

In brief

The COVID-19 pandemic and influenza

14 April 2022

Summary

- During the COVID-19 pandemic many jurisdictions have seen a sharp decline in influenza circulation, especially during the typical flu season, compared to pre-pandemic periods.
- Vaccination remains one of the most effective measures to prevent influenza outbreaks, and is seen as critically important following relaxation of COVID-19 restrictions.¹
- In Australia, influenza vaccination coverage increased in 2020 compared to previous years.² Influenza vaccine coverage in 2021 has been lower compared to 2020 and the previous years among children aged 6 months to <5 years and children and adolescents aged 5 to 14 years.³ [Australian Technical Advisory Group on Immunisation](#) advises that influenza vaccines can be co-administered (i.e. on the same day) with the COVID-19 vaccines. Subject to the availability of influenza vaccines, co-administration with COVID-19 booster vaccines could be prompt for influenza vaccination.⁴
- Surveillance data for the influenza season in 2021-2022 in the United Kingdom, United States and Canada reveals that the influenza activity (sample positivity rate, hospitalisation rate and mortality) is low compared to pre-pandemic seasons.⁵⁻⁷
 - The overall sample positivity rate for influenza in week 6 (6 February to 12 February 2022) was 0.02% in Canada, 0.4% in the United Kingdom and 3% in the United States. The sample positivity rate increased in United Kingdom and United States since week 6, peaking at 3.3% in week 12 in United Kingdom and at 7.62% in week 11 in United States.
 - The hospitalisation rate for influenza in week 6 was 0.04 per 100,000 in the United Kingdom and was 4.7 per 100,000 in the United States. In United Kingdom, the hospitalisation rate increased gradually thereafter, peaking at 1.05 per 100,000 in week 12 and declining to 0.76 in week 13 of 2022. The cumulative hospitalisation rate rose to 7.2 per 100,000 in week 12 in the United States.
 - In all three countries, influenza A accounted for the majority of incidences.
- For the World Health Organization European region as a whole, influenza activity started to increase in week 49 of 2021, with different levels of activity observed between the countries and areas of the region. The sample positivity rate peaked at week 52 at around 20%.⁸
- In Eastern Asia, mainly reflecting data from China, influenza activity was mainly influenza B (Victoria lineage) and detections peaked in week 2 of 2022. It declined thereafter until week 5, and then increased again. Influenza illness indicators and activity remained low in the rest of the subregion and western Asia, and were predominately influenza A.⁹
- Evidence suggests that co-administration of COVID-19 vaccines and influenza vaccines during the same visit is acceptable in terms of safety, immunogenicity and reactogenicity.¹⁰⁻¹²

Background

- [Seasonal influenza](#) is caused by influenza viruses which are classified into types A, B, C and D. Influenza viruses are transmitted mainly by droplets which are inhaled into the lungs. They can also spread by touching a contaminated surface.¹³
- Measures to slow the spread of [SARS-CoV-2 virus](#), such as physical distancing, mask-wearing, increased hand hygiene, restrictions on travel and social gatherings and lockdowns, can impact the circulation and incidence of other respiratory pathogens.^{14, 15}
- In regions with temperate climates, seasonal influenza epidemics usually occur in the winter months.¹³ In the northern hemisphere, the [peak of circulation](#) is usually between January and March and in the southern hemisphere, it is between August and September.¹⁶ In [Australia](#), May to October is typically considered an influenza season, with the peak often occurring in August.¹⁷

Evidence

Impact of COVID-19 pandemic on seasonal influenza

- During the COVID-19 pandemic, especially during lockdowns and when stringent public health measures were in place to curb the spread of COVID-19, a rapid decline or suppression of influenza circulation among both the adult and paediatric populations compared to previous years was observed across the world.¹⁸⁻²⁷
 - In [Australia](#), despite substantial testing, there was a sharp decline in the influenza notification from March to September 2020, from an average of 149,832 for the same period in 2015-2019 to 7,029.²⁸
 - In [NSW](#), data from St Vincent's Hospital and associated screening clinics showed that, between 12 March to 27 May 2020 during which "stay at home" orders and the various public health measures were implemented, there was a decline in the number of influenza diagnosis.²⁹
 - In [Western Australia during winter season of 2020](#), there was a 98.0% and 99.4% reduction in respiratory syncytial virus and influenza detections in children despite schools reopening.³⁰
 - A [population based study from the United Kingdom](#) found that between 1 March 2020 to 28 February 2021 there was a 94% reduction in hospital admissions due to influenza, compared to the same period in the previous years.³¹ In [Oxfordshire](#), United Kingdom, the rates of influenza infections in paediatrics remained suppressed throughout February 2020 and June 2021.³²
 - In the [United States](#), between October 2020 and May 2021, influenza activity was at a record low since at least 1997.³³
 - In [South Africa](#), there was a sharp reduction in influenza detections among outpatients with influenza-like-illness and in patients with severe respiratory illness between January and October 2020. All infections occurred outside of typical flu season.³⁴
 - In [Korea](#), the sample positivity rate and hospitalisation rate of the influenza virus were 6% and 5% of the predicted values, respectively, between February 2020 and January 2021.³⁵
- The restricted healthcare access and disrupted diagnostic and surveillance capacities in some countries may have also contributed to the reduction in the influenza detections.²⁰

Vaccination against influenza

- [Influenza vaccination](#) remains one of the most effective preventative measures against influenza infections and outbreaks.¹
- A review of [influenza vaccination strategies](#) for 2020-21, in the context of COVID-19 and in 13 countries, found that several strategies have been implemented or recommended to promote influenza vaccine uptake.³⁶ These strategies included increased infection control and prevention measures in immunisation settings, alternative models or settings for vaccine delivery, enhanced communication, prioritising the most vulnerable people, and combining influenza vaccination with other medical visits.³⁶
- In [Australia, influenza vaccine uptake](#) in adults aged ≥ 65 , children aged from six months to five years, and Indigenous young children and older adults in 2020 were higher than in 2019.² [Influenza vaccine coverage](#) in 2021 has been lower compared to 2020 and previous years for a number of age groups.³ There was approximately a 40% decrease in the influenza vaccination coverage for children aged six months to five years and 20% reduction in children and adolescents aged 5 to 14 years.³
- Analysis from the [United States](#) found that despite a significant drop in flu activity across individual states, there was no difference in the influenza vaccine acceptance pre-pandemic versus post-pandemic.¹⁸ Another study found that the COVID-19 pandemic may have served as a [cue for vaccination](#) against influenza as nearly one quarter of participants who had not had the vaccine the previous year expressed intention to get the influenza vaccine in the next 12 months.³⁷
- Studies from other countries found that previous influenza vaccination behaviour, positive attitude to vaccination, and knowledge were the predictors of [intention to have the influenza vaccine](#) during the COVID-19 pandemic.^{38, 39}

Co-administration of influenza vaccines and COVID-19 vaccines

- The World Health Organization interim guidance on [co-administration of seasonal inactivated influenza](#) and COVID-19 vaccines recommends that administration of both vaccines during the same visit has potential advantages and is acceptable in terms of safety, immunogenicity and reactogenicity.¹⁰
- The World Health Organization recommends [end-to-end integration](#) of SARS-CoV-2 and influenza sentinel surveillance. It recommends that integration of SARS-CoV-2 testing and sequencing should occur without compromising influenza surveillance.⁴⁰
- The [Centres for Disease Control and Prevention](#) in the United States recommends that COVID-19 vaccines may be administered before, at the same visit, or after other vaccines without regard to timing (including live, attenuated vaccines).
- [Australian Technical Advisory Group on Immunisation](#) advises that influenza vaccines can be co-administered (i.e. on the same day) with all COVID-19 vaccines. Subject to the availability of influenza vaccines, co-administration with COVID-19 booster vaccines could be a prompt for influenza vaccination.⁴
- A [multicentre, randomised, controlled, phase 4 trial](#) from the United Kingdom found that concomitant vaccination with Vaxzevria (Oxford/AstraZeneca) or Comirnaty (Pfizer/BioNTech) plus an age-appropriate influenza vaccine raises no safety concerns and preserves antibody responses to both vaccines.¹²

- In a [phase 2, randomised, open-label study](#), no safety concerns or immune interference were observed for concomitant administration of a high-dose quadrivalent influenza vaccine with Spikevax (Moderna) booster in adults aged 65 years and older.¹¹
- A [randomised, observer-blinded, placebo-controlled, phase 3 trial](#) found no evidence for interference of the COVID-19 vaccine (Novavax) with the quadrivalent influenza cell-based vaccine. There were no safety concerns and immunogenicity and vaccine efficacy of the influenza vaccine was preserved.⁴¹

Surveillance data for the influenza season in 2021-2022 in select regions and countries in northern hemisphere

United Kingdom

- [Weekly national Influenza and COVID-19 surveillance report](#) (week 7 report on 17 February 2022). The influenza positivity, hospital admissions and general practice influenza-like illness consultation rates remain very low.⁵
- Respiratory DataMart system (England, sentinel laboratory surveillance): In week 6 of 2022, overall sample positivity rate for SARS-CoV-2 was 3.8% and overall sample positivity rate for influenza was 0.4%. The influenza positivity rate for 2021-2022 is lower than the rate for the same period in 2019-2020. The influenza positivity rate rose gradually thereafter, peaked at week 12 at 3.3% and levelled off at 3.2% in week 13 of 2022. The influenza positivity rate for week 12 in 2021-2022 is higher than the rate for the same period in 2019-2020.
- United Kingdom general practice sentinel swabbing schemes: In week 6 of 2022, no sample tested positive for influenza in England through the scheme, with an overall positivity of 0.0% (0 out of 45). In week 13 of 2022, the overall positivity rate rose to 25.6% (20 out of 78).
- Secondary care surveillance: The hospitalisation rate for influenza was 0.04 per 100,000 in week 6 of 2022, compared to 11.04 per 100,000 for COVID-19. The hospitalisation rate was much lower than the rate for the same period in 2018-2019 and 2019-2020. However, the hospitalisation rate rose gradually thereafter, peaking at 1.05 per 100,000 in week 12 and declining to 0.76 in week 13 of 2022.

United States

- Weekly U.S. Influenza Surveillance Report (week 12 update on 1 April 2022): Influenza activity is still highest in the central and south-central regions of the country but appears to be declining slightly in these regions. Influenza activity is increasing in the northeast and northwest regions.⁶
- Clinical laboratories: In week 6 of 2022, overall sample positivity rate for influenza was 3%. Influenza test positivity rate increased gradually since week 6, peaked in week 11 at 7.62%, and dropped to 6.5% in week 12. The majority of viruses detected are influenza A (H3N2).
- Hospital surveillance: The overall cumulative hospitalisation rate is 7.2 per 100,000 population in week 12 of 2022, which is higher than the rate observed for the same period in 2020-2021, but lower than the rates observed for the same periods between 2016 and 2020.
- National Center for Health Statistics Mortality Surveillance: In week 6 of 2022, there were 17 deaths with influenza listed as the contributing cause, compared to 3,447 with COVID-19 listed as contributing cause. In week 12 of 2022, there were 27 deaths with influenza listed as contributing cause, compared to 750 with COVID-19 listed as contributing cause. A total of 14 influenza-

associated paediatric deaths were reported to the Centres for Disease Control and Prevention to week 12 of 2022 for this season.

Canada

- [Weekly influenza reports](#) (week 10, 6 March to 12 March of 2022): Influenza activity across Canada remains low for this time of year. Low numbers of sporadic detections of influenza continue to be reported. There has been no evidence of community circulation of influenza in the 2021-2022 season to date.⁷
- Laboratory-confirmed influenza detections: In week 6 of 2022, overall sample positivity rate for influenza was 0.02%. The majority of viruses detected are influenza A (H3N2). In week 10, the overall sample positivity rate for influenza was 0.13%.
- Provincial or territorial influenza hospitalisations and deaths: In week 6 and week 10 of 2022, respectively, no influenza-associated hospitalisations were reported by participating provinces and territories. No influenza-associated paediatric (≤ 16 years of age) hospitalisations were reported by the Immunization Monitoring Program Active (IMPACT) network.

Europe

- For the [European region](#), influenza virus positivity in sentinel primary care specimens first peaked in week 52 of 2021 at 20%. It declined thereafter until week 4 of 2022, reaching a plateau phase at 26%-27% since week 10/2022.⁸ Influenza activity remains above what was observed during the same period in 2020-2021, but lower compared to pre-COVID-19 seasons.
- For the region as a whole, different levels of activity observed between the countries and areas of the region and a general dominance of A(H3) viruses in most countries.⁸

Asia

- For [east Asia](#) and based on an update on 21 March, mainly reflecting the activity reported from China, influenza activity with mainly influenza B (Victoria lineage) detections peaked in week 2 of 2022. Detections declined thereafter until week 5, and then increased again. Influenza illness indicators and activity remained low in the rest of the subregion and western Asia, and were predominately influenza A.⁹

To inform this brief, PubMed and Google searches were conducted using terms related to COVID-19, influenza, and vaccination on 8 April 2022.

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