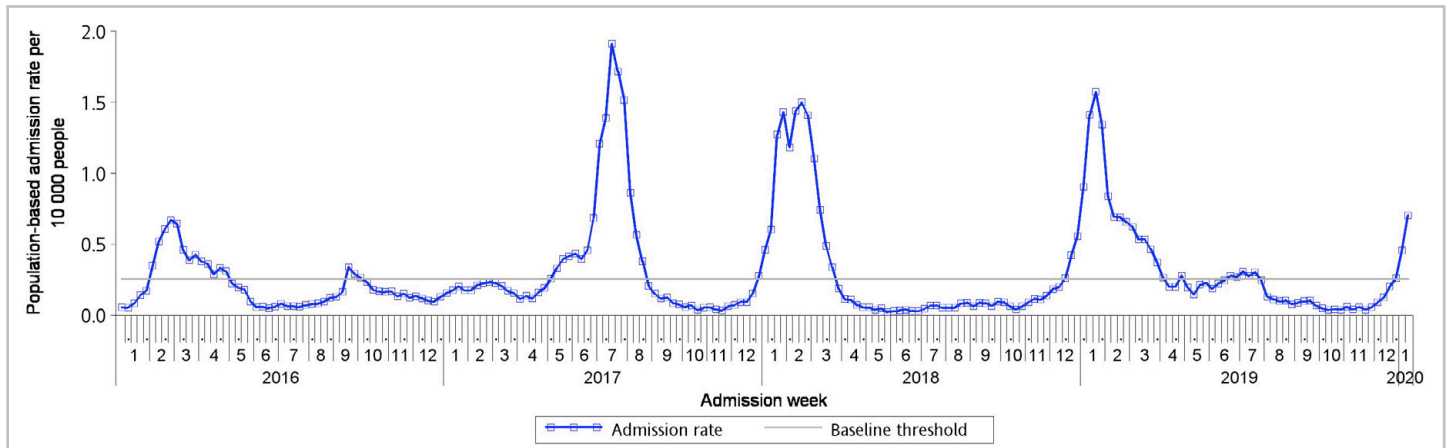


Figure 3 - Weekly admission rates with principal diagnosis of influenza in public hospitals, 2016 to 2020.

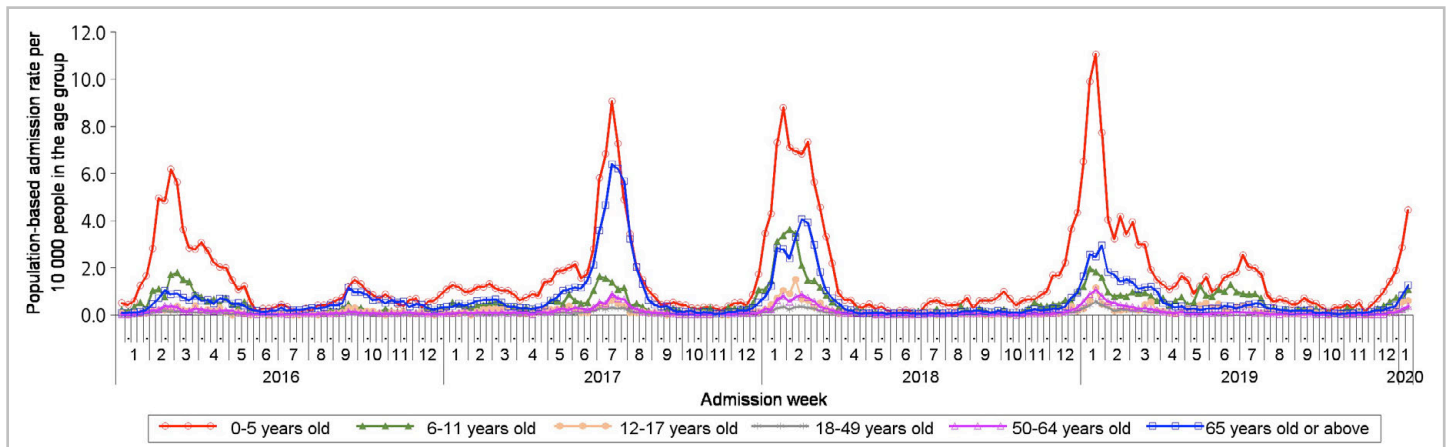


Figure 4 - Weekly admission rates with principal diagnosis of influenza in public hospitals by age groups, 2016 to 2020.

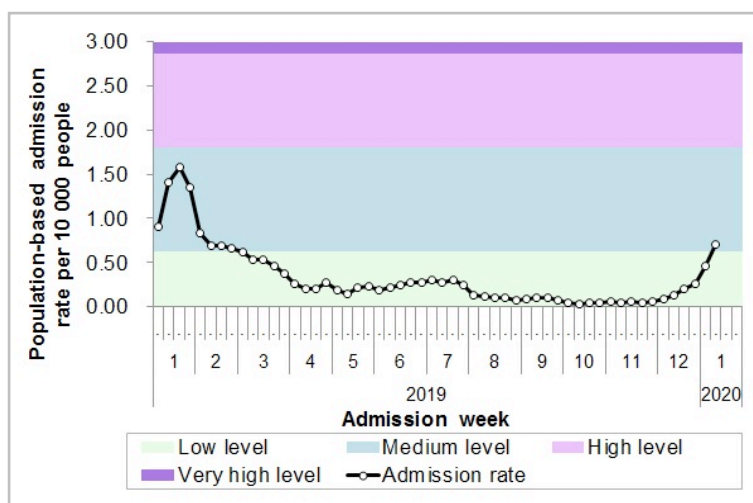


Figure 5 - Weekly influenza-associated admission rates in public hospitals, 2019 to 2020.

ILI outbreaks in schools and institutions

The weekly number of institutional ILI outbreaks reported to CHP started to increase following school resumption after the Christmas and New Year holidays (Figure 6). A total of 39 outbreaks were recorded in the week ending January 11, as compared to three in the previous week. In the first four days of this week (January 12 to 15), CHP recorded 53 outbreaks. Among the 92 outbreaks (affecting 443 persons) recorded from January 5 to 15, the majority occurred in kindergartens/child care centres (KG/CCC) (41, 45%), followed by primary schools (29, 32%), residential care homes for the elderly (RCHE) (9, 10%), residential care homes for persons with disabilities (5, 5%), secondary schools (3, 3%) and others (5, 5%). For the assessment of ILI outbreaks by MEM, the number of reported outbreaks last week was at low intensity level (Figure 7). The number of outbreaks in KG/CCC was at the medium intensity level while both the numbers in primary schools and RCHE were still at the low intensity level.

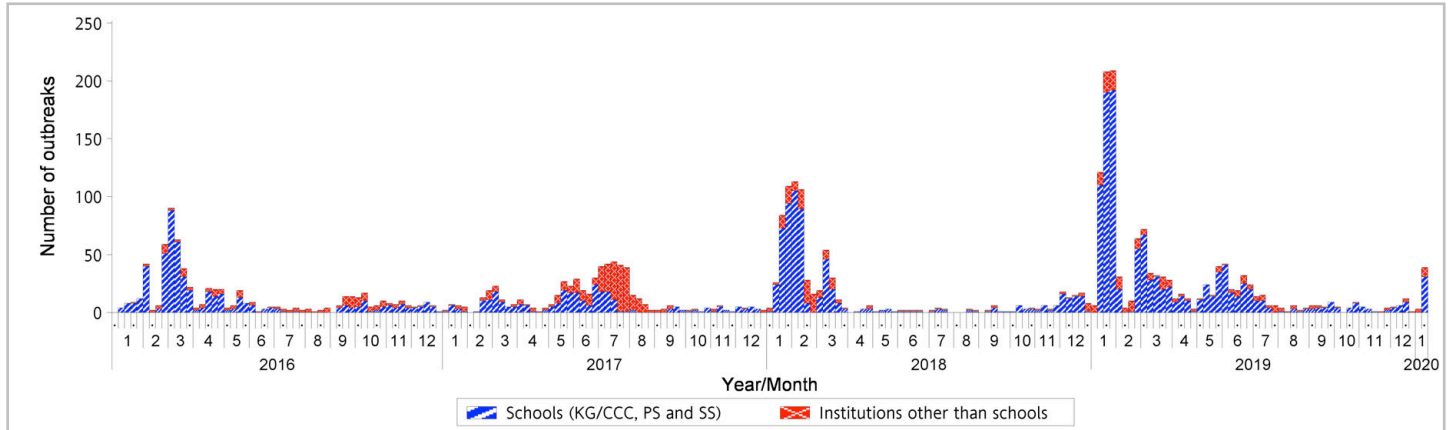


Figure 6 - Weekly number of institutional ILI outbreaks reported to CHP, 2016 to 2020.

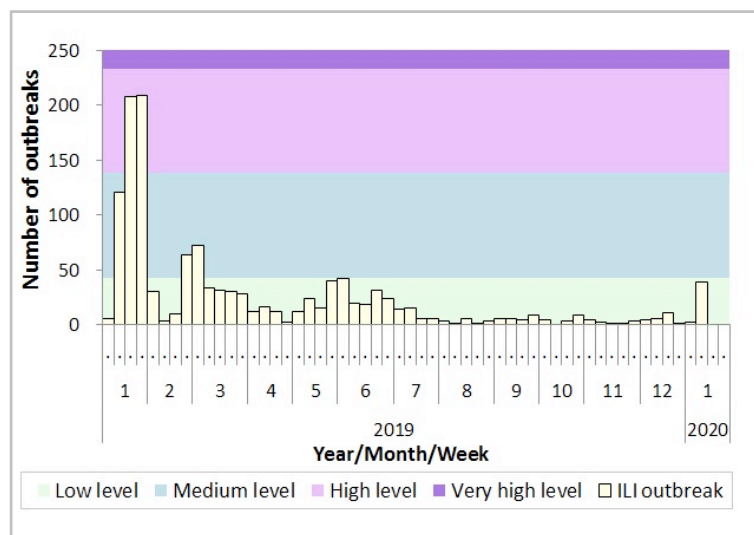


Figure 7 - Weekly number of reported institutional ILI outbreaks, 2019 to 2020.

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, severe adult cases are defined as laboratory-confirmed influenza patients (aged 18 years or above) 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 2019/20 winter influenza season, a total of 47 adult cases of ICU admissions or deaths with laboratory confirmation of influenza (including 17 deaths) have been recorded (as of January 15). Nineteen cases were reported in the week ending January 11, as compared with the range of three to 12 cases per week reported in the previous four weeks. From January 5 to 15, most of adult cases contracted infection of influenza A(H1N1) virus (61.7%), followed by influenza A(H3N2) (14.9%) and influenza A (pending subtype) (23.4%). About half of the reported cases were elderly aged 65 years or above whereas 15 cases (31.9%) were adults aged between 50 and 64 years.

Separately, one case of paediatric influenza-associated severe complication has been reported to CHP in 2020, affecting a 17-year-old boy who contracted influenza A(H3N2) infection and was complicated with shock. He did not receive the 2019/20 SIV. No fatal paediatric influenza case has been recorded in 2020 so far.

Overseas situation of seasonal influenza

According to the latest updates by the World Health Organization, influenza activity continued to increase in most countries in the temperate zone of the northern hemisphere. Worldwide, seasonal influenza A viruses accounted for the majority of detections.

North America

The 2019/20 winter influenza season in the United States started in mid-November 2019 and the current influenza activity was at a high level. The most common circulating virus was influenza B(Victoria) virus, followed by influenza A(H1) virus. In Canada, the influenza season started in late November 2019 and the influenza activity continued to increase. Influenza A(H3), A(H1) and B have been co-circulating, with influenza A(H3) being the predominant subtype for the season to date.

Europe

Influenza activity in Europe has increased across the region since late November 2019 and remains elevated. The majority of reported influenza virus detections were influenza A, but some countries reported influenza B virus dominance or co-dominance of influenza A and B viruses. In the United Kingdom, influenza activity has increased for several indicators since late November and the ILI consultations at primary care increased above the baseline in early December 2019. The most frequently identified influenza subtype was influenza A(H3).

Neighbouring areas

The 2019/20 winter influenza season in Japan has started in mid-November 2019, with influenza A(H1) virus predominating. In Korea, the weekly ILI rate has also increased steadily since mid-November 2019, and the most common detected virus was also influenza A(H1). In Mainland China, the majority of provinces have entered the influenza season with continual increase in influenza activity. Majority of influenza detections in southern provinces were influenza A(H3) and influenza B(Victoria) viruses, while influenza A(H3) virus was predominant in northern provinces. In Guangdong, influenza activity has continued to increase since mid-December 2019, with influenza A(H3) predominating. In Macao, the influenza season started in late December 2019, with influenza A(H1) being the most commonly detected virus, followed by influenza A(H3). In Taiwan, the influenza season started in late December 2019, with influenza A(H1) predominating in the community.

Preventive measures

Influenza can cause serious illnesses in high-risk individuals and even healthy persons. Given that SIV is safe and effective, all persons aged six months or above except those with known contraindications are recommended to receive SIV to protect themselves against seasonal influenza and its complications, as well as related hospitalisations and deaths. Members of the public should maintain good personal and environmental hygiene throughout the winter influenza season. For the latest information on influenza and prevention measures, please visit the following webpages/hyperlinks for more information:

- ◆ The influenza page (http://www.chp.gov.hk/en/view_content/14843.html)
- ◆ Webpage on Personal Hygiene (<https://www.chp.gov.hk/en/healthtopics/content/460/19899.html>)
- ◆ Videos on personal hygiene and wearing mask:
 - How to clean our hands properly (Short version)
(English: <https://youtu.be/OR8rzawOMJk> ; Cantonese: <https://youtu.be/jfmisT3rumY>)
 - How to clean our hands properly
(English: https://youtu.be/_3rYoh4gXV0 ; Cantonese: <https://youtu.be/vWJE6xExRel>)
 - How to wear a surgical mask properly (Short version)
(English: <https://youtu.be/6nmeMqIF50M> ; Cantonese: https://youtu.be/-HV_5rUajAk)
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NEWS IN BRIEF

A sporadic case of psittacosis

On January 9, 2020, the Centre for Health Protection recorded a sporadic case of psittacosis affecting a 66-year-old man with underlying illnesses. He presented with fever, cough and shortness of breath since January 4 and was admitted to a public hospital on the same day. His chest X-ray showed right lower zone haziness. The clinical diagnosis was pneumonia and he was treated with antibiotics. His condition remained stable. *Chlamydia psittaci* DNA was detected in his sputum collected on January 5. 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.

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Department of Health

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FEATURE IN FOCUS

Enhancing Infection Control to Combat Respiratory Diseases associated with a Novel Infectious Agent

Reported by Mr Anthony NG, Senior Nursing Officer; Ms Jane LEUNG, Advanced Practice Nurse; Ms LI Man-chi, Advanced Practice Nurse; Ms Angela LEE, Nursing Officer and Dr CHEN Hong, Consultant and Head, Infection Control Branch, CHP.

In view of stepping up to emergency response level under the preparedness and response plan for Severe Respiratory Disease associated with a Novel Infectious Agent, we advise the public to heighten the prevention and control measures against infectious diseases.

General Advices

We advise people not to travel to Hubei Province where community transmission of novel coronavirus is occurring.

As of January 28, 2020, we recommended that Hong Kong residents who have visited Hubei Province in the past 14 days should approach staff of the Department of Health (DH)'s Port Health Division for relevant assessment upon their arrivals. If they are found to be asymptomatic, they will be required to wear a surgical mask immediately and self-isolate for 14 days as far as possible. They will also be placed under medical surveillance. For Hong Kong residents returning from other parts of the Mainland, they are advised to stay home for 14 days upon their return as far as possible. Those who need to go out should wear a surgical mask. After returning to Hong Kong, consult a doctor promptly if experiencing a fever or other symptoms, take the initiative to inform the doctor of any recent travel history and any exposure to animals, and wear a surgical mask to help prevent spread of the disease.

For Hong Kong residents and travellers who had been to Hubei Province in the past 14 days but had returned to or entered Hong Kong earlier, they should call the hotline of the Centre for Health Protection (CHP) of DH (2125 1122) for health advice.

Please refer to the below link for latest Government press release on Severe Respiratory Diseases associated with a Novel Infectious Agent: https://www.chp.gov.hk/en/miniweb/press_release/100063.html.

To minimise the risk of infection and spreading in local community, people are advised not to go to crowded areas or put on a surgical mask if they need to go to crowded areas.

Maintain good personal hygiene, hand hygiene and cough manner

To prevent pneumonia and respiratory tract infection, we advise to maintain good personal hygiene, hand hygiene and cough manner.

- ❖ Perform hand hygiene frequently, especially before touching the mouth, nose or eyes; after touching public installations such as handrails or door knobs; or when hands are contaminated by respiratory secretion after coughing or sneezing (Figure 1).
- ❖ Wash hands with liquid soap and water, and rub for at least 20 seconds. Then rinse with water and dry with a disposable paper towel. If hand washing facilities are not available, or when hands are



Figure 1 - Poster for "When to Wash Our Hands". (<https://www.chp.gov.hk/files/jpg/08657-doh-pr2-r05.jpg>)



Figure 2 - Poster for "Don't Pass on the Bugs, Wash or Rub with 7 steps for 20 seconds is a MUST". (https://www.chp.gov.hk/files/pdf/hh_poster_2019.pdf)



Figure 3 - Poster for "Maintain Cough Manners". (https://www.chp.gov.hk/files/her/maintain_cough_manners.pdf)



Figure 4 - Infographic for "Health Advice on Prevention of Pneumonia and Respiratory Tract Infection". (https://www.chp.gov.hk/files/pdf/pneumonia_health_advice.pdf)

not visibly soiled, performing hand hygiene with 70 to 80 per cent alcohol-based handrub is an effective alternative (Figure 2).

- ❖ Cover mouth and nose with tissue paper when sneezing or coughing. If you don't have a tissue, cough or sneeze into your upper sleeve, not your hands. Dispose of soiled tissues into a lidded rubbish bin, then wash hands thoroughly (Figure 3).
- ❖ When having respiratory symptoms, wear a surgical mask, refrain from work or attending class at school, avoid going to crowded places and seek medical advice promptly (Figure 4).
- ❖ N95 respirators are generally not recommended for use by general public in community settings because if not worn or removed properly, the risk of contamination would be increased.

Maintain good environmental hygiene

We advise to keep the environment clean and hygienic.

- ❖ Maintain good indoor ventilation by opening windows, switching on fans or exhaust fans to enhance air flow, keeping air-conditioners well maintained and cleaning the dust-filters of air-conditioners regularly.
- ❖ Maintain good hygienic environment through thorough cleaning and disinfection general environment at least daily with 1 in 99 diluted household bleach (mixing 1 portion of household bleach containing 5.25% hypochlorite solution with 99 portion of water). Increase the frequency to at least twice daily for frequently touched surfaces. For metallic surface, disinfect with 70% alcohol (Figure 5).
- ❖ It is important to maintain drainage pipes properly and regularly (about once a week) pour about half a liter of water into each drain outlet (U-traps). To keep a water column in the pipe can prevent foul odour and insects in the soil pipe from entering the premises (Figure 6). For details, please refer to: https://www.chp.gov.hk/files/pdf/make_sure_the_trap_is_not_dry.pdf (QR code I).



Figure 5 - Infographic for “慎用品白水 安全又衛生”. (Page 68 of “Guidelines on Prevention of Communicable Diseases in Residential Care Homes for the Elderly (3rd Edition, 2015)”. (https://www.chp.gov.hk/files/pdf/guidelines_on_prevention_of_communicable_diseases_in_rche_eng.pdf)

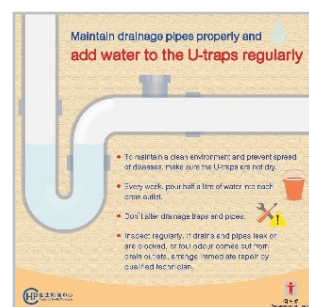


Figure 6 - Infographic for “Maintain drainage pipes properly and add water to the U-traps regularly”. (https://www.chp.gov.hk/files/pdf/utrap_en.pdf)



QR code I

The Infection Control Branch of CHP has developed infection control guidelines for various sectors. Please find the below links for information:

Health Professionals

- ❖ Healthcare settings: https://www.chp.gov.hk/files/pdf/ic_advice_for_nid_in_healthcare_setting.pdf
- ❖ Chinese Medicine Clinic (Chinese version only): https://www.chp.gov.hk/files/pdf/prevention_of_novel_infectious_disease_of_public_health_significance_ic_measures_for_chinese_medicine_clinic.pdf
- ❖ Allied Health Professionals: https://www.chp.gov.hk/files/pdf/ic_measures_for_nid_allied_health_eng.pdf
- ❖ Recommended Personal Protective Equipment (PPE) in hospitals/clinics under Serious/Emergency Response Level: https://www.chp.gov.hk/files/pdf/recommended_ppe_for_nid_eng.pdf

General Public

- ❖ https://www.chp.gov.hk/files/pdf/nid_guideline_general_public_en.pdf

Institutions & Schools

- ❖ Residential Care Homes for the Elderly or Persons with Disabilities: https://www.chp.gov.hk/files/pdf/advice_to_rche_rchd_on_prevention_of_nid_eng.pdf
- ❖ Schools: https://www.chp.gov.hk/files/pdf/advice_to_school_on_prevention_of_nid_eng.pdf

Business & Workplace

- ❖ Hotel industry: https://www.chp.gov.hk/files/pdf/nid_guideline_hotel_serving_guests_eng.pdf
- ❖ Property management: https://www.chp.gov.hk/files/pdf/advice_for_properties_management_for_nid_of_public_health_significance_eng.pdf
- ❖ Public transport: https://www.chp.gov.hk/files/pdf/nid_health_advice_for_public_transport_eng.pdf
- ❖ Workplace: https://www.chp.gov.hk/files/pdf/nid_guideline_workplace_eng.pdf

Please visit the CHP website for health messages. Institutions can consider to broadcast and post up the following health education materials.

TV Announcement in the Public Interest (API)

- ❖ Prevention of pneumonia and respiratory tract infection (Figure 7): https://youtu.be/QA_TRNF5tU

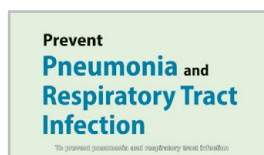


Figure 7 - TV Announcement on prevention of pneumonia and respiratory tract infection.

Videos on mask wearing and hand hygiene

- ❖ Prevent diseases · Maintain good hygiene (Figure 8): <https://youtu.be/X0OxrsGAP2w>
- ❖ How to wear a surgical mask properly (Figure 9): <https://youtu.be/gggtXTuhJek>
- ❖ Washing Hands with Liquid Soap and Water (Figure 10): https://youtu.be/pN2C6AJ2_EA
- ❖ Hand Rubbing with Alcohol-based handrub (Figure 11): <https://youtu.be/CLVOjMT2H68>



Figure 8 - Video on “Prevent disease · Maintain good hygiene”.



Figure 9 - Video on “How to wear a surgical mask properly”.



Figure 10 - Video on “Washing Hands with Liquid Soap and Water”.

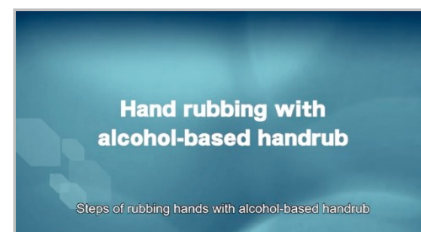


Figure 11 - Video on “Hand Rubbing with Alcohol-based handrub”.

Infographics

- ❖ Prevention of Pneumonia and Respiratory Tract Infection (Figure 12): https://www.chp.gov.hk/files/pdf/prevention_infographic_en.pdf
- ❖ Health Advice on Prevention of Pneumonia and Respiratory Tract Infection (Figure 13): https://www.chp.gov.hk/files/pdf/pneumonia_health_advice.pdf
- ❖ Travel Advice on Prevention of Pneumonia and Respiratory Tract Infection (Figure 14): https://www.chp.gov.hk/files/pdf/pneumonia_travel_advice.pdf



Figure 12 - Infographic for “Prevention of Pneumonia and Respiratory Tract Infection”.



Figure 13 - Infographic for “Health Advice on Prevention of Pneumonia and Respiratory Tract Infection”.



Figure 14 - Infographic for “Travel Advice on Prevention of Pneumonia and Respiratory Tract Infection”.

For the latest updates and preventive measures, please refer to below webpages for more information:

- ❖ CHP’s thematic webpage on “Severe Respiratory Disease associated with a Novel Infectious Agent” (QR code 2): <https://www.chp.gov.hk/en/features/I02465.html>
- ❖ Webpage on Personal Hygiene (proper hand hygiene, proper use of mask, guidance note on monitoring of body temperature) (QR code 3): <https://www.chp.gov.hk/en/healthtopics/content/460/19899.html>



QR code 2



QR code 3

A Properly Worn Surgical Mask Provides an Effective Barrier against Respiratory Infectious Disease Transmission by Droplet Route

Reported by Mr Anthony NG, Senior Nursing Officer; Dr Leo LUI, Associate Consultant; Ms Angel CHEUNG, Registered Nurse and Dr CHEN Hong, Consultant and Head, Infection Control Branch, CHP.

A properly worn surgical mask can provide an effective barrier against respiratory infectious disease transmission by the droplet route. People should wear surgical mask when they have respiratory infection; when taking care of people with respiratory infection; or when visiting clinics or hospitals during influenza peak season in order to reduce the spread of infection or protect themselves from getting the infection. In view of the recent development of novel coronavirus outbreak starting in Wuhan, Hubei, for all travellers returning from the Mainland, they are advised to wear surgical mask for 14 days after leaving the Mainland.

N95 respirators, on the other hand, are generally not recommended for use by the general public in community settings because special training is required for proper wearing and removal of the N95 respirator. Fit tests should be done by a trained person to identify the right model of N95 respirators. Otherwise the infective risk may be increased due to inadequate protection and contamination. The use of N95 respirator is necessary under very limited circumstances, e.g. in close contact with the confirmed/suspected case infected with novel coronavirus or in healthcare settings for certain procedures.

You can refer to the following materials for the proper use of surgical mask and N95 respirator:

Surgical mask

❖ Guidelines

- English: https://www.chp.gov.hk/files/pdf/use_mask_properly.pdf;
- Chinese: https://www.chp.gov.hk/files/pdf/use_mask_properly_chi.pdf

❖ Pamphlet (Figure 1)

- English: https://www.chp.gov.hk/files/her/use_mask_properly_pamphlet.pdf;
- Chinese: https://www.chp.gov.hk/files/her/use_mask_properly_pamphlet.pdf

❖ Video

- English: <https://www.youtube.com/watch?v=ggggtXTuhJek&feature=youtu.be>;
- Chinese: <https://www.youtube.com/watch?v=BZ8dFHOE2-4&feature=youtu.be>

N95 respirator

❖ Guidelines

- English: https://www.chp.gov.hk/files/pdf/use_n95_properly_eng.pdf;
- Chinese: https://www.chp.gov.hk/files/pdf/use_n95_properly_chi.pdf

For latest updates of the situation of the Severe Respiratory Disease associated with a Novel Infectious Agent updates, please visit the website of the Centre for Health Protection of the Department of Health:

<https://www.chp.gov.hk/en/features/102465.html>



Figure 1 - Pamphlet for "Use mask properly. Protect ourselves and protect others".



NEWS IN BRIEF

Infection Control Forum: Cluster of Pneumonia in Wuhan and Preparedness in Hong Kong

To combat against the "Severe Respiratory Disease associated with a Novel Infectious Agent", the Infection Control Branch (ICB) of the Centre for Health Protection (CHP) of the Department of Health (DH) has organised two sessions of Infection Control Forum on January 16 and 20, 2020 for doctors (including Chinese Medical Practitioners), nurses, and allied health professionals working in infection control and infectious disease management. The Forum aims at providing an update on cluster of pneumonia in Wuhan of Hubei Province, and help frontline workers familiarise with the reporting and control measures in healthcare settings. Over 370 healthcare workers in DH, Hospital Authority (HA) and private sector attended the two sessions.

Dr Albert Au and Dr Joanna Leung of the Communicable Disease Branch (CDB) of CHP provided the latest number of cases reported in Wuhan and other areas namely Thailand and Japan, epidemiology of the disease including the exposure to the market in Wuhan, preliminary findings of the causative agent, clinical presentation, reporting criteria for enhanced surveillance, management of reported cases, and port health measures. Ms MY Kong of Chief Infection Control Office of HA highlighted the risk assessment and precaution required in emergency departments and out-patient clinics, specimen collection and laboratory investigation, clinical management including initiation of non-invasive ventilation, patient isolation and other control measures under the serious response level in public hospital. To reinforce the infection control measures against the novel agent in the community settings, Dr Leo Lui of ICB, CHP briefed the audience on the recommendations including proper use of person protective equipment such as face mask, good person hygiene, adequate environment cleansing and disinfection including draining of water outlet (U-trap).

The presentation materials have been uploaded onto the Hong Kong Training Portal on Infection Control and Infectious Diseases: <https://icidportal.ha.org.hk/Trainings/>.



Photo 1 - Dr Albert Au, Principle Medical and Health Officer (Surveillance) of CDB, CHP gave a presentation on "Latest situation of 'Severe Respiratory Disease associated with a Novel Infectious Agent' and Prevention and Control Measures in Hong Kong".



Photo 2 - The speaker and participants.

CHP works with 12 Private Hospitals in Prevention & Control of Novel CoronaVirus Infection

ICB, CDB of CHP and the Office for Private Healthcare Facilities held an Ad Hoc Meeting with Infection Control Nurses (ICNs) of all private hospitals on January 23, 2020, to brief them on the latest situation of the Wuhan Pneumonia Outbreak and discuss on prevention and control measures against the Novel CoronaVirus (CoV) Infection.

The Government of the Hong Kong SAR has activated the Serious Response Level of the Preparedness and Response Plan for Novel Infectious Disease of Public Health Significance on January 4, 2020. With the announcement that 15 healthcare workers in Wuhan have been confirmed to suffer from the novel CoV infection, DH strengthened all measures to combat the novel CoV infection into Hong Kong and were preparing for escalating to Emergency Response Level at any time when situation got worse.

ICB maintains a close tie with HA which disseminated updated information and guidelines to all its hospitals. In addition, ICB has set up a platform to meet with ICNs of all 12 local private hospitals regularly. This Ad Hoc Meeting aimed to brief members on the latest situation of the outbreak, and reminded all on the latest reporting criteria of suspected cases under Cap. 599. Early notification, early isolation and early diagnosis were emphasised. Relevant interim guidelines for healthcare settings available on the CHP website were highlighted. Proper Hand hygiene and Personal Protective Equipment (PPE) during Serious Response Level were emphasised. The meeting then discussed on preparation for Emergency Response Level. Questions were addressed and all were urged to be well prepared.



Photo 3 - Representatives of ICB, CDB of CHP, the Office for Private Healthcare Facilities and ICNs of all private hospitals.

CA-MRSA cases in December 2019

In December 2019, CHP recorded a total of 75 cases of community-associated methicillin resistant *Staphylococcus aureus* (CA-MRSA) infection, affecting 53 males and 22 females with ages ranging from 10 months to 81 years (median: 38 years). Among them, there were 65 Chinese, 4 Filipinos, 1 Caucasian, 1 Indian, 1 Japanese, 1 Nepalese, 1 Pakistani, and 1 of unknown ethnicity. All cases presented with uncomplicated skin and soft tissue infections.

Among the 75 cases, one case involving a healthcare worker in a public hospital was reported. Investigation did not reveal any epidemiologically linked cases. Besides, four clusters, with each affecting two persons, were identified in December. Three clusters occurred in households while the remaining one occurred in a residential care home for the disabled.

Scarlet fever update (December 1, 2019 – December 31, 2019)

Scarlet fever activity in December increased. CHP recorded 251 cases of scarlet fever in December as compared with 155 cases in November. The cases recorded in December included 143 males and 108 females aged between eight months and 53 years (median: five years). There were eight institutional clusters occurring in seven kindergartens/child care centres and one primary school, affecting a total of 25 children. No fatal cases were reported in December. In view of the increased 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.

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.

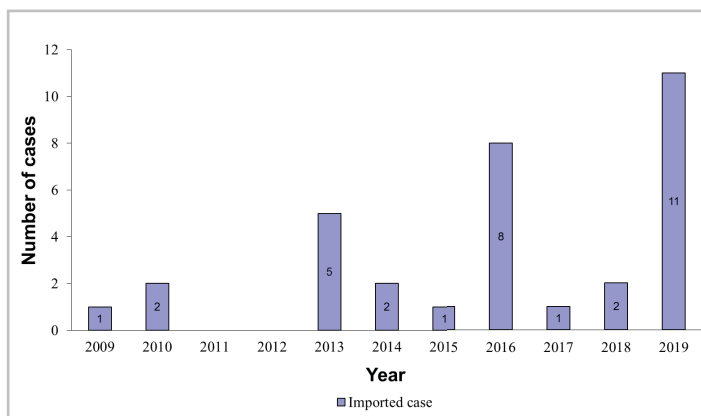


Figure 1 - Annual number of chikungunya fever cases, 2009 to 2019.

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.

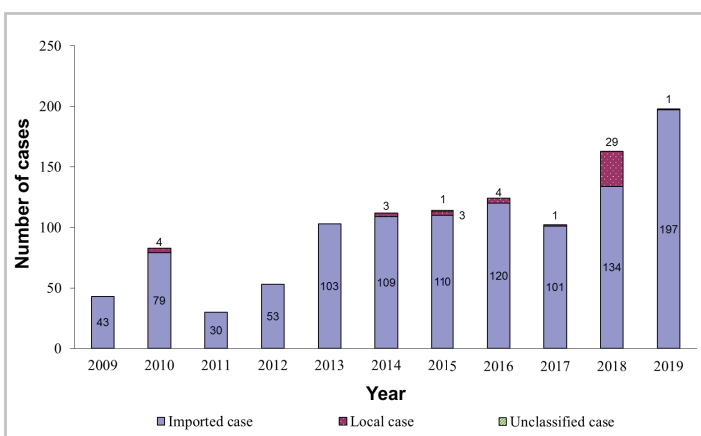


Figure 2 - Annual number of dengue fever cases, 2009 to 2019.

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%).

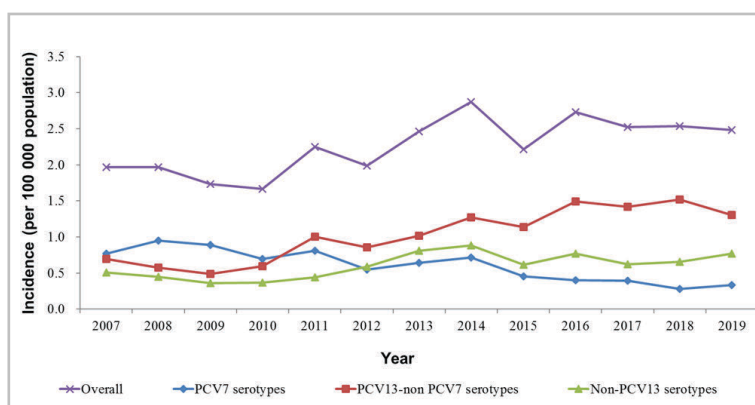


Figure 3 - Overall incidence of IPD by serotype groups in Hong Kong, 2007 to 2019.

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.

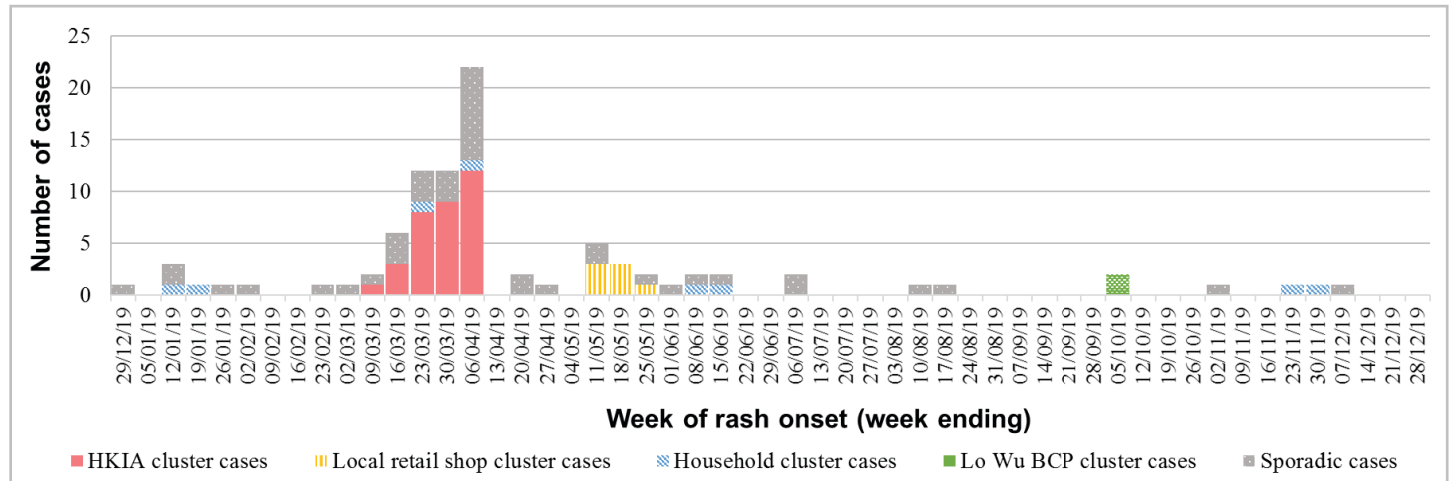


Figure 4 - Epidemic curve of 91 measles cases reported in Hong Kong, 2019.

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.

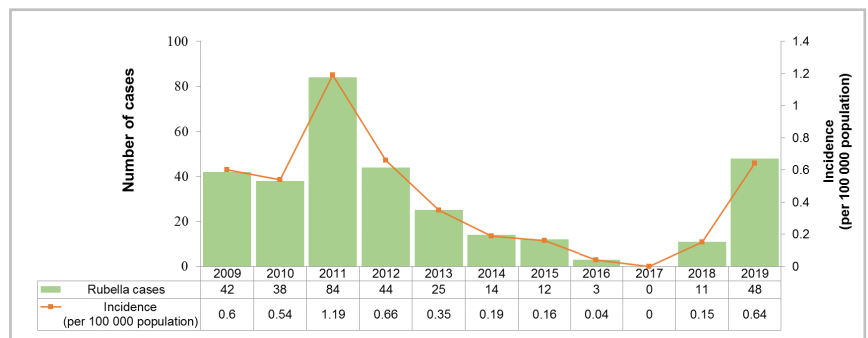


Figure 5 - Number and incidence of rubella cases reported in Hong Kong, 2009 to 2019.

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.

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).

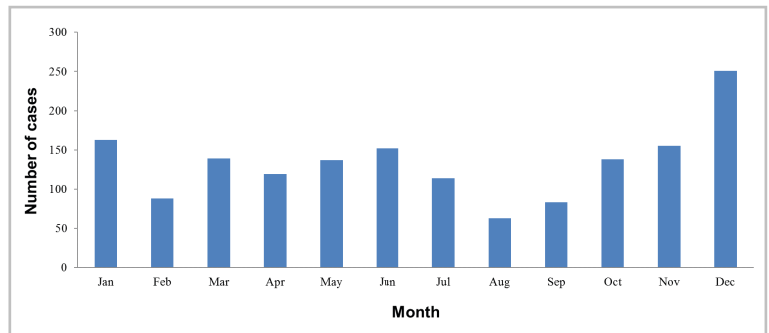


Figure 6 - Monthly number of scarlet fever cases recorded in 2019.

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.

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FEATURE IN FOCUS

Free Measles Vaccination Mop-up Programme

Reported by Dr Grace TONG, Senior Medical and Health Officer, Emergency Response and Programme Management Branch, CHP.

Measles is a highly contagious viral diseases and remains endemic in many parts of the world¹. It can be transmitted airborne, by droplet spread or by direct contact with nasal or throat secretions, to non-immune persons. In severe cases, measles can lead to serious consequences or even death².

Vaccination against measles is the most effective preventive measure. According to the United States Centers for Disease Control and Prevention, when given as scheduled, two doses of Measles, Mumps and Rubella (MMR) vaccine are 97% effective while one dose is 93% effective against measles. Although the coverage of the two doses of MMR vaccine has been maintained at a very high level (>95%) among local-born children, about 40% of Hong Kong population were born outside Hong Kong, who might or might not have completed two doses of measles vaccination during childhood in their home countries. Pockets of susceptible persons likely exist in the local community. Moreover, being an international city with high volume of travel, Hong Kong is constantly facing the risk of measles imported from other countries leading to subsequent spread in the community³.

Taking into account the experience of the measles outbreak at Hong Kong International Airport between March and May 2019 as well as the global situation regarding measles outbreak, and making reference to the Scientific Committee on Vaccine Preventable Disease's guiding principles for measles vaccination for non-immune adults, the Centre for Health Protection (CHP) of the Department of Health (DH) launched a Free Measles Vaccination Mop-up Programme. The Programme in August 2019 to February 2020 provided free measles vaccinations to three target groups, namely healthcare workers, airport staff and foreign domestic helpers working in Hong Kong.

The Programm has been extended since February 3, 2020 to cover all adult Hong Kong residents who are non-immune to measles, especially those born between years 1967 to 2002. In particular, CHP encourages participation from people who are non-local born, people of all ethnicities, post-secondary students, foreign domestic helpers and people who have frequent contact with tourists⁴. Eligible persons can make appointments for the first and/or second dose of MMR vaccination at designated clinics and group/outreach vaccination activities via outsourced private medical organisations. Details are available at CHP website:

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

Eligibility criteria to receive free MMR vaccination under the Programme are:

1. Born between 1967 and 2002, and has not received two doses of measles vaccines at or after one year old, and does not have laboratory confirmed measles infection; or
2. Born before 1967, and has laboratory evidence of tested non-immune to measles (i.e. tested negative/indeterminate for measles IgG).

Regarding the schedule, non-immune adults who had no history of receiving any measles-containing vaccine at or after one year old, or with unknown vaccination history are advised to receive two doses at least four weeks apart. Only one dose is required for those who had already received one dose of measles vaccination at or after one year old.

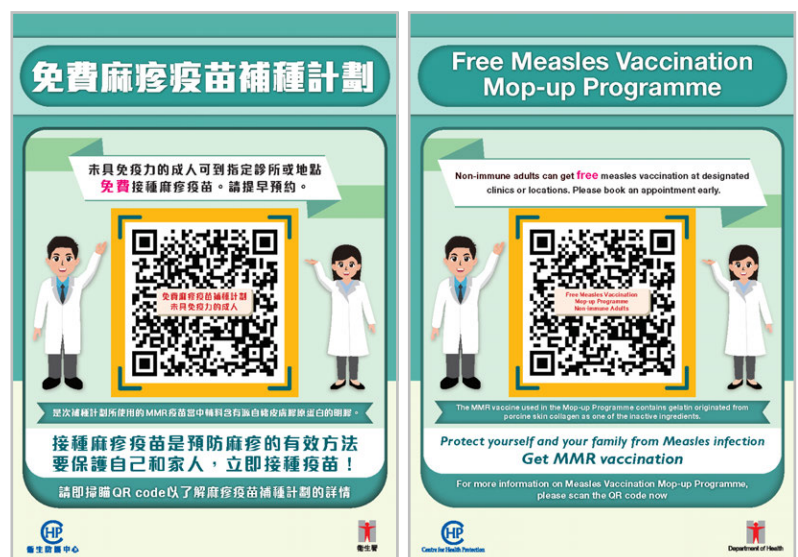


Figure 1 - QR code posters for "Free Measles Vaccination Mop-up Programme".

There are contraindications and precautions to measles vaccination. For example, pregnant women should NOT receive MMR vaccines. Women who received measles vaccination should avoid pregnancy for three months and take appropriate contraceptive measures. Also, persons with serious allergic reaction to a previous dose of MMR vaccine, known history of severe allergy to any vaccine component (e.g. gelatin or neomycin), people with severe immunosuppression and those with other unsuitable conditions should not receive MMR vaccines. To facilitate screening for these conditions, healthcare workers, before administering vaccine, would make use of questionnaire and check vaccination history to assess whether vaccination is recommended.

Information for those interested to know, the MMR vaccines used in the Programme contains gelatin originated from porcine skin collagen as one of the inactive ingredients.

DH will continue to work closely with stakeholders and conduct publicity activities through various channels, including press release, television, radio, websites and other social media to encourage non-immune adults to receive MMR vaccines.

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²Measles, Centre for Health Protection. Available at: <https://www.chp.gov.hk/en/healthtopics/content/24/31.html>.

³Guiding Principles for Measles Vaccination for Non-immune Adults in Hong Kong.

Available at: https://www.chp.gov.hk/files/pdf/guiding_principles_for_measles_vaccination_for_non_immune_adults_in_hk.pdf.

⁴Measles – Press Release, Centre for Health Protection.

Available at: https://www.chp.gov.hk/en/miniweb/press_release/100020.html.



JOURNAL PUBLICATION HIGHLIGHTS

Legionnaires' Disease and Use of Water Dispensers With an Ultraviolet Sterilizer

Yiu-Hong Leung¹, Shui-Wah Yau¹, Chau-Kuen Lam¹, and Shuk-Kwan Chuang¹

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This is a letter to the editor regarding three local Legionnaires' Disease (LD) cases. All three patients had stayed in hospitals that had water dispensers equipped with an ultraviolet (UV) sterilizer. Upon epidemiological investigation conducted by the Centre for Health Protection, *Legionella pneumophila* (*Lp*) was isolated in water samples from respective water dispensers. Although the exact sources of infection were undetermined for these cases, *Lp* recovering from cold-water samples from water dispensers showed the failure to eradicate *Legionella* by UV sterilizers.

The use of water dispensers equipped with different types of water treatment devices has gained popularity. Ultraviolet light has been reported as an effective means for disinfection against *Legionella* in water systems. In the reported cases, the UV sterilizers claimed to deliver an UV dosage of 30mJ/cm² or more, which is greater than the reported dosage require to inactivate *Lp*. The authors suggested several factors that may contribute to the incomplete disinfection against *Lp*, including the fact that UV disinfection provides no residual protection and regrowth of *Lp* in the biofilm layers of scale which may allow recolonization.

The findings provide evidence that cold water from water dispensers with UV sterilizer is not free from *Legionella*. In addition, it is possible for the bacteria to be transmitted via aspiration of contaminated water. As immunosuppression is a well-known risk factor for LD, the authors consider that it is prudent to advise immunocompromised patients, particularly those who are at high risk of aspiration, to avoid drinking cold water directly from these water dispensers without boiling.

Infect Control Hosp Epidemiol 2018; 39:502-504

https://www.cambridge.org/core/services/aop-cambridge-core/content/view/A79C36A42B29A8663084D85C06F73704/S0899823X18000041a.pdf/legionnaires_disease_and_use_of_water_dispensers_with_an_ultraviolet_sterilizer.pdf

Multidrug-resistant organism carriage among residents from residential care homes for the elderly in Hong Kong: a prevalence survey with stratified cluster sampling

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The authors conducted a point prevalence survey to study the epidemiology and risk factors of multidrug-resistant organism (MDRO) carriage among the residents in selected residential care homes for the elderly (RCHEs) in Hong Kong.

By adopting a stratified single-stage cluster sampling, a total of 20 RCHEs were selected. Most of them were privately run RCHE (n = 19) and one was a non-private RCHE. Nasal swab, axillary swab, rectal swab or stool were collected from consenting residents who aged 65 years or above in the participating RCHEs and the specimens collected were cultured for methicillin-resistant *Staphylococcus aureus* (MRSA), multidrug-resistant *Acinetobacter* (MDRA)*, vancomycin-resistant *Enterococcus* (VRE) and carbapenemase-producing *Enterobacteriaceae* (CPE). Further investigation such as molecular typing was performed for all positive specimen of MDRA, VRE and CPE and one-third of randomly selected MRSA-positive samples. The authors also obtained information from the residents such as demographic and health information that included medical history, history of hospitalisation, antimicrobial usage, and use of indwelling catheters to identify the risk factors associated with the MDROs carriage.

Samples of 1 028 residents were collected in this study. The prevalence of MRSA and MDRA was 30.1% (95% confidence interval [CI] = 25.1% - 35.6%) and 0.6% (95% CI = 0.1% - 4.1%) respectively while no VRE and CPE were identified. The authors observed that residents living in privately run RCHEs associated with the carriage of MRSA while the association of the non-Chinese residents and MRSA carriage was at borderline significance.

This study revealed the information of MRDOs carriage among RCHE residents in Hong Kong which is important to formulate targeted surveillance and control strategies in future.

*Defined as concomitant resistance to fluoroquinolones, carbapenems, aminoglycosides. Cephalosporins and beta-lactam with or without beta-lactamase inhibitors

Hong Kong Med J, 2018; 24 (4): 350-360

<https://www.hkmj.org/abstracts/v24n4/350.htm>

Risk factors associated with 1-year mortality among patients with HIV-associated tuberculosis burden and low HIV prevalence

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This study aims to determine the risk factors for 1-year mortality among patients infected with human immunodeficiency virus (HIV)-associated tuberculosis (TB) in Hong Kong, where the HIV prevalence was low and TB burden was intermediate. The authors retrieved data of adult patients from the records in the Hong Kong TB-HIV Registry between 2006 and 2015 and performed Cox proportional hazards regression modelling to identify factors associated with the mortality.

A total of 299 patients were identified in this study and 21 (7.0%) of them died within 12 months of anti-TB treatment with a median of 7.5 months (interquartile range: 3.8 to 10 months). The median age of death was 54 years (interquartile range: 40.5 to 75.0 years). Among the deceased patients, five of them died of TB while the cause of death of the remaining 16 cases were unrelated to TB. This study suggested that older age of patients (adjusted hazard ratio = 4.5; 95% confidence interval [CI] = 1.4 - 14.9), patients with a history of drug addiction (4.6; 95% CI = 1.6 - 13.0), and low baseline CD4 cell count of <50/μL (2.9; 95% CI = 1.1 - 7.7) were independent risk factors for death within 12 months. The findings of this study may guide targeted measures to improve survival of patients with HIV-associated TB in other areas with similar TB burden and HIV prevalence as Hong Kong such as the Western Pacific region.

Hong Kong Med J, 2018; 24 (5): 473-483

<https://www.hkmj.org/system/files/hkmj187303.pdf>

Varicella vaccine dose depended effectiveness and waning among preschool children in Hong Kong

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The primary objective of this study is to estimate the effectiveness of varicella vaccine against varicella infections of all severity in preschool children in Hong Kong.

Universal varicella vaccination (UVV) was introduced in July 2014 in Hong Kong with a two-dose schedule for children born in 2013. However, the vaccine had been available in the private market since 1996. Based on the data from varicella notifications and surveys on immunization coverage, the investigators estimated the dose-specific varicella vaccine effectiveness (VE) among preschool children in Hong Kong before UVV using screening method. They have estimated the VE of one- and two-dose varicella vaccination against all notified varicella as 69.4% (95% confidence interval [CI] = 69.5 - 71.2) and 93.4% (95% CI = 91.7 - 94.7) respectively. They did not find evidence for decrease in VE with time since receipt. They have also found the vaccine was more effective against complications (85.4% [95% CI = 48.8 - 95.8] for one dose and 100% [95% CI –Inf to 100] for two doses) and against hospital admission (75.2% [95% CI = 53.4 - 86.8] for one dose and 93.1% [95% CI = 47.1 - 99.1] for two doses). They have also explored the relationship between varicella vaccination and breakthrough infection, and found that the lower protection provided by one-dose vaccination resulted in breakthrough varicella.

The investigators concluded that varicella vaccine is effective in preventing varicella infection, complication and hospitalisation. With shortened interval between the first and second dose of varicella vaccination under the current UVV, the risk of breakthrough varicella and outbreaks in preschool should be reduced.

Hum Vaccin Immunother, 2019; Oct: 1-7

<https://www.tandfonline.com/doi/pdf/10.1080/21645515.2019.1663121?needAccess=true>

NEWS IN BRIEF

CA-MRSA cases in January 2020

In January 2020, the Centre for Health Protection (CHP) of the Department of Health recorded a total of 78 cases of community-associated methicillin resistant *Staphylococcus aureus* (CA-MRSA) infection, affecting 41 males and 37 females with ages ranging from two months to 81 years (median: 36 years). Among them, there were 57 Chinese, 5 Caucasian, 4 Pakistani, 3 Filipinos, 3 Indian, 2 Nepalese, 1 African, 1 Indonesian and 2 of unknown ethnicity.

Seventy-seven cases presented with uncomplicated skin and soft tissue infections while the remaining case had severe CA-MRSA infection. The severe case affected a 34-year-old man with underlying disease. He presented with fever and swelling of face and lips since January 2. He attended a public hospital on January 4 and was admitted for management. His blood specimen collected on the same day was cultured positive for CA-MRSA. He was diagnosed with CA-MRSA associated facial cellulitis and sepsis. He was subsequently transferred to the intensive care unit for further management and treated with antibiotics. His condition improved and was discharged on January 17.

Among the 78 cases, one was a nurse working in a government out-patient clinic. Investigation did not reveal any epidemiologically linked cases. Besides, three household clusters, with each affecting two persons, were identified.

Scarlet fever update (January 1, 2020 – January 31, 2020)

Scarlet fever activity in January decreased. CHP recorded 164 cases of scarlet fever in January 2020 as compared with 251 cases in December 2019. The cases recorded in January included 90 males and 74 females aged between one year and 64 years (median: five years). There were three institutional clusters occurring in two kindergartens/child care centres and a primary school, each affecting two children. No fatal cases were reported in January.

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FEATURE IN FOCUS

Prevalence Survey on Catheter-associated Urinary Tract Infection (CAUTI) in Public Hospitals 2018

Reported by Dr CHEN Hong, Head; Dr Joyce LEE, Medical and Health Officer; Mr Kelvin YU, Research Officer and Ms Christina CHAN, Research Officer, Infection Control Branch, CHP; Dr Kitty FUNG, Consultant Microbiologist and Convener of Working Group of Prevalence Survey; Dr Raymond Wai-man LAI, Chief Infection Control Officer, Hospital Authority.

Healthcare-associated infections (HAI) can cause patient morbidity, additional hospital stay and increased healthcare costs. Efforts to address HAIs should be targeted to areas with the most potential for prevention and control. The Scientific Committee on Infection Control of the Centre for Health Protection of the Department of Health recommended that prevalence survey should be conducted regularly to monitor the trend of HAIs within hospitals. Catheter-associated urinary tract infection (CAUTI) is one of the most common HAIs, and is also considered as the most preventable HAI. A prevalence survey of CAUTI was conducted in public hospitals of the Hospital Authority (HA) in June 2018. The survey aimed to (1) monitor the point prevalence of healthcare-associated CAUTI (HA-CAUTI); (2) understand the policy of urinary catheter care and (3) monitor the compliance to recommendations of catheter care.

A total of 16 914 patients from 30 hospitals were surveyed and included in the analysis. Forty-six patients fulfilled the case definition of HA-CAUTI giving the prevalence of 0.27% (95% confidence interval [CI] 0.20%-0.36%). Prevalence of CAUTI for hospitals ranged from 0% to 2.59%.

Patients in Neurosurgery (NS) and Intensive Care Unit/High Dependency Unit (ICU/HDU) had higher prevalence of CAUTI (Figure 1). Multivariate logistic regression showed that NS and ICU/HDU were significantly associated with a higher prevalence of CAUTI. Compared to the Medical (MED) specialty as the reference group, the odds ratios (OR) were 5.97 (95% CI 2.30-15.51, $p < 0.001$) and 6.61 (95% CI 1.91-22.92, $p = 0.003$) respectively.

The prevalence of CAUTI was also associated with the length of stay, demonstrating an increasing trend with longer hospital stay (Figure 2). For patients staying for over 29 days, the prevalence of CAUTI was over 10 times that of those staying for seven days or less (OR 10.45, 95% CI 3.84-28.19, $p < 0.001$) (Table 1).

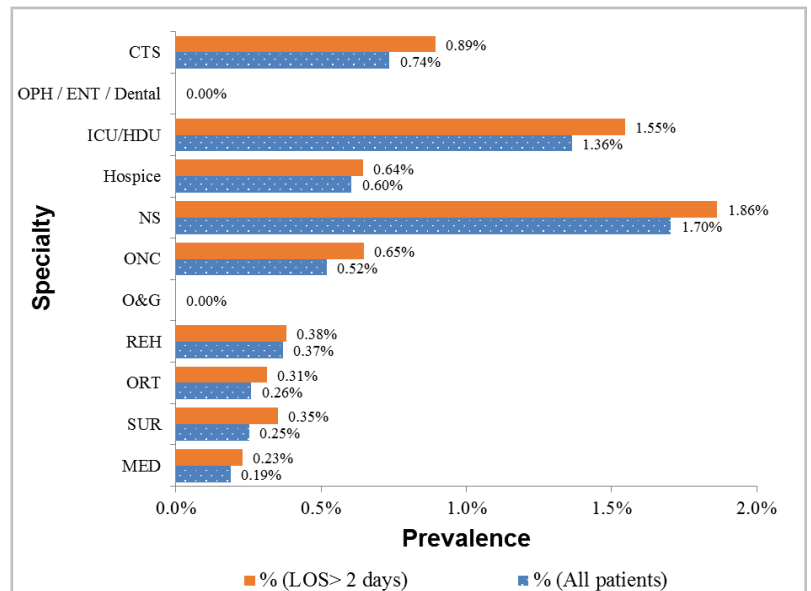


Figure 1 - Prevalence of CAUTI by specialty.

Note: LOS = length of stay; CTS = Cardiothoracic Surgery; OPH = Ophthalmology; ENT = Ear, Nose & Throat; ICU = Intensive Care Unit; HDU = High Dependency Unit; NS = Neurosurgery; ONC = Clinical Oncology; O&G = Obstetrics & Gynaecology; REH = Rehabilitation; ORT = Orthopaedics & Traumatology; SUR = Surgery; MED = Medicine.

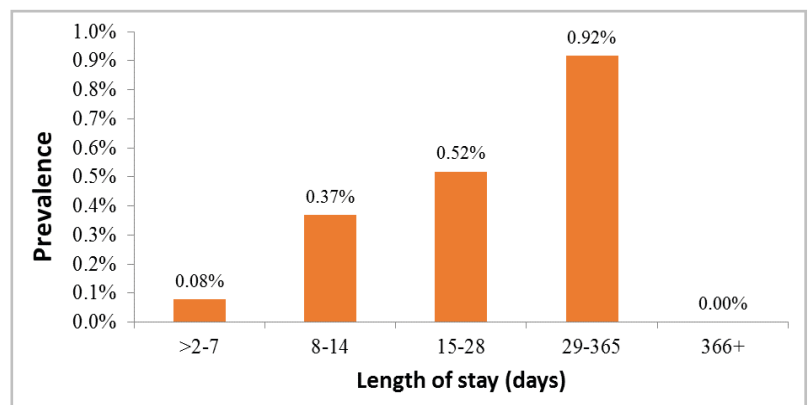


Figure 2 - Prevalence of CAUTI by length of stay.

For policy on urinary catheter care, 124 responses from various clinical departments of the 30 participating hospitals were received. All hospitals had Standard Operating Procedures (SOP) in place. Twenty-nine (96.7%) hospitals had reminder system for catheter removal. Twenty-seven (90%) hospitals had written policy of indications for urinary catheter use. Majority of hospitals had written policy on the standard of care for insertion and maintenance of urinary catheter, such as hand hygiene (100%), aseptic technique (100%), use of bedside ultrasound scan for post-voiding residual urine (100%), use of designated container for emptying (100%), disinfection of drainage outlet (100%) and daily cleansing of meatal area (100%). Sixteen (53.3%) hospitals have surveillance system to monitor CAUTI.

Among the study population, 2 517 out of 16 949 patients surveyed (14.9%) had a urinary catheter, of which 709 (28.2%) were sampled for assessment of compliance to catheter care recommendations.

Among these 709 observations, 223 (31.5%) were long-term catheter. Apart from variation in proper securing of the catheter (51.1%), the compliance to other recommendations like documentation of indication of catheterization (96.3%), closed drainage system (100%), tube free from kinking (99.7%), urinary bag below the level of bladder and above the floor (98.9%), and no overfilling of drainage bag were satisfactory (99.7%).

This is the third prevalence survey of infections in HA hospitals since 2007¹ and 2010² but the first to document the prevalence of HA-CAUTI. Members of Working Group of Prevalence Survey visited the three hospitals with highest HA-CAUTI rate. Improvement plan was formulated after reviewing practice together with local team and the hospital infection control team. Serial prevalence would be monitored.

We found that close to half of the hospitals did not have routine CAUTI surveillance. We recommend departments with high prevalence should have surveillance to monitor their practice and trend to prevent CAUTI.

Proper securing of catheter is important to prevent urethral tension and minimise the chance of infection³. Method for securing catheter has been discussed and promulgated to frontline healthcare workers. The practice will be monitored in the future.

Acknowledgement

The authors want to express their appreciation for the contribution of members of Working Group of Prevalence Survey, infection control nurses, ward managers and colleagues of wards of all participating hospitals.

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Table 1 - OR of associating factors for CAUTI.

	Univariate Logistic Regression		Multivariate Logistic Regression	
	OR 95% CI	P-value	OR 95% CI	P-value
Specialty				
MED	Reference group		Reference group	
SUR	1.34 (0.53-3.40)	0.537	1.70 (0.67-4.33)	0.265
ORT	1.37 (0.54-3.49)	0.504	1.16 (0.46-2.95)	0.755
REH	1.95 (0.57-6.68)	0.285	1.02 (0.30-3.51)	0.978
O&G	NA	NA	NA	NA
ONC	2.76 (0.64-12.01)	0.175	3.11 (0.71-13.60)	0.131
NS	9.18 (3.60-23.43)	<0.001	5.97 (2.30-15.51)	<0.001
Hospice	3.22 (0.74-13.99)	0.119	1.75 (0.40-7.65)	0.460
ICU/HDU	7.32 (2.13-25.16)	0.002	6.61 (1.91-22.92)	0.003
OPH/ENT/Dental	NA	NA	NA	NA
CTS	3.92 (0.52-29.68)	0.186	3.72 (0.49-28.39)	0.205
Length of Stay				
>2 - 7 (Ref group)	Reference group		Reference group	
8 - 14	4.76 (1.63-13.94)	0.004	4.62 (1.57-13.58)	0.005
15 - 28	6.71 (2.33-19.34)	<0.001	6.53 (2.25-18.93)	0.001
29 - 365	11.93 (4.47-31.82)	<0.001	10.45 (3.84-28.19)	<0.001

NA: not applicable due to no cases.

NEWS IN BRIEF

Infectious Disease Forum on COVID-19

The Infection Control Branch (ICB) of the Centre for Health Protection (CHP) of the Department of Health and the Infectious Disease Control Training Centre (IDCTC) of the Hospital Authority (HA) organised an Infection Disease Forum on COVID-19 through online teaching recently. This was the first time ICB/IDCTC adopted this mode of training instead of classroom forum. The arrangement was to avoid crowd gatherings in light of the current situation of COVID-19. In addition, it is hoped that more colleagues and working partners could benefit from the programme.

The forum consists of three presentations in the format of PowerPoint with voice recordings. It covers the following topics:

The first part, Management of COVID-19 presented by Dr Owen Tsang, Consultant (Medicine and Geriatrics) Princess Margaret Hospital/Medical Director of Infectious Disease Centre of HA, introduced the global, regional and local epidemiology of COVID-19, its clinical characteristics and comparison with other coronavirus diseases, laboratory and imaging findings, and treatment recommendations. This session lasted for about 30 minutes.

The second part, Infection Control Advices in Hospital Setting presented by Ms Kong Man Ying, Senior Nursing Officer, Chief Infection Control Officer Office of HA, was focused on the infection control guidelines for COVID-19 in public hospitals. Requirement of personal protective equipment (PPE) for various scenarios based on risk assessment was presented. Equipment and environmental disinfection, linen handling and waste management for suspected and confirmed cases were detailed. This session lasted for 19 minutes.

The third part, Infection Control Advices in Community Setting presented by Mr Ng Ngai Ming, Anthony, Senior Nursing Officer, ICB of CHP, was focused on infection prevention and control in the community. Health advice for the general public, travellers, businesses and workplace, institutions and schools was presented. Management for travellers returning from the Mainland, namely quarantine and medical surveillance, and PPE requirement in various clinic settings were described. This session lasted for 23 minutes.

The forum can be accessed on the Hong Kong Training Portal on Infection Control and Infectious Diseases website via the URL: <https://icidportal.ha.org.hk/Trainings/View/149>.

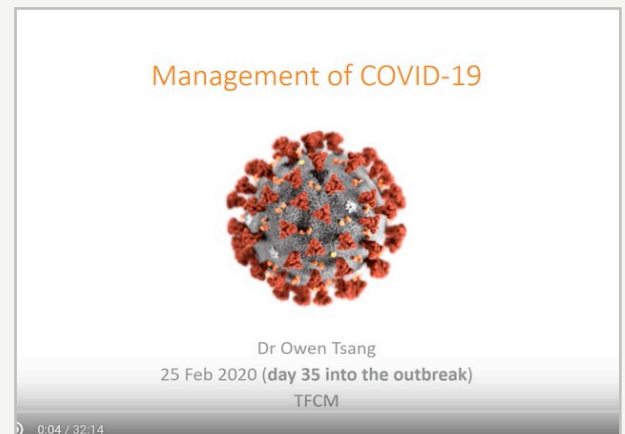


Photo - The Infectious Disease Forum on COVID-19 was organised in the format of online teaching.

Communicable Diseases

WATCH

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FEATURE IN FOCUS

Cooling tower-associated outbreak of Legionnaires' disease in Hong Kong

Reported by Dr Emily TAM, Medical and Health Officer, Outbreak Section, Epidemiology Division, Communicable Disease Branch, CHP.

In Hong Kong, Legionnaires' disease (LD) has been a notifiable disease since March 1994. In 2018 and 2019, there were 105 cases each year. So far most cases recorded in Hong Kong were sporadic infections with unidentified source. Below we describe the first LD outbreak associated with cooling towers in Hong Kong affecting a total of 15 persons.

The outbreak

On January 30 and 31, 2020, the Centre for Health Protection (CHP) of the Department of Health received notifications of three cases of LD residing in Wong Tai Sin district. Epidemiological investigations and control measures were introduced immediately. Subsequently, more cases were reported. From January 30 to February 28, a total of 15 cases of LD was recorded in the outbreak affecting 12 males and three females (aged 52 to 94 years). All had underlying illnesses. They presented with fever (11 cases, 73%), cough (11 cases, 73%), sputum (7 cases, 47%) and shortness of breath (10 cases, 67%), with onset from January 22 to February 6 (Figure 1). All required hospitalisation. As of March 17, three cases died, and one was in serious condition. The remaining 11 cases were stable and discharged.

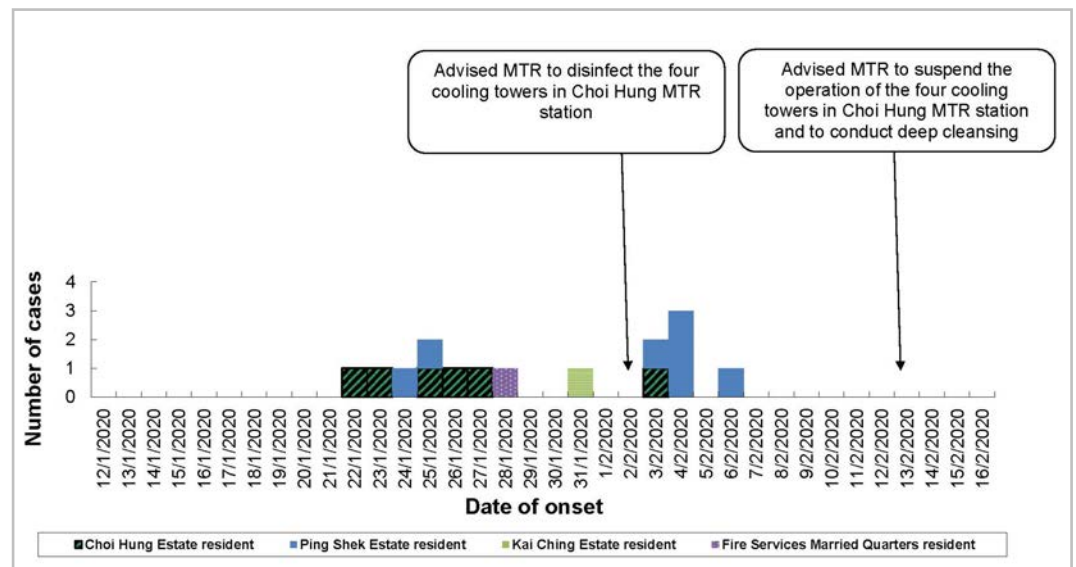


Figure 1 - Epidemic curve by date of onset of symptom (n=15).

All required hospitalisation. As of March 17, three cases died, and one was in serious condition. The remaining 11 cases were stable and discharged.

Among these 15 patients, 10 of them were diagnosed by Urine Antigen Test (UAT) for *Legionella pneumophila* serogroup 1 antigen, three were diagnosed by PCR of respiratory specimens for *Legionella pneumophila* serogroup 1, and two were diagnosed by paired serology showing more than four-fold rise in antibody against *Legionella pneumophila*. Respiratory specimens collected from eight patients also yielded positive culture for *Legionella pneumophila* serogroup 1.

Epidemiological investigation revealed that six cases resided in five blocks of Choi Hung Estate, seven cases resided in four blocks of Ping Shek Estate, one case resided in Kai Ching Estate and one case resided in Wing Ting Road Fire Services Married Quarters. All are geographically proximal to each other (Figure 2) and within 650 meters from Choi Hung MTR station. The wind direction was mostly 010 -100 degrees, i.e. from North and East during the period from early January to early February.

Actions taken to control the outbreak

CHP conducted site visits and field investigations with Electrical and Mechanical Services Department (EMSD) for source identification. Site visits were conducted to cases' residence, water tanks of cases' residence and cooling towers in the vicinities. A total of four functioning cooling towers were identified in the overlapping area of 500m within cases' residence, all belonged to Choi Hung MTR. Water and environmental samples were collected for testing of *Legionella*. CHP advised precautionary disinfection of the cooling towers on February 2 while awaiting laboratory results.

The total *Legionella* species count of water collected from three out of four cooling towers of Choi Hung MTR station (CT1- 4) (Figure 2) on February 2 were reported to be 1 700 cfu/ml (CT1), 200 cfu/ml (CT3) and 10 cfu/ml (CT4) respectively, which exceeded the action level of <10 cfu/ml. In addition, *Legionella pneumophila* serogroup 1 (*Lp-1*) was isolated from the above three water samples. MTR was advised to suspend the operation of four cooling towers in Choi Hung MTR station for thorough disinfection of the systems on February 13 on receiving the laboratory results. Subsequent laboratory tests revealed that respiratory specimens of eight patients of the cluster and two water samples collected from CT1 and CT3 of Choi Hung MTR station were of the same sequence type (ST74) of *Lp-1*. This suggested that the cooling towers could be source of infection of this outbreak.

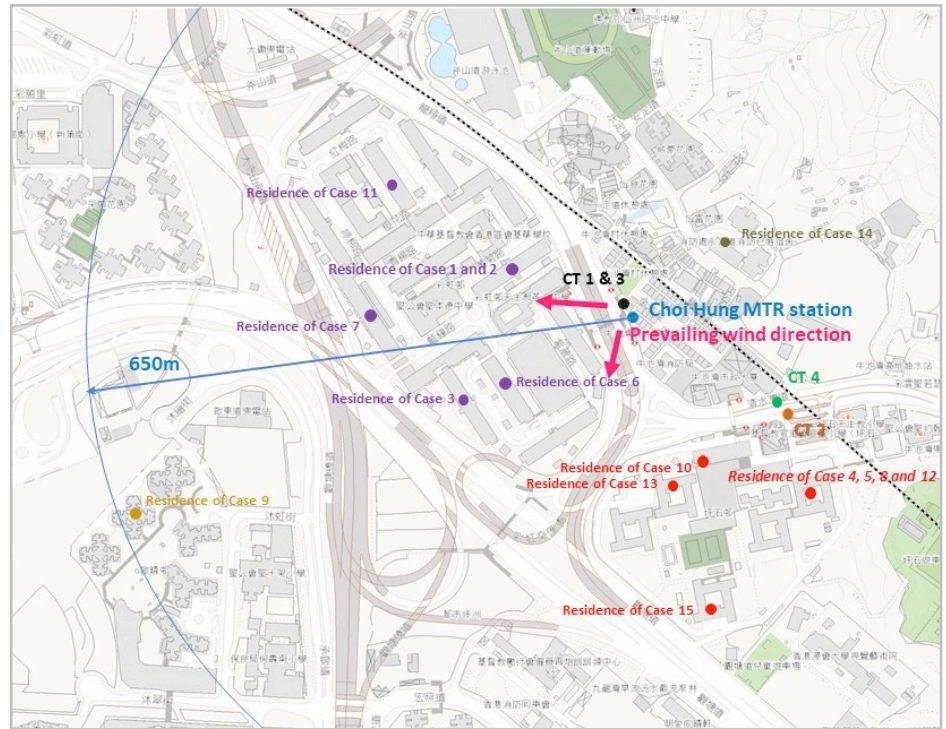


Figure 2 - Geographic distribution of the cases and cooling towers (CT1-CT4).

The total *Legionella* species count of water sampled from the four cooling towers in Choi Hung MTR station after disinfection were found below action level. No further cases have been reported for over a month since the onset of the last case related to this outbreak on February 6. Given the longest incubation period of 10 days for LD, we may conclude that the control measures have been effective to stop the outbreak. To prevent further recurrence, MTR has been requested to enhance surveillance and maintenance of cooling towers in accordance with the Code of Practice for Fresh Water Cooling Towers issued by EMSD.

NEWS IN BRIEF

CA-MRSA cases in February 2020

In February 2020, the Centre for Health Protection (CHP) of the Department of Health recorded a total of 73 cases of community-associated methicillin resistant *Staphylococcus aureus* (CA-MRSA) infection, affecting 53 males and 20 females with ages ranging from five years to 96 years (median: 37 years). Among them, there were 49 Chinese, 7 Caucasian, 5 Filipinos, 4 Pakistani, 1 Indian, 1 Indonesian, 1 Nepalese and 5 of unknown ethnicity.

Seventy-one cases presented with uncomplicated skin and soft tissue infections while the remaining two cases had severe CA-MRSA infections. The first severe case affected a 91-year-old man with underlying disease. He presented with fever with increased cough and shortness of breath on January 22 and was admitted to a public hospital for management. He was subsequently transferred to a private hospital for further management on the next day. His sputum collected on January 23 was cultured positive for CA-MRSA. He was diagnosed with CA-MRSA associated pneumonia. He was treated with antibiotics and discharged on January 28. The second severe case affected a 54-year-old man with underlying disease. He presented with left hand abrasion injury on January 25. He noted swelling and redness over his left wrist and ring finger. He attended a public hospital on February 8 and was admitted for management. His left wrist tissue and blood specimen collected on February 8 were cultured positive for CA-MRSA. He was diagnosed with CA-MRSA associated abscess of the left wrist and ring finger and sepsis. He was treated with antibiotics and incision and drainage of the abscess. He was discharged on February 9.

Three clusters, with each affecting two to three persons, were identified in February. Two clusters occurred in households while the remaining one occurred in the same unit of a public hospital. No cases involving healthcare worker were reported during this period.

Scarlet fever update (February 1, 2020 – February 29, 2020)

Scarlet fever activity in February decreased. CHP recorded 20 cases of scarlet fever in February as compared with 159 cases in January. The cases recorded in February included 13 males and seven females aged between two and 23 years (median: five years). There was one institutional cluster occurring in a kindergarten, affecting two children. No fatal cases were reported in February.

Communicable Diseases WATCH



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FEATURE IN FOCUS

Review of HIV/AIDS epidemiology in 2019

Reported by Dr Alfred YW SIT, Medical and Health Officer; Dr Billy CH HO, Senior Medical and Health Officer, and Dr Kenny CW CHAN, Consultant, Special Preventive Programme, Public Health Services Branch, CHP.

The Department of Health (DH) implemented a voluntary anonymous case-based HIV and AIDS reporting system with input from both clinicians and laboratories in 1984 following the first report of HIV. The cumulative number of HIV and AIDS reported in Hong Kong reached 10 280 and 2 118 cases at the end of 2019.

The annual number of newly reported HIV cases has decreased slightly for the fourth consecutive year when compared to the peak of 725 cases in 2015. The number of reports decreased by about 9.5% (a drop of 59 cases) to 565 in 2019 as compared with that of 624 in 2018 (Figure 1).

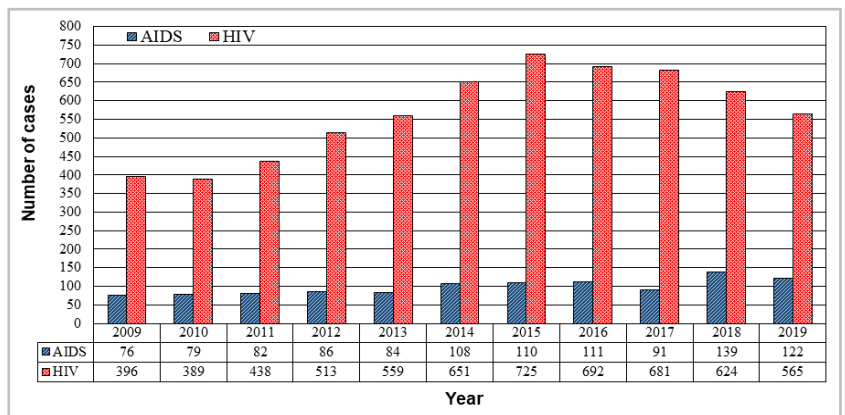


Figure 1 - HIV and AIDS reports (2009 to 2019).

Similar to previous few years, the HIV situation in Hong Kong in 2019 was still dominated by sexual transmission, which accounted for 81.2% of all reported cases. Men who have sex with men (MSM), which includes homosexual and bisexual contact, was the commonest mode of transmission and accounted for more than half (58.6%) of all HIV reports. The ratio of MSM cases to heterosexual cases peaked in 2017 and has slightly decreased to 2.6 in recent two years (Figure 2).

The majority of the HIV reports in 2019 were male (84.8%), Chinese (74.2%) and diagnosed at the age between 20 and 49 (75.0%). The male-to-female ratio was 5.6 in 2019, which was the same as in 2018 but lower than 6.7 in 2017.

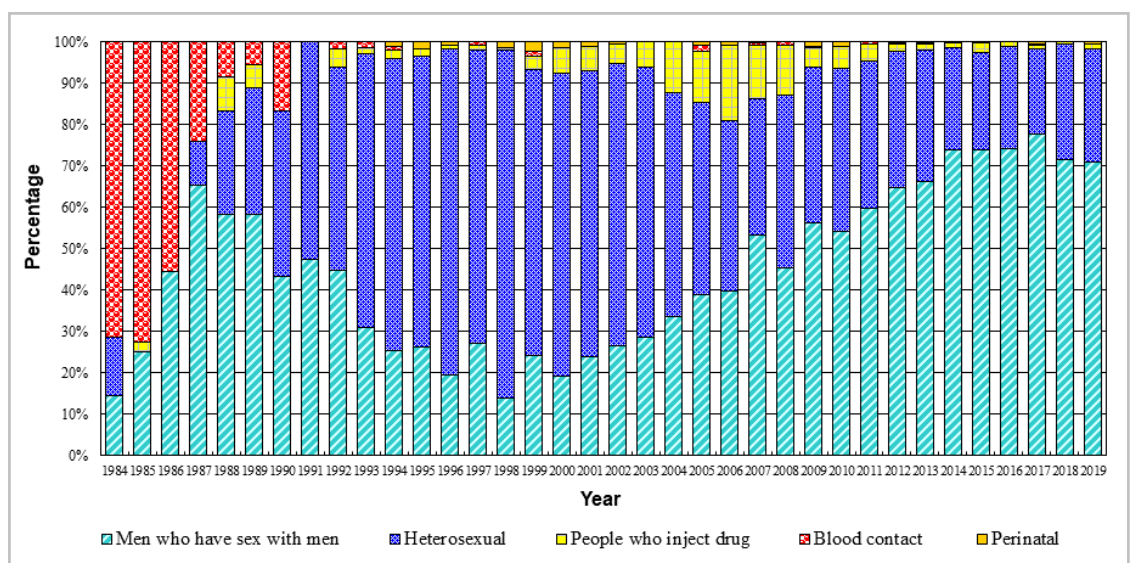


Figure 2 - Route of transmission, excluding unknown route (1984 to 2019).

There were 128 cases of heterosexual transmission in 2019, which accounted for 22.7% of newly reported cases and which has remained stable in recent five years. Among them, 68 were male and 60 were female. The male-to-female ratio ranged from 0.9 to 1.23 in the past few years.

Chinese ethnicity accounted for 70.6% of heterosexual male cases and 51.7% of heterosexual female cases. The median ages were 46 and 40.5 respectively, which were older than their MSM counterpart of 33. Majority of MSM cases were diagnosed HIV positive in the age range of 20-29 years old (Figure 3) while heterosexual cases aged 40 to 49 and 30 to 39 were most commonly reported in heterosexual male and female cases respectively.

In 2019, over half (59.8%) of the reported HIV cases were assessed to have acquired the virus locally, 10.1% in Mainland China and 8.1% in other places respectively. Around one-fifth (21.9%) had unknown place of infection due to inadequate information. When comparing heterosexual men and MSM, a higher proportion of MSM were infected locally (79.2%) than heterosexual men (50.0%). In contrast, more heterosexual male cases (38.2%) and heterosexual female cases (28.3%) were infected outside Hong Kong (in Mainland China or other places) as compared to only 16.4% among MSM. This suggested that non-local infections had an impact on the HIV transmission among heterosexual population in particular.

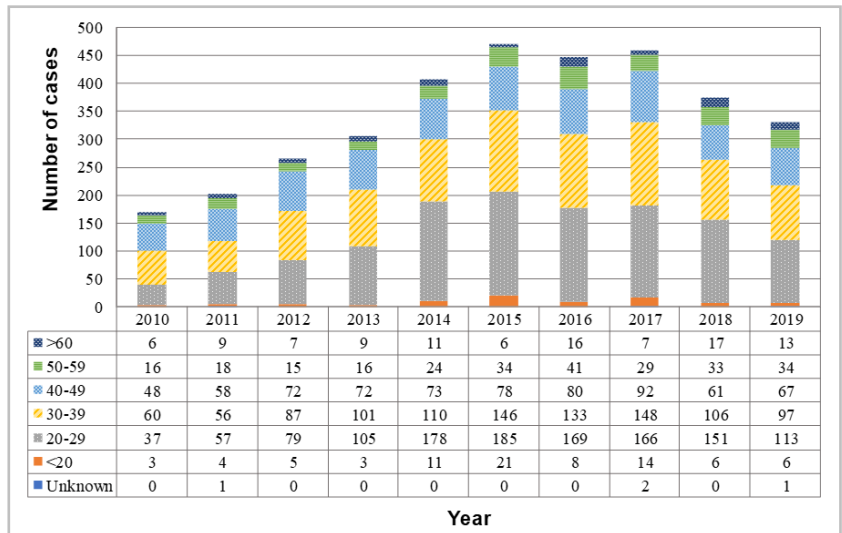


Figure 3 - Age breakdown of HIV-infected MSM cases (2010 to 2019).

In 2019, the three commonest sources of HIV notification were public hospitals/clinics (43.5%), DH's Social Hygiene Clinic (16.6%) and DH's AIDS unit (16.5%). The proportion of HIV cases reported from AIDS service organisations (i.e. non-governmental organisations, NGOs) decreased slightly from 12.7% (79 cases) in 2018 to 12.4% (70 cases) in 2019. For DH's AIDS Unit, it decreased from 11.5% (72 cases) in 2018 to 10.6% (60 cases) in 2019.

Since the introduction of highly active antiretroviral therapy (HAART) in Hong Kong in 1997, the percentage of HIV cases who had progressed to AIDS has decreased. In early 1990s, around 35% of reported cases had progressed to AIDS. This percentage dropped to around 17% in 2010s. A total of 122 AIDS cases were reported in 2019, bringing the cumulative total to 2 118 AIDS cases. As compared to previous years, it was the second highest number of yearly AIDS cases recorded since 1985. The two most common AIDS defining illnesses in Hong Kong continued to be *Pneumocystis pneumonia* and tuberculosis, accounting for 74.6% of all new AIDS reports in 2019.

Overall, MSM cases have remained at a high level and dominated new HIV diagnoses but their number has decreased in recent few quarters when compared to the peak in 2015-2017 (Figure 4). Nevertheless, the concentrated epidemic among young MSM warrants our sustained attention. On the other hand, the HIV situation of heterosexual population and injecting drug users remained relatively stable in the past decade. The number of AIDS cases was shown to be in a slowly rising trend since 2009, albeit a slight drop in 2017. Among them, MSM cases rose sharply, from 31 cases in 2009 to 72 in 2019, while heterosexual cases also rose from about 30 more cases in early 2010s to 43 in 2019. It is speculated that the AIDS cases may remain at a relatively high level, partially attributed to the high level of HIV cases, MSM in particular, in the past decade. Promotion of HIV testing in recent years could have moderated this trend.

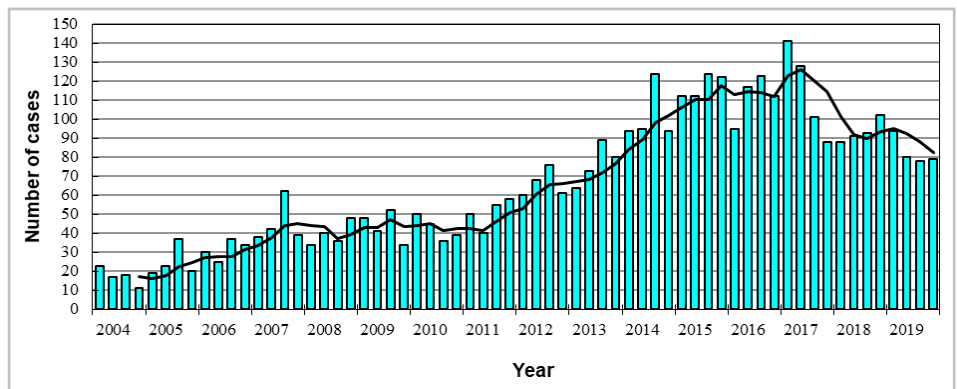


Figure 4 - Number of MSM cases (1984 to 2019, per quarter).

Among them, MSM cases rose sharply, from 31 cases in 2009 to 72 in 2019, while heterosexual cases also rose from about 30 more cases in early 2010s to 43 in 2019. It is speculated that the AIDS cases may remain at a relatively high level, partially attributed to the high level of HIV cases, MSM in particular, in the past decade. Promotion of HIV testing in recent years could have moderated this trend.

HIV self-test study by DH

Early diagnosis of HIV infection could facilitate access to and uptake of treatment and care, including HAART. Treatment is highly effective. In addition to reducing morbidity and mortality, it further prevents onward transmission to sexual partners. Anyone with the risk behaviour or interested in knowing his HIV status should get tested for HIV early, either by attending any HIV testing service or by performing HIV self-testing with a reliable, good-quality test kit.

By providing an opportunity for people to test themselves discreetly and conveniently, HIV self-testing could be an efficient avenue to reach those who are not currently reached by existing HIV voluntary counselling and testing (VCT) services. Self-testing refers to a process in which a user collects his/her own specimen, performs testing and interprets the result. Of note, HIV self-test only serves as a preliminary test and users of any self-test should seek further confirmation by conventional testing if positive.

DH is conducting a study of using oral fluid HIV self-tests for local MSM to expand testing coverage. The study period is from September 2019 to June 2020. The study examines the feasibility and acceptability of using a web-based system that allows ordering of HIV test kits and uploading of test results. Confirmatory testing will be provided to those who have self-tested positive. Medical care will also be provided for the infected patients. The public may visit the DH website (<https://www.21171069.gov.hk/en/index.html>) for related information.

Communicable Diseases WATCH



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FEATURE IN FOCUS

Summary of the 2019/20 winter influenza season in Hong Kong

Reported by Ms Vera CHOW, Scientific Officer, Respiratory Disease Section, Surveillance Division, Communicable Disease Branch, CHP.

The 2019/20 winter influenza season in Hong Kong arrived in the second week of 2020. The overall seasonal influenza activity increased above the baseline level in January and peaked in the last week of the month. It then rapidly returned to the baseline level in mid-February. This winter influenza season spanned for five weeks, which was much shorter than the previous two winter seasons (12 weeks in 2017/18 winter and 14 weeks in 2018/19 winter seasons).

Laboratory surveillance

The laboratory surveillance data of the Centre for Health Protection (CHP) of the Department of Health showed that the percentage of respiratory specimens tested positive for influenza viruses by the Public Health Laboratory Services Branch (PHLSB) reached the peak of about 19% in late January (Figure 1). In this season, the majority of positive influenza detections (about 80%) were influenza A(H1N1), followed by influenza A(H3N2) (16%), while influenza B remained low throughout the season (4%).

Antigenic characterisation of influenza viruses performed by PHLSB revealed that the majority of influenza A(H1N1) and influenza B viruses detected between late November 2019 to March 2020 were antigenically similar to the vaccine strains contained in the 2019-20 Northern Hemisphere seasonal influenza vaccine (SIV) used in Hong Kong. However, the majority (85%) of influenza A(H3N2) viruses detected were antigenically dissimilar from the H3N2 vaccine strain. The results were largely similar to the findings in Mainland China and some overseas countries such as the United States and Canada.

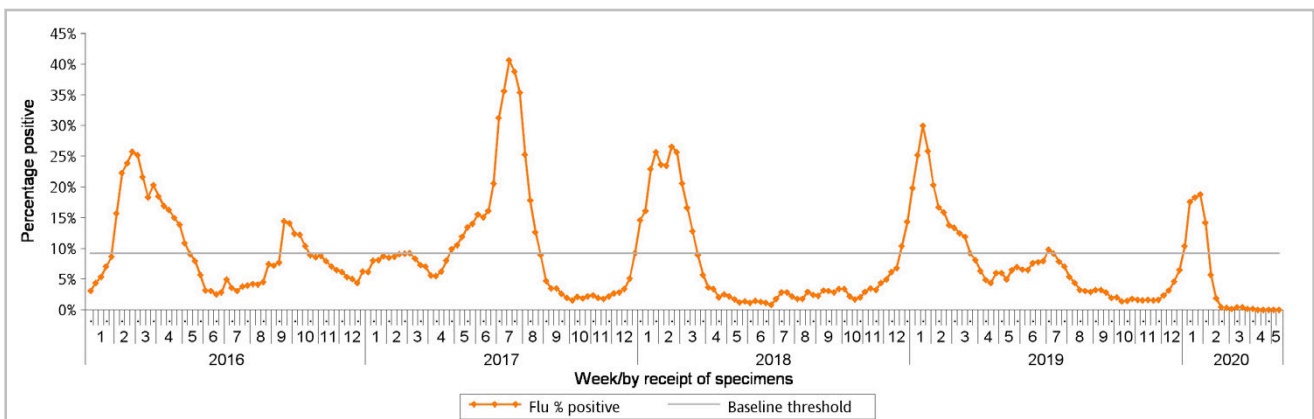


Figure 1 - Percentage of respiratory specimens tested positive for influenza viruses, 2016 to 2020.

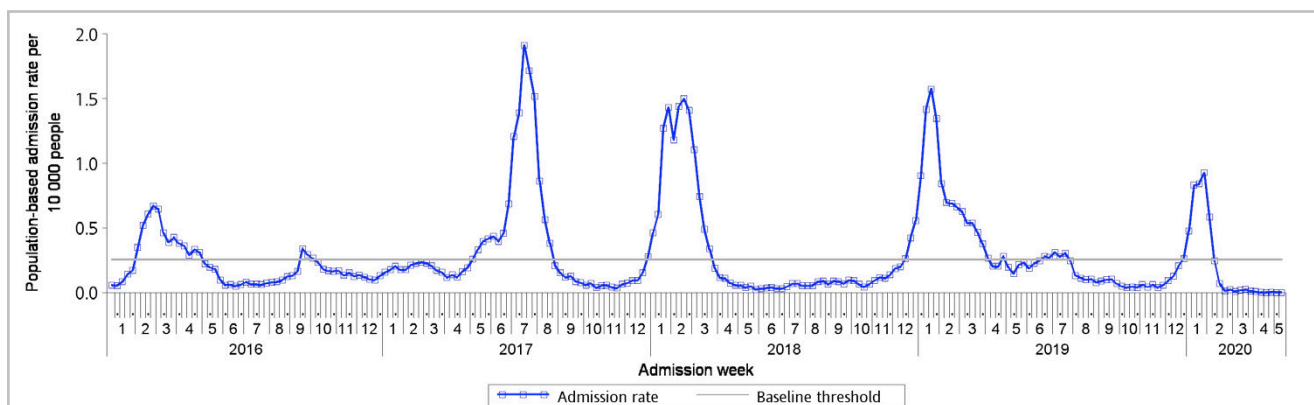


Figure 2 - Weekly admission rates with principal diagnosis of influenza in public hospitals, 2016 to 2020.

Influenza-associated hospital admission rates in public hospitals

The influenza-associated hospital admission rates in public hospitals reached the peak of 0.93 admitted cases per 10 000 population in late January, and then returned to a low level in early February (Figure 2). The peak rate was lower than that recorded in major influenza seasons from 2017 to 2019 (ranging from 1.50 to 1.91). The peak weekly rate was highest among young children aged ≤5 years, followed by elderly aged ≥65 years and children aged 6-11 years (Table 1). For the assessment of influenza-associated admission rates by the moving epidemic method (MEM)*, the highest weekly rates among young children aged ≤5 years, children aged 6-11 years and elderly aged ≥65 years were all at the medium intensity level.

Table 1 - Peak weekly admission rates (per 10 000 population) recorded during major influenza seasons, 2016 to 2020.

Season (predominating virus)	Peak weekly admission rate (per 10 000 population)						
	0-5	6-11	12-17	18-49	50-64	≥65	All ages
2019/20 winter (H1)	4.95	1.13	0.62	0.46	0.64	1.94	0.93
2018/19 winter (H1)	11.06	1.96	1.14	0.56	1.05	2.97	1.58
2017/18 winter (B)	8.81	3.62	1.50	0.36	0.87	4.06	1.50
2017 summer (H3)	9.07	1.63	0.61	0.31	0.88	6.40	1.91
2015/16 winter (H1&B)	6.18	1.79	0.38	0.17	0.38	1.04	0.67

Note: The peak rate of various age groups might be recorded in different weeks of the same season.

Influenza-like illness (ILI) outbreaks in schools and institutions

The number of institutional outbreaks of influenza-like illness (ILI) increased in January with the majority occurring in kindergartens/child care centres (KG/CCC) and primary schools (Figure 3). It has decreased markedly since the Lunar New Year holiday in late January and the subsequent territory-wide school closure as a control measure for coronavirus disease 2019 (COVID-19). The last ILI outbreak was recorded on February 11 involving a residential care home for the elderly (RCHE). A total of 153 ILI outbreaks were recorded in this season, which was lower than the range of 401 to 862 outbreaks recorded during major influenza seasons in the past five years. The most affected types of institutions were KG/CCC and primary schools, which constituted 39.9% and 24.8% of all reported outbreaks respectively (Table 2). For the assessment of ILI outbreaks by MEM, the highest weekly numbers in KG/CCC and primary schools were at the medium intensity level while that in RCHE was at the low intensity level.

Table 2 - Numbers and percentages of ILI outbreaks in schools and institutions during the 2019/20 winter season.

Type of institutions	Cumulative number of ILI outbreaks reported from January 5 to February 8, 2020 (% of total)
KG/CCC	61 (39.9%)
Primary school	38 (24.8%)
Secondary school	9 (5.9%)
RCHE	21 (13.7%)
Residential care home for persons with disabilities	15 (9.8%)
Others	9 (5.9%)

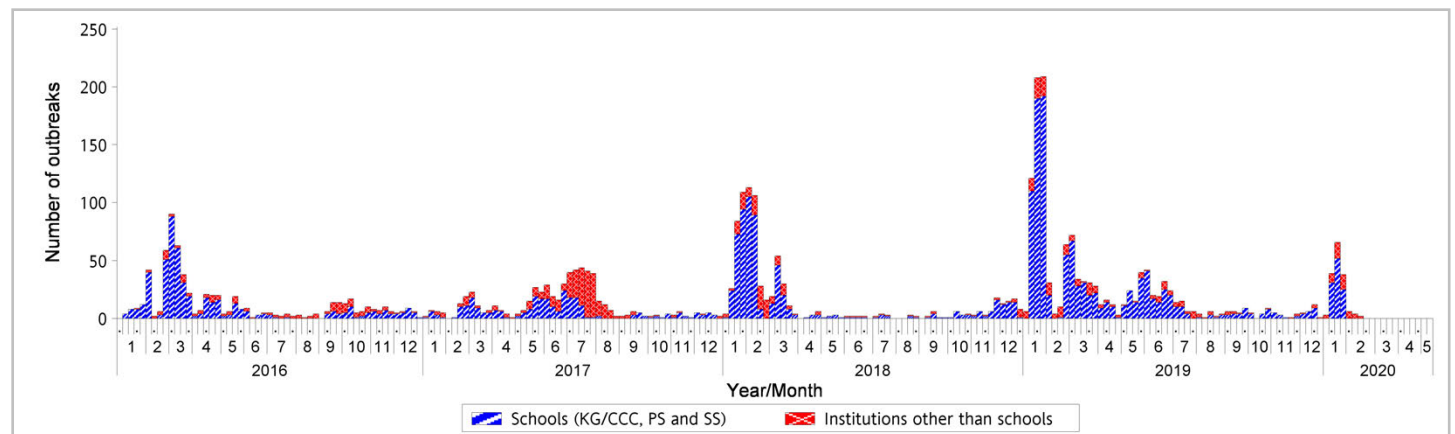


Figure 3 - Weekly number of institutional ILI outbreaks reported to CHP, 2016 to 2020.

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 (≥18 years). For surveillance purpose, the cases refer to laboratory-confirmed influenza patients who require ICU admission or die 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 or underlying diseases.

For the surveillance of severe influenza cases requiring ICU admission or death among adult patients, a total 169 cases (including 103 deaths) were recorded in this season. The number of adult severe influenza cases was much lower than those recorded in major seasons in the past five years (ranging from 409 to 647 cases). About 66% and 22% of the adult severe cases affected persons aged ≥65 years and 50-64 years respectively. Most of the deaths (81%) affected elderly ≥65 years. About 78% of the adult severe cases had pre-existing chronic medical diseases. Only 25% of the cases were known to have received the SIV for the 2019/20 season.

* Details are available from: https://www.chp.gov.hk/files/pdf/explanatory_note_for_flux_mem_eng.pdf.

For paediatric cases of influenza-associated severe complications, five cases were recorded in this season with no deaths recorded. The number of cases was lower than the range of 18 to 27 cases recorded in major influenza seasons in the past five years. The last case was reported on February 3. The ages of the five cases ranged from 26 months to eight years with a median of five years. Three and two cases were aged 0-5 and 6-11 years respectively. Only one of the five cases had received the SIV for the 2019/20 season.

In summary, the 2019/20 winter influenza season was predominated by influenza A(H1N1) which constituted about 80% of all influenza detections in this season. This season only spanned for five weeks, which was much shorter than the winter seasons in previous two years. The local influenza activity dramatically declined in February with decreases in the numbers of influenza detections, institutional ILI outbreaks and influenza-associated hospitalisations. Overall, it was a mild season as reflected by the various surveillance parameters. This is likely related to the intensive prevention measures adopted by the whole community for COVID-19, such as hand hygiene, mask wearing, social distancing, etc.

NEWS IN BRIEF

Four sporadic cases of psittacosis

The Centre for Health Protection (CHP) of the Department of Health record four sporadic cases of psittacosis from January to March 2020.

The first case affected a 77-year-old man with underlying illnesses. He presented with fever, cough, headache, myalgia and shortness of breath on January 14 and was admitted to a public hospital on January 17. Chest X-ray showed right upper zone haziness. The clinical diagnosis was chest infection and he was treated with antibiotics. He remained stable and was discharged on January 23. The nasopharyngeal aspirate collected on January 17 and 19 were both tested positive for *Chlamydia psittaci* DNA by polymerase chain reaction (PCR). He travelled to Shenzhen for one day on January 13. He did not keep any pets at home. He did not recall any contact with birds or bird droppings during the incubation period. His home contact remained asymptomatic.

The second case affected a 70-year-old man with underlying illnesses. He presented with fever, cough and myalgia on February 15 and was admitted to a public hospital on February 20. Chest X-ray showed right lower zone haziness. The clinical diagnosis was pneumonia and he was treated with antibiotics. He remained stable and was discharged on February 25. The sputum collected on February 21 tested positive for *Chlamydia psittaci* DNA by PCR. He did not keep any pets at home. He did not recall history of contact with birds or bird droppings during the incubation period, nor any history of travel. His home contact remained asymptomatic.

The third case affected a 61-year-old man with underlying illness. He presented with headache and cough on February 7 was admitted to a public hospital on February 15. Chest X-ray showed consolidation of the left lower zone and right upper zone. The clinical diagnosis was pneumonia. His condition deteriorated and he developed respiratory failure. He was transferred to the intensive care unit (ICU) and intubated. His condition improved with antibiotic treatment and he was discharged on February 29. Respiratory specimens collected on February 15 tested positive for *Chlamydophila psittaci* DNA. During the incubation period, there was no history of travel. The patient had bought a pair of cockatiel birds on January 24. One of the birds passed away on February 3, before his symptom onset. CHP conducted home visit jointly with the Agriculture, Fisheries and Conservation Department (AFCD) on February 21 and specimens were taken from the remaining bird and the bird cage, which were positive for *Chlamydophila psittaci* DNA. The family members voluntarily surrendered the bird to AFCD. His home contacts remained asymptomatic. Health advice on environmental hygiene was given to the family.

The fourth case affected a 79-year-old man with underlying illness, who lived in Dongguan with his family. He presented with fever and shortness of breath on December 16, 2019 while in Dongguan and was admitted to a hospital in Dongguan on the same day and was intubated. Chest X-ray showed bilateral diffuse infiltrates. Blood and broncho-alveolar lavage collected by the hospital in Dongguan on December 20 tested positive for *Chlamydia psittaci*. He was transferred to Hong Kong on April 3, 2020 and was admitted to the ICU of a public hospital in Hong Kong for further management. Chest X-ray taken in Hong Kong revealed left lower zone consolidation with pleural effusion. He was treated with antibiotics. His condition gradually improved and he was transferred to a convalescence hospital. He did not report any history of contact with birds or their excreta during the incubation period. His home contacts were asymptomatic.

A sporadic confirmed case of brucellosis

On January 20, 2020, CHP recorded a confirmed case of brucellosis affecting a 21-year-old pregnant woman with good past health. She presented with vaginal bleeding with abdominal pain on January 13 at her second trimester pregnancy and was admitted to a public hospital on the same day and was diagnosed to have miscarriage. She was discharged on January 16, and culture of the abortus swab collected on January 13 was subsequently confirmed on January 19 to grow *Brucella melitensis*. The clinical diagnosis was brucellosis and she was arranged for admission on January 20. She was treated with antibiotics and her condition was stable. She reported no contact with animal carcasses or their internal organs. She had no recent travel history, and she did not recall history of consuming raw or undercooked animal products. Her home contacts were asymptomatic.

Four sporadic cases of necrotizing fasciitis caused by *Vibrio vulnificus* infection

CHP recorded four sporadic cases of necrotizing fasciitis caused by *Vibrio vulnificus* infection from January to May 2020, all of them had underlying illnesses.

The first case affected a 77-year-old male who presented with right upper limb swelling and blisters over the right shin on January 25 and was admitted to a public hospital on January 26. The clinical diagnosis was necrotizing fasciitis. He was treated with antibiotics, surgical debridement and right lower limb amputation and he required ICU admission. Blood and necrotic tissue, collected on January 27 and January 29 respectively, grew *Vibrio vulnificus*. His condition improved and he was discharged on April 9. During the incubation period, there was no history of travel. He recalled handling crabs and shrimps on January 24 for preparing meal at home but did not recall history of injury or wounds.

The second case affected a 52-year-old man who presented with fever and pain over the left ankle, both elbows and both knees on March 31 and was admitted to a public hospital on April 2. The diagnosis was necrotizing fasciitis. He was treated with antibiotics, and underwent bilateral above knee amputation and surgical debridement, and post-operatively required ICU care. Blood and right upper limb deep muscle fascia collected on April 2 grew *Vibrio vulnificus*. The patient developed acute renal failure and dehydration after surgery. His condition deteriorated and he finally succumbed on April 7. According to information from the patient's family, he had history of contact with raw crabs and shrimps which he had bought from the wet market on March 30, but there was no history of injury or wounds.

The third case affected a 75-year-old male. He sustained a fall on May 4 with head injury and left wrist swelling. He attended the Accident and Emergency Department (AED) of a public hospital on May 5 due to deterioration in general conditions. He was found to have shortness of breath and cyanosis, and was intubated at the AED. He passed away on the same day. His blood specimen collected on May 5 grew *Vibrio vulnificus*. According to his family, he had visited a wet market on May 3 but there was no known history of contact with seafood or injury at the market.

The fourth case was a 95-year-old female who presented with fever, left middle finger swelling and blister on May 9 and was admitted to a public hospital on May 11. The clinical diagnosis was necrotizing fasciitis. She was treated with antibiotics and surgical debridement. Pus and tissue of her left middle finger collected on May 11 tested positive for *Vibrio vulnificus*. Her condition was stable. She reported history of finger injury while handling raw fish at home on May 8.

All four cases had no recent travel history and their home contacts were asymptomatic. Investigation so far did not identify epidemiological linkage among the four cases.

Four probable cases of sporadic Creutzfeldt-Jakob disease

CHP recorded four probable cases of sporadic Creutzfeldt-Jakob disease (CJD) from February to May 2020.

The first case affected a 74-year-old woman with history of underlying illness. She presented with progressive memory loss and slowness in speech in August 2019 and was admitted to a public hospital on October 22, 2019. Upon admission, she was found to have progressive dementia, decrease in speech and walking disability. Findings of magnetic resonance imaging of the brain and electroencephalography were compatible with CJD. She passed away on December 27, 2019.

The second case affected a 63-year-old man with good past health. He presented with akinesia, akinetic mutism and unsteady gait in end of February 2020. He later developed irrelevant response with incoherent speech and confusion, and was admitted to a private hospital on March 5 due to deterioration in cognition. He was found to have rapidly progressive dementia and myoclonus. Findings of the electroencephalography was compatible with CJD. He was discharged on March 9.

The third case affected a 75-year-old woman with underlying illness. She presented with rapidly progressive dementia with occasional confused speech, disorientation and unsteady gait in February 2020. She was admitted to a public hospital on April 7. Physical examination showed rigidity, hyperreflexia and cerebellar signs. Findings of the electroencephalography was consistent with CJD. She was discharged on April 23.

The fourth case affected an 81-year-old man with history of underlying illness. He presented with deterioration in general condition in March 2020 and was admitted to a public hospital on April 28, 2020. Upon admission, he was found to have progressive dementia, decrease in speech and myoclonus. Electroencephalography findings were compatible with CJD.

All four cases were classified as probable cases of sporadic CJD. They had no known family history of CJD and no risk factors for iatrogenic or variant CJD were identified. No epidemiological linkage was identified among the four cases.

Eight sporadic cases of listeriosis

CHP recorded eight sporadic cases of listeriosis from March to May 2020, three affected pregnant women and four had underlying illnesses.

The first case affected a 27-year-old pregnant woman with good past health. She presented with fever on February 24 and later developed vaginal bleeding, abdominal pain and diarrhoea. She was admitted to a public hospital on March 1 and was found to have miscarriage at 17 weeks of gestation. The blood and high vaginal swab collected on March 1, and the endocervical swab collected on March 2, grew *Listeria monocytogenes*. She was treated with antibiotics. Her condition was stable and she was discharged on April 2. She recalled consuming cucumber salad at home during the incubation period but was unable to provide further details. She had no recent travel history and her household contacts remained asymptomatic.

The second case affected a 37-year-old pregnant woman with no underlying illness. She presented with fever during first trimester pregnancy on March 26. She was admitted to a public hospital on April 3. The blood specimen collected on April 3 yielded *Listeria monocytogenes*. The clinical diagnosis was listeriosis and silent miscarriage. The patient was treated with antibiotics. Her condition improved and she was discharged on April 18. She could not recall history of consuming any high risk food items during the incubation period, and she had no recent travel.

The third case affected a 35-year-old pregnant woman with good past health. She presented with fever, chills and vomiting on April 5 and was admitted to a public hospital on April 10 at 14 weeks gestation. She developed lower abdominal pain and vaginal bleeding after admission, and subsequently passed out the fetus spontaneously. The blood culture collected on April 11 yielded *Listeria monocytogenes*. The diagnosis was septic abortion. She was treated with antibiotics. Her condition was stable and she was discharged on April 27. She travelled to Guangdong from January 24 to 29. She had history of consuming salad and sushi in local restaurants but she could not recall the details. Her household contacts remained asymptomatic.

The fourth case affected a 44-year-old man with underlying illnesses. He presented with fever, diarrhoea and generalised weakness on April 1 and was admitted to a public hospital on April 3. On admission, he was found to have jaundice and generalised abdominal discomfort and was disoriented. The blood culture collected on April 3 yielded *Listeria monocytogenes*. He was treated with antibiotics. His condition deteriorated and he passed away on April 4. According to the patient's wife, he had no recent travel history nor history of consuming high risk food during the incubation period. His home contacts were asymptomatic.

The fifth case affected a 42-year-old woman with underlying illnesses. She presented with shortness of breath on April 6 and was admitted to a public hospital on April 8. Chest X-ray showed bilateral pleural effusion. The pleural fluid collected on April 9 grew *Listeria monocytogenes*. She was treated with antibiotics and bilateral pleural tapping. Her condition improved gradually and she was discharged on April 11. She had history of consuming salad with raw vegetables, sashimi, smoked seafood and pre-cooked meat in various restaurants but she was unable to provide further details. She had no travel history during the incubation period. Her household contacts remained asymptomatic.

The sixth case was a 93-year-old woman with underlying illnesses, a bedbound resident at an elderly home. She was admitted to a public hospital on April 5 due to fever, abdominal pain and distension, shortness of breath and chest pain. The blood culture collected on April 6 yielded *Listeria monocytogenes*. She was treated with antibiotics. She remained stable and was discharged on April 28. She had no recent travel and did not recall history of consuming high risk food during the incubation period. Environmental investigation at the elderly home was negative for *Listeria monocytogenes*.

The seventh case was a 94-year-old woman with underlying illnesses. She presented with fever, shortness of breath and cough since March 24. She was admitted to a public hospital on March 25. The blood culture collected on April 26 yielded *Listeria monocytogenes*. She was treated with antibiotics. Her condition deteriorated and she passed away on April 29. She had no recent travel and there was no history of consuming high risk food during the incubation period.

The eighth case was a 51-year-old man with good past health. He presented with diarrhoea on April 18 and developed fever on April 21. He was admitted to a public hospital on April 21. The blood specimen collected on April 29 grew *Listeria monocytogenes*. He was treated with antibiotics. His condition was stable. He was a fishmonger and had history of consuming self-preparing sashimi during the incubation period. He had no recent travel history and his household contacts remained asymptomatic.

So far, no epidemiological linkage has been identified among the eight cases of listeriosis.

A sporadic case of leptospirosis

On April 16, 2020, CHP recorded a sporadic case of leptospirosis, affecting a 34-year-old man with underlying illness. He presented with fever and bilateral leg pain in late March, and was admitted to a public hospital on April 1. He developed pulmonary haemorrhage and gastrointestinal bleeding after admission. He was transferred to ICU and required intubation. He was treated with antibiotics and his condition subsequently improved. He was discharged on April 23. Paired sera taken on April 2 and 8 showed more than four-fold rise in the antibody titres against *Leptospira* by microscopic agglutination test. He denied history of water activities or other high risk activities during the incubation period, and indicated that he did not have history of rodent or animal bites or direct contact with rodent or their excreta. His home contacts remained asymptomatic.

CA-MRSA cases in April 2020

In April 2020, CHP recorded a total of 47 cases of community-associated methicillin resistant *Staphylococcus aureus* (CA-MRSA) infection, affecting 28 males and 19 females with ages ranging from eight months to 84 years (median: 37 years). Among them, there were 41 Chinese, 3 Caucasian, 2 Pakistani, and 1 Filipino.

Forty-six cases presented with uncomplicated skin and soft tissue infections while the remaining case had severe CA-MRSA infection. The severe case affected a 33-year-old woman with history of CA-MRSA infection. She presented with fever and low back pain since April 4 and was admitted to a public hospital for management. Her blood specimen collected on April 9 was cultured positive for CA-MRSA. Echocardiogram was performed and showed valvular lesion of the heart. She was diagnosed with CA-MRSA associated infective endocarditis. She was treated with antibiotics and remained in stable condition.

Among the 47 cases, two sporadic cases involved healthcare workers. One case was a nurse working in a public hospital while another was a physiotherapy assistant working in a residential care home for the elderly. Investigation did not reveal any epidemiologically linked cases. Besides, no household clusters were identified in April.

Scarlet fever update (April 1, 2020 – April 30, 2020)

Scarlet fever activity in April remained low. CHP recorded seven cases of scarlet fever in April as compared with four cases in March. The cases recorded in April included five males and two females aged between 11 months and 16 years (median: six years). No institutional clusters or fatal cases were reported in April.

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FEATURE IN FOCUS

Investigation of the first local dengue case in Hong Kong, 2020

Reported by Dr SY TANG, Medical and Health Officer, Outbreak Section, Epidemiology Division, Communicable Disease Branch, CHP.

The Centre for Health Protection (CHP) of the Department of Health (DH) confirmed the first local case of dengue fever in 2020. We summarise below the epidemiological investigation and actions taken in response to the case.

The patient was an 84-year-old man with underlying illnesses. He presented with fever on April 3, 2020. He attended the Accident and Emergency Department of a public hospital on April 9 due to persistent fever, and was admitted on the same day. Blood test showed deranged liver function, leucopenia and thrombocytopenia. The blood specimen collected on April 9 tested positive for dengue NSI antigen, dengue virus IgM and dengue virus type 2 RNA by Public Health Laboratory Services Branch of CHP of DH on April 15. The patient had no travel history during the incubation period (14 days before his symptom onset). He lived in a village in Yuen Long with his wife. The families of his son and daughter lived nearby in the same village, and he regularly visited the backyard garden of his son for farming. He had otherwise been mostly staying at home. He did not recall history of mosquito bites during incubation period but he indicated that there were many mosquitoes around his home.

Upon receiving notification of the case on April 15, CHP immediately commenced epidemiological investigation and conducted field visit to the patient's residence, jointly with the Pest Control Advisory Section (PCAS) of the Food and Environmental Hygiene Department (FEHD) on the same day. The patient's family members were asymptomatic. Active case finding was conducted through interviews of residents living in the vicinity and questionnaire surveys. Health advice and educational materials were disseminated to the residents. The case was announced through press release, appealing to residents of the area to call the CHP hotline. A telephone hotline was set up to facilitate case finding and to offer health advice to persons who had been to the vicinity of the village and with symptoms of dengue fever.

The PCAS of FEHD carried out vector investigation and mosquito control measures. Vector control and prevention measures were also strengthened in the vicinity of the patient's residence, and the clinics and hospitals that the patient had visited during his infectious period.

CHP had immediately issued letters to doctors and private hospitals to alert them about the local case of dengue fever for heightening vigilance. Letters were also issued to institutions including schools, kindergartens/child care centre/kindergarten-cum-child care centre, elderly homes and homes for the disabled to reinforce messages about prevention of dengue fever infection and the importance of enhancing vector control measures.

The patient remained in stable condition after admission and was discharged on April 16, 2020. A total of 28 households with 114 residents had been reached by interviews or questionnaire surveys. All persons identified were asymptomatic. By the end of surveillance period on May 15, 2020, no additional cases have been detected.

To eliminate potential breeding sites of mosquitoes and to avoid mosquito bites remain the best measures for the prevention and control of dengue fever. At present, there is no locally registered dengue vaccine available in Hong Kong and no curative treatment. Travellers who return from affected areas should apply insect repellent for 14 days after arrival in Hong Kong to prevent mosquito bite. If they feel unwell, they should seek medical advice promptly, and provide travel details to doctor. Members of the public may visit CHP's dengue fever page (<https://www.chp.gov.hk/en/features/38847.html>) or DH's Travel Health Service (<https://www.travelhealth.gov.hk/eindex.html>) for further information on dengue fever and outbreaks in other areas. Information regarding control and prevention of mosquito breeding can be found on FEHD's website (https://www.fehd.gov.hk/english/pestcontrol/handbook_prev_mos_breeding.html).

NEWS IN BRIEF

A sporadic case of listeriosis

On May 17, 2020, the Centre for Health Protection (CHP) of the Department of Health recorded a sporadic case of listeriosis affecting a 25-year-old woman with good past health. She presented with vomiting and polydipsia on May 13. She attended a private clinic on May 15 and was found to have high blood glucose level. She was admitted to the intensive care unit of a public hospital on the same day. Blood culture collected on May 15 yielded *Listeria monocytogenes*. The diagnosis was listeriosis with severe sepsis, newly diagnosed Type 1 diabetes with diabetic ketoacidosis. She was treated with antibiotics. Her condition improved gradually and she was discharged on June 1. She had no recent travel history. She had history of consuming sashimi, hotpot with raw egg, ice-cream and yoghurt during the incubation period but she could not recall the details. Her household contacts remained asymptomatic.

A sporadic case of psittacosis

On May 23, 2020, CHP recorded a sporadic case of psittacosis affecting a 59-year-old man with good past health. He presented with fever and myalgia on May 6 and was admitted to a public hospital on May 12. Chest X-ray showed left basal infiltrates. The clinical diagnosis was pneumonia and he was treated with antibiotics. The sputum collected on May 14 tested positive for *Chlamydia psittaci* DNA. He remained stable and was discharged on May 16. 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.

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FEATURE IN FOCUS

Scientific Committee's Recommendations on Seasonal Influenza Vaccination for the 2020/21 Season in Hong Kong

Reported by Dr Lori KWOK, Medical and Health Officer, Vaccine Preventable Disease Section, Surveillance Division, Communicable Disease Branch, CHP.

The Scientific Committee on Vaccine Preventable Diseases (SCVPD) under the Centre for Health Protection (CHP) of the Department of Health has reviewed the local epidemiological data, the latest scientific evidence of influenza vaccination as well as overseas experiences, and made recommendations on the use of seasonal influenza vaccine (SIV) for the coming 2020/21 season in Hong Kong.

Given that influenza vaccination is one of the effective means in preventing influenza and its complications, as well as reducing influenza-associated hospitalisation and death, SCVPD continues to recommend that all members of the public aged six months or above, except those with known contraindications, should receive SIV annually for personal protection, preferably before the arrival of winter influenza season. Amid the coronavirus disease 2019 pandemic, SIV can reduce the risk of influenza infection and related complications, which could relieve the burden on healthcare system. Hence, it is important to ensure people who are at greater risk are prioritised to receive SIV.

Vaccine composition

In Hong Kong, only egg-based quadrivalent SIV will be available in the coming 2020/21 season. The composition of the 2020/21 egg-based quadrivalent influenza vaccine (Northern Hemisphere winter) comprises an A/Guangdong-Maonan/SWL1536/2019 (H1N1)pdm09-like virus, an A/Hong Kong/2671/2019 (H3N2)-like virus, a B/Washington/02/2019-like virus (B/Victoria lineage), and a B/Phuket/3073/2013-like virus (B/Yamagata lineage). The above compositions are in line with the recommendations made by the World Health Organization for the 2020/21 Northern Hemisphere influenza season.

Vaccine type

Currently registered SIV includes inactivated influenza vaccines (IIV) and a live attenuated influenza vaccine (LAIV). Both IIV and LAIV are recommended for use locally. Depending on individual brand, most IIV are recommended for use in individuals six months of age or above, except those with known contraindications, and are generally given via the intramuscular route. The only LAIV (FluMist Quadrivalent) available on the local market is recommended for individuals aged two to 49 years except those who are pregnant, immunocompromised or with contraindications, and is given intranasally. The package inserts for individual product should always be referred to when deciding on which vaccine to use, the dosage and for the precautions.

Dosing schedule

A single dose of SIV is the standard regimen for persons aged nine years or above. Children below nine years of age who have received at least one dose of SIV before are recommended to receive one dose of SIV in the 2020/21 season. For children below nine years of age who have not received any SIV before, two doses of SIVs with an interval of at least four weeks are required. For individuals receiving inactivated SIV, other inactivated or live vaccines may be administered simultaneously or at any interval between doses. For individuals receiving LAIV, other live vaccines not administered on the same day should be administered at least four weeks apart.

Adverse events

The most common adverse events following IIV administration are local reactions including pain, redness and swelling at the site of injection and may occur at more than 10% of IIV recipients. Non-specific systemic symptoms including fever, chills, malaise and myalgia are uncommon and reported in less than 1%. Other rare adverse events may include anaphylaxis (nine per ten million doses distributed) and Guillain-Barré syndrome (GBS). Scientific studies have shown that risk of GBS following influenza infection is much greater than that following influenza vaccination. Also, extensive reviews showed that there was inadequate evidence to accept or reject a causal relationship between influenza vaccine and GBS.

For LAIV, the most common adverse reactions are nasal congestion or runny nose in all ages, fever in children and sore throat in adults. Children aged below five years with recurrent wheezing and persons of any age with asthma may be at an increased risk of wheezing following administration. There is also a potential risk of transmission of the vaccine viruses to immunocompromised individuals.

Vaccine precautions

SIV is contraindicated for those with a history of severe hypersensitivity to any of the vaccine components or a previous dose of influenza vaccination. Individuals with mild egg allergy who are considering an influenza vaccination can be given SIV in primary care setting. Individuals with a history of anaphylaxis to egg should have SIV administered by healthcare professionals in appropriate medical facilities with capacity to recognise and manage severe allergic reactions.

LAIV is a live vaccine and is generally contraindicated in the following conditions:

- ◆ History of severe allergic reaction to any vaccine component or after previous dose of any influenza vaccine;
- ◆ Concomitant aspirin or salicylate-containing therapy in children and adolescents;
- ◆ Children two years through four years who have asthma or who have had a history of wheezing in the past 12 months;
- ◆ Children and adults who are immunocompromised due to any cause;
- ◆ Close contacts and caregivers of severely immunosuppressed persons who require a protected environment;
- ◆ Pregnancy; and
- ◆ Receipt of influenza antiviral medication within previous 48 hours.



Priority groups

Based on a range of scientific considerations, as well as taking into account the local disease burden and international experience, SCVPD recommends the following priority groups for seasonal influenza vaccination in 2020/21 season:

- Pregnant women
- Residents of residential care homes (such as Residential Care Homes for the Elderly or Residential Care Homes for Persons with Disabilities)
- Persons aged 50 years or above
- Persons with chronic medical problems*
- Healthcare workers (including care workers in residential care homes)
- Children aged six months to 11 years
- Poultry workers
- Pig farmers and pig-slaughtering industry personnel

*Persons with chronic medical problems refer to persons aged six months or above who have chronic cardiovascular (except hypertension without complication), lung, metabolic or kidney disease, obesity (body mass index 30 or above), who are immunocompromised[#], children and adolescents (aged six months to 18 years) on long-term aspirin therapy, and those with chronic neurological condition that can compromise respiratory function or the handling of respiratory secretions or that can increase the risk for aspiration or those who lack the ability to take care for themselves.

[#]Those with a weakened immune system due to disease (such as HIV/AIDS) or treatment (such as cancer treatment).

People who are in the priority groups are generally at increased risk of severe influenza or transmitting influenza to those at high risk. Therefore, they shall have higher priority for seasonal influenza vaccination.

In the coming 2020/21 season, the Government will continue to provide free and subsidised influenza vaccination to eligible groups through the Government Vaccination Programme and the Vaccination Subsidy Schemes respectively. Details of various vaccination programmes will be announced in due course.

For the full version of SCVPD's Recommendations on Seasonal Influenza Vaccination for the 2020/21 Season in Hong Kong, please visit the CHP's website at https://www.chp.gov.hk/files/pdf/recommendations_on_siv_for_2020-21.pdf.

NEWS IN BRIEF

A local case of *Streptococcus suis* infection

On June 2, 2020, the Centre for Health Protection (CHP) of the Department of Health recorded a sporadic case of *Streptococcus suis* infection affecting a 62-year-old woman with underlying illnesses. She presented with fever, malaise, headache, abdominal pain and vomiting on May 24 and was admitted to a public hospital on May 31. The blood culture collected on May 31 yielded *Streptococcus suis*. She was treated with antibiotics and her condition remained stable. She had history of handling raw pork at home during the incubation period. She had no recent travel history. Her home contacts were asymptomatic.

A probable case of sporadic Creutzfeldt-Jakob disease

On June 9, 2020, CHP recorded a probable case of sporadic Creutzfeldt-Jakob disease (CJD) affecting an 84 year-old man with underlying illnesses. He presented with memory loss and double vision since early May and was admitted to a public hospital on May 14. He was found to have rapidly progressive dementia, rigidity, akinetic mutism, myoclonus, extrapyramidal signs, cerebellar signs, dysphagia and gait disturbance. Findings of electroencephalography were compatible with CJD. He developed pneumonia and succumbed on June 9. He had no known family history of CJD and no risk factors for either iatrogenic or variant CJD were identified. He was classified as a probable case of sporadic CJD.

A local sporadic case of psittacosis

On June 11, 2020, CHP recorded a local sporadic case of psittacosis affecting a 69-year-old man with underlying illnesses. He presented with fever, productive cough and shortness of breath on June 4 and was admitted to a public hospital on June 5. He was intubated at the Accident and Emergency Department due to respiratory distress, and was admitted to the intensive care unit. The diagnosis was pneumonia and he was treated with antibiotics. The patient required mechanical ventilation, renal replacement therapy and inotropic support. Tracheal aspirate collected on June 6 tested positive for *Chlamydophila psittaci* DNA. His condition deteriorated and he succumbed on June 15. He did not keep pets at home. According to the patient's family, during the incubation period he did not have contact with birds or bird droppings, and that he had no recent travel history. His home contact remained asymptomatic.

CA-MRSA cases in May 2020

In May 2020, CHP recorded a total of 81 cases of community-associated methicillin resistant *Staphylococcus aureus* (CA-MRSA) infection, affecting 49 males and 32 females with ages ranging from one month to 93 years (median: 39 years). Among them, there were 68 Chinese, 6 Caucasian, 2 Filipinos, 2 Pakistani, 1 Sri Lankan and 2 of unknown ethnicity.

Eighty cases presented with uncomplicated skin and soft tissue infections while the remaining case had severe CA-MRSA infection. The severe case affected a 37-year-old man. He presented with left buttock swelling since April 30. He attended a public hospital on May 3 and was admitted for management. Pus from his left buttock abscess and blood specimen collected on May 3 were both cultured positive for CA-MRSA. He was diagnosed with CA-MRSA associated left buttock abscess and bacteraemia. He was treated with antibiotics and incision and drainage of the abscess. He was discharged on May 4.

Among the 81 cases, three sporadic cases involved healthcare workers who worked in different public hospitals and investigation did not reveal any epidemiological linkage. Besides, one household cluster, affecting two persons, was identified in May 2020.

Scarlet fever update (May 1 – 31, 2020)

Scarlet fever activity in May remained low. CHP recorded nine cases of scarlet fever in May as compared with seven cases in April. The cases recorded in May included four males and five females aged between one and 48 years (median: five years). No institutional clusters or fatal cases were reported in May.

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FEATURE IN FOCUS

Non-typhoidal Salmonella Group D food poisoning outbreak linked to consumption of sandwiches

Reported by Dr Alan LAM, Senior Medical and Health Officer, Outbreak Section, Epidemiology Division, Communicable Disease Branch, CHP; and Dr LEUNG Lai-kwan, Queenie, Medical Officer, Food Incidents Response and Management Unit, Risk Management Section, Risk Management Division, Centre for Food Safety, Food and Environmental Hygiene Department.

In end-May 2020, the Centre for Health Protection (CHP) of the Department of Health recorded 99 clusters of food poisoning outbreaks related to consumption of sandwiches produced in a food factory.

CHP received notification of the first two clusters on May 21. The first cluster involved four persons who developed gastroenteritis symptoms about eight to 12 hours after consuming sandwiches on the previous day. The second cluster comprised three persons who developed similar symptoms about seven to 14 hours after consuming sandwiches of the same brand. The sandwiches involved in both clusters were purchased from the same retail outlet in Tsuen Wan on the same day. Subsequently CHP identified additional clusters of suspected food poisoning related to those sandwiches. A total of 99 clusters involving 236 cases were identified. The size of the clusters ranged from two to five cases, with a median of two cases.

The 236 cases comprised 87 males and 149 females and their ages ranged from 10 months to 68 years (median = 30 years). They presented with diarrhoea (234 cases, 99%), abdominal pain (212 cases, 89.8%), fever (191 cases, 80.9%), nausea (105 cases, 44.5%) and vomiting (89 cases, 37.7%). The sandwiches were purchased from nine different retail outlets and one food factory and were consumed immediately to 48 hours later (median = 2.5 hours). The incubation period ranged from 0.5 to 87.5 hours (median = 15 hours) (Figure 1).

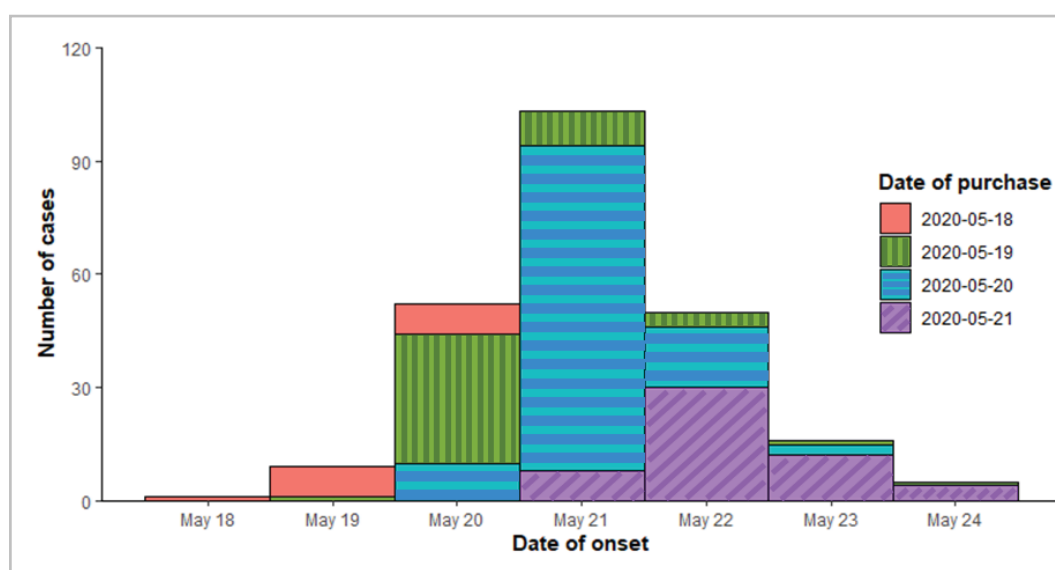


Figure 1 - Epidemic curve of the food poisoning outbreak.

Among the 236 cases, 51 cases required hospitalisation (including one case who required intensive care); 36 cases had attended Accident and Emergency Departments and did not require admission; 149 cases had sought treatment from private practitioners or outpatient clinics; and 38 cases did not seek medical attention. All hospitalised patients had subsequently been discharged. A total of 53 stool specimens were collected for culture, out of which 37 yielded Group D *Salmonella* and five specimens grew *Salmonella* Species. *Salmonella enteritis* was cultured from the blood specimen of the case who required intensive care. A food remnant was provided by one of the patients for testing, from which Group D *Salmonella* was isolated.

The most commonly consumed items included ham-cheese-egg sandwich (166 cases, 70.3%), ham-egg sandwich (50 cases, 21.1%) and cheese-egg sandwich (29 cases, 12.3%).

The Centre for Food Safety of the Food and Environmental Hygiene Department (CFS/FEHD) was informed for investigation and follow up actions. Investigation revealed that the sandwiches concerned were supplied from the same food factory in Kwun Tong, which provided sandwiches to 12 retail outlets.

Field investigation by CFS/FEHD at the retail outlet in Tsuen Wan revealed that the refrigerator for storing the sandwiches recorded 19°C to 20.7°C, which was much higher than the recommended storage temperature (at or below 4°C). No expiry date or production date was found on the package of the sandwiches. Two sandwich samples were collected for testing which yielded Group D *Salmonella*. Whole genome sequencing performed on the Group D *Salmonella* isolates from the sandwich samples, sandwich remnant and stool samples of 38 affected persons revealed that all the isolates belonged to ST (sequence type)-11. Phylogenetic analysis showed that all except two isolates were closely related to each other.

Review of the food preparatory process at the field visit to the food factory in Kwun Tong revealed that fried egg sheets were prepared from egg mixture of unpasteurized eggs, and were then cut and stacked up before being stored in the fridge for later use. The same working table was used for preparation of raw eggs and cooked egg sheets. It was noted that a food handler was not wearing gloves during preparation of the egg sheets. All food handlers would share the same towel for hand drying after hand washing, and the towel would only be washed after close of business. The 10 food handlers all reported that they did not have gastroenteritis symptoms and their stool samples were all negative for *Salmonella* species.

The packed sandwiches were delivered from the food factory to the retail outlets throughout the day using a single vehicle without any temperature control equipment. Unsold sandwiches were sometimes moved between retail outlets for replenishment of the stock.

Health advice on food, environmental and personal hygiene was given to the person-in-charge and staff of the food factory and the retail outlets. All the retail outlets stopped the sale of the affected products and the food factory was instructed to stop production of the food items on May 21. In response to the incident, CHP issued press releases to update the public about the investigation findings of the incident. The public was advised not to consume the products concerned. The 99 clusters reported had all consumed the sandwiches before the implementation of control measures by CFS/FEHD. There were no additional clusters reported thereafter.

The clinical, epidemiological and microbiological findings were compatible with food poisoning caused by non-typhoidal Group D *Salmonella*. Cross contamination by raw eggs and food handlers at the food factory, as well as prolonged storage of sandwiches at improper temperature during delivery and at the retail outlets were suspected to be contributing factors to the outbreak.

Salmonella is a common causative agent for food poisoning. It is widely distributed in domestic and wild animals and is prevalent in food animals such as poultry, pigs and cattle. Inadequately cooked meat, meat products, poultry, raw milk, raw egg and egg products are frequent sources for *Salmonella* food poisoning.

The World Health Organization promulgates the five keys to food safety: keep clean; separate raw food from other ready-to-eat food to prevent cross-contamination; cook food thoroughly before consumption; store ready-to-eat food under proper temperature (at or below 4°C or above 60°C); and use safe water and raw materials from reliable sources.

For more information on food poisoning, please visit the CHP's website: www.chp.gov.hk.

NEWS IN BRIEF

Four sporadic cases of necrotizing fasciitis due to *Vibrio vulnificus* infection

The Centre for Health Protection (CHP) of the Department of Health recorded four cases of *Vibrio vulnificus* infection in the months of May and June 2020.

The first case was an 83-year-old female with underlying illnesses. She presented with fever and right thumb swelling on May 14 and was admitted to a public hospital on the same day. Exploration of tendon sheath, incision and drainage was performed. The patient was transferred to the intensive care unit (ICU) post-operatively due to septic shock. She developed necrotizing fasciitis and required amputation and disarticulation of thumb, and elbow disarticulation on May 15, followed by elbow amputation on May 16. She was treated with antibiotics, and underwent surgical debridement. The patient later developed perforation of bowel and suppurative peritonitis, and underwent right hemicolectomy and ileostomy on May 29. Her condition deteriorated and she succumbed on June 7. The blood and pus aspirate collected for culture on May 14 yielded *Vibrio vulnificus*. The patient had history of right thumb injury while handling a fish during cooking at home on May 13. She had no recent travel and her home contacts were asymptomatic.

The second case was a 73-year-old male with underlying illnesses. He presented with left leg pain and swelling on June 10 and was admitted to a public hospital on June 13. The clinical diagnoses were necrotizing fasciitis and sepsis. He was treated with antibiotics and underwent left above knee amputation on the same day. He was transferred to ICU postoperatively. He developed right shin swelling and required surgical debridement and subsequently right above knee amputation. His condition was critical. Fascia tissue and blood tissue collected on June 13 for culture yielded *Vibrio vulnificus*. According to information from the patient's family, he had no recent travel. During the incubation period he had history of purchasing seafood from a wet market. There was no known history of injury. His home contacts were asymptomatic.

The third case was a 62-year-old woman with underlying illnesses. She presented with left leg swelling on June 12 and attended the Accident and Emergency Department on the same day. She was found to be in shock, with a blister over the left leg, and was transferred directly to the operating theatre for surgical debridement of the left limb. She was transferred to ICU postoperatively and was intubated. The diagnosis was necrotizing fasciitis. Tissues collected from her left leg on June 12 yielded *Vibrio vulnificus*. Her current condition was serious. According to information provided by her husband, the patient had handled a leopard coral grouper on June 11 for preparing meal at home. There was no history of injury or wounds to the left leg. She had no travel history during the incubation period. Her home contact was asymptomatic.

The fourth case was a 73-year-old male with underlying illnesses. He presented with right foot swelling on June 21 and was admitted to a public hospital on June 22. The clinical diagnosis was necrotizing fasciitis. He was treated with antibiotics and underwent right lower limb amputation. He was transferred to ICU and his condition was critical. Blood collected on June 23 grew *Vibrio vulnificus*. The patient had no travel history during incubation period. He used to visit the wet market every day and had visited the beach near Discovery Bay with his wife on June 20, when he sustained an injury to his foot. His wife developed lower limb redness on June 22. She was admitted to a public hospital and diagnosed as cellulitis.

Two sporadic cases of psittacosis

CHP recorded two sporadic cases of psittacosis in June. The first case affected a 77-year-old man with underlying illnesses. He presented with cough on June 1, developed shortness of breath and fever on June 9 and was admitted to a public hospital. Chest X-ray showed right lung consolidation. The clinical diagnosis was pneumonia. He was transferred to ICU due to respiratory distress and was intubated. His condition improved with antibiotic treatment. Tracheal aspirate collected on June 10 was positive for *Chlamydia psittaci* DNA. He lived alone.

The second case affected a 57-year-old man with underlying illness. He presented with fever and cough on June 17 and was admitted to a public hospital on June 21. Chest X-ray showed right lower zone consolidation. The clinical diagnosis was pneumonia and he was treated with antibiotics. He remained stable and was discharged on June 24. The sputum collected on June 23 tested positive for *Chlamydia psittaci* DNA. His home contacts remained asymptomatic.

Investigation did not identify epidemiological linkage between the two cases. Both cases had no recent travel history. They both reported no history of contact with birds or their excreta and did not keep any pets at home.

A local case of *Streptococcus suis* infection

On June 26, 2020, CHP recorded a sporadic case of *Streptococcus suis* infection affecting a 57-year-old woman with underlying illness. She worked as a butcher and sustained cut injury on the left middle finger while handling raw pork at work on June 19. She had persistent wound swelling and pain and was admitted to a public hospital on June 20. The clinical diagnosis was wound infection. The wound swab for culture yielded *Streptococcus suis*. She was treated with antibiotics and surgical debridement. Her condition remained stable and she was discharged on June 24. She lived alone and had no travel history during the incubation period.