衞生防護中心
Centre for Health Protection

Scientific Committee on Vaccine Preventable Diseases

Recommendations on Seasonal Influenza Vaccination For the 2024-25 Season in Hong Kong (As of 21 March 2024)

Introduction

Seasonal influenza causes a significant disease burden in Hong Kong. Since 2004, the Scientific Committee on Vaccine Preventable Diseases (SCVPD) reviews the scientific evidence of influenza vaccination and makes recommendations on influenza vaccination in Hong Kong annually. This document sets out the scientific evidence, local data as well as overseas practices, and provides recommendations in relation to seasonal influenza vaccination in Hong Kong for the 2024-25 season.

Summary of Global Influenza Activity

2. According to World Health Organization (WHO)'s updates on seasonal influenza activity published in February 2024, influenza activity was reported in all regions from September 2023 through January 2024, and the overall activity was similar compared to the same period in 2023. The predominating viruses varied among regions and between countries. Globally, influenza A virus detections outnumbered those of influenza B. Influenza A(H1N1)pdm09 and A(H3N2) viruses were detected more frequently in the Americas and South Asia. Influenza A(H1N1)pdm09 and A(H3N2) viruses co-circulated in West Asia and A(H3N2) viruses predominated elsewhere in Asia. Europe and Africa reported similar proportions of A(H1N1)pdm09 and A(H3N2) viruses with some variation among regions. A predominance of A(H3N2) was

reported in Oceania in late 2023 to early 2024. While influenza B detections were lower than those of influenza A, all influenza B viruses where lineage was confirmed belonged to the B/Victoria lineage.[1]

Summary of the 2023/24 Winter Influenza Season in Hong Kong

3. The 2023/24 winter influenza season in Hong Kong started in the second week of 2024. The activity was on a decreasing trend in January and then rebounded slightly in late February. The overall influenza activity remained at an elevated level in early March.

4. 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 and the Hospital Authority reached the peak of 11.77% in early January, as compared to the baseline threshold of 9.21%. In this season, majority (55%) of the influenza detections were influenza A(H3) viruses, though the proportions of influenza A(H1) and influenza B detection gradually increased in late February to early March. Meanwhile, the overall admission rate with principal diagnosis of influenza in public hospitals also reached the peak of 0.80 cases per 10,000 population, which exceeded the baseline threshold of 0.25 cases per 10,000 population. Increases in admission rates across all age groups were observed during the season, particularly in children aged below 12 years and elders aged 65 year or above. Nevertheless, both the influenza virus detection and influenza-associated admission peak rates were lower than those recorded during the influenza seasons last year, and were also much lower than the pre-COVID-19 winter influenza seasons in 2018 (detection peak at 27% and admission peak at 1.50) and 2019 (detection peak at 30% and admission peak at 1.58).

5. Regarding the influenza-like illness (ILI) outbreaks, more outbreaks were reported after the Chinese New Year holiday, reaching the peak of 33 outbreaks recorded in last week of February. Majority of the ILI outbreaks

[1] WHO Recommended composition of influenza virus vaccines for use in the 2024-2025 northern hemisphere influenza season. 23 February 2024. Available at https://www.who.int/publications/m/item/recommended-composition-of-influenza-virus-vaccines-for-use-in-the-2024-2025-northern-hemisphere-influenza-season

reported in this season were from primary schools (52%), followed by secondary school (13%) and kindergartens/child care centres (10%).

6. For the surveillance of severe influenza cases (intensive care unit admission or death) among adult patients (≥18 years), a total 322 cases (including 193 deaths) were recorded so far in this season (up to 16 March). About 68% of the adult severe cases (including fatal cases) affected elders aged 65 years or above. About 80% of all cases had pre-existing chronic medical diseases. Only 26% were known to have received the seasonal influenza vaccine (SIV) for the 2023/24 season.

7. For paediatric cases of influenza-associated severe complications/ deaths, 13 non-fatal cases were recorded in this season (up to 16 March). Their ages ranged from 3 to 15 years with a median of 7 years. Seven cases contracted influenza A(H3), 3 had influenza A(H1) and 3 had influenza B infections. Nine cases were complicated with severe pneumonia, 2 with encephalopathy, one with encephalitis and one with myocarditis and shock. Four cases had underlying illnesses. Only 4 out of the 13 cases received the SIV for the 2023/24 season.

Influenza Vaccines

Vaccine Types

8. Influenza vaccination is one of the effective means in preventing influenza and its complications together with reduction in influenza-associated hospitalisation and death. In Hong Kong, registered seasonal influenza vaccines (SIV)[2] include inactivated influenza vaccines (IIV), a live attenuated influenza vaccine (LAIV), as well as a recombinant influenza vaccine (RIV).

9. Trivalent SIV consist of three seasonal influenza viruses: one influenza A (H1N1) pdm09 virus, one influenza A (H3N2) virus and one influenza B virus, while quadrivalent SIV consist of an additional influenza B virus of the lineage not contained in the trivalent SIV.

[2] In the upcoming 2024-25 season, adjuvanted IIV, cell-based IIV and high-dose IIV are not available.

10. SIV require annual administration. Evidence on repeated influenza vaccination shows that vaccination in the current and prior season provides better protection than no vaccination or being vaccinated in the prior season only.[3] Most IIV are given via the intramuscular route and are recommended for use in individuals six months of age or above, except those with known contraindications (depending on individual brands). LAIV is recommended for use in individuals aged two to 49 years, and should be given intranasally. RIV is given via the intramuscular route and is recommended for use in individuals of 18 years or above.

Vaccine Effectiveness

11. Vaccine effectiveness (VE) measures the protection when it is used in the general population under real-world conditions and depends on factors including the similarity between the virus strains present in the vaccine and those circulating in the community as well as the characteristics of recipients (e.g. age).[4]

12. According to estimates from the United States (US) Centers for Disease Control and Prevention, influenza vaccines reduced the risk of influenza illness by 40% to 60% among the overall population during seasons when most circulating viruses closely matched with the vaccine strains.[5] In older adults, protection that inactivated vaccines offer in preventing influenza illness was modest, irrespective of setting, outcome, population and study design.[3] A review of existing studies suggested that, in this age group, recombinant vaccines may be potentially more effective than standard-dose inactivated vaccines. For LAIV, overseas studies and clinical experience had generally indicated LAIV to be a safe vaccine, providing comparable protection against influenza to that afforded by IIV.

[3] World Health Organization. Vaccines against influenza: WHO position paper – May 2022. Weekly Epidemiological Record No 19, 2022, 97, 185–208. Available at https://www.who.int/publications/i/item/who-wer9719

[4] US Centers for Disease Control and Prevention. How Flu Vaccine Effectiveness and Efficacy are Measured. Available at https://www.cdc.gov/flu/vaccines-work/effectivenessqa.htm

[5] US Centers for Disease Control and Prevention. Vaccine Effectiveness: How Well Do Flu Vaccines Work? Available at https://www.cdc.gov/flu/vaccines-work/vaccineeffect.htm

Adverse Events

13. The most common adverse events following IIV or RIV administration are local reactions including pain, redness and swelling at the site of injection and may occur at more than 10% of IIV or RIV recipients. Non-specific systemic symptoms including fever, chills, malaise and myalgia are uncommon and reported in less than or about 1%. Other rare adverse events may include anaphylaxis (0.2-1.5 cases per million doses after IIV) and Guillain-Barré syndrome (GBS).

14. GBS is an acute paralyzing illness, usually provoked by a preceding infection, surgery or rarely after immunisation. It is characterised by progressive weakness of all limbs and areflexia. Overseas studies have estimated that the risk of GBS following influenza vaccination to be about one to two GBS cases per million vaccine recipients. Locally, one case of GBS was recorded in the season 2023-24 among persons who had received SIV (within the period of five days and six weeks after seasonal influenza vaccination).[6] In Hong Kong, the number of GBS (all causes) admitted to public hospitals ranged from 33 to 60 cases per year between 2019 and 2023.[7]

15. For LAIV, the most common adverse reactions following LAIV administration are mild nasal congestion or runny nose, low-grade fever and sore throat. The safety in pregnant women has not been established. Children aged below five years with recurrent wheezing and persons of any age with asthma may be at increased risk of wheezing following administration. As this is a live vaccine, there is potential for transmission of the vaccine viruses to immunocompromised individuals.

Recommendations

16. The SCVPD made the following recommendations on seasonal influenza vaccination for the 2024-25 season in Hong Kong.

[6] Causality assessment based on the WHO's classification (https://www.who.int/vaccine_safety/publications/gvs_aefi/en/) : B1 (Indeterminate; temporal relationship is consistent but there is insufficient definitive evidence for vaccine causing event)
[7] Details are available from https://www.chp.gov.hk/en/features/26736.html

Vaccine Composition

17. The composition follows the recommendations by the WHO for the 2024-25 Northern Hemisphere influenza season (Table 1). The composition recommended for egg-based versus cell- or recombinant-based vaccines were different for influenza A (H1N1)pdm09 and A(H3N2) viruses, as the WHO considered the same virus may not be optimal for both production systems in some instances.

Table 1 – WHO recommendations on influenza vaccine composition for the 2024-2025 northern hemisphere influenza season.[1]

	Quadrivalent vaccine	**Trivalent vaccine**
Egg-based vaccines	• A/Victoria/4897/2022 (H1N1)pdm09-like virus • A/Thailand/8/2022 (H3N2)-like virus • B/Austria/1359417/2021 (B/Victoria lineage)-like virus • B/Phuket/3073/2013 (B/Yamagata lineage)-like virus	• A/Victoria/4897/2022 (H1N1)pdm09-like virus • A/Thailand/8/2022 (H3N2)-like virus • B/Austria/1359417/2021 (B/Victoria lineage)-like virus
Cell culture or Recombinant based vaccines	• A/Wisconsin/67/2022 (H1N1)pdm09-like virus • A/Massachusetts/18/2022 (H3N2)-like virus • B/Austria/1359417/2021 (B/Victoria lineage)-like virus • B/Phuket/3073/2013 (B/Yamagata lineage)-like virus	• A/Wisconsin/67/2022 (H1N1)pdm09-like virus • A/Massachusetts/18/2022 (H3N2)-like virus • B/Austria/1359417/2021 (B/Victoria lineage)-like virus

Vaccine Type

18. IIV, RIV and LAIV are recommended for use in Hong Kong. Given B/Yamagata lineage viruses are no longer circulating in the population based on WHO surveillance data, both trivalent and quadrivalent vaccines could

be used in the 2024-25 season. Depending on individual brand, IIV is recommended for use among people aged six months of age or older, including healthy people and those with chronic medical problems. RIV is recommended for use in individuals of 18 years or above. The LAIV can be used for people aged 2 to 49 years, except those who are pregnant, immunocompromised or with other contraindications (refer to paragraph 25 below). When deciding the type of SIV to be used, healthcare providers should always refer to the package insert of individual products for indications, precautions and contraindications.

Dosing Schedule

19. Given that SIV offers protection against clinical influenza and severe cases do occur in previously healthy persons, all members of the public except those with known contraindications should receive SIV annually for personal protection, which is in line with the recommendation by the WHO. Members of the public should receive SIV once in the 2024-25 season, which is expected to offer protection for both winter and summer seasons.

20. Healthcare providers should follow the age-appropriate dosage of individual vaccines according to the respective package insert. A single dose of SIV is the standard regimen for persons aged nine years or above. For children below nine years of age who have received one or more doses of SIV before, they are recommended to receive one dose of SIV in the 2024-25 season. For children below nine years of age who have not received any SIV before, two doses of SIV with an interval of at least four weeks are required.[8]

Injection interval between influenza vaccines and other vaccines

21. For individuals receiving LAIV, other live vaccines not administered on the same day should be administered at least four weeks apart.

[8] For the 2023-24 influenza season, most health authorities including the UK, Canada, Australia and New Zealand recommended only 1 dose for children aged 6 months to 8 years who had received any SIV in the past. The UK recommended that only a single dose of LAIV was required for children aged 2-17 years who were not in clinical risk groups, even for those who have not received any SIV in the past. However, the US Centers for Disease Control and Prevention recommended that children aged 6 months through 8 years who had previously received ***less than 2*** total doses of trivalent or quadrivalent SIV at least 4 weeks apart before July 1, 2023 or whose influenza vaccination history is unknown required 2 doses of 2023-24 influenza vaccine, given ≥4 weeks apart.

22. For individuals receiving IIV and RIV, other inactivated or live vaccines may be administered simultaneously or at any interval between doses.

23. While a study in young children in the US has shown that there may be a small increased risk of febrile convulsion following concomitant administration of IIV and pneumococcal vaccine, the increased risk was not observed during subsequent influenza season and the overall risk remains acceptable. Given the obvious benefit of on-time vaccination with the two vaccines, it is recommended that IIV and pneumococcal vaccine can be given concomitantly.

24. COVID-19 vaccines can be co-administered with seasonal influenza vaccine on the same visit under informed consent for administrative convenience and achieving better coverage. The same principle would also apply to similar settings including residential care homes.[9,10]

Vaccine Precautions

25. SIV are 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 settings. Individuals with a history of anaphylaxis to egg should have SIV administered by health care professionals in appropriate medical facilities with capacity to recognise and manage severe allergic reactions. RIV contains no egg protein.

26. LAIV is a live vaccine and is generally contraindicated in the following conditions, taking reference from recommendations of the US, the UK and Canada:

- History of severe allergic reaction to any vaccine component or after previous dose of any influenza vaccine;

[9] JSC-EAP Consensus Interim Recommendations on the Use of COVID-19 Vaccines in Hong Kong (6 April 2022). Available at https://www.chp.gov.hk/files/pdf/consensus_interim_recommendations_on_the_use_of_covid19_vaccines_in_hong_kong_6_apr.pdf

[10] JSC-EAP Consensus Interim Recommendations on the Use of COVID-19 Vaccines in Hong Kong (11 August 2022). Available at https://www.chp.gov.hk/files/pdf/consensus_interim_recommendations_on_coadministration_of_covid19_vaccine_with_other_vaccines_in_hong_kong_11_aug.pdf

- Concomitant aspirin or salicylate-containing therapy in children and adolescents;
- Children 2 years through 4 years who have asthma or who have had a history of wheezing in the past 12 months[11];
- 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

27. Recommendations on the priority groups for seasonal influenza vaccination are summarised below:

(a) Health Care Workers[12]: Health care workers are recommended as one of the highest priority groups for influenza vaccination.

(b) Persons Aged 50 Years or Above: Older adults (over the age of 65) are recommended as one of the highest priority groups for influenza vaccination. Persons aged 50-64 years are also recommended for influenza vaccination because local influenza epidemiology showed that people aged 50-64 years, irrespective of chronic medical problems, were having a higher risk of influenza-related ICU admission and death during seasons predominated by influenza A (H1N1)pdm09.

(c) Pregnant Women: Pregnant women remained to be the high priority group for vaccination. Seasonal influenza vaccination is recommended for all pregnant women for benefits in terms of reduced acute respiratory infection for both mothers and infants, and reduction of cardiopulmonary complications and the associated hospitalisations in pregnant women.

[11] The UK recommended the use of IIV instead of LAIV for children with increased wheezing and/or needed additional bronchodilator treatment in previous 72 hours. Also, specialist advice should be sought on giving LAIV for children who require regular oral steroid for maintenance of asthma control or who have previously required intensive care for asthmatic attack. Canada recommended that individuals with severe asthma (currently on oral or high-dose inhaled glucocorticosteroids or active wheezing) or those with medically attended wheezing in the 7 days prior to vaccination should not use LAIV.

[12] Including care workers in RCHEs and RCHDs and laboratory personnel handling influenza virus specimens.

IIV is considered to be safe by the WHO for use at any gestational age of pregnancy and there is no evidence indicating that IIV is teratogenic even when given during the first trimester. RIV is not contraindicated in pregnancy. However, LAIV should **not** be used in pregnant women.

(d) Residents of Residential Care Homes (such as Residential Care Homes for the Elderly [RCHE] or Residential Care Homes for Persons with Disabilities [RCHD]): For elderly, seasonal influenza vaccination is recommended for reducing the risk of complications from influenza including hospitalisation, pneumonia and death. For residents in RCHD, their disability hinders them from undertaking adequate hygiene measures in an institutional environment which favours the transmission of influenza. Seasonal influenza vaccination is therefore recommended for reducing influenza related hospitalisation during influenza outbreaks. Based on review of available evidence, WHO recommendation and overseas practice, both IIV and RIV are recommended for use in the residential care home setting. When available, RIV which may offer improved protection against influenza illness in older adults is preferred for older adults living in residential care homes.

(e) Persons with Chronic Medical Problems: Seasonal influenza vaccination is recommended for persons aged six months or above having chronic cardiovascular (except hypertension without complication), lung, metabolic or kidney disease, obesity (body mass index 30 or above)[13], who are immunocompromised[14], 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. Seasonal influenza vaccination is recommended in view of their increased risk of complications and death associated with influenza infection. Of note, LAIV should **not** be used in immunocompromised persons.

[13] Obesity is considered as an independent risk factor for influenza complication and thus people with body mass index of ≥30 are included for seasonal influenza vaccination.
[14] People who are immunocompromised refer to those with a weakened immune system due to disease (such as HIV/AIDS) or treatment (such as cancer treatment).

(f) Children and Adolescents Aged Six Months to under 18 Years: Seasonal influenza vaccination is recommended for children aged six months to 11 years for reducing influenza related complications such as excess hospitalisations or deaths. Studies in overseas have shown that vaccinating young school children may potentially reduce school absenteeism and influenza transmission in the community. Taking reference from the latest WHO recommendation, overseas practice and local experience, seasonal influenza vaccination continues to be recommended to secondary school students or adolescents 12 to under 18 years of age for the 2024-25 season.

(g) Poultry Workers: Seasonal influenza vaccination is recommended for poultry workers and persons involved in slaughtering of animals potentially infected with highly pathogenic avian influenza virus for minimising the risk of re-assortment and eventual emergence of a novel influenza virus with pandemic potential through preventing concomitant infections by the human influenza and avian influenza viruses in humans.

(h) Pig Farmers and Pig-slaughtering Industry Personnel: Pig farmers and pig-slaughtering industry personnel are recommended to receive SIV to prevent emergence of new influenza A virus in either human or pig hosts.

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