



FluCov-Bulletin – mid-December 2023

FluCov project: combining data from around the world to better understand the impact of COVID-19 on influenza activity

Commentary

Contents

It is now almost four years since a cluster of atypical pneumonia cases in Wuhan, China, was reported to the World Health Organization (WHO) (January 1, 2020) that was later linked to the new **SARS-CoV-2** virus. The FluCov Bulletin provides an overview of the number of positive cases of **influenza** and **SARS-CoV-2** and the percentage of specimens that tested positive from January 2019 onwards in 22 countries across most regions of the world (see page 3).

Results

On a global level, **influenza** activity has slightly increased in the beginning of December 2023 (see Figure 1). The following country patterns were observed for **influenza**:

- In the Northern Hemisphere, **influenza** activity remained low in Europe, with most countries reporting a little increase in new detections, compared to November (**United Kingdom, France, Poland, Germany, Italy**).
- **Influenza** activity continued to increase in North America (**United States, Canada, and Mexico**).
- **Influenza** detections were low in **India, Japan, and the Philippines**.
- **Influenza** activity in **Southern China** remained very high ($\geq 50\%$ positivity) in week 49, while **Northern China** reports high activity (40-50% positivity).
- In **South Korea**, **influenza** detections continued to increase in the beginning of December, with a mix of **influenza** A(H1N1)pdm09 (dominant) and A(H3N2), and to a lesser extent B/Victoria. The percentage of specimens that tested positive also continued to increase to approximately 40%.
- After a rise in cases between weeks 32-42, **influenza** activity (with a mix of A and B) seems to have peaked in **Thailand**, but **influenza** positivity rate remains around 25%.
- In the Southern Hemisphere, **influenza** detections have been low in the countries covered by the Bulletin (**Brazil, South Africa and Australia**).
- No update on **influenza** activity was available for **Netherlands** and **Spain** in the beginning of December.

Globally, **SARS-CoV-2** detections have been relatively low after the late 2022 peak in China (see Figure 1). The following patterns were observed for **SARS-CoV-2** in the beginning of December 2023:

- **SARS-CoV-2** activity was low or stable in most countries in the Bulletin: **China, India, Israel, Mexico, Poland, South Africa, Thailand, United Kingdom**.
- In **Italy**, the number of **SARS-CoV-2** is relatively high.
- **SARS-CoV-2** activity increased in **Australia** and **Philippines**.
- No update on **SARS-CoV-2** activity was available for **Brazil, Egypt, France, Germany, Japan, Netherlands, South Korea, Spain, United States, and Vietnam** in the beginning of December.

Implications

Global **influenza** activity has shown an increase in the beginning of December 2023, following the pattern shown in November. **SARS-CoV-2** activity has been relatively low worldwide.

Influenza detections in the Northern and Southern Hemispheres:

In the Northern Hemisphere, **influenza** activity has slowly increased throughout the month of November and start of December and in particular in **China** (mix of **influenza** A(H3) – dominant - and B/Victoria) and **South Korea**, where **influenza** positivity rate is above 40%. **Influenza** activity also increased in North America and is above the epidemic threshold in **Canada, Mexico** and the **United States** [1]. **Influenza** activity has been low in all Southern Hemisphere countries covered by the Bulletin: **Australia, South Africa and Brazil**. Other countries in the Southern Hemisphere (**New Zealand, Argentina**) also reported low **influenza** activity [1].

Influenza A subtypes and Influenza B lineages:

Up until now, the dominant **influenza** B lineage in the countries reported in the Bulletin has exclusively been **influenza** B/Victoria (when the lineage was determined). This is noteworthy, especially considering the rarity of **influenza** B/Yamagata during the COVID-19 pandemic [2].

Regarding **influenza** A, **influenza** A(H3) is currently dominating, globally. The Southern Hemisphere's **influenza** season has primarily featured a mix of **influenza** A(H1N1)pdm09 and **influenza** A(H3N2).

SARS-CoV-2:

SARS-CoV-2 detections have been on the decline worldwide since December 2022 when **China** experienced its peak. As of December, detections remained relatively low. However, an increase in **SARS-CoV-2** hospital admissions has been reported in November/December in a number of countries covered by the Bulletin (**Canada, Japan, Netherlands** and **United States**), and in particular in **Italy** [3]. It's critical to acknowledge that the Bulletin's data completeness is impacted by scaled-back monitoring efforts, such as France's strategy of testing predominantly high-risk individuals, and instances of non-communication with WHO [4]. This results in some data not being included in the FluCov Bulletin.

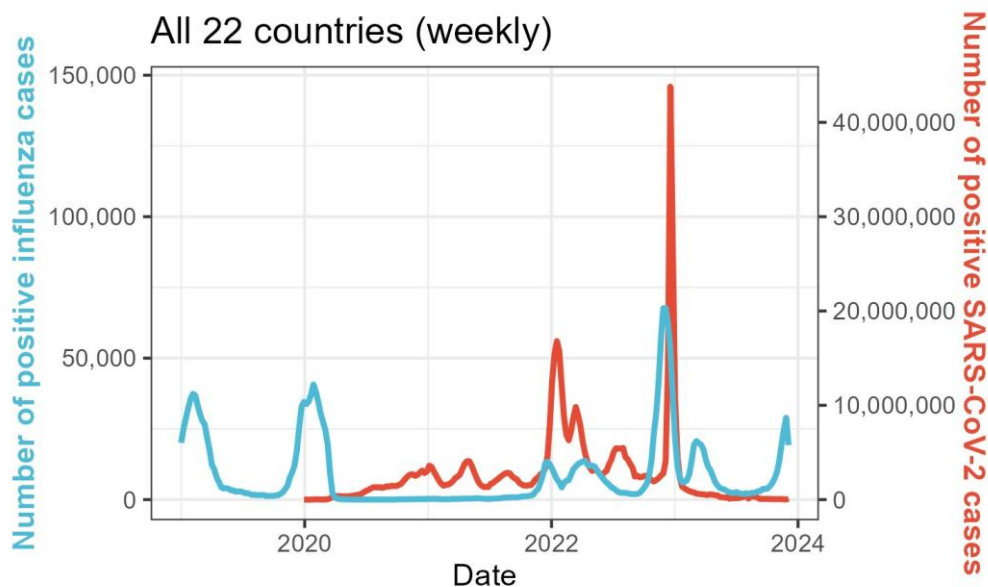


Figure 1: SARS-CoV-2 and influenza detections in the 22 countries covered by the Bulletin (period: from week 1/2019 to week 49/2023)

Disclaimer: Comparisons between countries and seasons of influenza and SARS-CoV-2 detections should be made with care, as national surveillance systems may differ (e.g. surveillance structures and testing intensity) and change over time.

Monthly plots by country

The plots per country show weekly data for **influenza** and of **SARS-CoV-2** infections from 1 January, 2019 up to 10 December, 2023. This FluCov-Bulletin includes the countries Canada, United States, Mexico, Brazil, United Kingdom, France, Germany, Italy, Netherlands, Spain, Poland, South Africa, Egypt, China, Japan, South Korea, India, Philippines, Thailand, Vietnam, Israel and Australia.

Per country, the first plot displays the number of positive **influenza** (in blue) and **SARS-CoV-2** (in red) detections. An overview of the absolute number of **influenza** and of **SARS-CoV-2** detections per country can be found on [pages 26-28 of this FluCov-Bulletin \(click here\)](#). The bar displays the Stringency Index (SI; a country-specific composite metric of the mitigation measures that are in place) over time. The second plot shows the **influenza** detections by subtypes/lineages reported to FluNet. The third plot displays the percentage of specimens testing positive for **influenza** during the current season (in red), the last season, and the average of the two pre COVID-19 seasons (2017-18 and 2018-19).

The FluCov Dashboard is live!

All Figures and Tables in the FluCov-Bulletin can now be accessed (real-time) at:

<https://www.nivel.nl/en/dossier-epidemiology-respiratory-viruses/flu-cov-dashboard>

Countries (click to view plot)

North America

Canada

United States

Central America Caribbean

Mexico

Tropical South America

Brazil

Northern Europe

United Kingdom

Eastern Europe

Poland

South West Europe

France

Germany

Italy

Netherlands

Spain

Northern Africa

Egypt

Southern Africa

South Africa

Eastern Asia

China

Japan

South Korea

Southern Asia

India

South East Asia

Philippines

Thailand

Vietnam

Western Asia

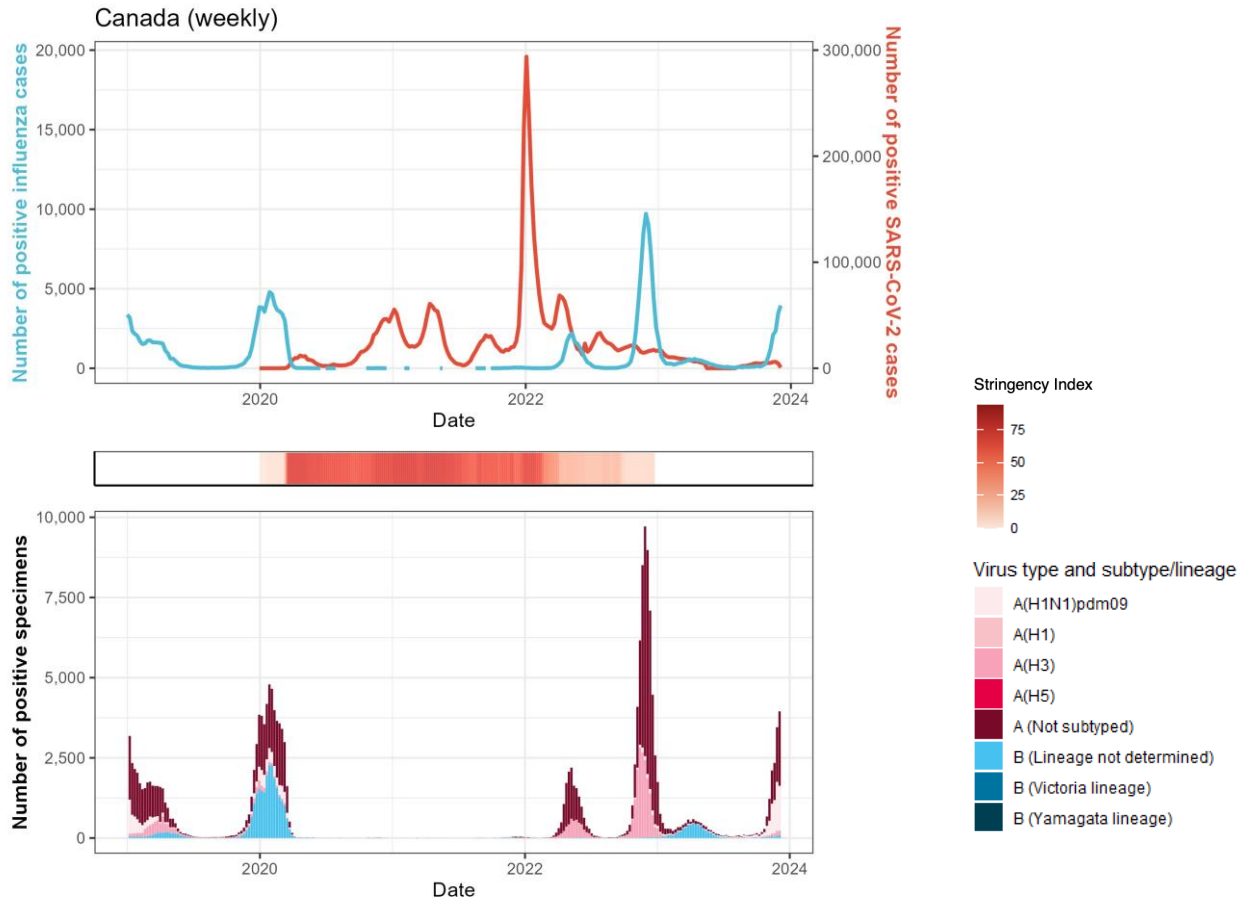
Israel

Oceania

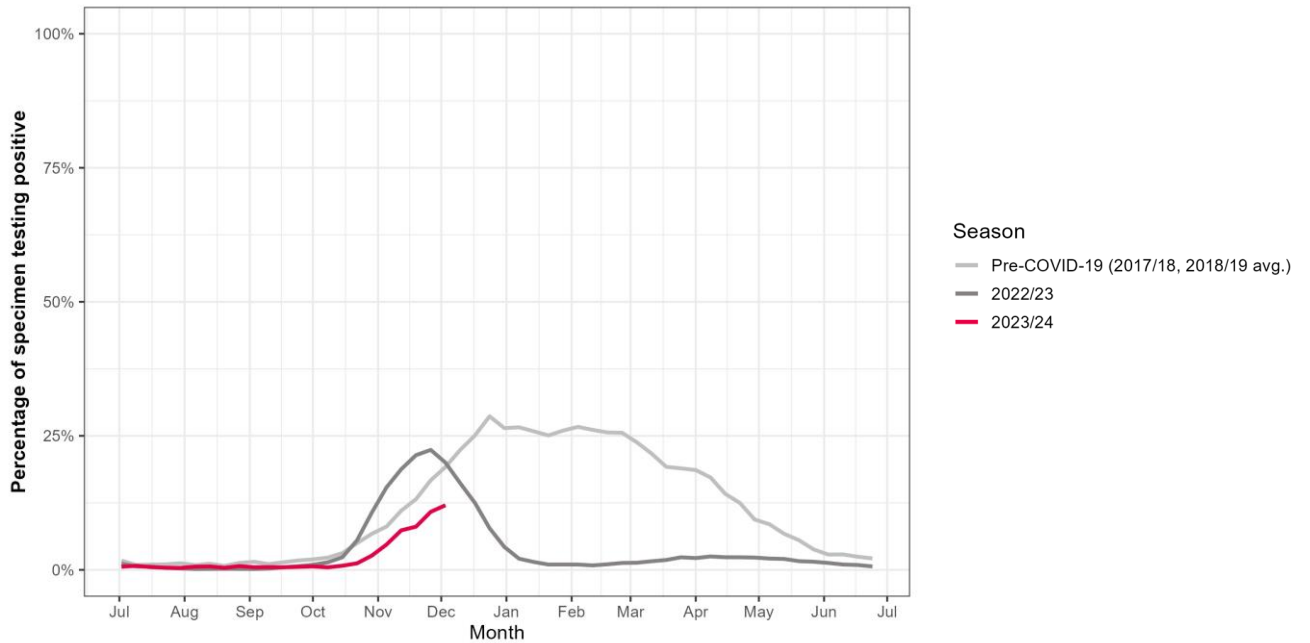
Australia

North America

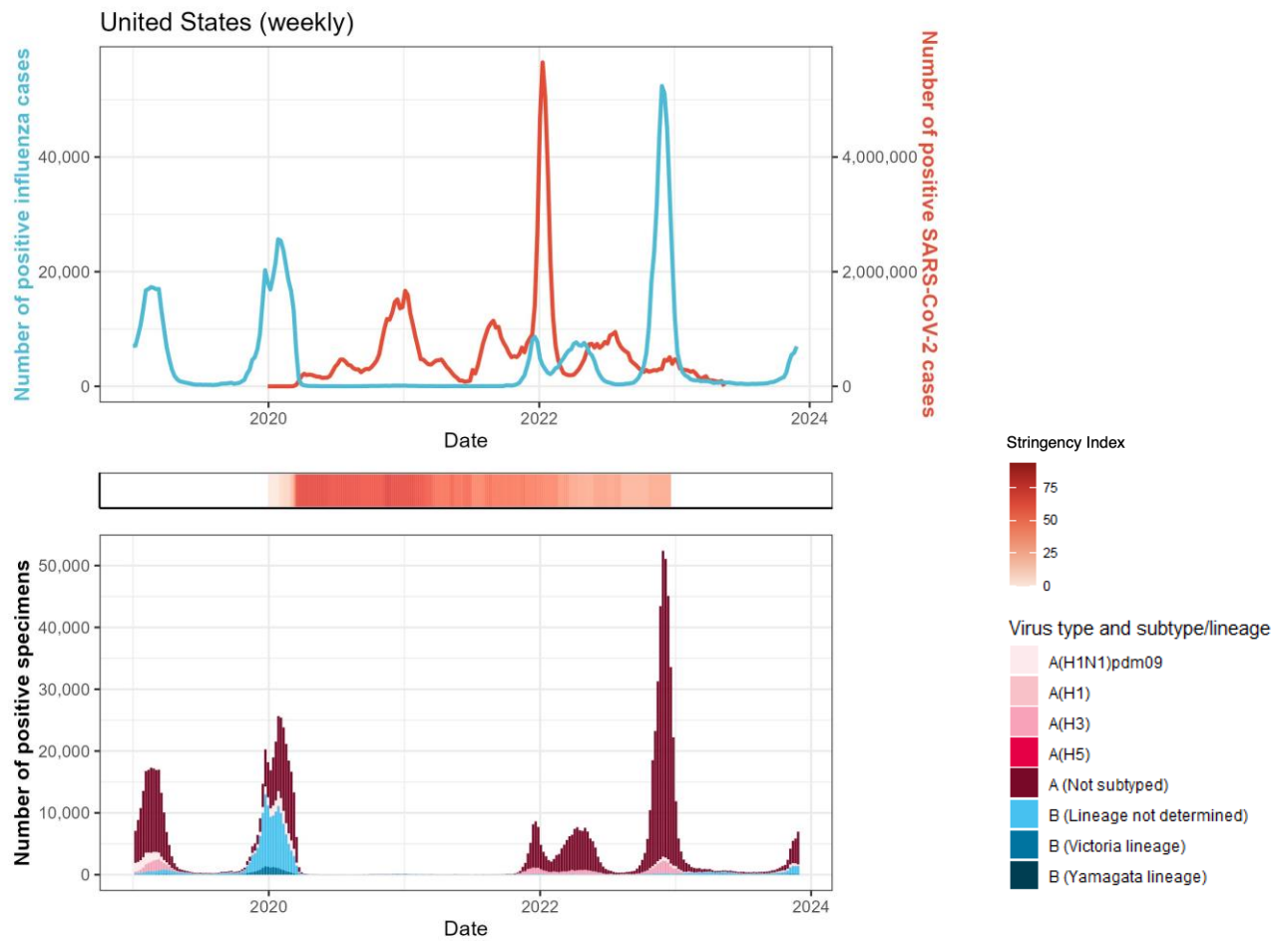
Canada



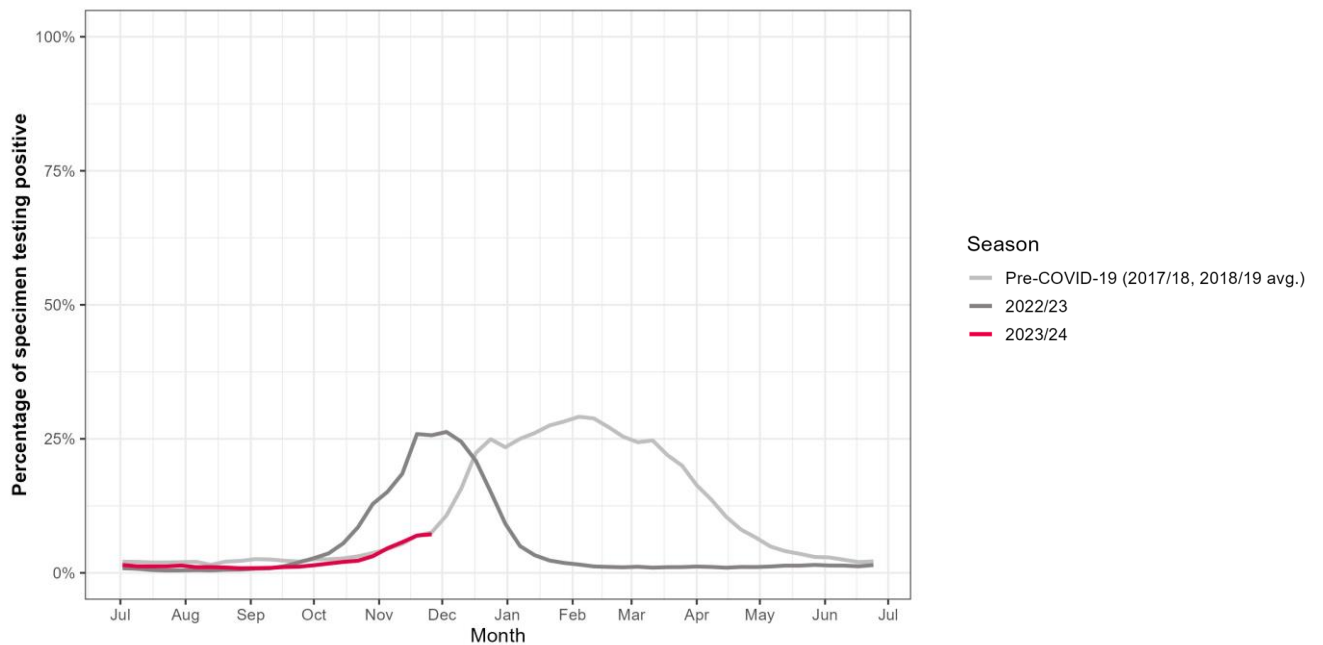
Percentage of specimens testing positive for influenza in different seasons



United States

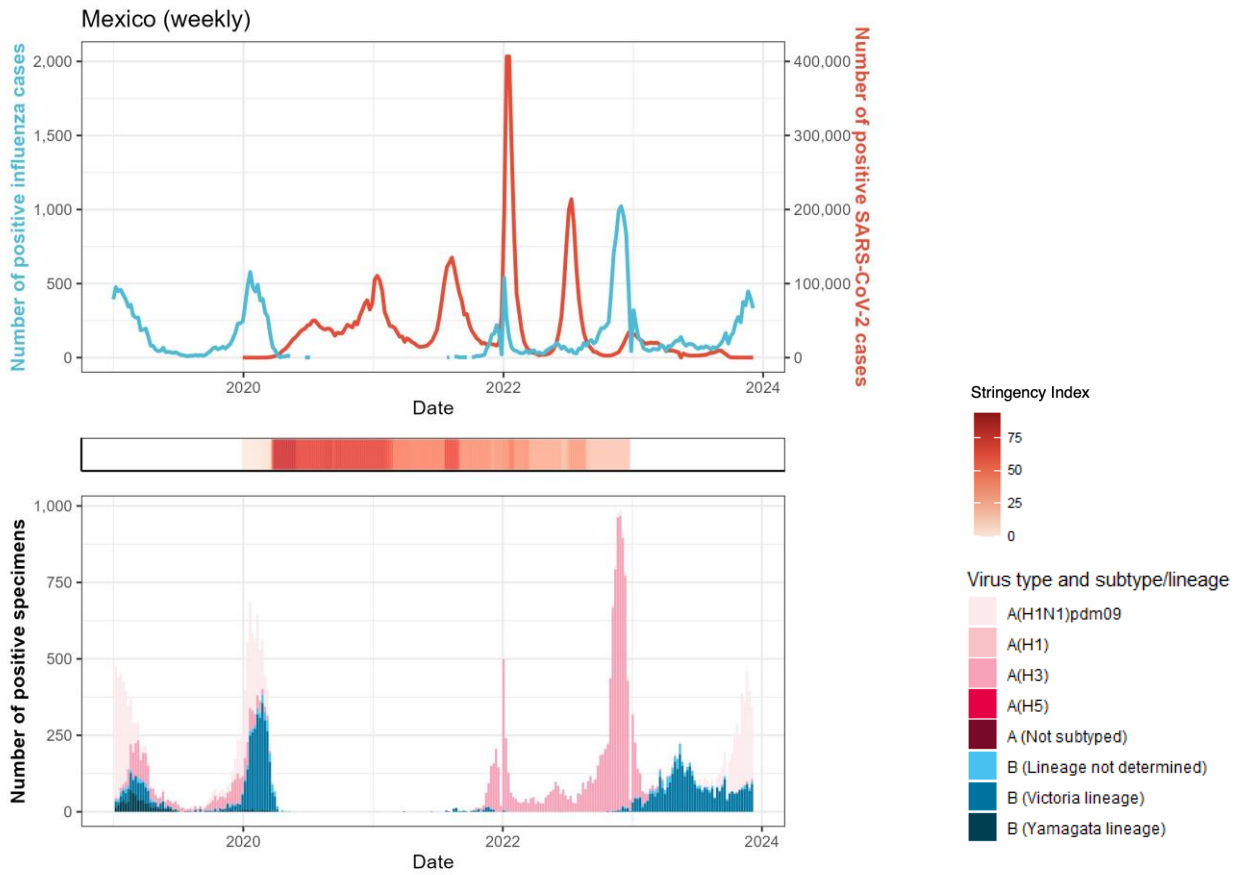


Percentage of specimens testing positive for influenza in different seasons

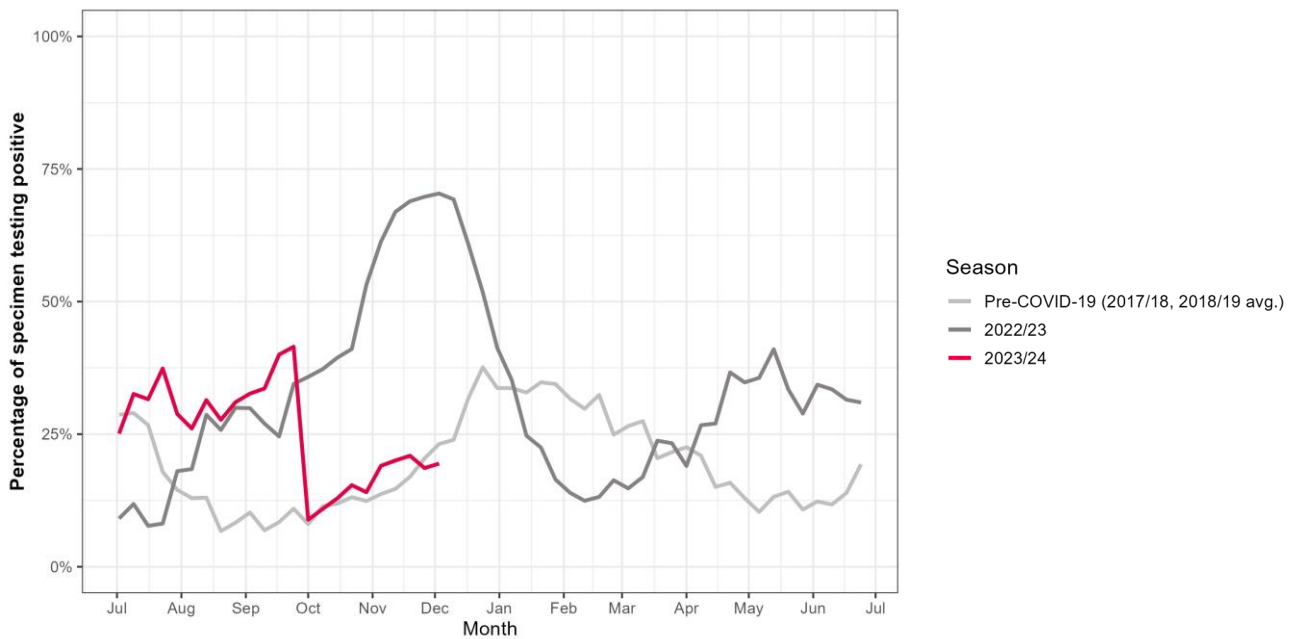


Central America Caribbean

Mexico

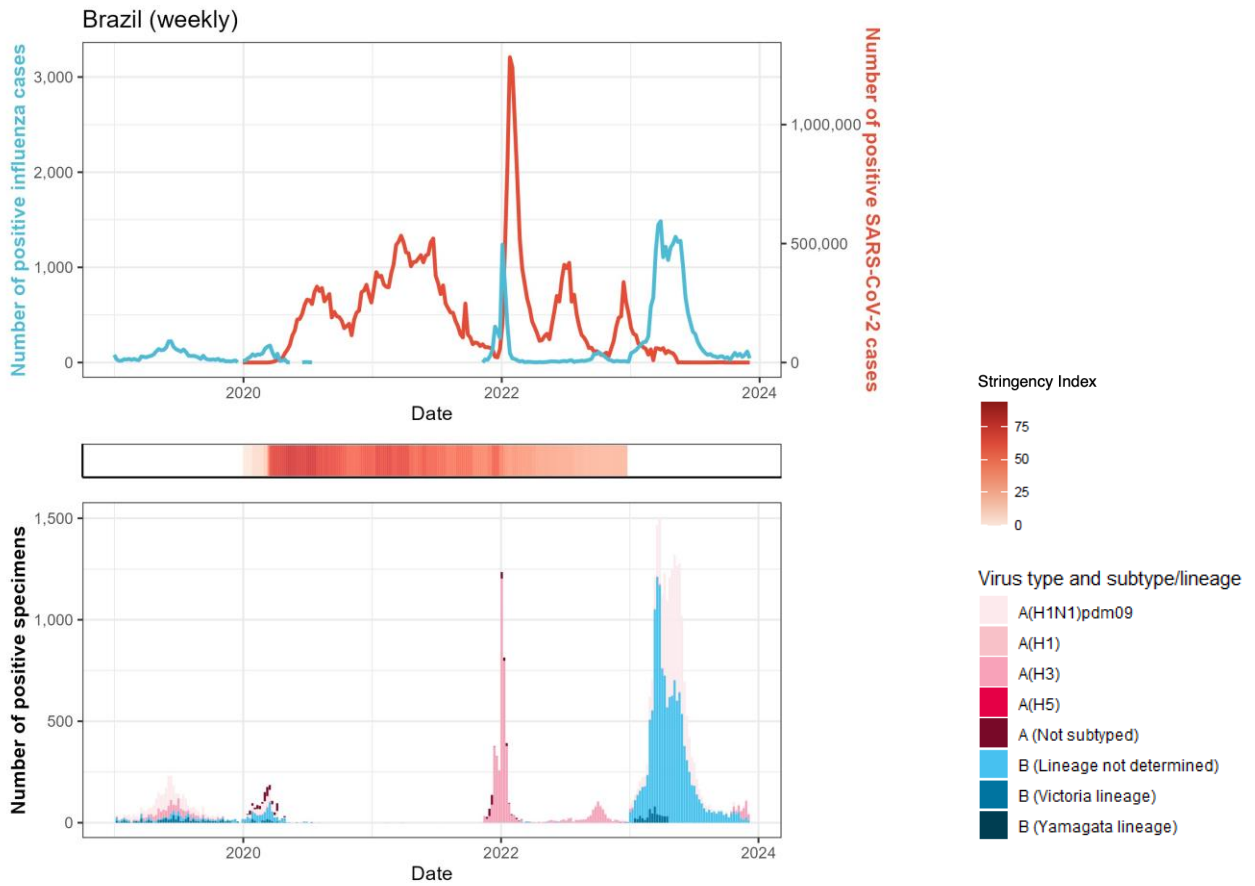


Percentage of specimens testing positive for influenza in different seasons

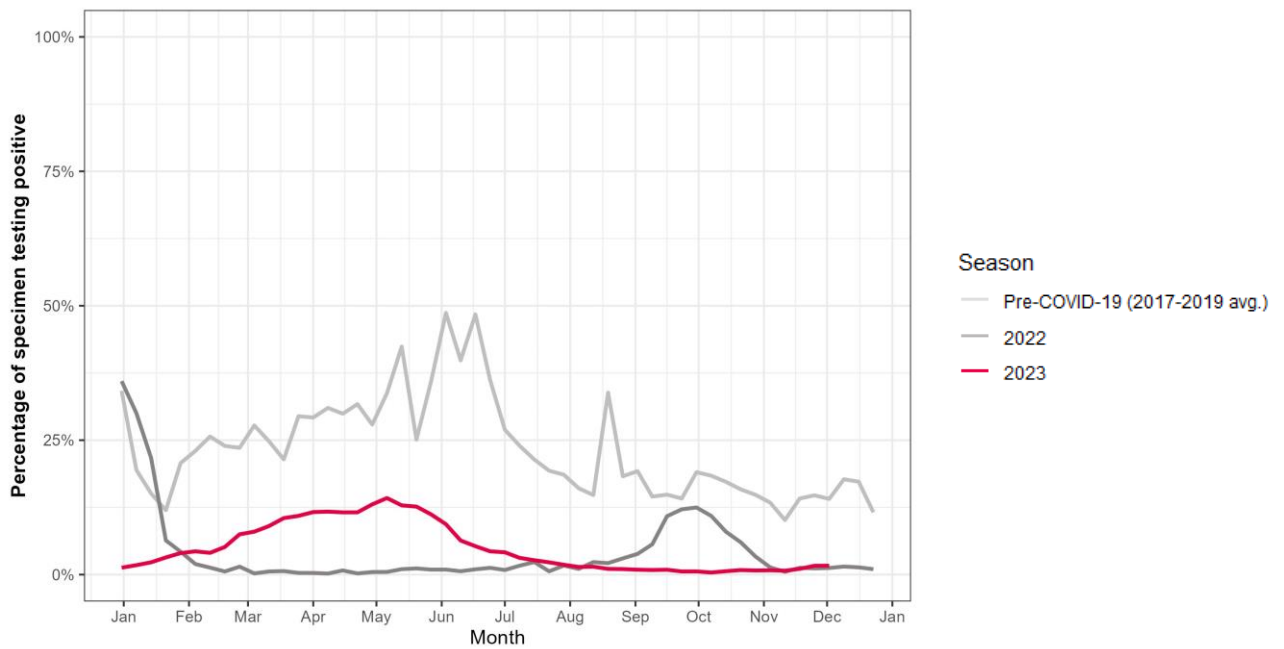


Tropical South America

Brazil

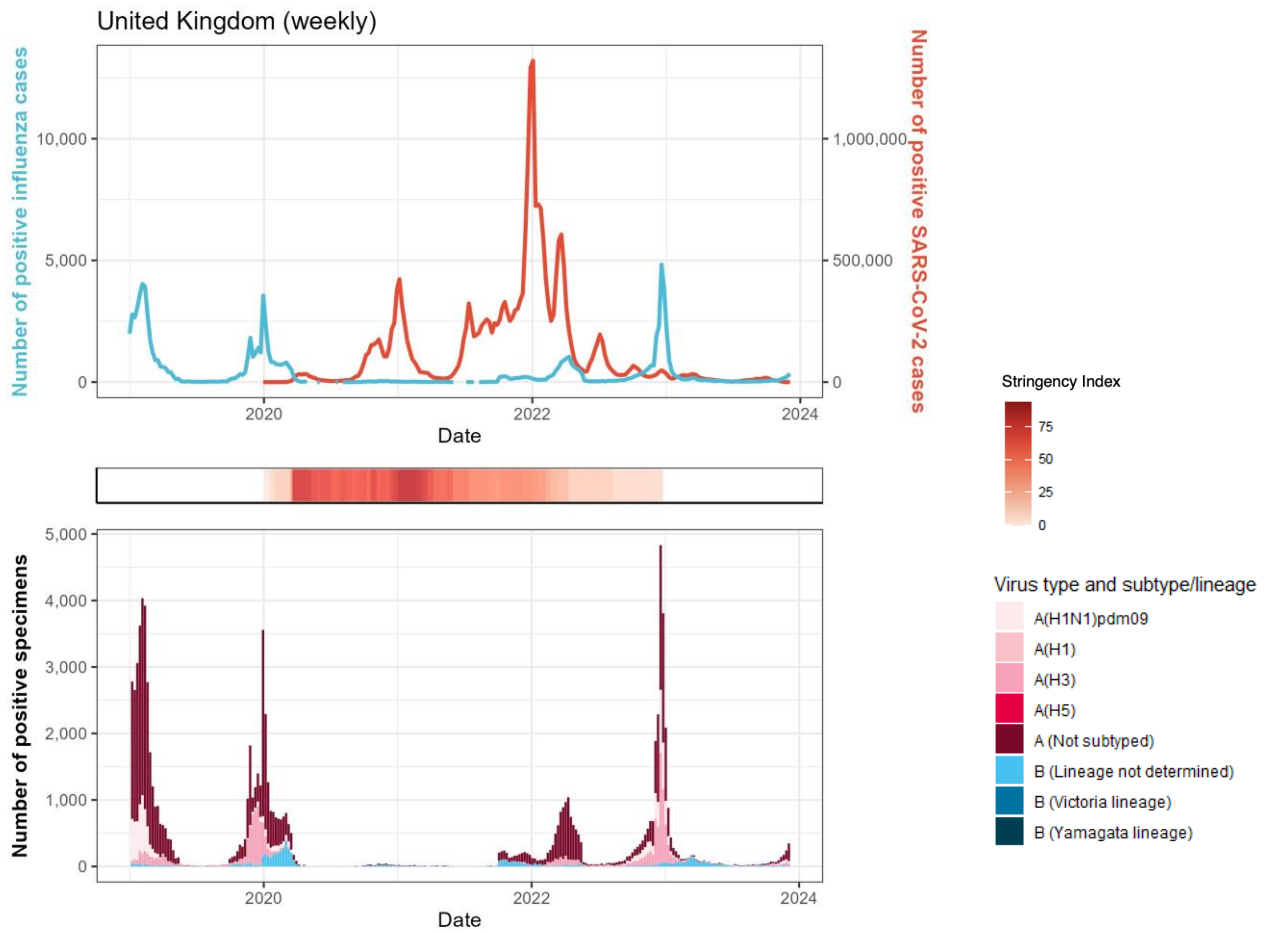


Percentage of specimens testing positive for influenza in different seasons



Northern Europe

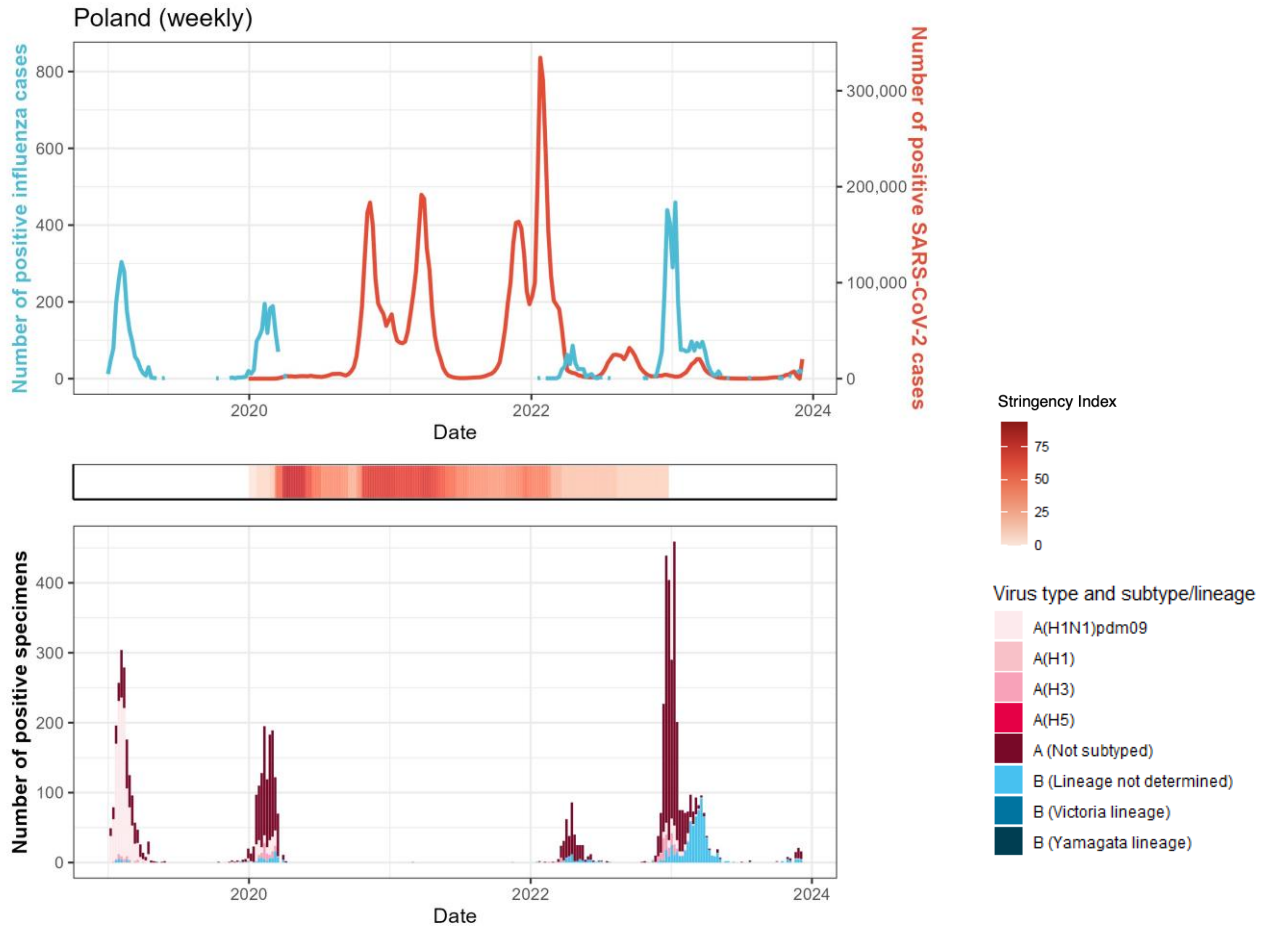
United Kingdom



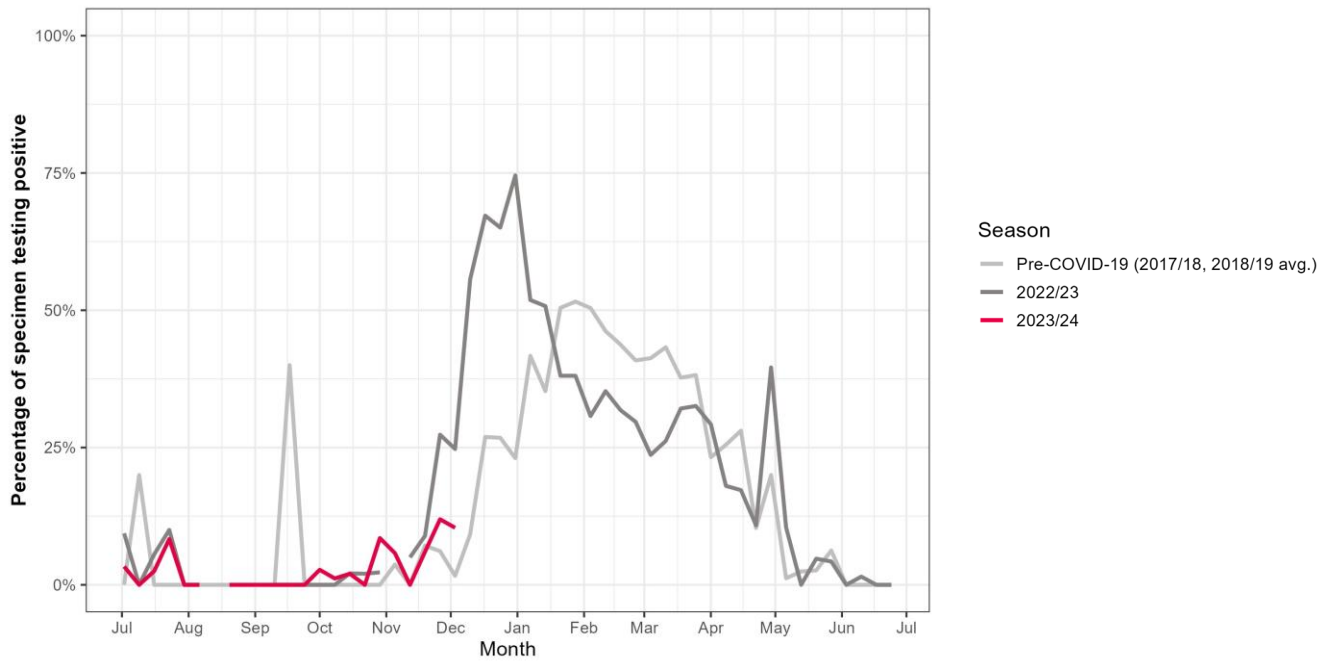
Percentage of specimens testing positive for influenza in different seasons: data not available

Eastern Europe

Poland

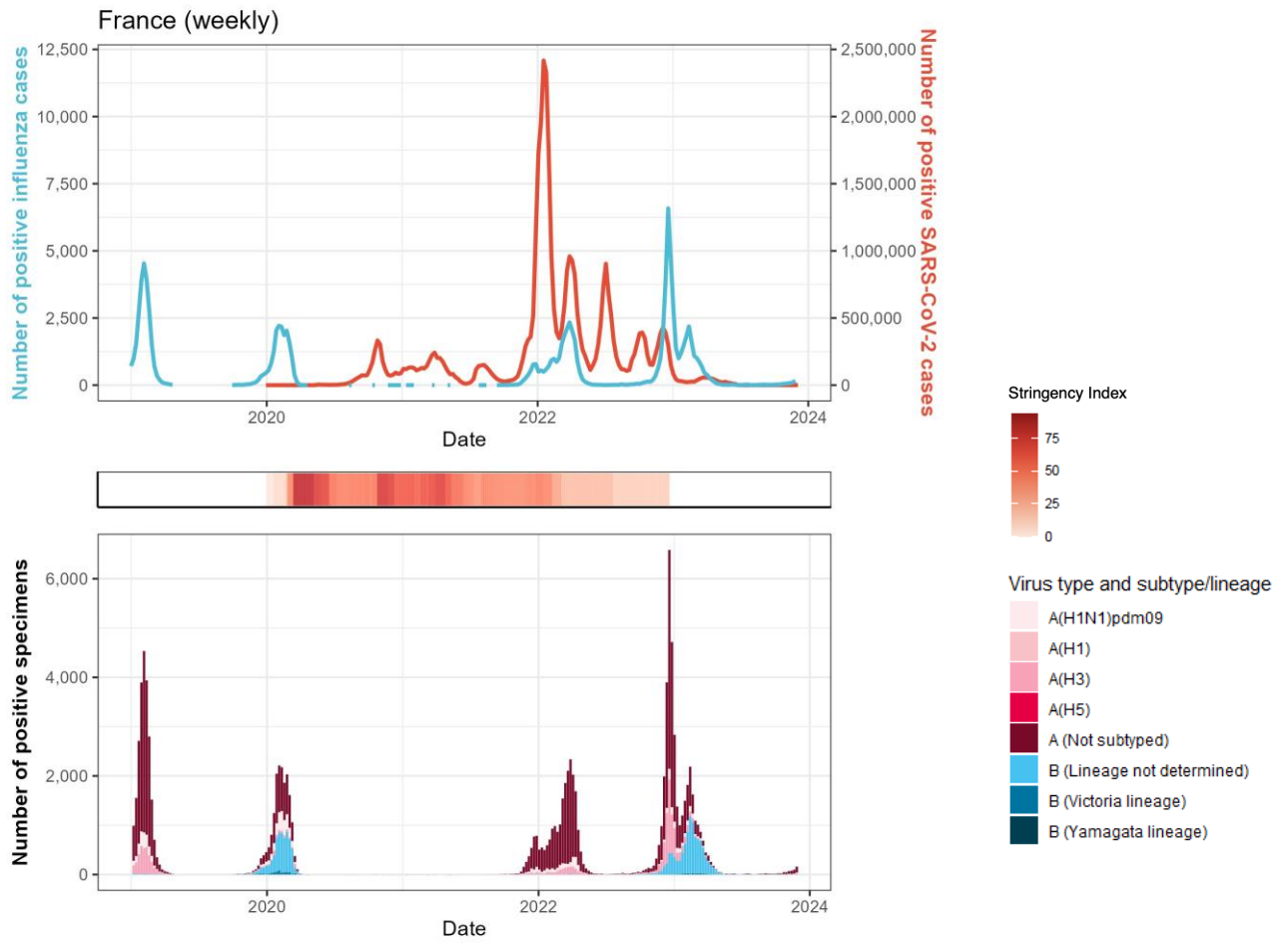


Percentage of specimens testing positive for influenza in different seasons

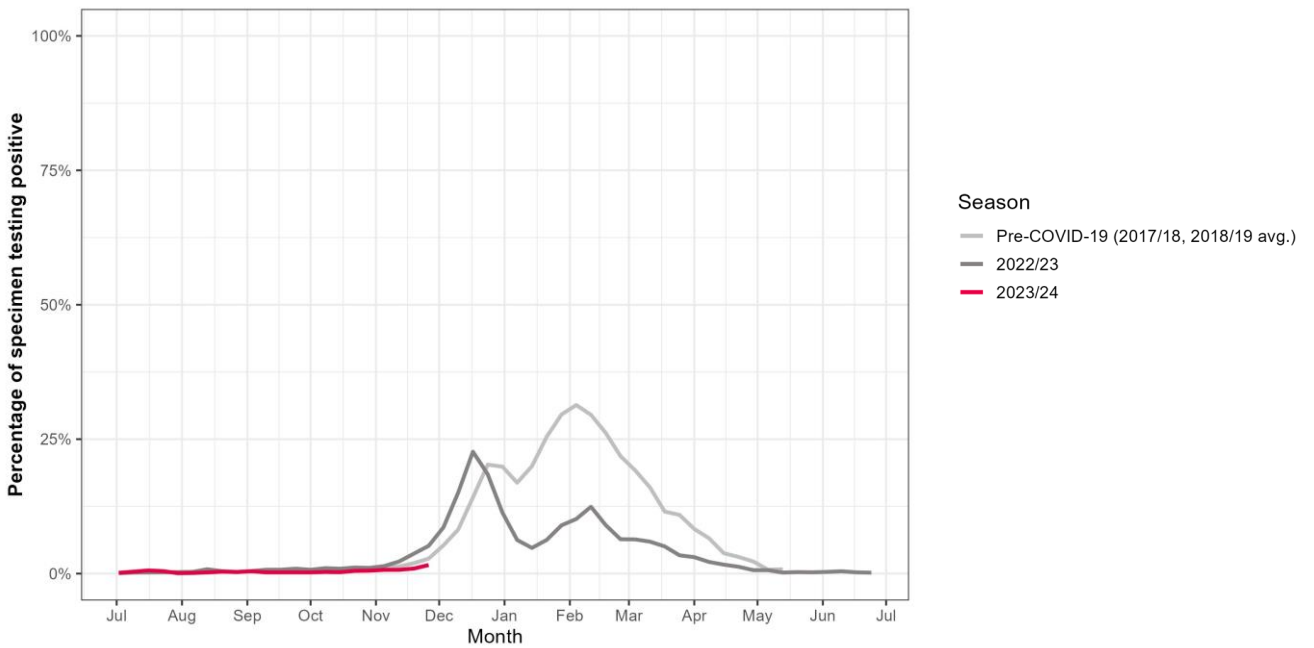


South West Europe

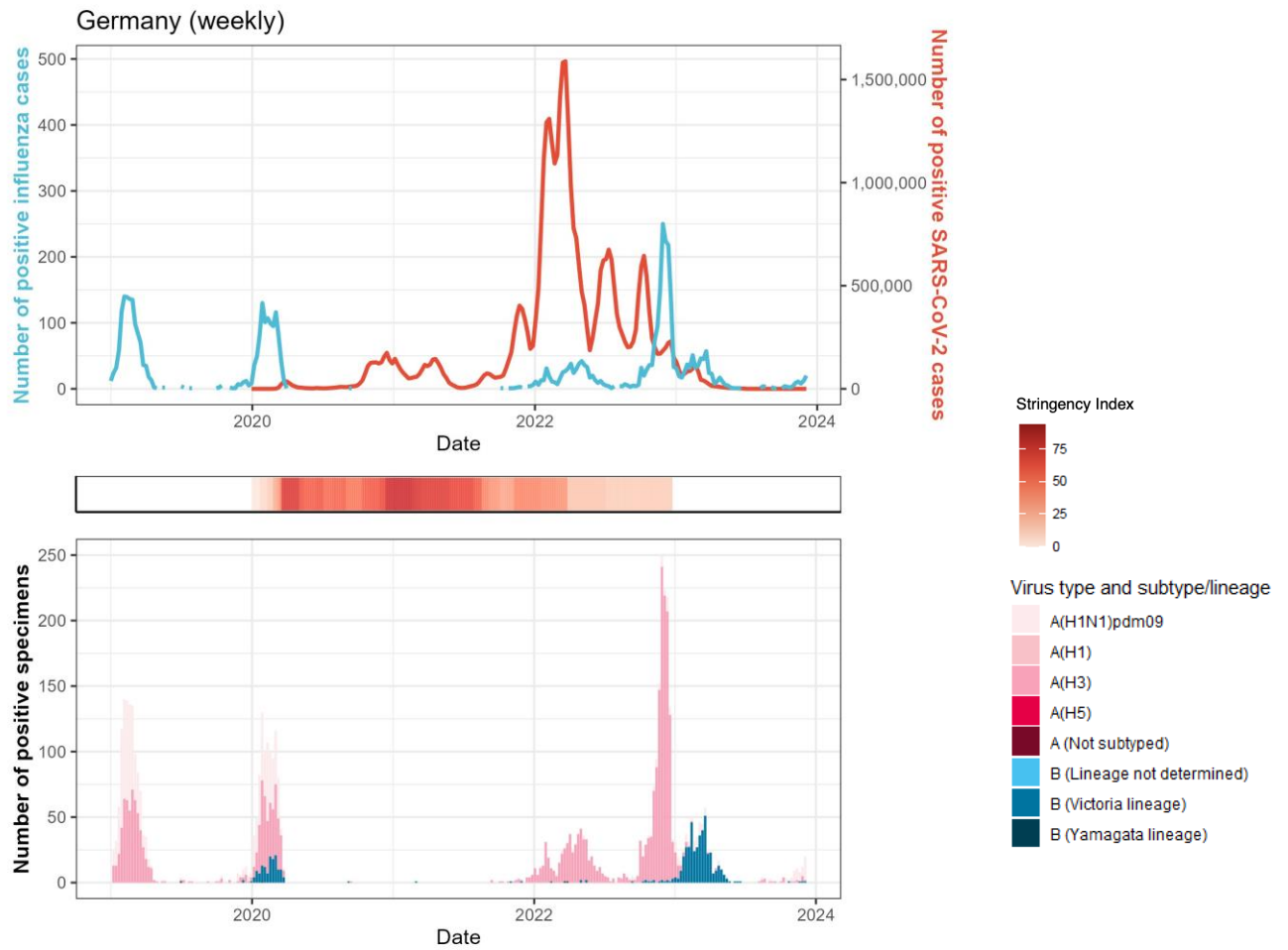
France



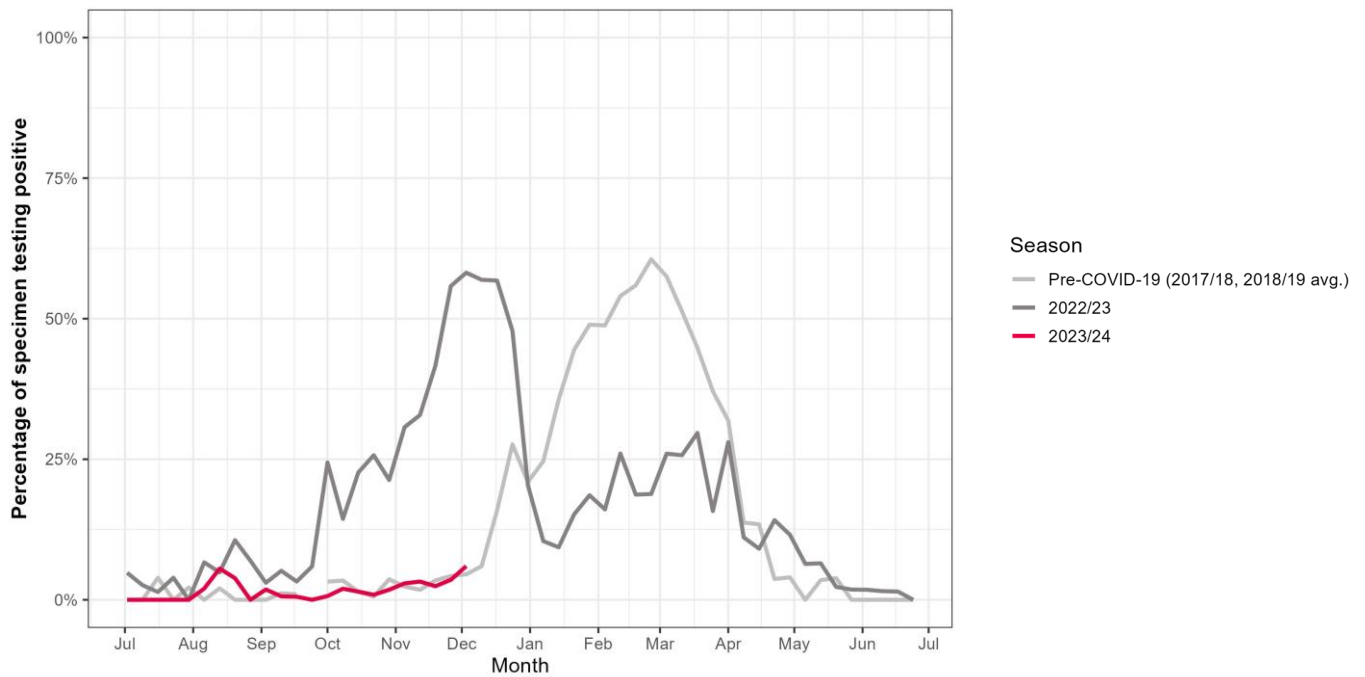
Percentage of specimens testing positive for influenza in different seasons



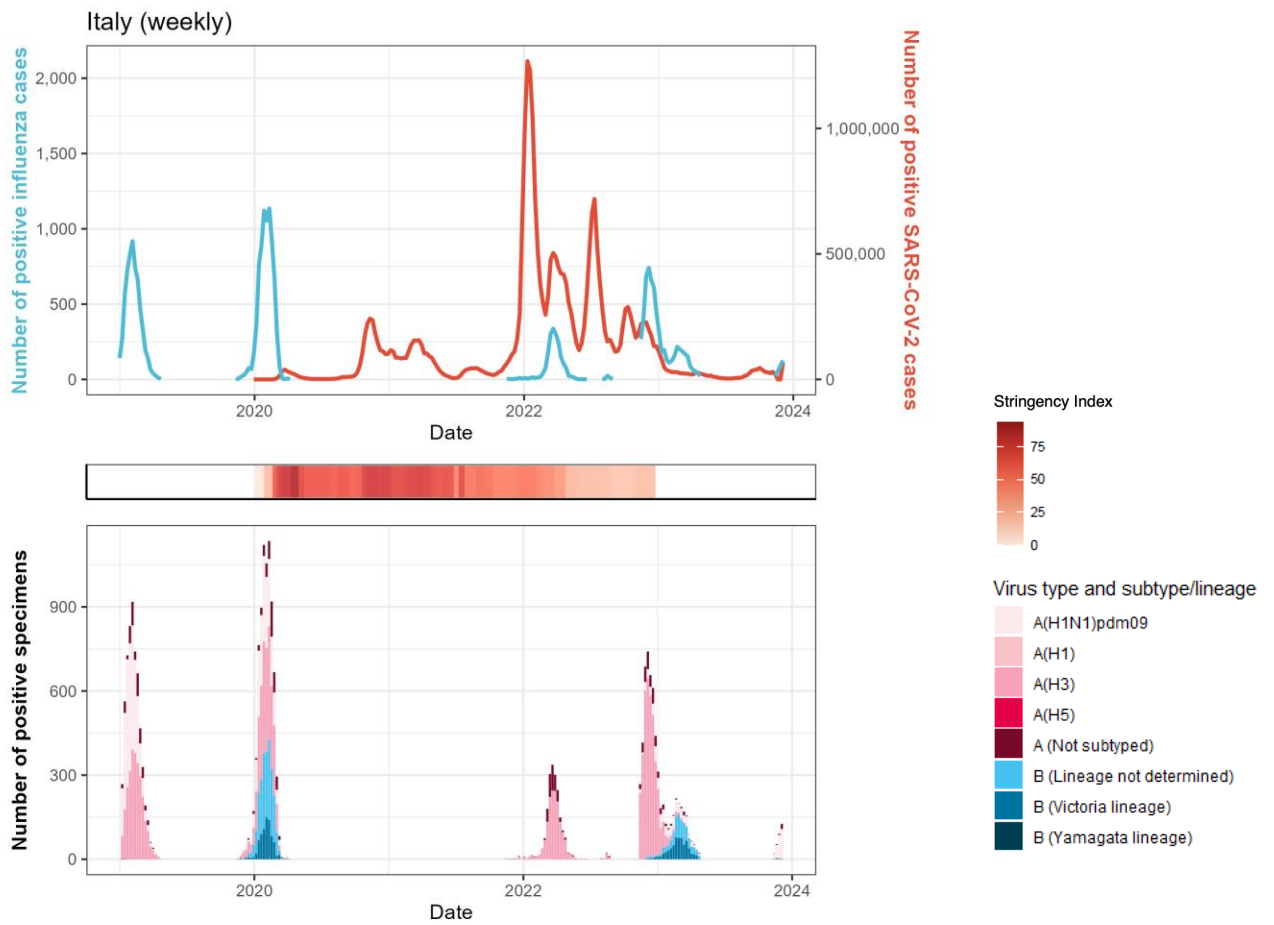
Germany



Percentage of specimens testing positive for influenza in different seasons

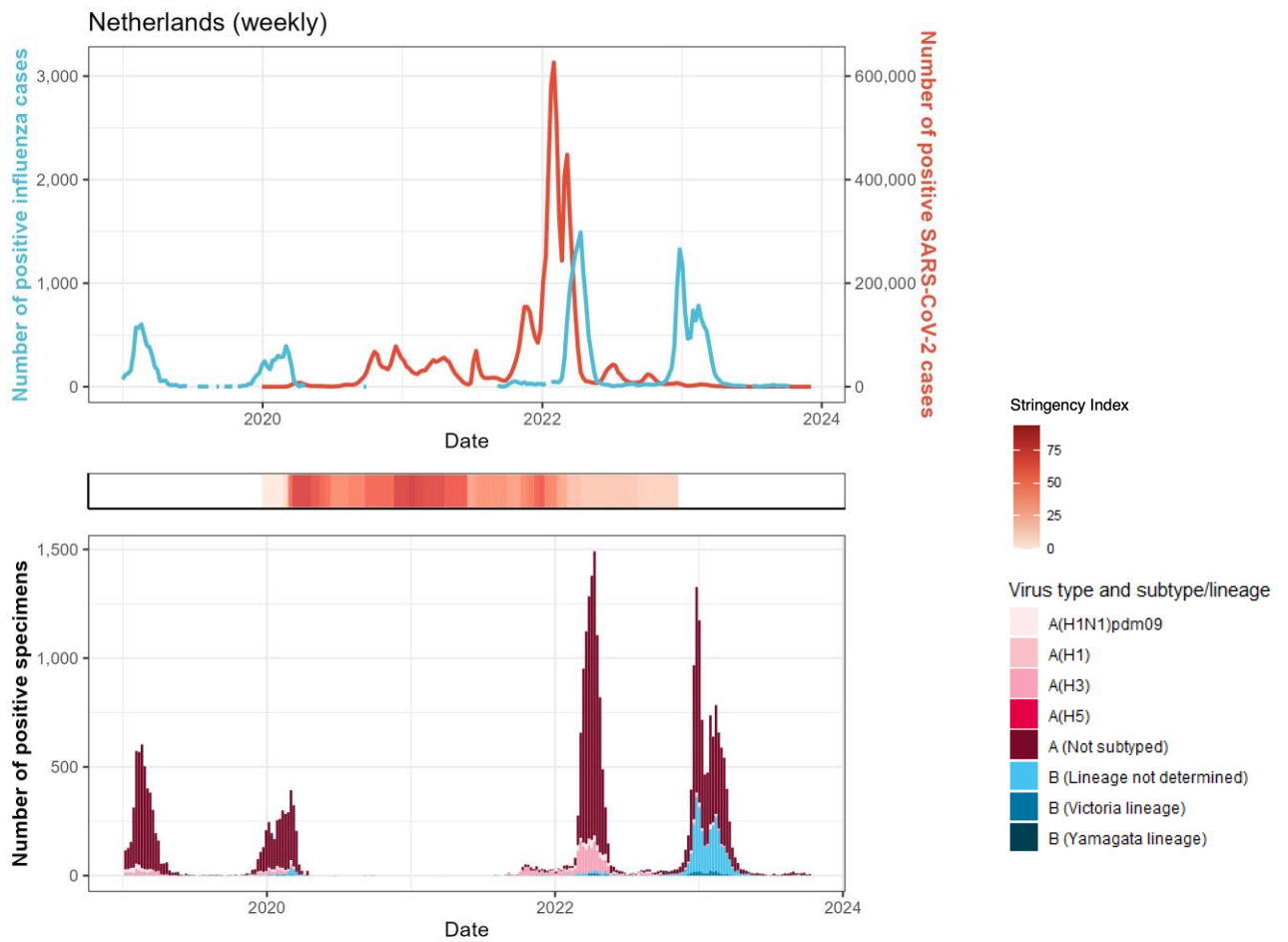


Italy



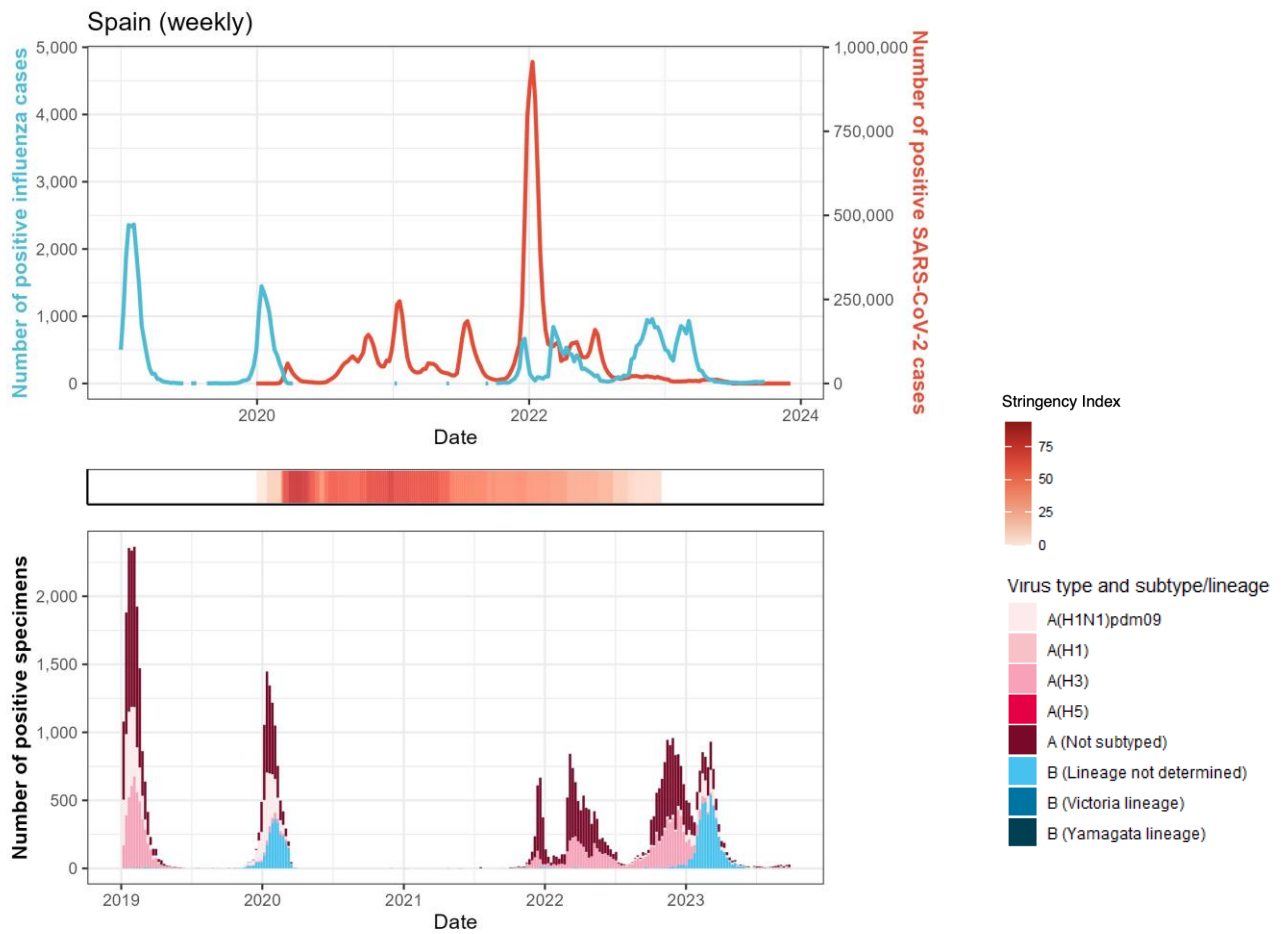
Percentage of specimens testing positive for influenza in different seasons: data not available

Netherlands

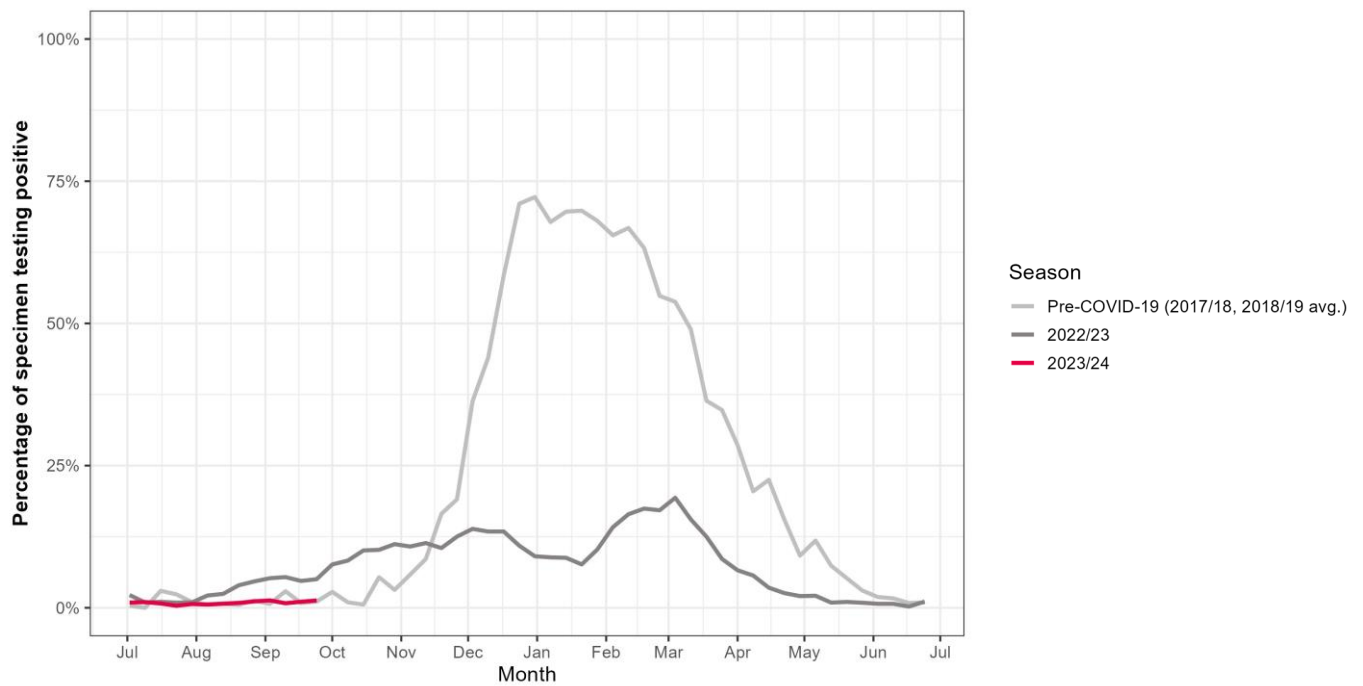


Percentage of specimens testing positive for influenza in different seasons: data not available

Spain

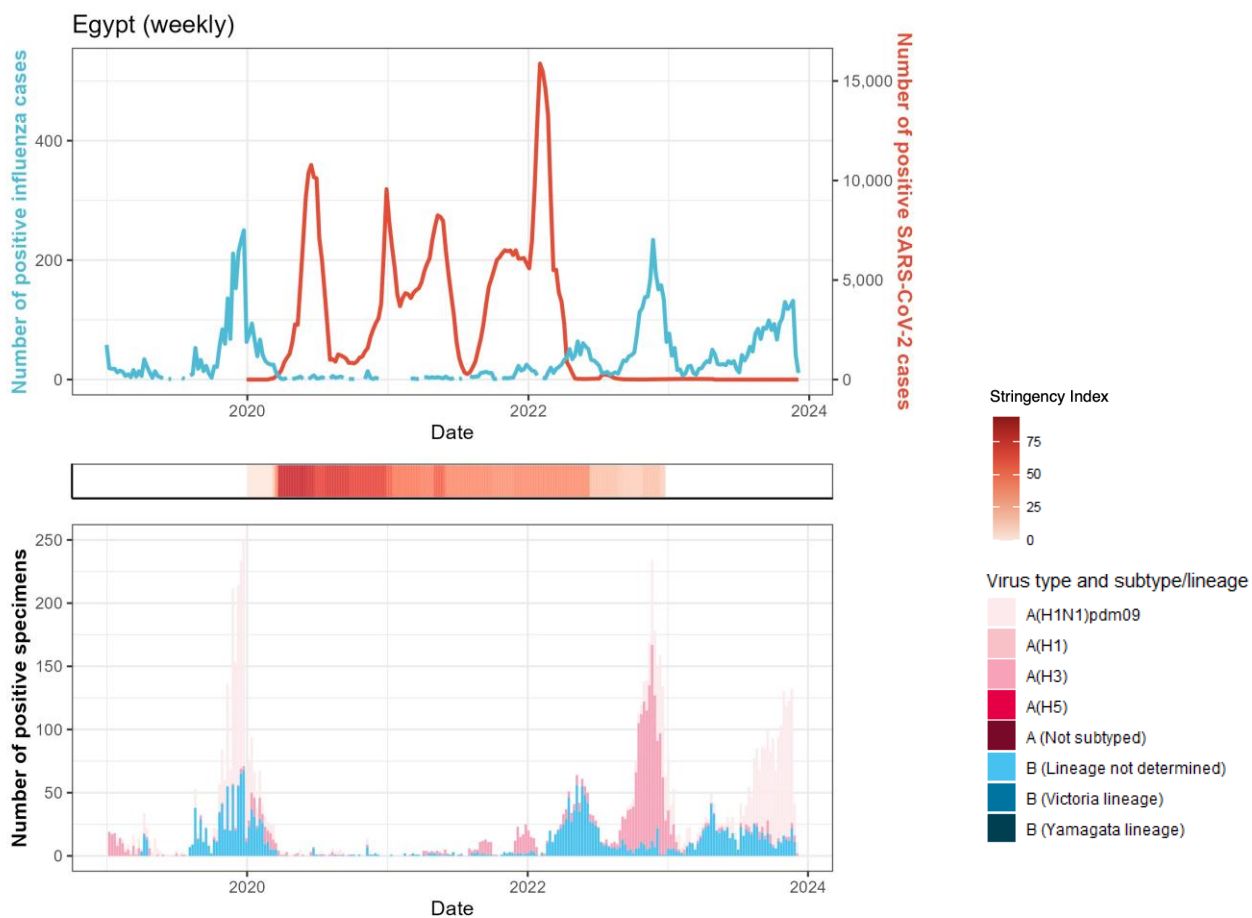


Percentage of specimens testing positive for influenza in different seasons

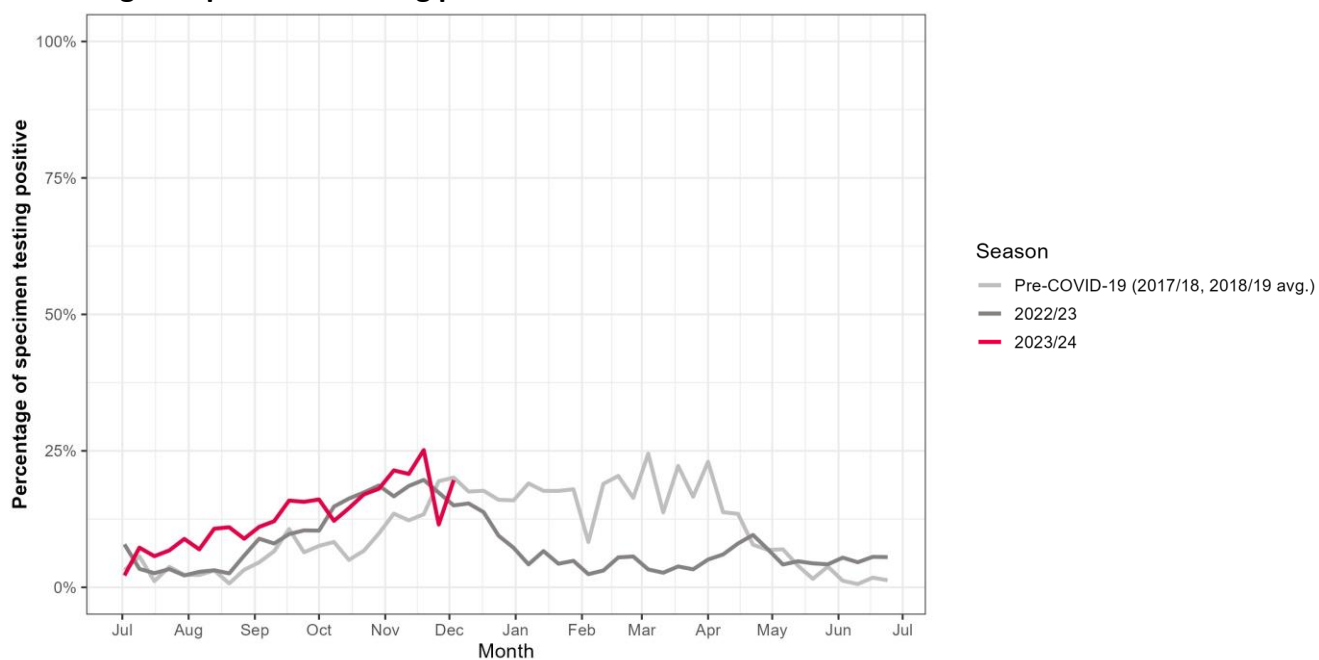


Northern Africa

Egypt

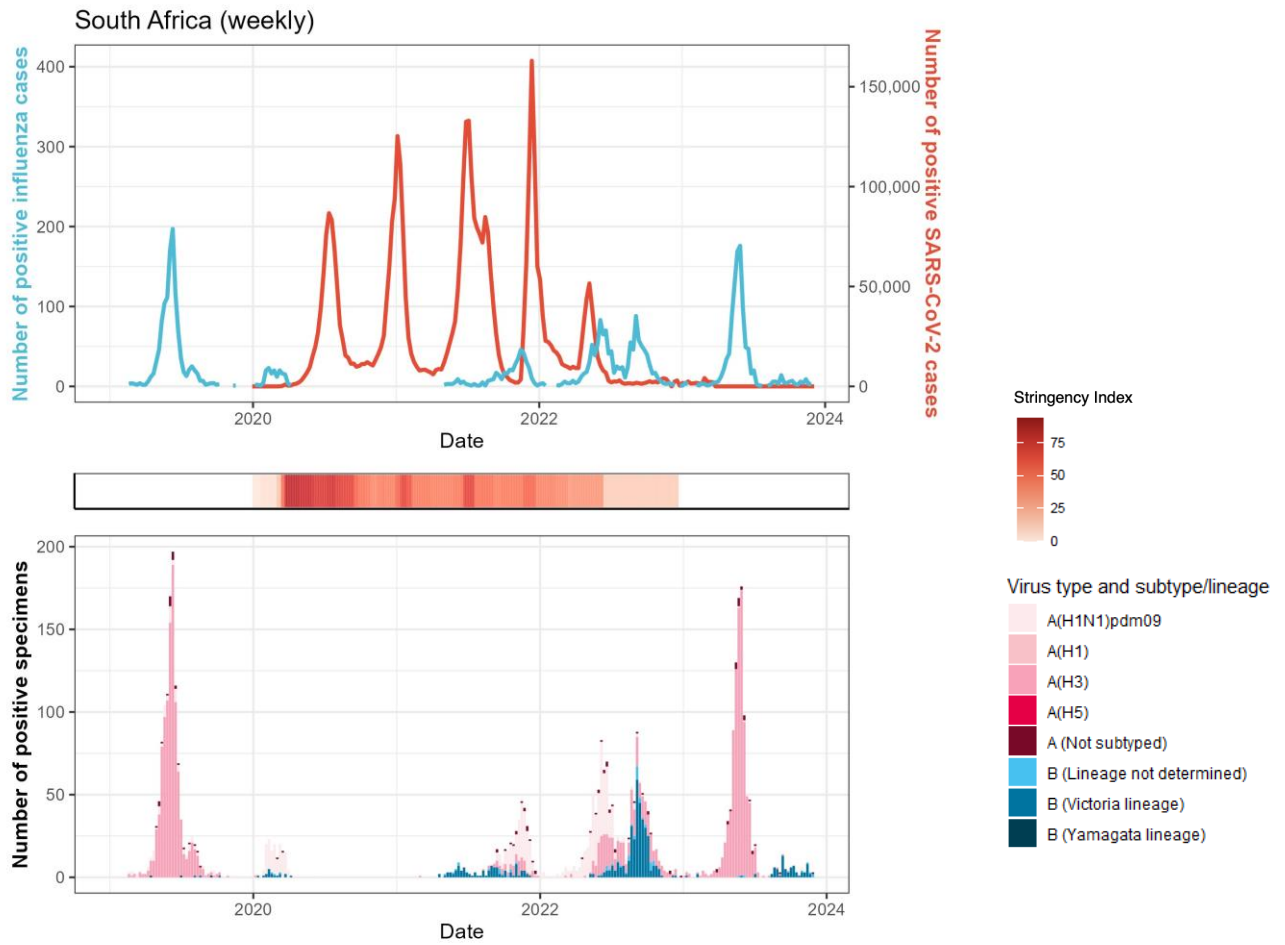


Percentage of specimens testing positive for influenza in different seasons

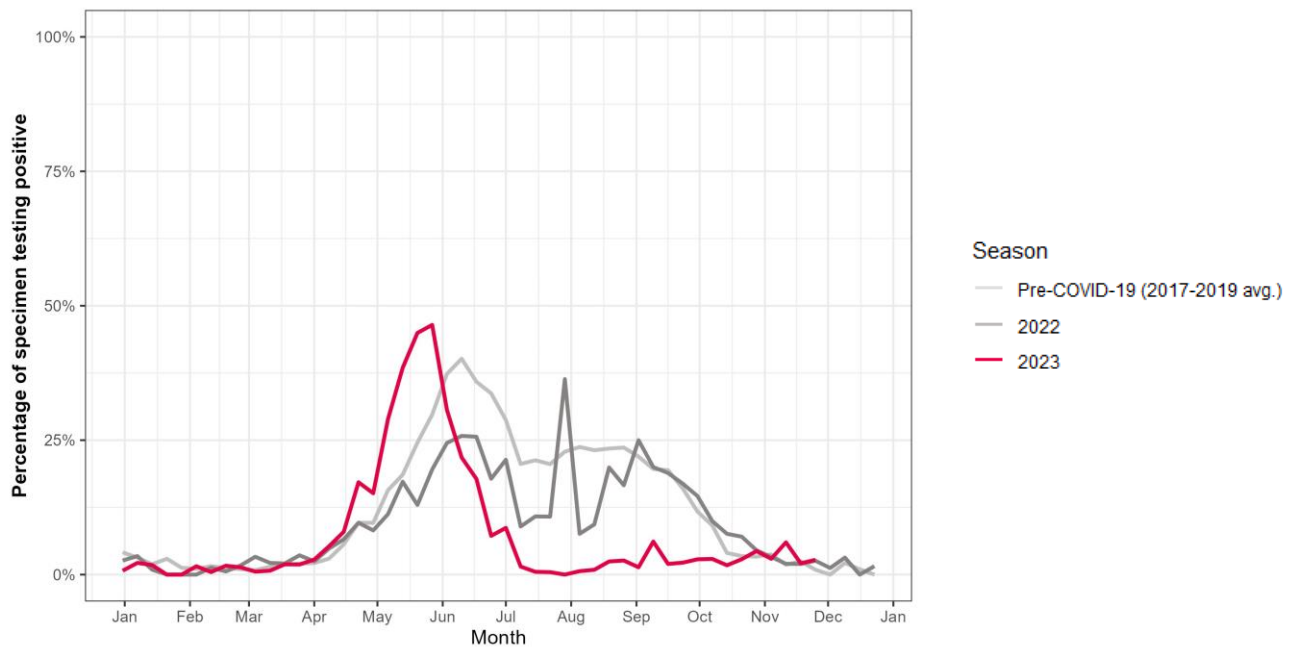


Southern Africa

South Africa

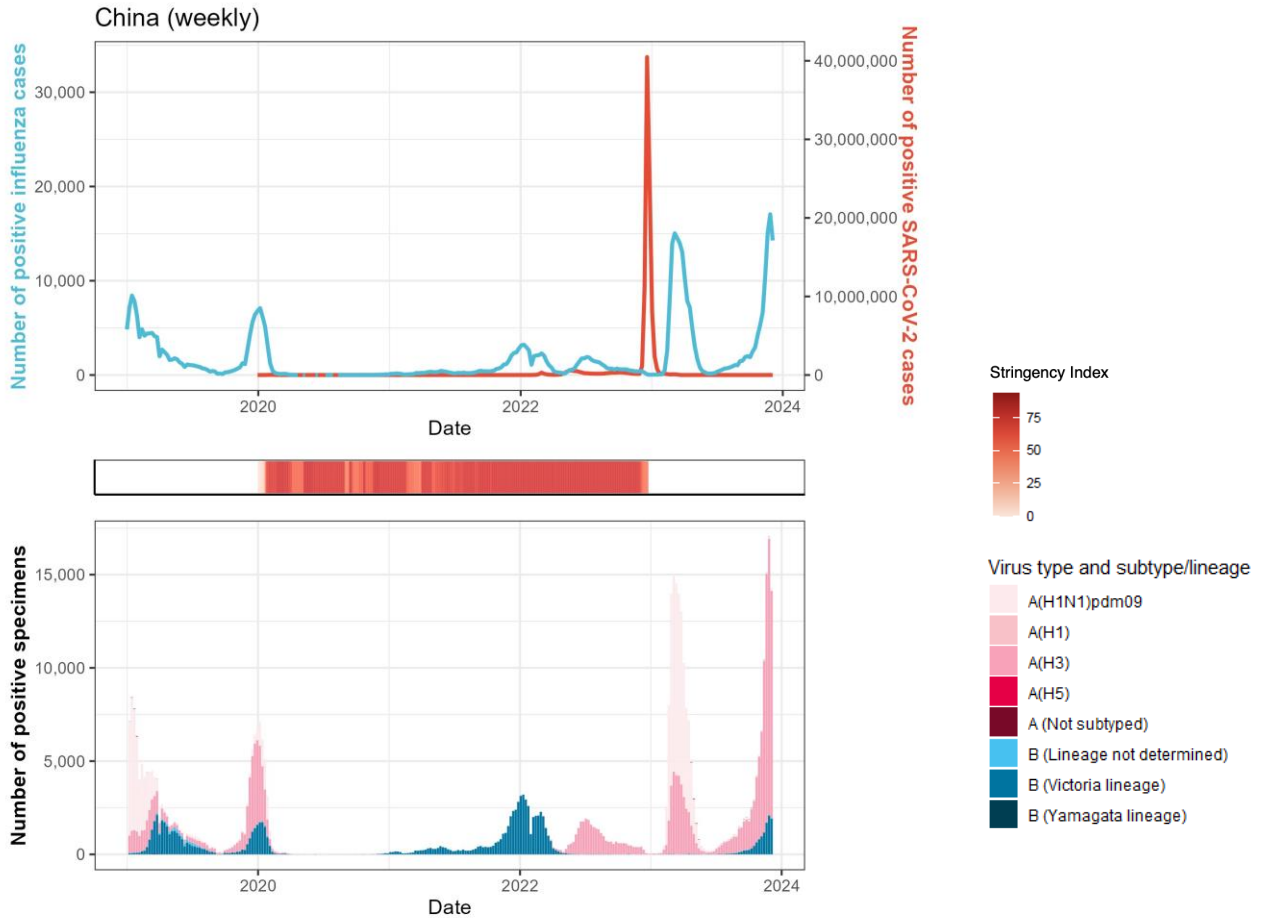


Percentage of specimens testing positive for influenza in different seasons

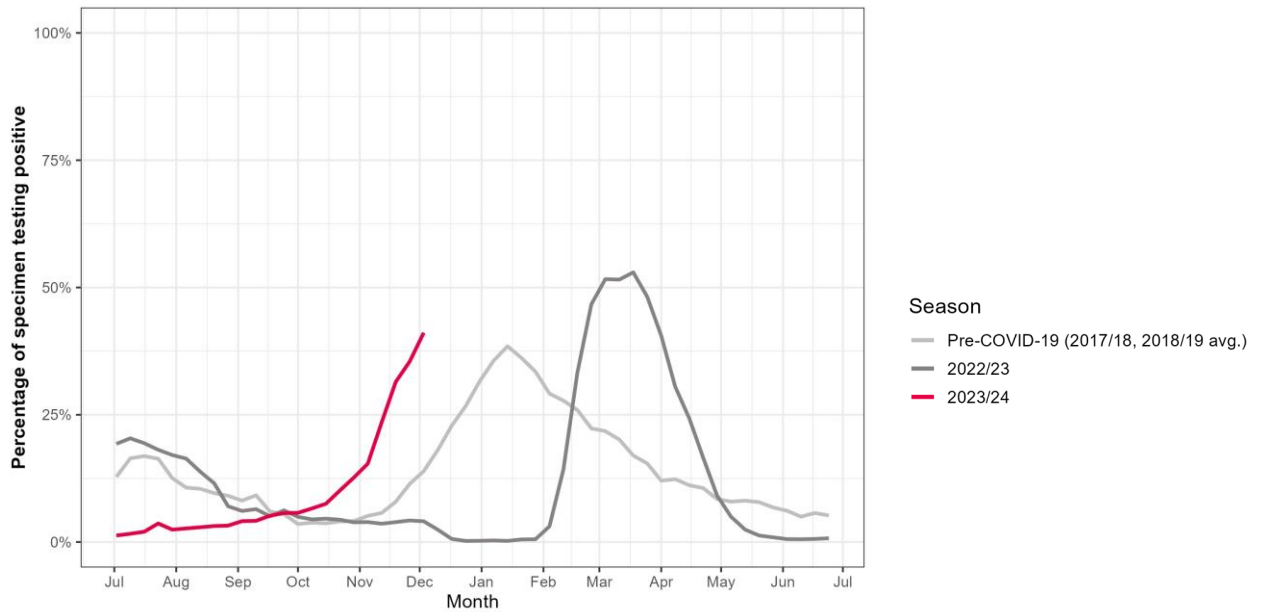


Eastern Asia

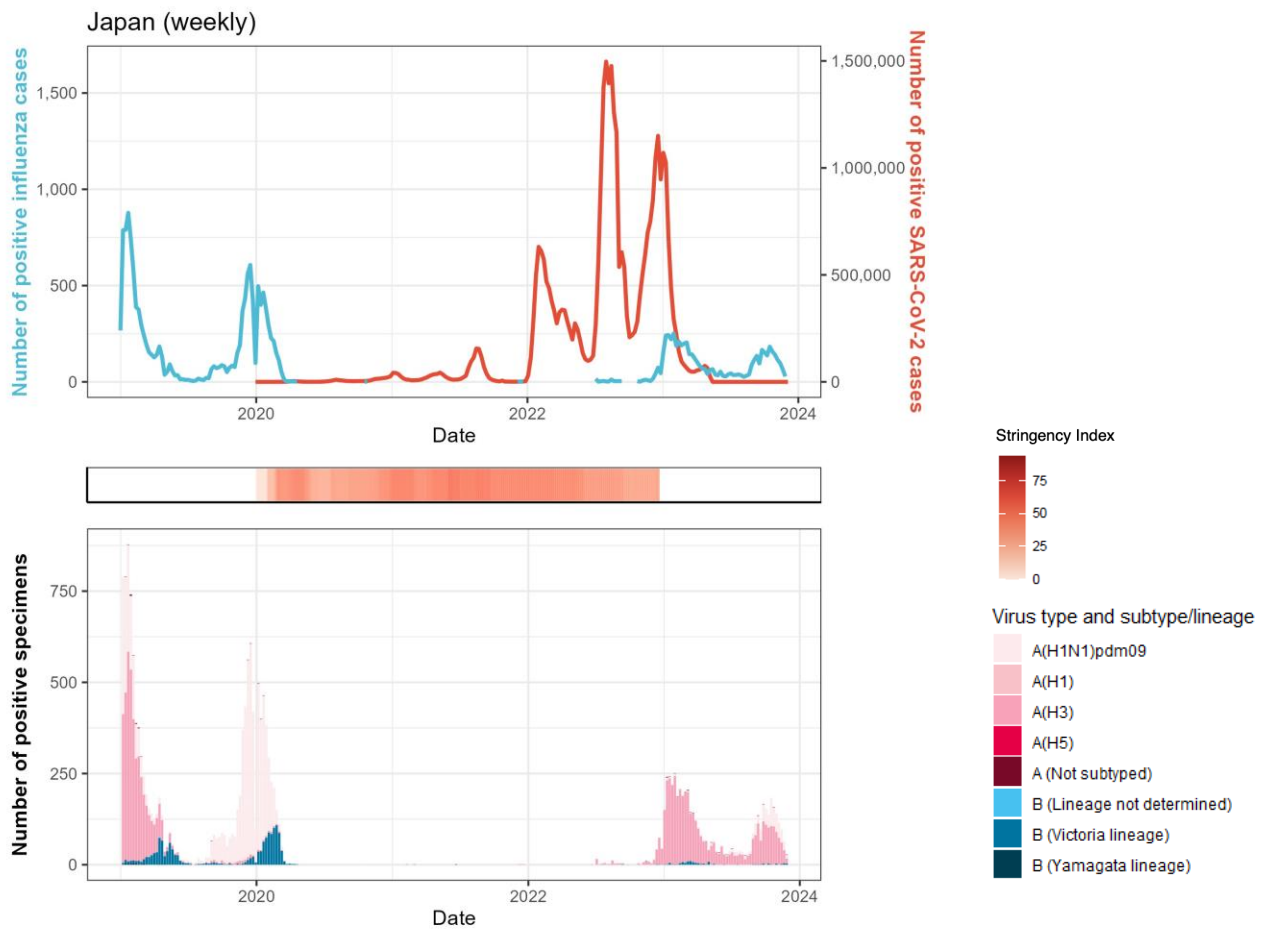
China



Percentage of specimens testing positive for influenza in different seasons

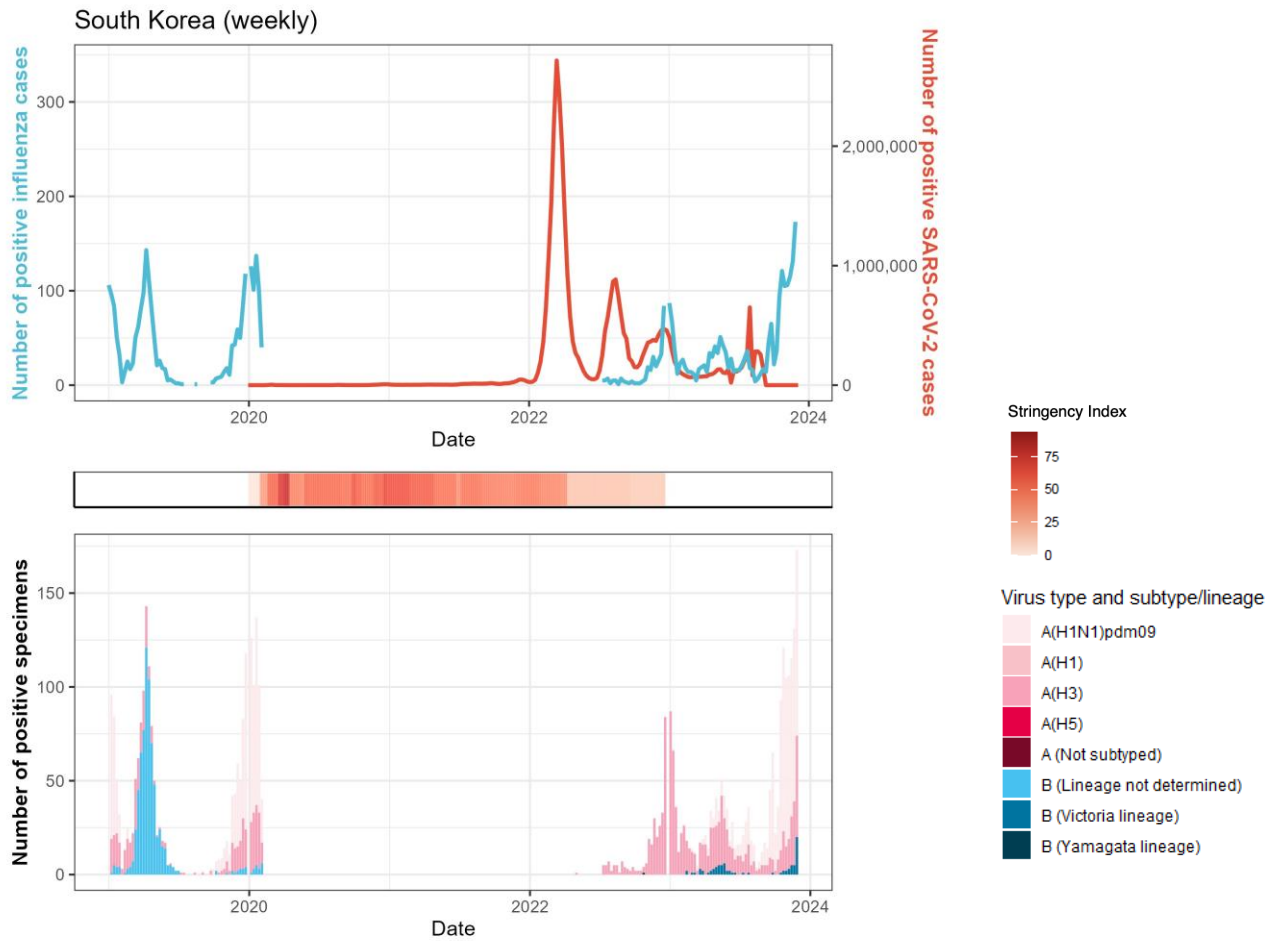


Japan

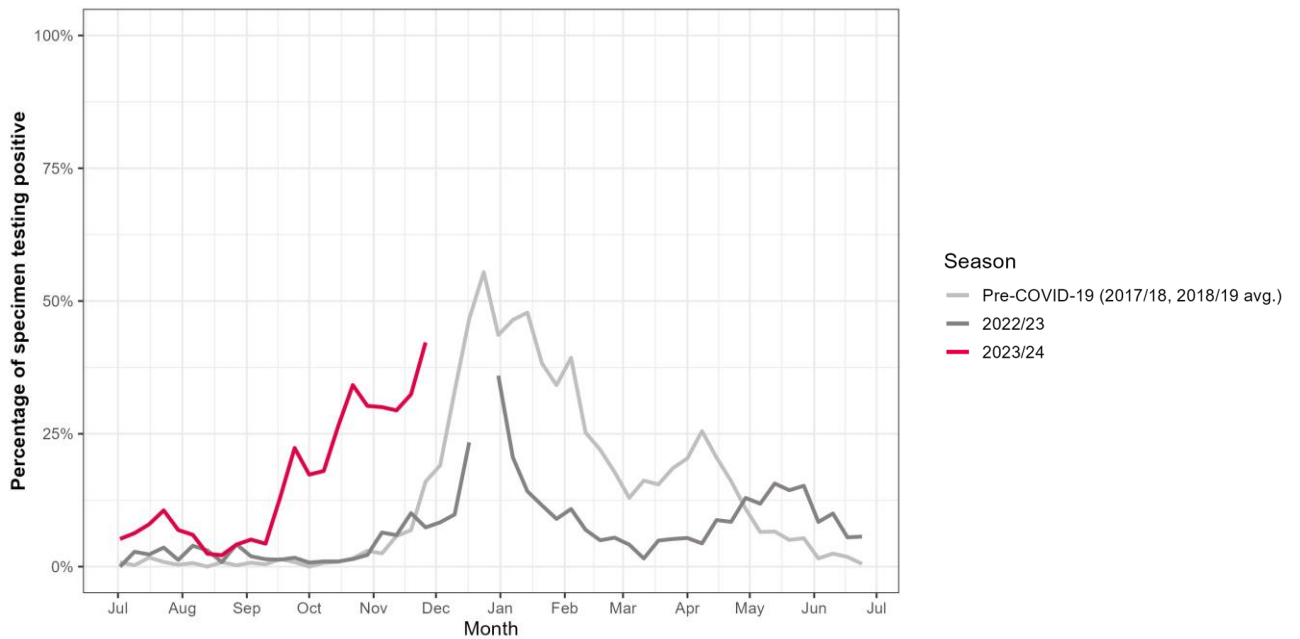


Percentage of specimens testing positive for influenza in different seasons: data not available

South Korea

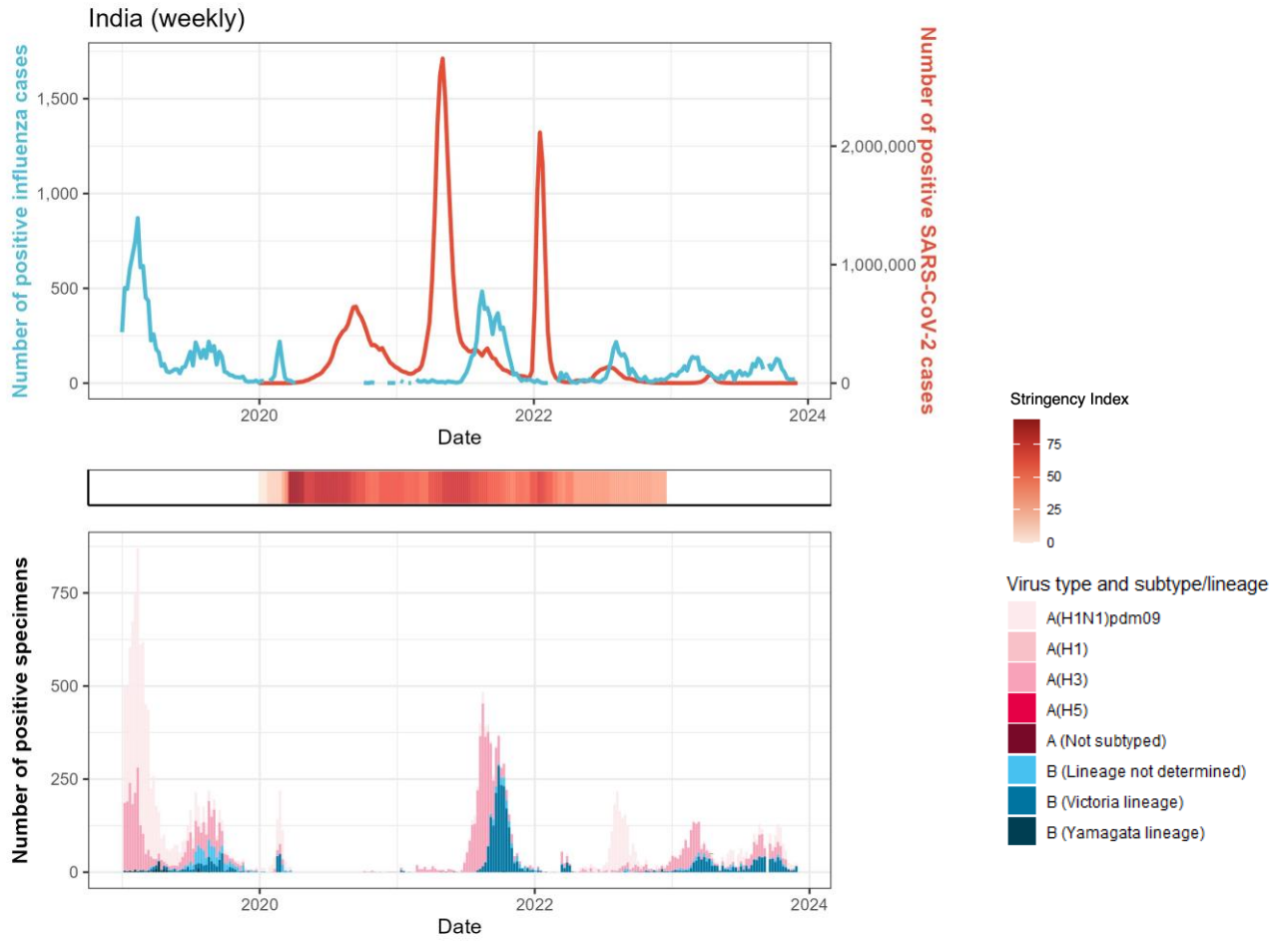


Percentage of specimens testing positive for influenza in different seasons

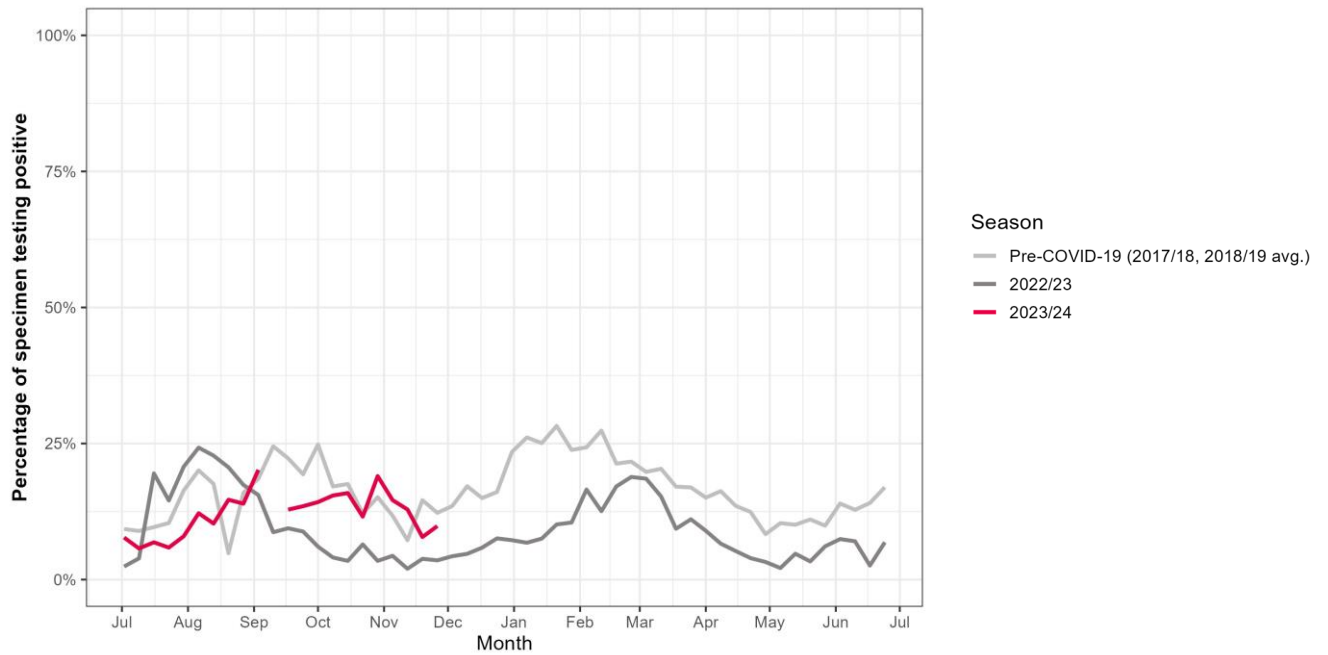


Southern Asia

India

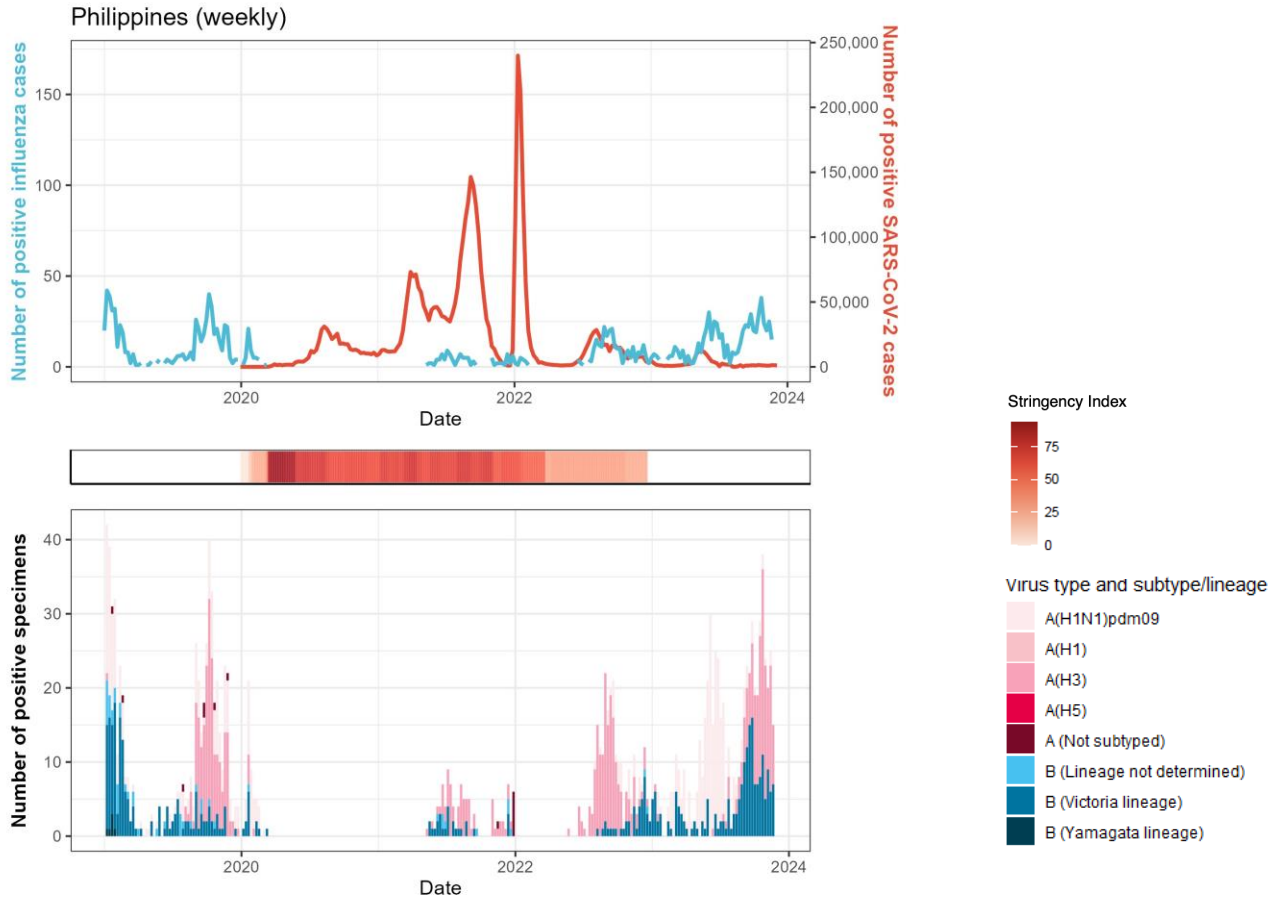


Percentage of specimens testing positive for influenza in different seasons

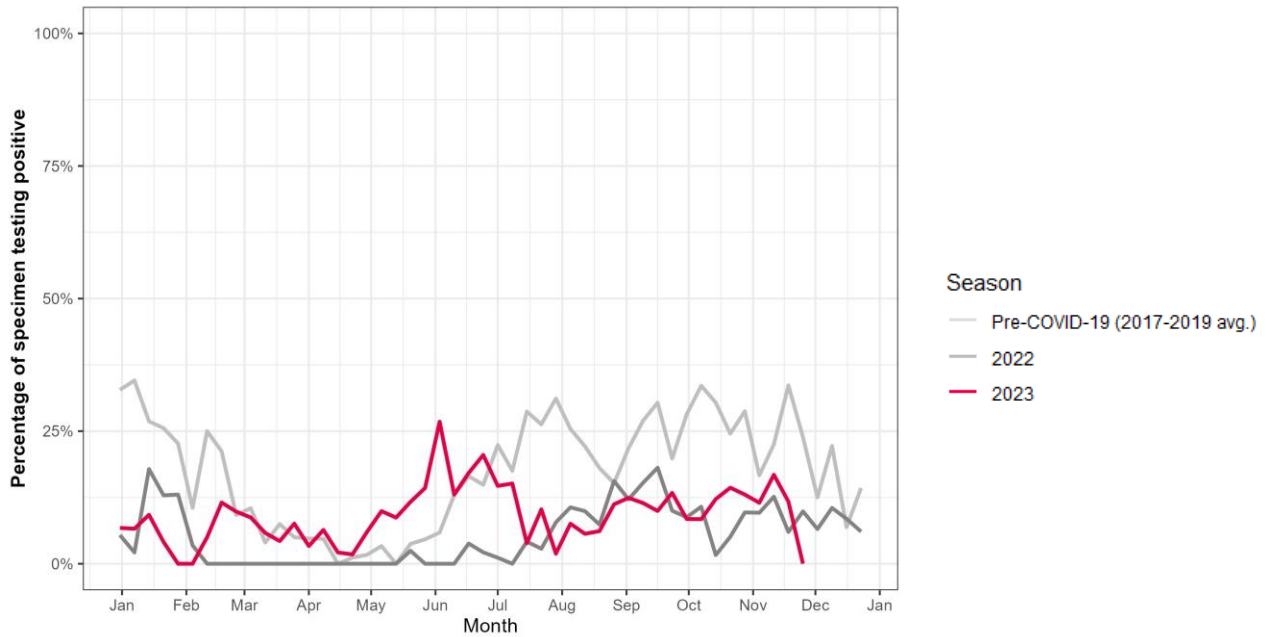


South-East Asia

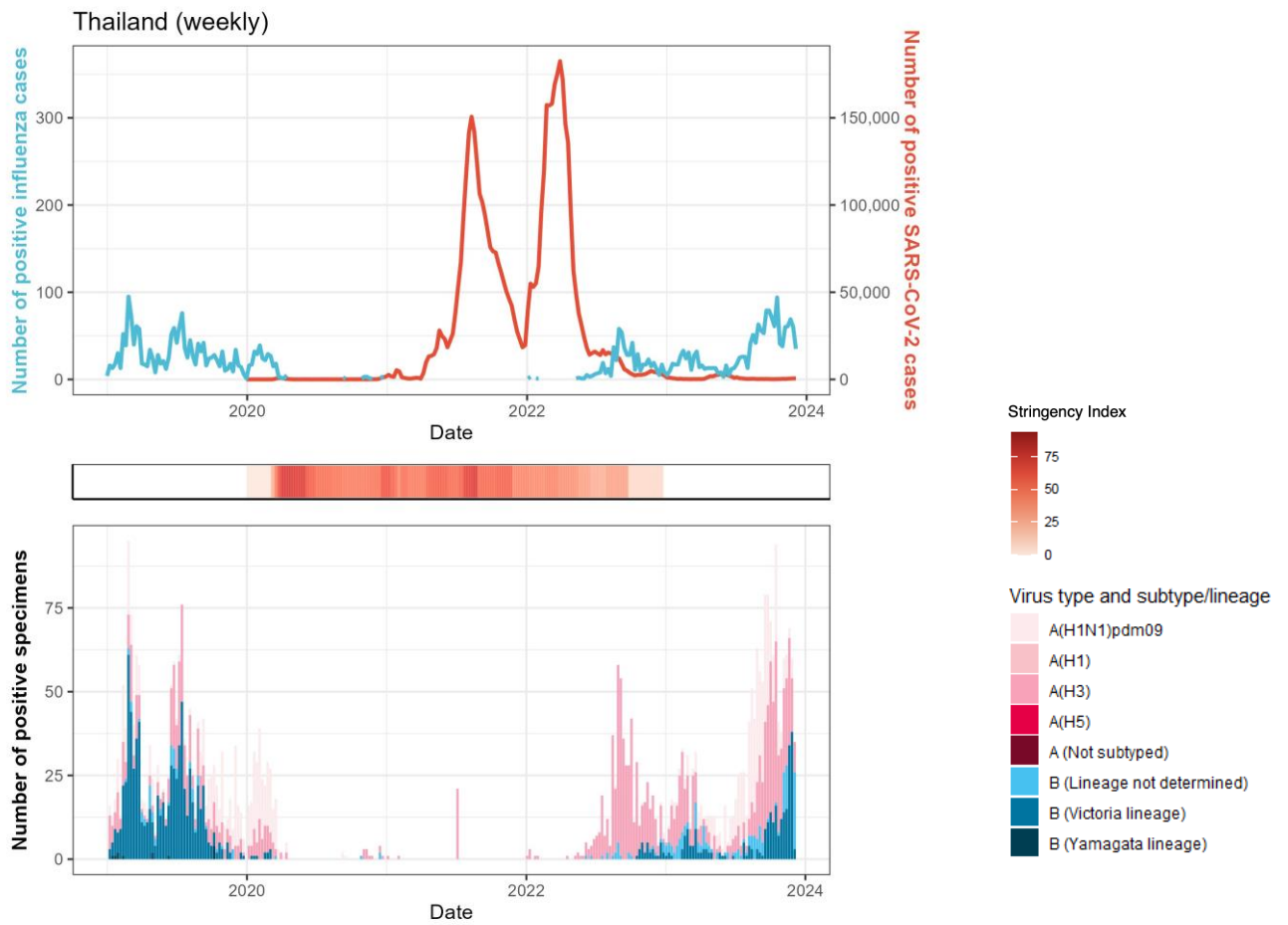
Philippines



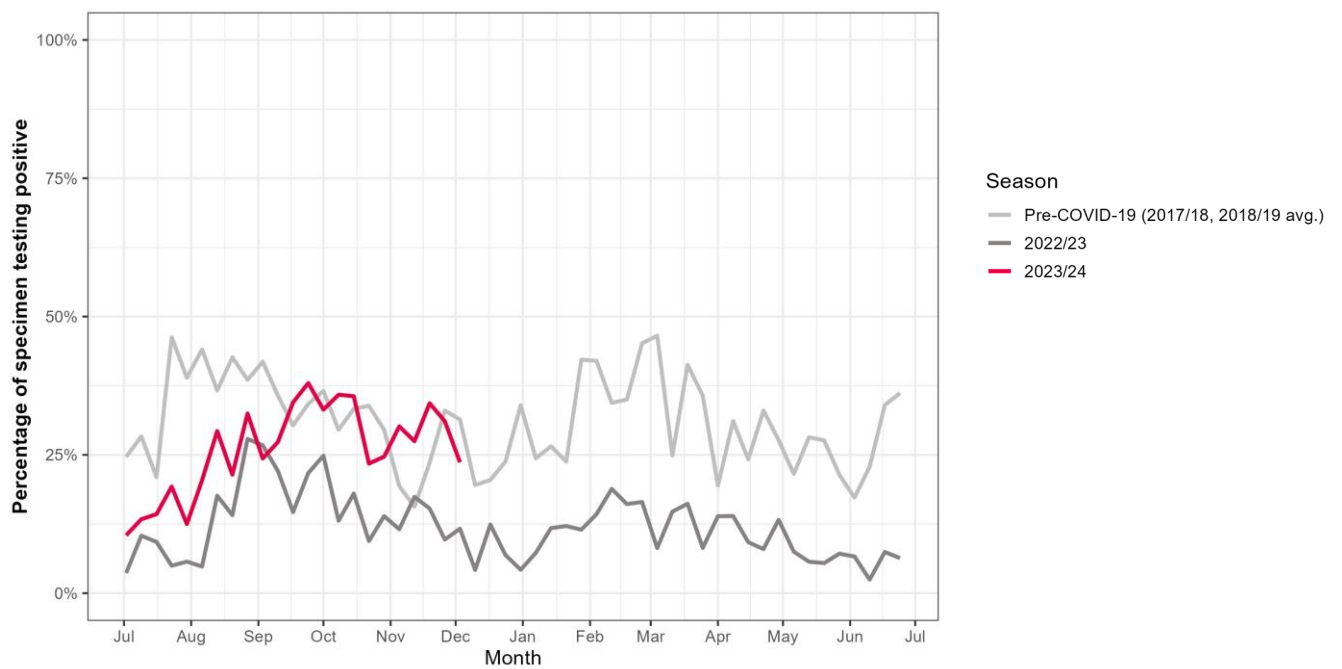
Percentage of specimens testing positive for influenza in different seasons



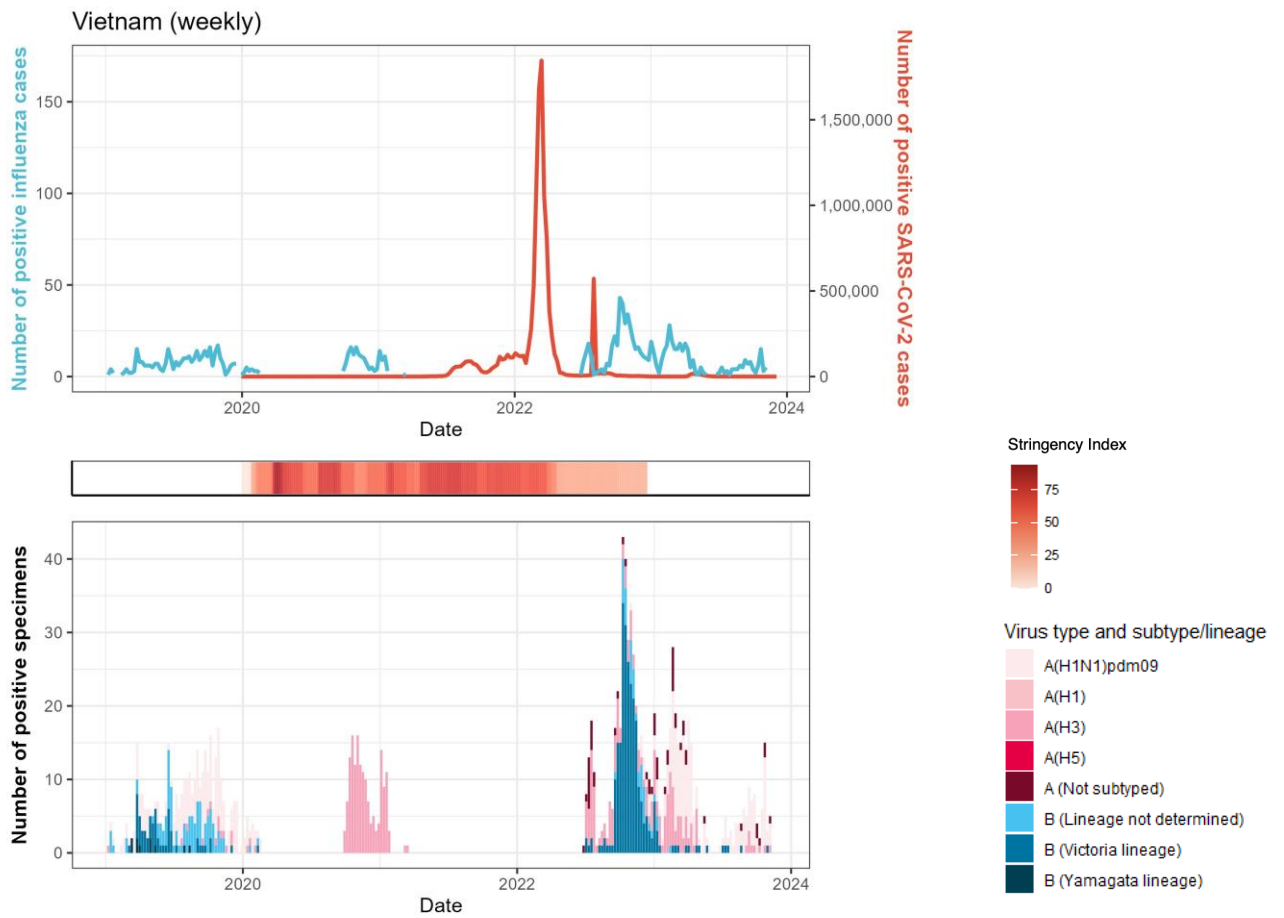
Thailand



Percentage of specimens testing positive for influenza in different seasons



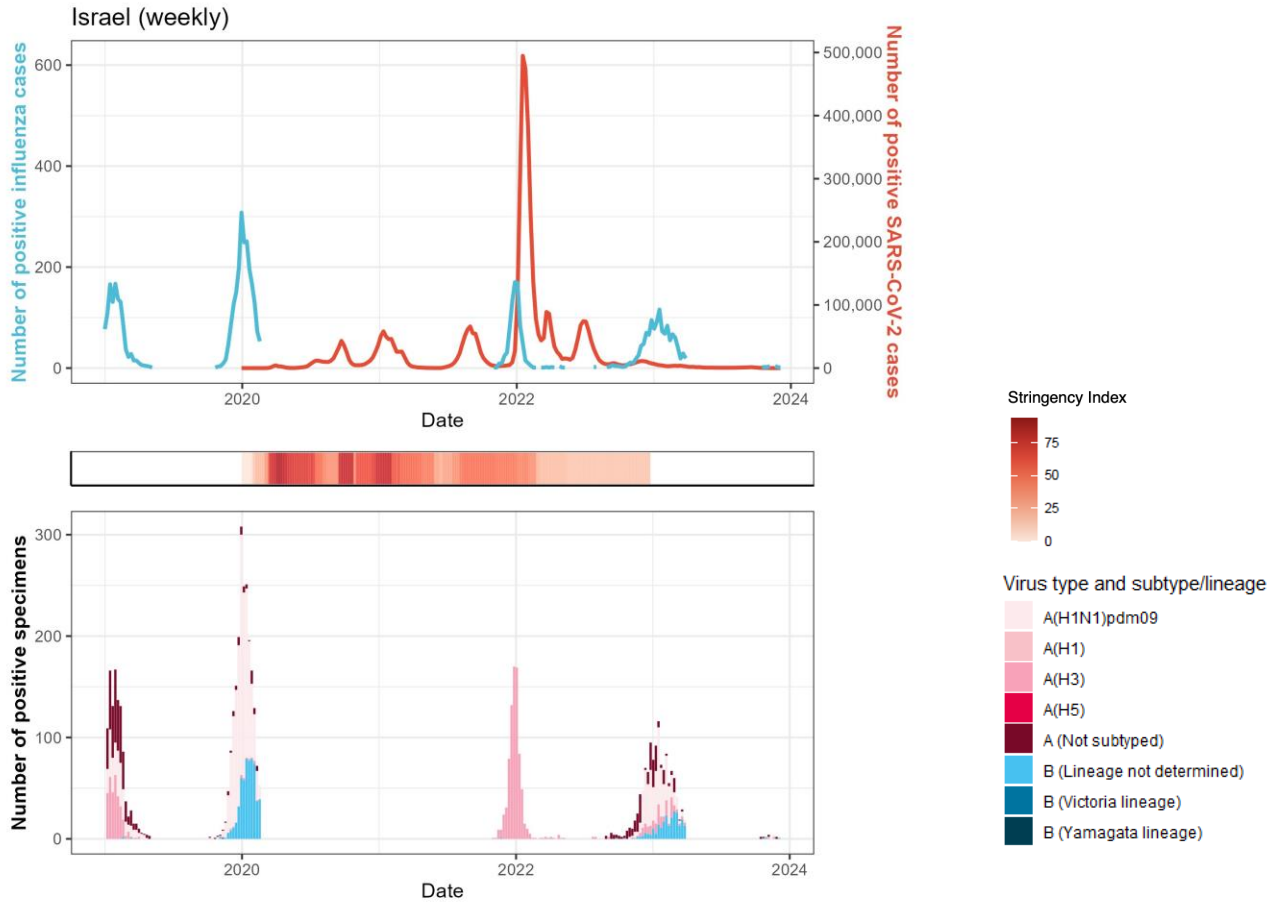
Vietnam



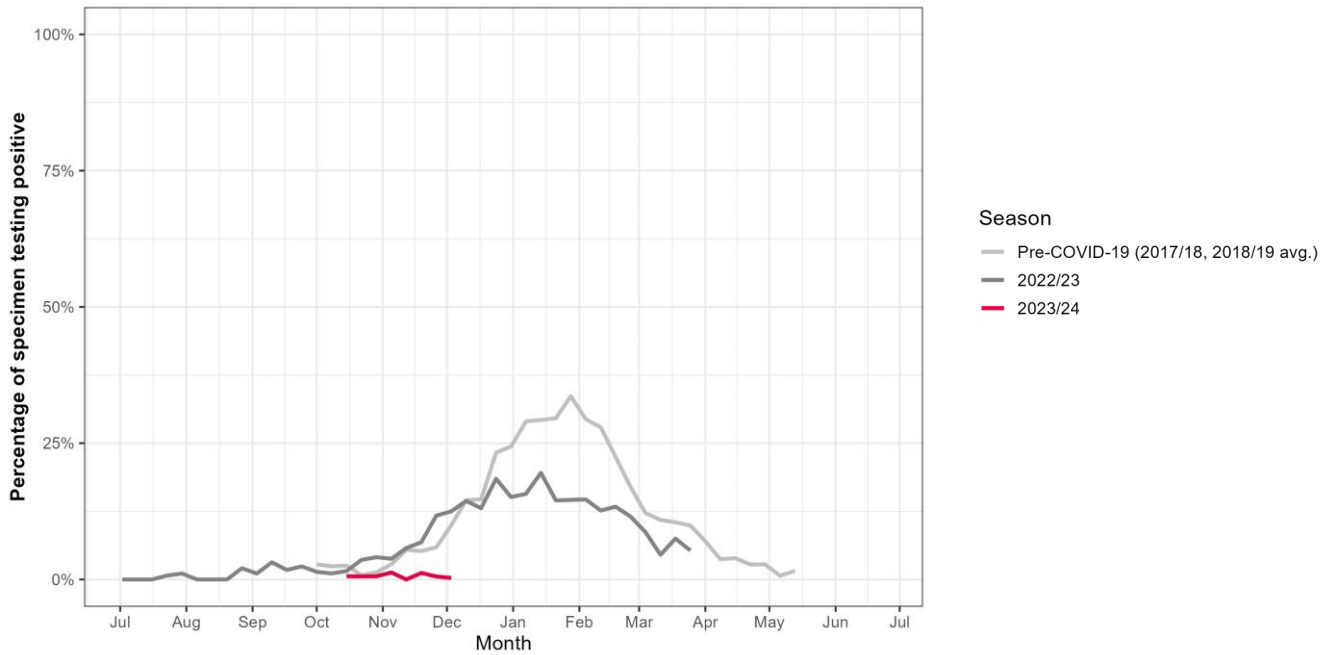
Percentage of specimens testing positive for influenza in different seasons: data not available

Western Asia

Israel

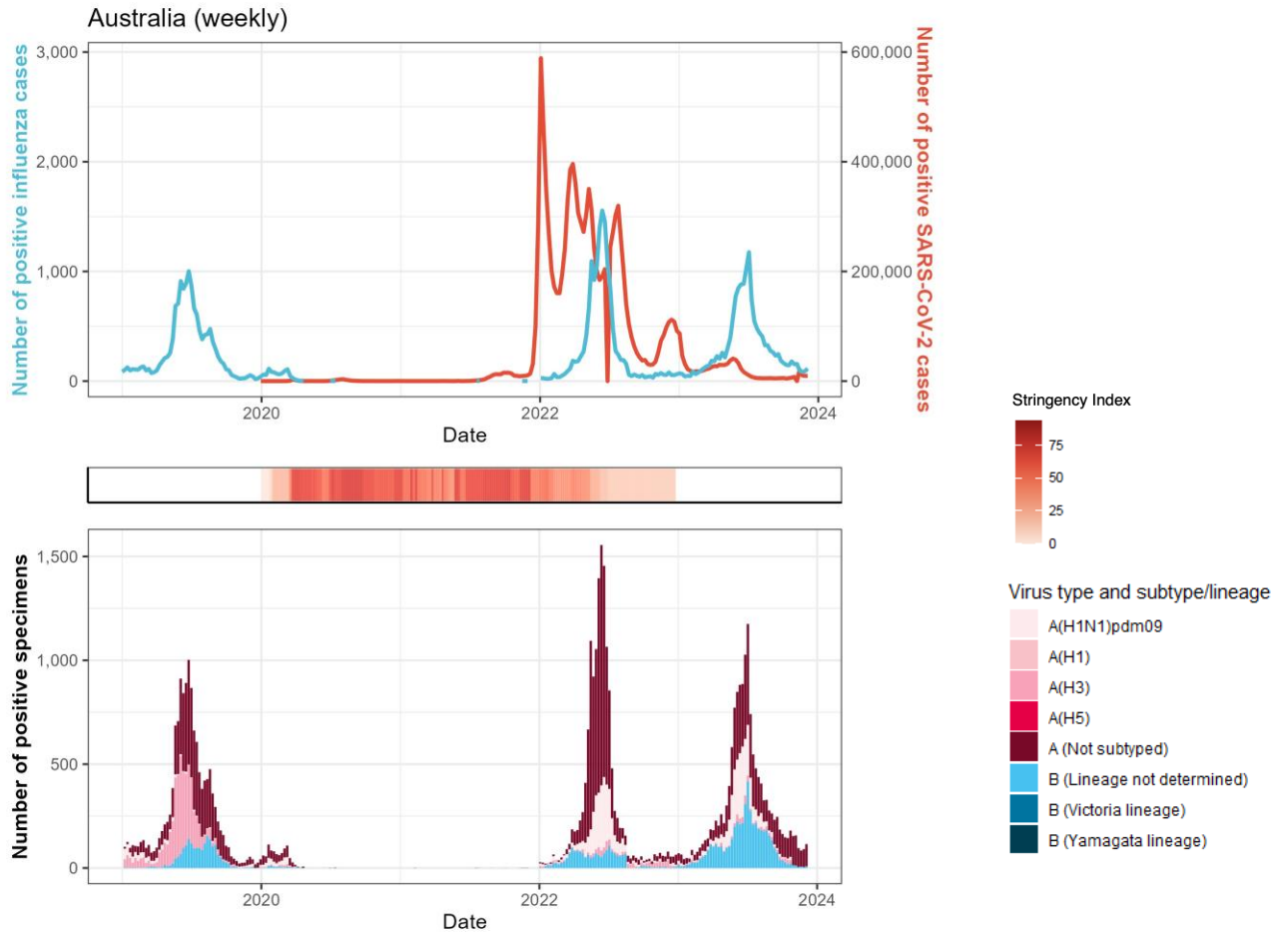


Percentage of specimens testing positive for influenza in different seasons

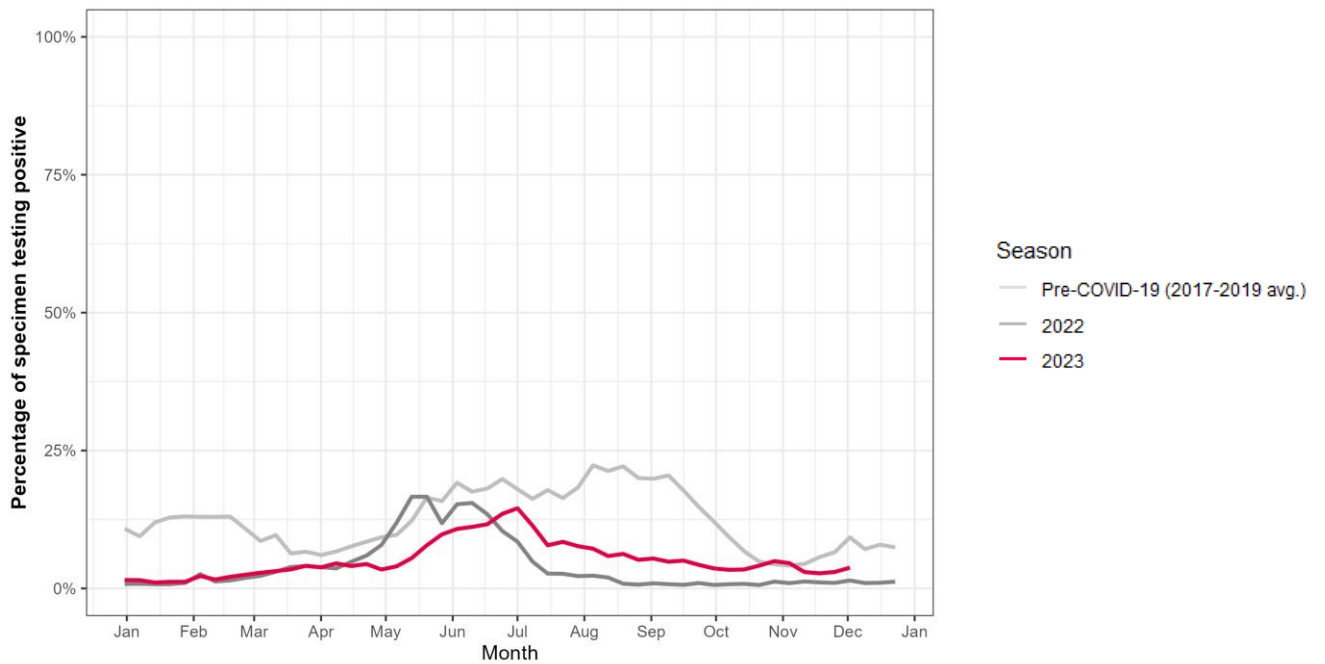


Oceania

Australia



Percentage of specimens testing positive for influenza in different seasons



Absolute numbers per country

Country	Year	Cases ^{a,b} of SARS-CoV-2	+/- since last month ^c	Cases ^a of influenza	+/- since last month ^c	Week of last influenza update
Australia	2019			14,002		
Australia	2020	28,381		949		
Australia	2021	338,226		8		
Australia	2022	10,418,952		14,662		
Australia	2023	893,597	40,973	14,823	582	2023-49
Brazil	2019			3,459		
Brazil	2020	7,563,551		1,391		
Brazil	2021	14,700,856		1,240		
Brazil	2022	14,038,581		3,648		
Brazil	2023	1,217,545	0	21,579	417	2023-49
Canada	2019			43,196		
Canada	2020	565,508		44,956		
Canada	2021	1,536,966		337		
Canada	2022	2,390,310		71,314		
Canada	2023	244,840	21,624	22,409	9,800	2023-49
China	2019			122,757		
China	2020	96,673		31,237		
China	2021	35,398		26,151		
China	2022	84,792,971		56,455		
China	2023	14,395,714	2,222	198,644	54,592	2023-49
Egypt	2019			1,999		
Egypt	2020	136,644		659		
Egypt	2021	248,084		233		
Egypt	2022	130,805		2,709		
Egypt	2023	490	0	2,419	544	2023-49
France	2019			25,405		
France	2020	2,338,258		16,589		
France	2021	6,371,668		3,071		
France	2022	29,279,621		40,148		
France	2023	1,007,943	0	19,507	456	2023-48
Germany	2019			1,215		
Germany	2020	1,660,178		958		
Germany	2021	5,353,865		29		
Germany	2022	30,227,893		1,923		
Germany	2023	1,195,820	0	606	44	2023-49
India	2019			10,428		
India	2020	10,266,679		655		
India	2021	24,572,130		5,128		
India	2022	9,840,329		1,948		
India	2023	323,560	654	3,143	148	2023-48
Israel	2019			1,796		
Israel	2020	419,661		1,424		
Israel	2021	962,275		456		
Israel	2022	3,381,658		774		
Israel	2023	78,178	145	817	12	2023-49

Country	Year	Cases ^{a,b} of SARS-CoV-2	+/- since last month ^c	Cases ^a of influenza	+/- since last month ^c	Week of last influenza update
Italy	2019			6,361		
Italy	2020	2,083,689		7,485		
Italy	2021	3,897,739		31		
Italy	2022	19,187,010		5,817		
Italy	2023	1,150,279	71,711	2,582	167	2023-49
Japan	2019			10,343		
Japan	2020	230,304		2,915		
Japan	2021	1,503,484		9		
Japan	2022	27,371,282		273		
Japan	2023	4,698,502	0	5,182	446	2023-48
Mexico	2019			6,963		
Mexico	2020	1,496,067		4,799		
Mexico	2021	2,538,755		960		
Mexico	2022	3,236,805		10,314		
Mexico	2023	430,840	283	6,232	1,815	2023-49
Netherlands	2019			5,166		
Netherlands	2020	773,198		3,235		
Netherlands	2021	2,312,304		471		
Netherlands	2022	5,480,565		14,019		
Netherlands	2023	53,984	0	7,980	0	2023-41
Philippines	2019			612		
Philippines	2020	472,523		52		
Philippines	2021	2,371,346		105		
Philippines	2022	1,218,790		260		
Philippines	2023	126,340	4,442	615	84	2023-48
Poland	2019			1,786		
Poland	2020	1,297,400		1,282		
Poland	2021	2,811,801		2		
Poland	2022	2,259,187		1,604		
Poland	2023	184,929	19,231	1,924	50	2023-49
South Africa	2019			1,164		
South Africa	2020	1,039,161		157		
South Africa	2021	2,407,371		413		
South Africa	2022	602,048		1,171		
South Africa	2023	24,056	45	1,028	25	2023-48
South Korea	2019			1,702		
South Korea	2020	60,722		505		
South Korea	2021	574,528		0		
South Korea	2022	28,424,023		295		
South Korea	2023	5,512,600	0	1,930	630	2023-48
Spain	2019			17,228		
Spain	2020	1,919,549		8,827		
Spain	2021	4,180,589		2,206		
Spain	2022	7,654,824		18,089		
Spain	2023	225,378	0	8,960	0	2023-39
Thailand	2019			1,568		
Thailand	2020	6,919		297		
Thailand	2021	2,216,551		23		
Thailand	2022	2,500,484		575		
Thailand	2023	35,667	1,461	1,537	288	2023-49

Country	Year	Cases ^{a,b} of SARS-CoV-2	+/- since last month ^c	Cases ^a of influenza	+/- since last month ^c	Week of last influenza update
United Kingdom	2019			42,447		
United Kingdom	2020	2,563,561		14,377		
United Kingdom	2021	10,878,146		2,755		
United Kingdom	2022	10,752,848		26,896		
United Kingdom	2023	618,027	10,364	6,952	719	2023-49
United States	2019			268,524		
United States	2020	19,577,585		229,766		
United States	2021	33,956,701		39,507		
United States	2022	45,877,410		469,968		
United States	2023	4,025,133	0	79,271	24,938	2023-48
Vietnam	2019			355		
Vietnam	2020	1,456		146		
Vietnam	2021	1,729,801		39		
Vietnam	2022	9,793,887		399		
Vietnam	2023	98,880	0	343	8	2023-47

^a Laboratory-confirmed cases.

^b As of the 24th bulletin, the data source, used by Our World In Data, for SARS-CoV-2 cases has been changed retrospectively. As a result, yearly totals displayed in this table may differ from those in previous bulletins.

^c Influenza cases are reported by FluNet on a weekly basis. To convert these data to months, weekly data are assigned to the month most days in that week belong to. SARS-CoV-2 cases are reported per day and assigned to each month by date. +/- since last month includes all cases over the last full calendar month.

Methodology

Background

After assessment of alarming levels of spread and severity of SARS-CoV-2 virus, on March 11, 2020, WHO declared COVID-19 a pandemic [5]. The emergence of this new virus has had a major impact on the global circulation of respiratory viruses, including influenza and RSV [6]. The FluCov project aims to understand and communicate the impact of COVID-19 on: i) influenza activity and ii) prevention and control measures (e.g. vaccination) in the coming years.

Scope

The countries included in this FluCov-Bulletin are distributed over the Americas (North, Central and Tropical South), Europe (Northern, South West and Eastern), Africa (Northern and Southern), Asia (Eastern, Southern, South East and Western) and Oceania. These data are compared to the prevention and control measures applied in each country using the Stringency Index from the Oxford COVID-19 Government Response Tracker (OxCGRT) [7].

Data sources

- **Influenza:** FluNet [8] is a global web-based tool for influenza virological surveillance first launched in 1997. The virological data entered into FluNet, e.g. number of influenza viruses detected by subtype, are critical for tracking the movement of viruses globally and interpreting the epidemiological data. The data are provided remotely by National Influenza Centres (NICs) of the Global Influenza Surveillance and Response System (GISRS) and other national influenza reference laboratories collaborating actively with GISRS or are uploaded from WHO regional databases.
- **SARS-CoV-2:** Our World in Data systematically collects COVID-19 data which is presented in their online tool [9]. We used this platform to extract data on the number of cases, as well as tests performed per country. As of 8 March 2023, Our World in Data changed their primary data source from the John Hopkins repository on daily confirmed COVID-19 cases to the WHO [10].
- **Government response tracker:** The Oxford COVID-19 Government Response Tracker (OxCGRT) [7] systematically collects information on several different common policy responses that governments have taken to respond to the pandemic on 20 indicators such as school closures and travel restrictions. It now has data from more than 180 countries. OxCGRT data is downloaded directly from the Our World in Data platform.

Extraction details

Data were extracted on 18 November 2023 and cover the period 1 January 2019 to 10 December 2023 (influenza) and 14 December 2023 (SARS-CoV-2). Data from both platforms are regularly updated and **sometimes retrospectively corrected**. This might explain any discrepancies between our reported figures and the data published online, even when using data for the exact same period. In case of any unclarities or perceived irregularities, feel free to contact us at flucov@nivel.nl.

References

- [1] WHO. Influenza Update N° 460. [2023 12 11 surveillance update 460.pdf \(who.int\)](#)
- [2] Paget J, Caini S, Del Riccio M, van Waarden W, Meijer A. Has influenza B/Yamagata become extinct and what implications might this have for quadrivalent influenza vaccines? *Euro Surveill.* 2022 Sep;27(39):2200753. doi: 10.2807/1560-7917.ES.2022.27.39.2200753.
- [3] Our World In Data. Weekly new hospital admission for COVID-19 per million. [Weekly new hospital admissions for COVID-19 per million \(ourworldindata.org\)](#) [accessed 19 December 2023]
- [4] Hospice Civils de Lyon (HCL). Bulletin Épidémiologique Hebdomadaire. Saison 22-23, Numéro 50, date: 8 Aug 2023. Available online: <https://twitter.com/BEHcl>.
- [5] WHO. Listing of WHO's response to COVID-19. <https://bit.ly/3mIMtRi> [accessed 1 July 2022]
- [6] WHO. Influenza Update N° 416. <http://bit.ly/3T5SvHV> [accessed 7 April 2022]
- [7] Oxford COVID-19 Government Response Tracker, Blavatnik School of Government, University of Oxford. <http://bit.ly/41WqmQX> [accessed 16 June 2021]
- [8] WHO. FluNet. <https://www.who.int/tools/flunet> [accessed 8 March 2023]
- [9] Ritchie, H., Ortiz-Ospina, E., Beltekian, D., Mathieu, E., Hasell J., Macdonald B. et al. Coronavirus Pandemic (COVID-19). <https://ourworldindata.org/coronavirus> [accessed 15 June 2021]
- [10] Mathieu E, Rodés-Guirao L. Our World in Data will rely on data from the WHO to track confirmed COVID-19 cases and deaths. <https://ourworldindata.org/covid-jhu-who> [accessed 5 April 2023]

Project Team

Nivel, Netherlands: Susanne Heemskerk, Bronke Boudewijns, Marco Del Riccio, Willemijn van Waarden, Saverio Caini, John Paget

Global Influenza Initiative:

Ben Cowling, School of Public Health, University of Hong Kong, Hong Kong

Ann Falsey, Rochester General Hospital, University of Rochester School of Medicine, Rochester, NY

Angele Gentile, Ricardo Gutiérrez Children's Hospital, Buenos Aires

Jan Kyncl, Department of Infectious Diseases Epidemiology, National Institute of Public Health, Prague

Bruno Lina: Virpath Laboratory, University of Lyon, Lyon

Raina McIntyre: The Kirby Institute, University of New South Wales, Sydney



Global **Influenza** Initiative

Sanofi, France: Erica Dueger, Clotilde El Guerche-Séblain, Meral Akçay, Cecile Eymin

Websites

Project Website: <https://www.nivel.nl/en/fluCoV>

FluCoV Dashboard: <https://www.nivel.nl/en/dossier-epidemiology-respiratory-viruses/fluCoV-dashboard>

Funding

The FluCoV Project is funded by Sanofi, France.
