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Communicable Diseases WATCH

FEATURE IN FOCUS

Updates on Pneumonia Cases in Wuhan Associated with Novel Coronavirus

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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 Wuhan[1]. 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, 2020[3]. 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 condition[2]. 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 pneumonia[3]. 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 market[3]. Among the patients, there was at least one family cluster which involved a couple[4]. 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 identified[2]. 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 source[4].

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 excluded[4].

Separately, Thailand reported the first imported case of nCoV infection on January 14, 2020[5]. 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-going[4].

On January 16, 2020, Japan reported an imported case of nCoV infection involving a male in his thirties who is living in Kanagawa, Japan[6]. 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 undetected[5]. WHO does not recommend any specific measures for travellers and advises against travel or trade restrictions on China based on the information currently available[7-9].

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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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%.

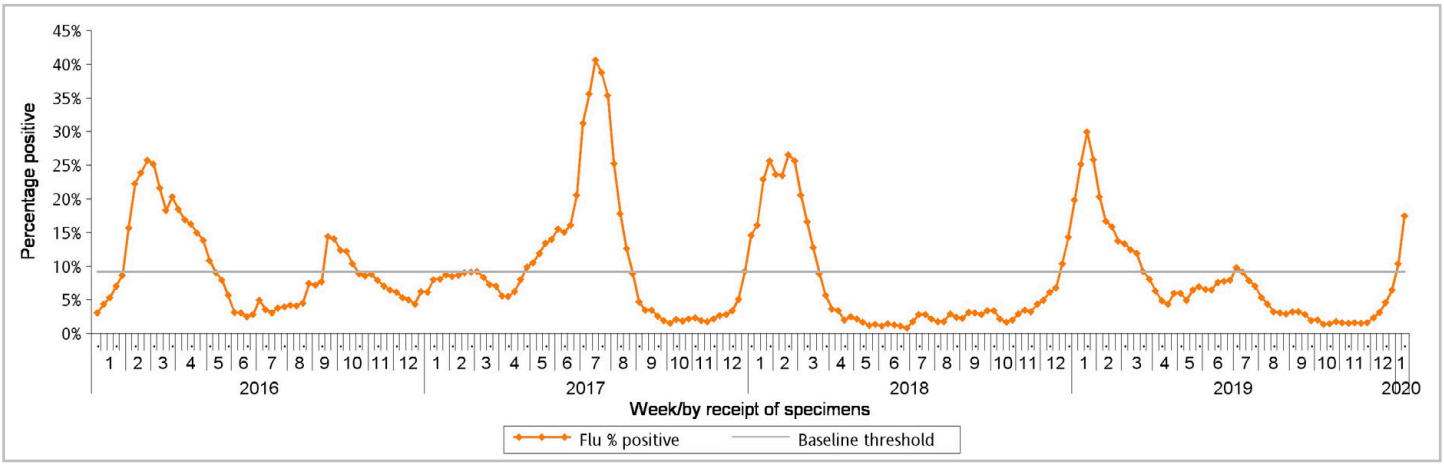

Figure 1 - Percentage of respiratory specimens tested positive for influenza A and B viruses, 2016 to 2020.

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(H1) (70%), followed by influenza A(H3) (27%), while very few influenza B viruses were detected.

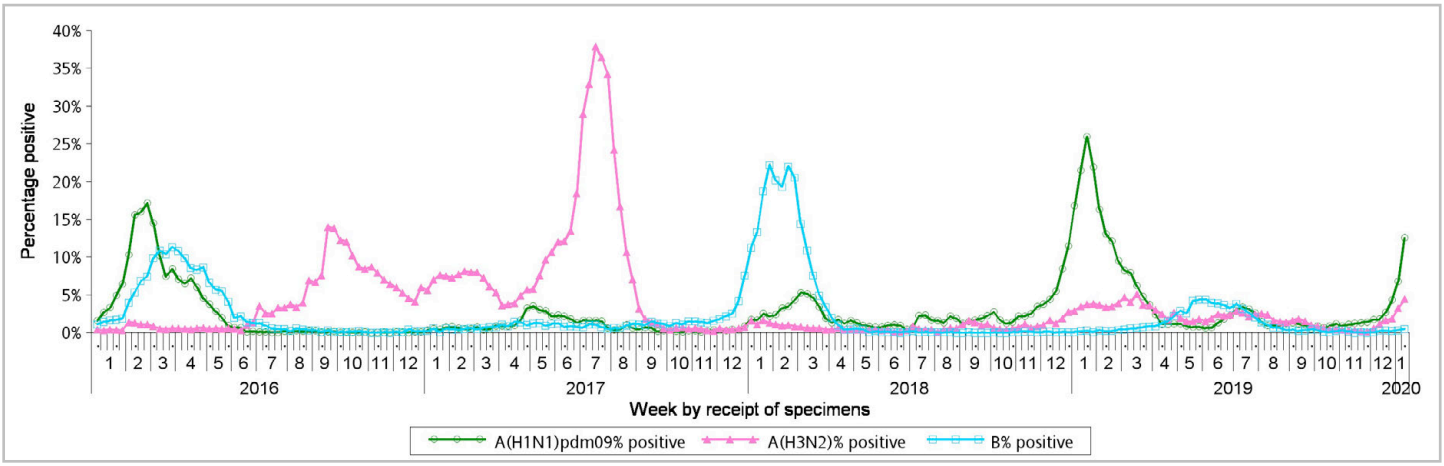

Figure 2 - Percentage of respiratory specimens tested positive for influenza virus subtypes, 2016 to 2020.

Antigenic characterisation of influenza viruses performed by the PHLSB revealed that the majority of influenza A(H1) 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.

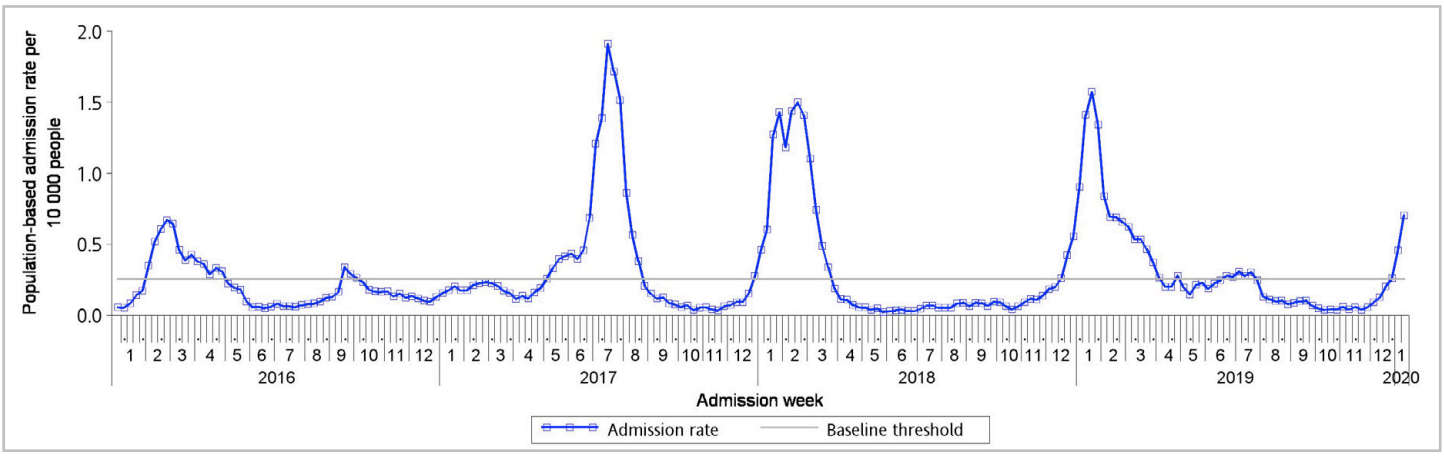

Figure 3 - Weekly admission rates with principal diagnosis of influenza in public hospitals, 2016 to 2020.

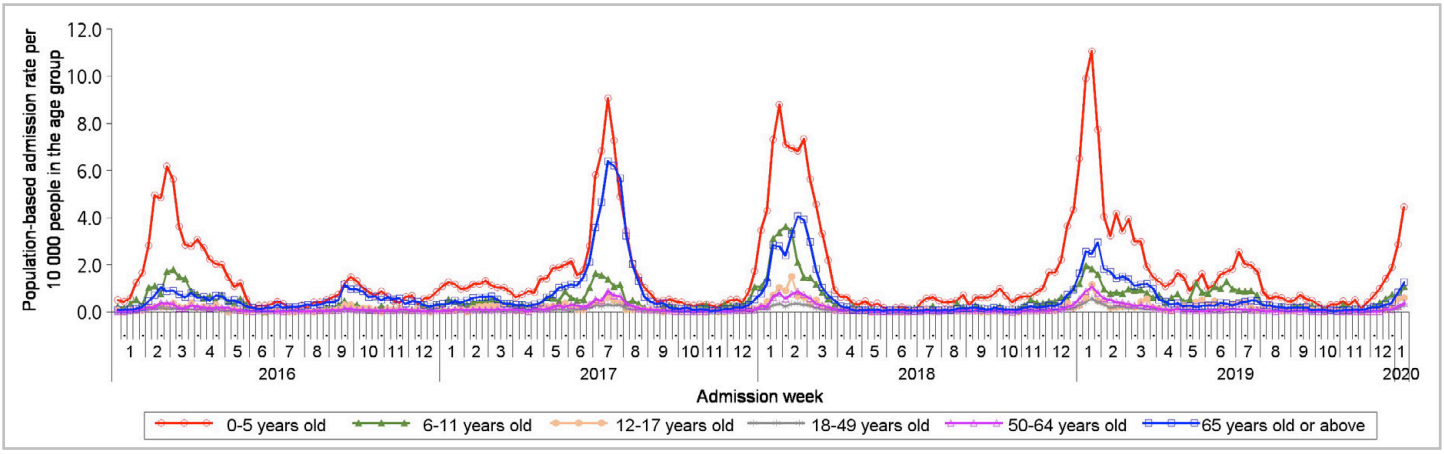

Figure 4 - Weekly admission rates with principal diagnosis of influenza in public hospitals by age groups, 2016 to 2020.

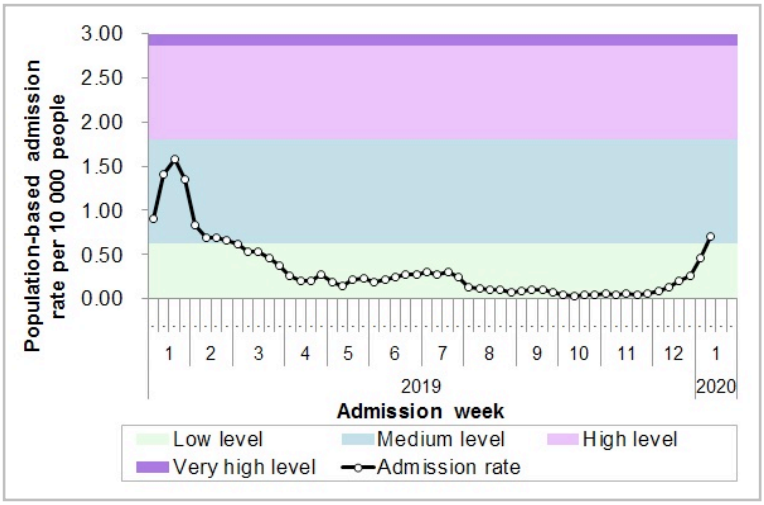

Figure 5 - Weekly influenza-associated admission rates in public hospitals, 2019 to 2020.

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.

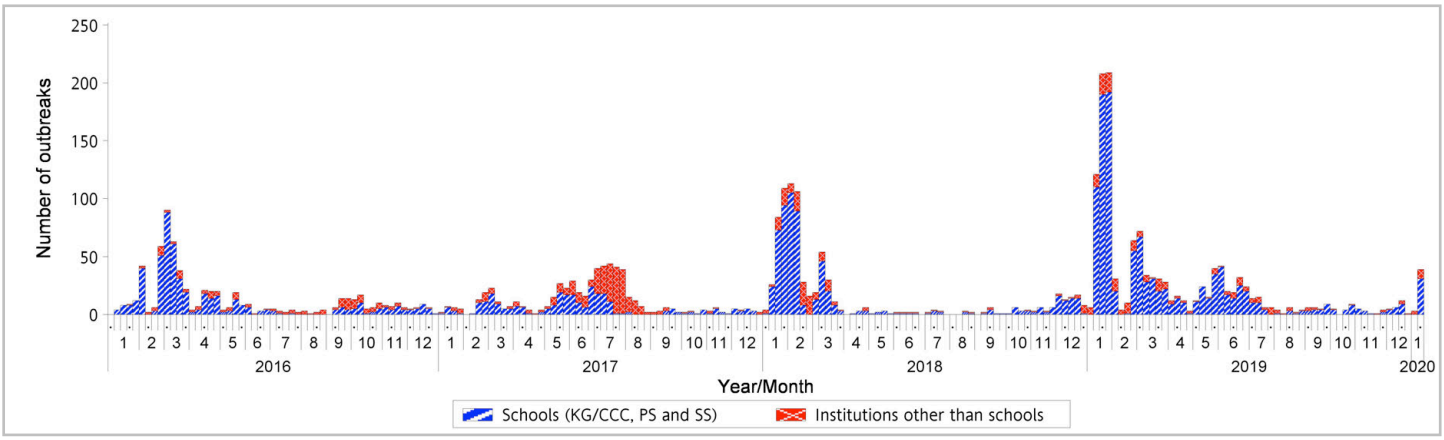

Figure 6 - Weekly number of institutional ILI outbreaks reported to CHP, 2016 to 2020.

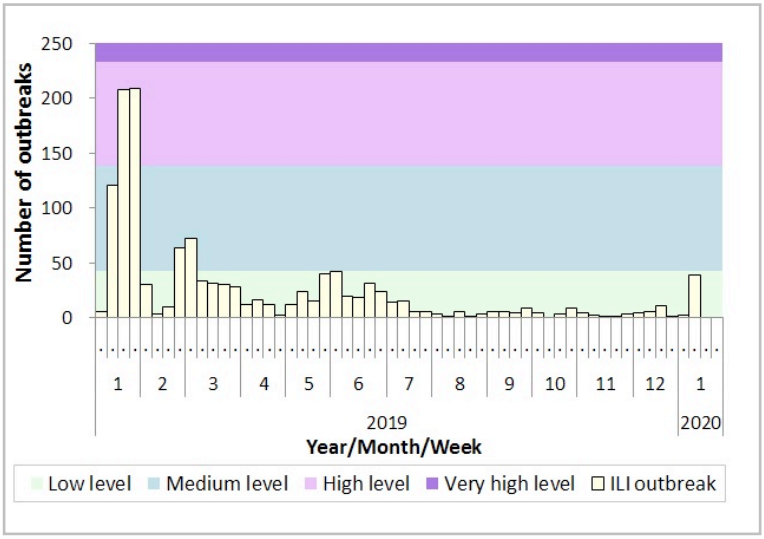

Figure 7 - Weekly number of reported institutional ILI outbreaks, 2019 to 2020.

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(H1) virus (61.7%), followed by influenza A(H3) (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(H3) 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/6nmeMq1F50M ; Cantonese: https://youtu.be/-HV_5rUajAk)
  - How to wear a surgical mask properly
    (English: https://youtu.be/gggtXTuhJek ; Cantonese: https://youtu.be/BZ8dFHOE2-4)
  - Prevent diseases - Maintain good hygiene
    (English: https://youtu.be/X0OxrsgAP2w ; Cantonese: https://youtu.be/jQpH-c7QpII)

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.