

Communicable Diseases

WATCH



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FEATURE IN FOCUS

Summary of the 2023/2024 influenza season in Hong Kong

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

In 2024, Hong Kong experienced a prolonged influenza season from early January to late July, which spanned for more than six months (28 weeks). This is the third influenza season encountered after resumption of normalcy since early 2023. The duration of this season was much longer than the usual winter influenza seasons in the pre-COVID era that ranged from about two to four months. One reason for such a prolonged season was change of the predominating influenza virus subtypes sequentially, from influenza A(H3) virus in the first phase to influenza A(H1) virus in latter phase. The previous prolonged season was the winter season in 2012, lasting 28 weeks with shifting of the predominating subtype from influenza B to influenza A (H3).

Laboratory surveillance

Among the respiratory specimens received by the Hospital Authority (HA) and Public Health Laboratory Services Branch (PHLSB) of the Centre for Health Protection (CHP), the weekly percentage tested positive for seasonal influenza viruses started to increase in late December 2023 and exceeded the baseline threshold of 9.21% in early January 2024. It decreased to a lower level transiently between February and March, and then rose again in April due to upsurge of influenza A(H1). The influenza detection positivity reached the peak level of 15.16% in mid-May, and subsequently dropped to 3.69% in late July (Figure 1). The peak level was comparable to the range of 14.94% to 18.20% in the past two seasons in pre-pandemic years (2017 to 2019) which ranged from 26.53% to 40.59%.

Regarding the circulating influenza viruses, 63% of all influenza detections recorded in January and February were influenza A(H3) viruses (Figure 2). Influenza A(H1) activity began to increase in March and became predominating, accounting for over 78% of the detections during the remainder of the season.

Influenza-associated hospital admission rates in public hospitals

A similar pattern was observed for influenza-associated admission rates in public hospitals in this season (Figure 3). The weekly admission rate with principal discharge diagnosis of influenza increased and exceeded the baseline threshold of 0.25 per 10 000 population in mid-December 2023. Although the rate remained above the threshold, it had decreased to a

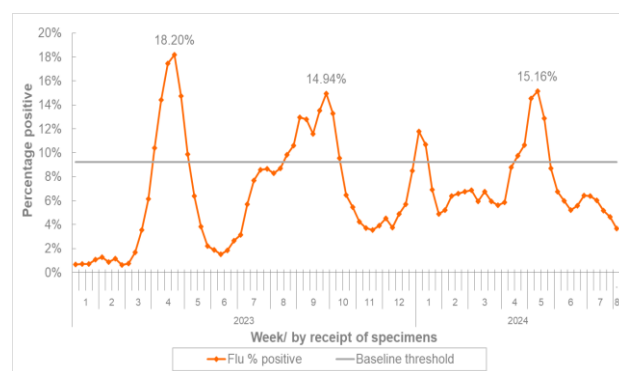


Figure 1 – Percentage of respiratory specimens tested positive for influenza viruses, Jan 2023 – Aug 2024.

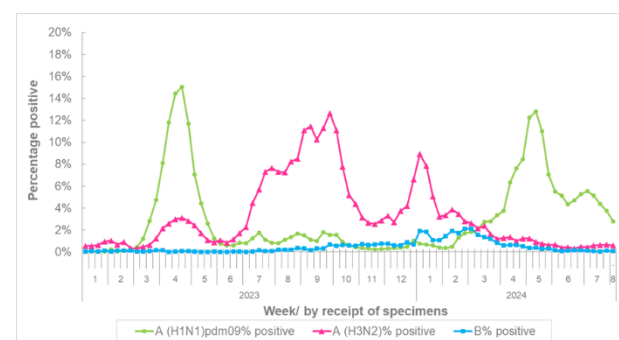


Figure 2 – Percentage of respiratory specimens tested positive for influenza virus subtypes, Jan 2023 – Aug 2024.

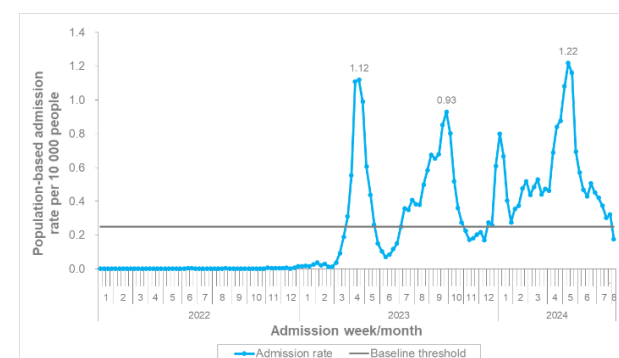


Figure 3 – Weekly admission rates with principal diagnosis of influenza in public hospitals, Jan 2022 – Aug 2024.

lower level between February and March due to decreasing activity of influenza A(H3). It rose rapidly in April due to increasing activity of influenza A (H1), and reached the peak of 1.22 per 10 000 population in May, and finally returned to the baseline threshold in late July. The peak rate was slightly higher than those rates recorded during the 2023 April and 2023 summer seasons (1.12 and 0.93 per 10 000 population respectively) but lower than those recorded during the three major influenza seasons in 2017 to 2019 (ranging from 1.50 to 1.91 per 10 000 population).

Figure 4 (upper) shows the weekly influenza-associated admission rates amongst different age groups in the past three years. Similar to previous pattern, the most affected age group in this season was young children aged five years or below, followed by elders aged 65 year or above and children aged 6-11 years. For children aged five years or below, the rate reached a peak level of 5.51 per 10 000 population in early May. It was much lower than the range of 9.03 to 11.66 recorded in pre-pandemic years during 2017 to 2019 (Figure 4, lower). The trend of admission rate of children aged 6-11 years also followed this pattern with a peak rate of 1.97, which was within the ranged of 1.65 to 3.69 recorded during 2017-2019. For elderly aged 65 years or above, the rate reached 3.25 in early May, which was higher than 1.78 and 2.28 in 2023 seasons but was within the range of 2.96 to 6.39 recorded during 2017 to 2019.

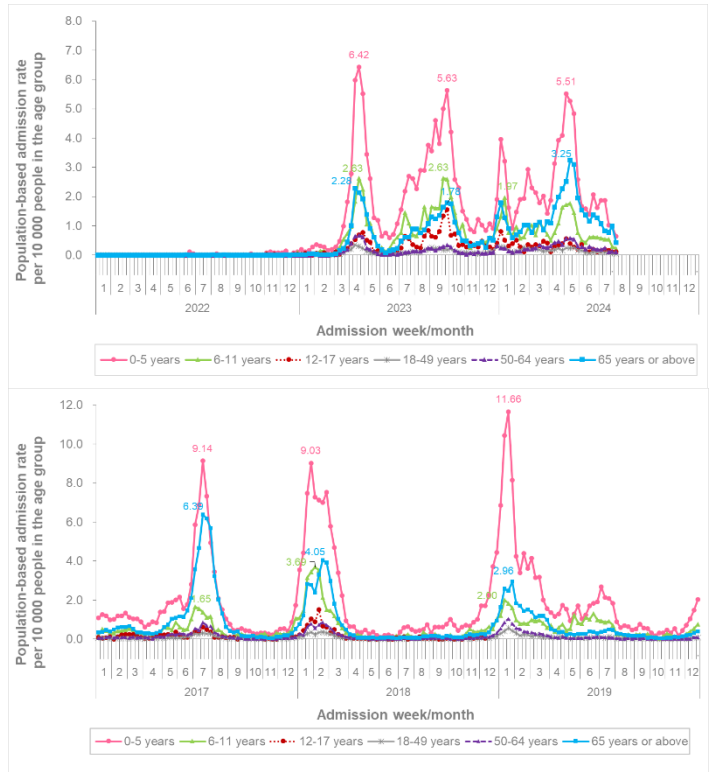


Figure 4 – Weekly admission rates with principal diagnosis of influenza in public hospitals by age groups, 2022-2024 (upper) and 2017-2019 (lower)

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

The institutional ILI outbreaks reported to CHP, mainly affecting schools, showed a stepwise increasing pattern from January 2024 with intermittent drops related to school holidays including Lunar New Year, Easter and Ching Ming holidays (Figure 5). The weekly number of ILI outbreaks reached the peak of 57 in late April.

A total of 616 ILI outbreaks were recorded in this prolonged season (28 weeks), which was higher than those recorded in the two seasons in 2023 (154 within 7 weeks and 367 within 10 weeks respectively). During this season, the cumulative numbers of ILI outbreaks reported in January to March and April to July were 230 and 386 respectively. Figure 6 shows the number and proportion of ILI outbreaks by type of institutions during these two periods. During first half of the season where influenza A(H3) viruses predominated, over 70% of the outbreaks were reported from schools (including kindergartens/child care centres (KG/CCC), primary schools (PS) and secondary schools (SS)). The proportion of outbreaks reported from residential care homes for the elderly (RCHE) was 9%. In contrast, an increased number of ILI outbreaks were reported from RCHE during the second half of the season predominated by influenza A (H1) with the proportion increased to 33%.

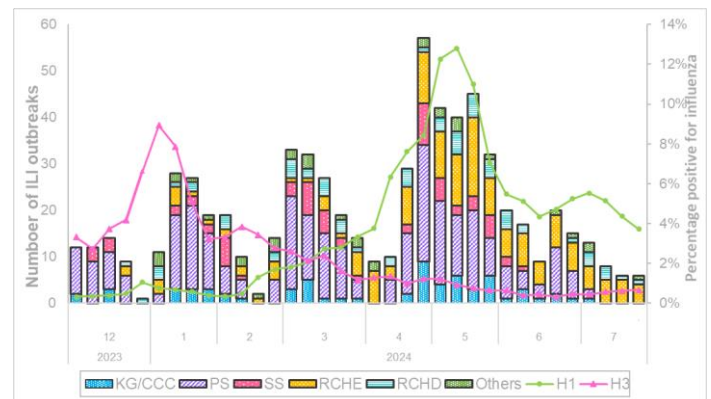


Figure 5 – The weekly number of ILI outbreaks by type of institutions and the weekly percentages of influenza A(H1) and A(H3), December 2023 – July 2024.

Severe influenza cases

For adult severe cases, CHP collaborates with the HA and private hospitals to monitor intensive care unit (ICU) admissions and deaths with laboratory confirmation of influenza among adult patients. For surveillance purpose, the cases include all laboratory-confirmed influenza patients who require ICU admission or die

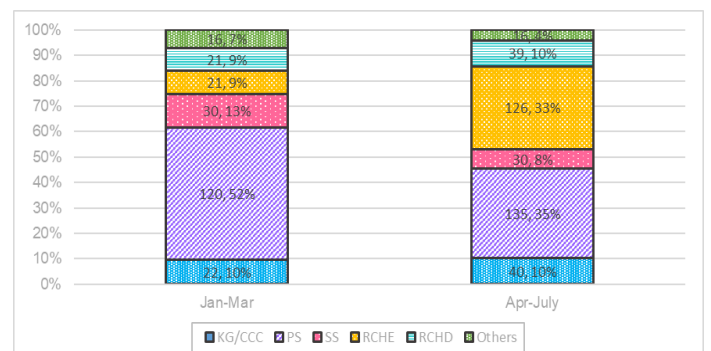


Figure 6 – The proportion of ILI outbreaks by type of institutions during January to March and April to July in 2024

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.

Table 1 – Numbers of adult and paediatric severe influenza cases reported during major influenza seasons in 2017-2019 and 2023-2024.

Season (predominating virus)	Duration (weeks)	Number of adult severe cases (including deaths)	Average weekly number of adult cases	Number of paediatric severe cases (including deaths)	Average weekly number of paediatric cases
2024 season (H3, then H1)	28	1 167	41.7	32	1.1
2023 summer (H3)	10	308	30.8	15	1.5
2023 April (H1)	7	274	39.1	3	0.4
2019 winter (H1)	14	601	42.9	24	1.7
2018 winter (B)	12	570	47.5	20	1.7
2017 summer (H3)	18	582	32.3	19	1.1

During this season, 1 167 cases of ICU admission or death with laboratory confirmation of influenza (including 791 deaths) were recorded among adult patients aged 18 years or above (data as at August 12, 2024). Due to the prolonged season, the cumulative number of adult severe cases was much higher than those recorded in previous seasons in 2017 to 2019 and 2023, but the average weekly number (41.7) of cases was within the range recorded previously (Table 1). For the paediatric patients, 32 severe cases were reported in this season. The number was the highest amongst previous seasons but the average weekly number (1.1) was also within the historical range.

Among the 1 167 adult severe cases, their ages ranged from 18 to 106 (median 77 years), and most (73%) affected elderly aged 65 years or above. For adult fatal cases, 89% of them affected elderly aged 65 years or above.

Regarding the influenza vaccination status of the adult severe cases, majority (179, 85%) of the cases aged 50-64 years and more than half (471, 55%) of the elderly aged 65 years or above were not known to have received the seasonal influenza vaccine (SIV) for the current season. Among persons aged 50 years or above residing in RCHE and in the community (based on available residential information; N = 1 051), 67% (195) and 29% (218) of the cases were known to have received the SIV respectively. Given that the 2023/24 SIV coverage among approximately 59 900 RCHE residents being 81.8% (data as of August 11, 2024), the risk of becoming a severe case among RCHE residents who received the SIV was reduced by 56% (p-value < 0.001) as compared with non-vaccination group. For the age group of 18-49 years, only 4% (4) of the severe cases were known to have received the SIV.

Separately, 32 paediatric cases of influenza-associated severe complication were reported during this season, of which six were fatal. They involved 16 boys and 16 girls with ages ranging from five months to 16 years (median six years). Seventeen cases (53%) contracted influenza A(H1), 10 (31%) had influenza A(H3) and five (16%) had influenza B infection. Regarding the complications reported (note: a case may have more than one complication), 15 cases (47%) had severe pneumonia, followed by neurological complications (10; 31%), shock (5; 16%), sepsis (2; 6%) and myocarditis (1; 3%). One fatal case with acute necrotising encephalopathy had COVID-19 co-infection. Eight cases (25%) had underlying diseases. Majority (74%) of the cases did not receive the SIV for the current season.

Summary

Hong Kong entered the winter influenza season in early January this year, similar to the timing in pre-pandemic years. The sequential upsurge of activities of different influenza viruses during this season resulted in a prolonged season that spanned for more than six months. Increases in cumulative disease burden including influenza infection, outbreaks in school and institutions, hospitalisation, and severe cases were observed in this season. Similar to previous seasons, severe influenza illnesses mainly affected young children, elderly and/or persons with pre-existing chronic medical diseases, especially those who did not receive SIV. Given that SIVs are 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.

A review of local COVID-19 situation

Reported by Ms Lok Tung WONG and Ms Kam Suen CHAN, Research officers, Surveillance Division, Communicable Disease Branch, CHP

Introduction

From January 2020 to January 2023, Hong Kong experienced five waves of COVID-19 epidemic. The Centre for Health Protection (CHP) of the Department of Health recorded over three million cases and over nine thousand deaths during the period. With Omicron becoming the predominating variant, coupled with the enhancement of prevention and treatment capacities of the healthcare system and the handling capacity of society as a whole, the risk posed by COVID-19 to the local community has decreased, allowing rooms for gradual resumption of normalcy. On January 30, 2023, the Government announced the cancellation of isolation orders and the cessation of mandatory reporting of individual COVID-19 cases.¹ In May 2023, the World Health Organization (WHO) declared the COVID-19 situation no longer constituted a Public Health Emergency of International Concern.² COVID-19 is now managed as an upper respiratory tract infection in a manner similar to other respiratory viruses such as seasonal influenza. This article reviews the local COVID-19 situation from January 30, 2023 to July 2024 (data up to July 27, 2024).

The local COVID-19 situation from January 30, 2023 to July 2024

Since January 30, 2023, the CHP has been monitoring the trend of COVID-19 activity through a set of surveillance indicators, including laboratory detections and positivity percentage, consultation rates in sentinel clinics, number of reported institutional outbreaks and viral loads in sewage samples. Overall, the activity had been increasing shortly after the lifting of mandatory mask-wearing requirements on March 1, 2023,³ reaching the peak in late May 2023. Since then, the activity had been decreasing to a lower level and fluctuating with smaller upsurges every four to six months without any predictable seasonal pattern. For laboratory surveillance, the percentage of specimen tested positive for SARS-CoV-2 virus at the Public Health Laboratory Services Branch (PHLSB) of the CHP (Figure 1) increased from 4.85% in Week 13 (March 26 to April 1, 2023) to the peak at 36.55% in Week 21 (May 21 to 27, 2023). There were two noticeable surges around August to October 2023 (peaked at 10.59% in Week 40 (Oct 1 to 7, 2023)) and around February to March 2024 (peaked at 16.76% in Week 10 (March 3 to 9, 2024)). These surges were likely due to the transition of predominating SARS-CoV-2 variants circulating in the community (XBB.1.9 sublineages emerged in July 2023, overtaken by JN.1 from January 2024 onwards).

Similar trend pattern was also reflected in sewage surveillance for monitoring the viral load of SARS-CoV-2 (Figure 2). Following the peak of 7-day geometric mean per capita viral load of over 1.5 million copies/L in Week 21 of 2023 (May 21 to 27, 2023), there were two peaks amounting over 0.35 million copies/L in early October, 2023 and over 0.45 million copies/L between mid-February and early-March, 2024.

Another upswing has been emerging since late-June 2024 and is still ongoing. The specimen positivity rate for SARS-CoV-2 virus increased from 3.60% in Week 26 (June 23 to 29, 2024) to 8.72% in Week 30 (July 21 to 27, 2024), likely corresponding to the increased local circulation of KP.2, a descendent lineage of JN.1 classified as a variant under monitoring (VUM) by the WHO.

Surveillance of severe and fatal COVID-19 cases

According to the WHO, the overall public health risk imposed by the circulating variants should remain low as there is so far no evidence indicating an increase in clinical severity. The CHP's surveillance data on severe and fatal COVID-19 cases showed a pattern aligned with this assessment. The upsurges in sewage viral load (as a surrogate of the actual number of infection in the community) resulted in much less increases in the number of severe and fatal cases related to COVID-19, as compared to the

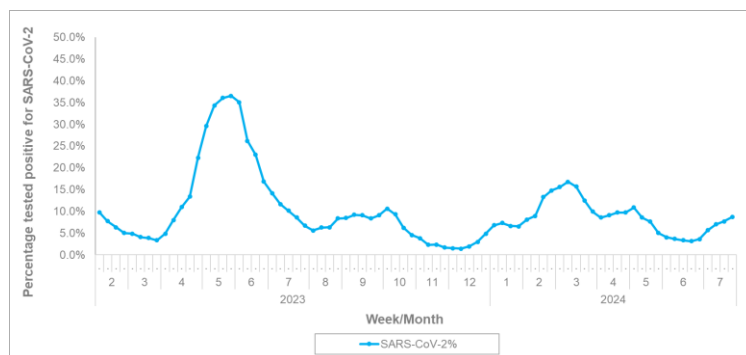


Figure 1 – Percentage tested positive for SARS-CoV-2 virus among all respiratory specimens at PHLSB (Jan 30, 2023 to Jul 27, 2024).

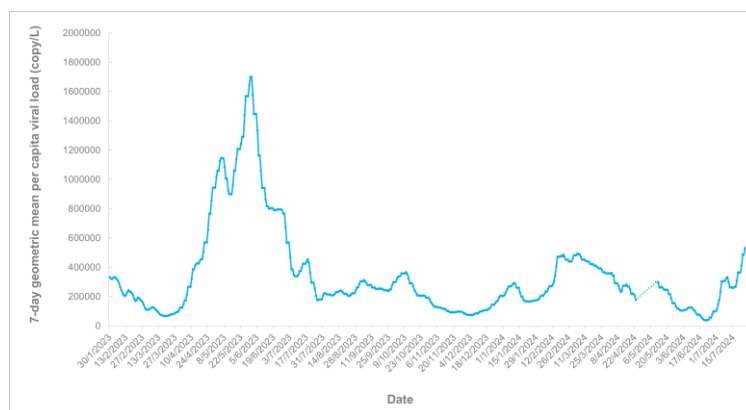


Figure 2 – 7-day geometric mean per capita viral load of SARS-CoV-2 virus from sewage surveillance (Jan 30, 2023 to Jul 27, 2024).

data recorded in the fifth wave of epidemic when Omicron first emerged in Hong Kong. From January 30, 2023 to July 27, 2024, there were 3 650 severe and fatal cases with cause of death preliminarily assessed to be related to COVID-19 (including 1 340 fatal cases), as compared with 9 287 registered local deaths in 2022⁴ (as of December 31, 2022). After resumption of normalcy, over 100 cases per week were recorded in the first upsurge during late April to mid-June, 2023, and subsequently decreased to a level between zero to 69 cases per week between July 2023 and July 2024 (Figure 3).

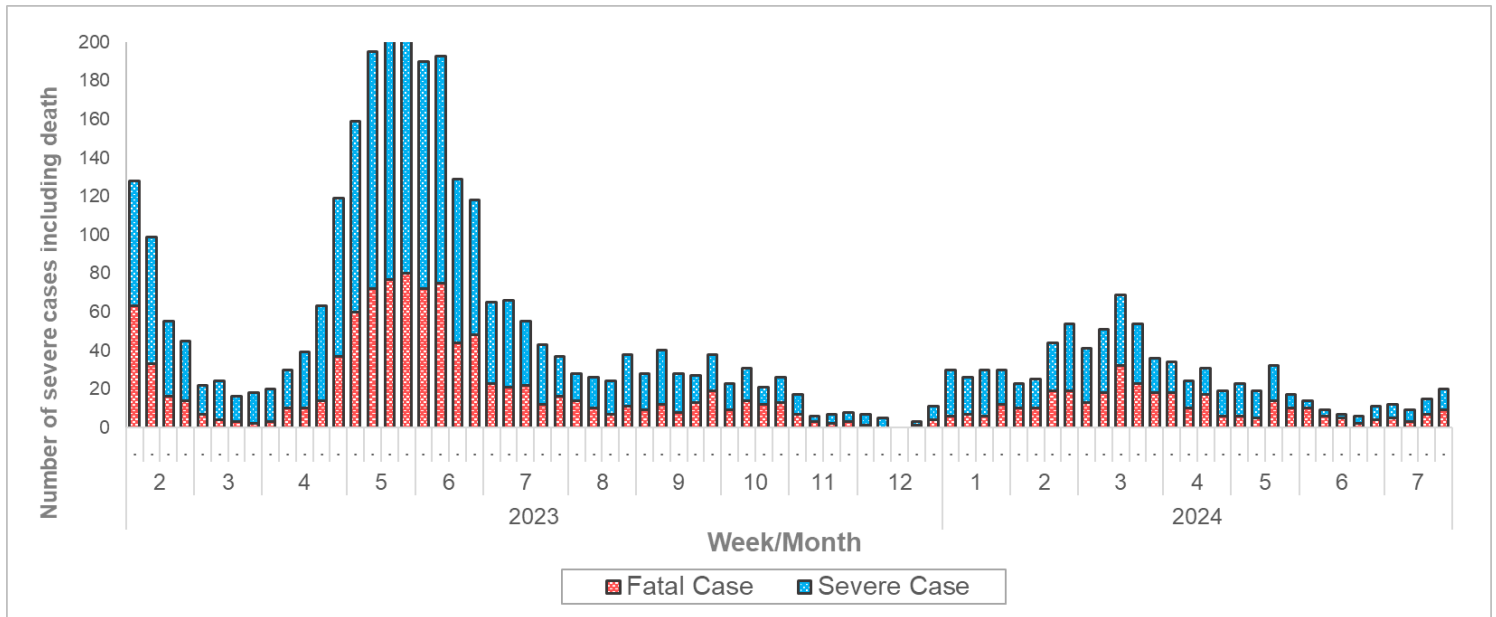


Figure 3 – Weekly number of severe and fatal cases with cause of death preliminarily assessed to be related to COVID-19 (Jan 30, 2023 to Jul 27, 2024).

Regarding age and vaccination status among these cases, elderly aged 60 or above represented 87.1% (2 013 cases) of severe cases and 96.9% (1 298 cases) of fatal cases. In particular, 72.0% (965 cases) of the fatal cases were elderly aged 80 or above. Only 14.6% (534 cases) of the severe cases and fatal cases received their latest dose of COVID-19 vaccine within 180 days (Figures 4a and 4b).

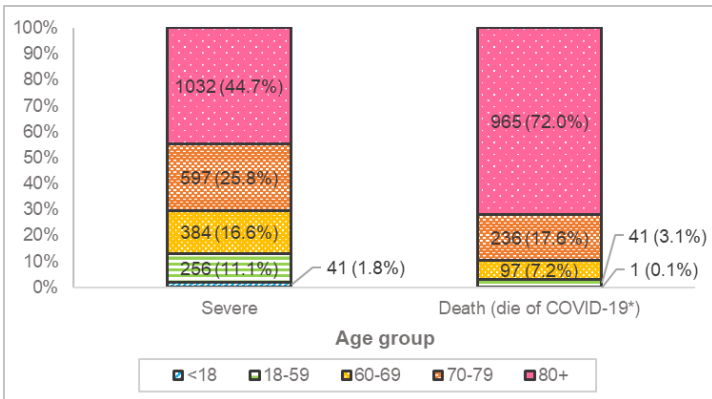


Figure 4a – Age distribution of severe and fatal cases (Jan 30, 2023 to Jul 27, 2024).

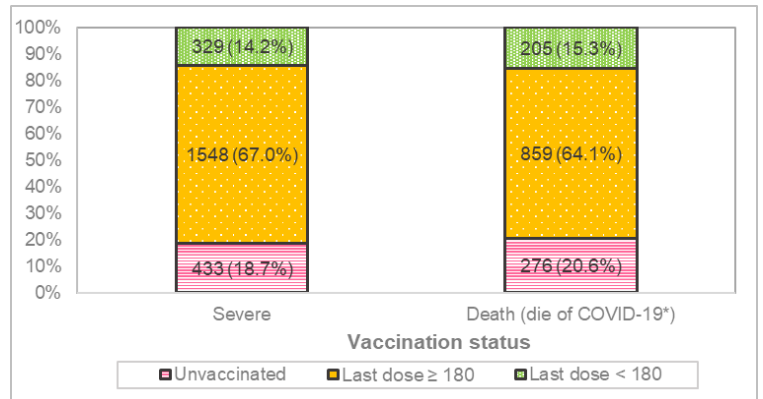


Figure 4b – Vaccination status of severe and fatal cases (Jan 30, 2023 to Jul 27, 2024).

Surveillance of SARS-COV-2 variants

The CHP closely monitors the emergence of new variants around the globe by keeping track of WHO’s list of VUMs, variants of interest (VOIs), and variants of concern (VOCs).⁵ To keep track of the local circulating SARS-CoV-2 variants, the CHP conducts variant testing in sewage samples biweekly, while the PHLSB performs genetic characterisation on human specimens (both severe and fatal COVID-19 cases, and a sample of non-severe cases).

Figure 5 shows the transition of circulating variants in Hong Kong from January 2023 to July 2024 among sewage samples. BA.2 and BA.5 (both sublineages of Omicron) were co-circulating at the start of 2023. Subsequently, the prevalence of the emerging XBB.1.5 rose quickly and became the predominant strain in Hong Kong in March 2023. It was then gradually replaced by the XBB.1.9 sublineages (including XBB.1.9.1, XBB.1.9.2 and EG.5) in June 2023. The wave for XBB.1.9 sublineages lasted for about six months from July 2023 to December 2023. In mid-November 2023, JN.1 appeared in Hong Kong and then rapidly taken root and became the predominant strain between January 2024 and June 2024. Since the beginning of July 2024, KP.2, a sublineage of

JN.1, has started to take over. KP.2 is believed to be one of the contributing factor for the recent upsurge of cases, and is expected to remain as the predominant strain in the coming months.

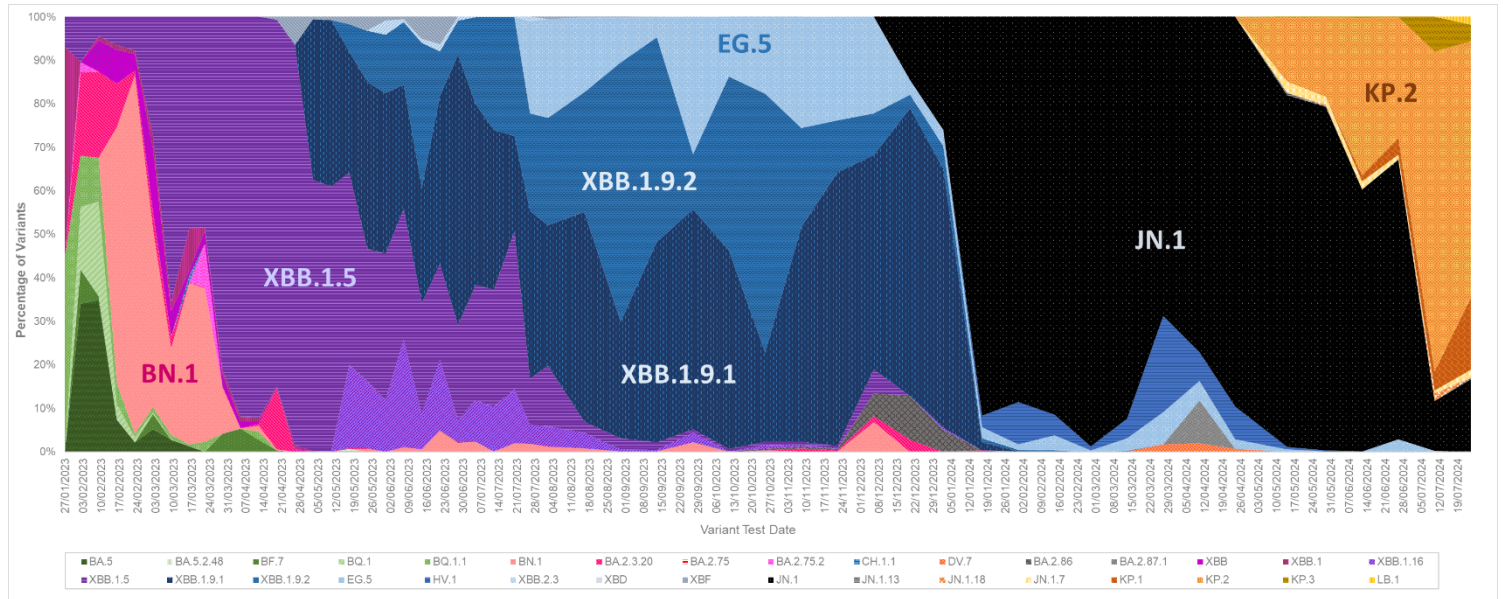


Figure 5 – SARS-CoV-2 variants circulating in Hong Kong among sewage samples (Jan 30, 2023 to Jul 27, 2024).

The risk assessment and the prevention of COVID-19 infection

Despite there is no current evidence indicating an increase in clinical severity for the current circulating variants, new variants with immune escape potential evolve from time to time due to the frequent mutation of SARS-CoV-2 viruses, posing continuous challenges in the fight against COVID-19. Vaccination remains the most effective measure to prevent severe manifestation, hospitalisation and death due to COVID-19 infection. Members of the public are advised to take note of the latest recommendations on the use of COVID-19 vaccines in Hong Kong to protect themselves from serious outcomes of COVID-19. High-risk priority groups are recommended to receive a dose of COVID-19 vaccine at least six months since the last dose or infection, regardless of the number of doses received previously. For more details, please visit: <https://www.chp.gov.hk/en/features/106934.html>. Besides, maintaining strict personal and environmental hygiene is crucial for the personal protection against COVID-19 infection and the prevention of the spread of the disease in the community. High risk people, including persons with underlying medical conditions or being immunocompromised, should adopt additional measures such as proper mask wearing when going to public places. For more details, please visit the COVID-19 information page (<https://www.chp.gov.hk/en/healthtopics/content/24/102466.html>).

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NEWS IN BRIEF

A local confirmed case of *Streptococcus suis* infection

On July 23, 2024, the CHP recorded a sporadic case of *Streptococcus suis* infection involving a 38-year-old woman with good past health. She was a domestic helper and had handled raw pork without wearing protective gloves during the incubation period. She developed fever and left knee pain on July 21 and was admitted to a public hospital on the following day. Blood culture confirmed the presence of *Streptococcus suis*. She was treated with antibiotics and her condition was all along stable. She did not have other exposure to livestock, farms, abattoirs, or butcher shops before onset of her symptoms.

Two local sporadic cases of psittacosis

The CHP recorded two sporadic cases of psittacosis on August 7 and 13, 2024 respectively.

The first case involved a 78-year-old retired man with underlying illnesses residing in Sha Tin. He presented with fever, cough and shortness of breath on July 30, and was admitted to a public hospital on August 1. His nasopharyngeal aspirate collected on August 2 was tested positive for *Chlamydia psittaci* DNA. Chest X-ray showed consolidative change at right middle and lower zones. His condition improved with antibiotic treatment and he was discharged on August 13. He had no travel history during incubation period. He did not keep any birds at home, but reported the presence of pigeons and sparrows in the leisure area near his home. All home contacts were asymptomatic. The case was referred to Agriculture, Fisheries and Conservation Department (AFCD) and Food and Environmental Hygiene Department (FEHD) for follow-up. No epidemiological linkage with previous cases were identified.

The second case involved a 61-year-old man with underlying illnesses residing in Tai Kok Tsui. He presented with fever on August 7, and was admitted to a public hospital on the same day. His nasopharyngeal aspirate collected on August 8 was tested positive for *Chlamydia psittaci* DNA. Chest X-ray showed consolidative change at left middle zone. His condition improved with antibiotic treatment. He had no travel history during incubation period. He worked in a vegetable wholesale market in Cheung Sha Wan where no live poultry was sold, but he reported presence of doves and birds near the market. He did not keep any birds at home. He had no household contacts. The case was referred to AFCD and FEHD for follow-up. No epidemiological linkage with previous cases were identified.

Sewage surveillance for COVID-19 won International Water Association Project Innovation Awards

Standing out from 108 submissions worldwide, the territory-wide sewage surveillance programme for COVID-19 in Hong Kong, which was a showcase of collaboration among Government departments including the Environmental Protection Department, CHP of the Department of Health, and Drainage Services Department, was awarded with the Gold Award of the 2024 International Water Association Project Innovation Awards under the category of “Performance Improvement and Operational Solutions” on 13 August 2024. This award fully recognises the Government's innovative spirit and outstanding technological achievements in using sewage surveillance to help combat COVID-19.

The interdepartmental team, comprising the aforesaid Government departments, has implemented a unique territory-wide sewage surveillance programme that combated COVID-19 by using sewage COVID-19 virus concentration to assist in the planning of anti-epidemic measures and monitoring/ forecasting disease activity during the containment and mitigation phase of COVID-19 pandemic respectively.

Looking ahead, the scope of sewage surveillance will be expanded to cover other infectious diseases in a stepwise manner, such as seasonal influenza, with a view to early identification of risks arising from different infectious diseases to formulate appropriate public health response measures.



Photo – The Director of Environmental Protection, Dr Samuel Chui (third left); the Deputy Director of Drainage Services, Mr Robin Lee (first left); and Principal Medical & Health Officer of the CHP Dr Kung Kin-hang (third right) leading the interdepartmental delegation to receive the award during the Awards Gala Dinner.

A sporadic case of necrotising fasciitis due to *Vibrio vulnificus* infection

On August 20, 2024, CHP recorded a sporadic case of necrotising fasciitis due to *Vibrio vulnificus* infection in Yuen Long. The case involved a 61-year-old female with good past health. She presented with fever, left leg pain and swelling on August 14 and was admitted to a public hospital on August 15. Clinical diagnosis was necrotising fasciitis involving left foot and left leg, and excisional debridement was performed. Tissue taken from left foot fascia grew *Vibrio vulnificus*. Before symptom onset, she got stung by a marine fish at her left foot in a wet market in Sheung Shui on August 14. She did not consume any uncooked seafood. There was no history of recent travel.