NIVEL
Research for better care

FluCov-Bulletin – end-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 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 slightly decreased in the second half of December 2023 (see Figure 1). The following country patterns were observed for **influenza**:

- In the Northern Hemisphere, **influenza** activity increased in Europe, with most countries reporting an increase in new detections, compared to the previous bulletin (**France**, **Germany, Italy, Poland**, **United Kingdom**).
- **Influenza** activity continued to increase in the **United States** and **Canada**, with predominantly A(H1N1)pdm09 if subtyped. In **Mexico**, **influenza** activity decreased, as did the percentage of positive tests.
- **Influenza** detections also decreased in **Egypt**, **Japan**, the **Philippines** and **Thailand**.
- **Influenza** activity increased in **China**, predominated by A(H3N2).
- In **South Korea**, **influenza** activity stabilized in late December, with cocirculation of **influenza** A(H1N1)pdm09, A(H3N2), and increasingly B/Victoria. The percentage of specimens that tested positive also stabilized, but remained high with approximately 40%.
- Low **influenza** detections were reported in **India**, **Israel** and **Vietnam**.
- 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 via GISRS for **Netherlands** and **Spain** in the second half 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 second half of December 2023:

- **SARS-CoV-2** activity increased in **India**, **Italy**, the **Netherlands**, the **Philippines**, **Poland**, **Thailand** and the **United Kingdom.**
- In **Canada**, **SARS-CoV-2** activity decreased in the second half of December, compared to November.
- **SARS-CoV-2** activity was low or stable in the following countries: **Australia**, **China**, **Mexico** and **South Africa.**
- No update on **SARS-CoV-2** activity was available for **Brazil, Egypt, France, Germany, Japan, South Korea, Spain, United States,** and **Vietnam** in the second half of December.

Implications

Global influenza activity has shown a slight decrease in the second half of December 2023, which might be related to a reporting delay during the holidays. SARS-CoV-2 activity has been relatively low worldwide.

Influenza detections in the Northern and Southern Hemispheres:

In the Northern Hemisphere, influenza activity continued to increase in most countries during the second half of December. Detections also increased **China** (mainly influenza A(H3) – dominant - and B/Victoria) and stabilized in **South Korea**. Influenza activity also increased further in **Canada** and the **United States** and most European countries covered by the Bulletin. No update of the bulletin data was available via GISRS for the **Netherlands** and **Spain.** Data were reported in ERVISS: in **Spain** influenza activity increased, but the **Netherlands** reported baseline activity for the second half of December [1]. Influenza activity has been low in all Southern Hemisphere countries covered by the Bulletin: **Australia**, **South Africa and Brazil**.

Influenza A subtypes and Influenza B lineages:

In the 2023/24 Northern Hemisphere season, influenza A is currently dominating globally, with both influenza A(H1N1)pdm09 and influenza A(H3N2) being detected frequently [2]. Influenza B/Victoria is mostly detected in Asia. Up until now, the influenza B lineage in the countries reported in the Bulletin has exclusively been influenza B/Victoria (if lineage was determined). This is noteworthy, especially considering the rarity of influenza B/Yamagata during the COVID-19 pandemic [3].

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 the United States [4]. In Italy and the Netherlands, hospital admission started to decrease, after an increase in November/early December. 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 [5]. This results in some data not being included in the FluCov Bulletin.

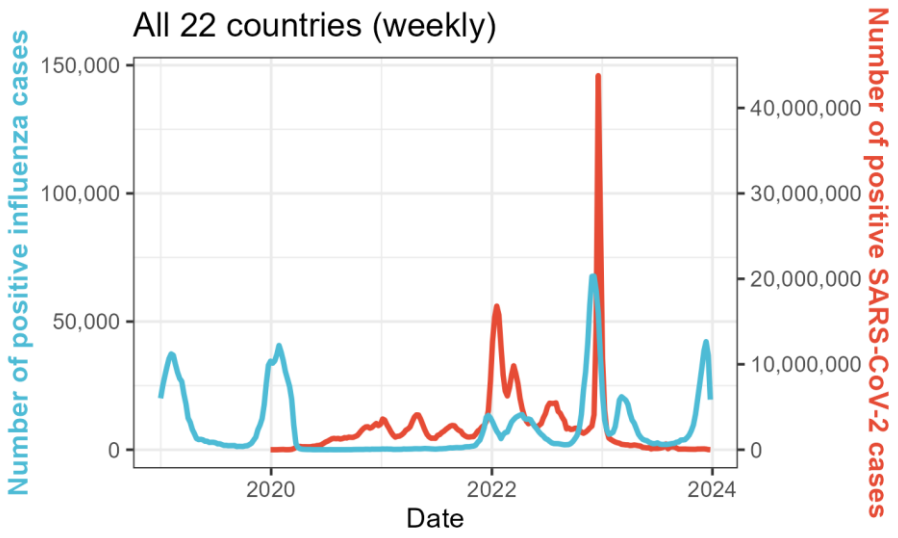


Figure 1: SARS-CoV-2 and influenza detections in the 22 countries covered by the Bulletin (period: from week 1/2019 to week 52/2023)

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 31 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/flucov-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

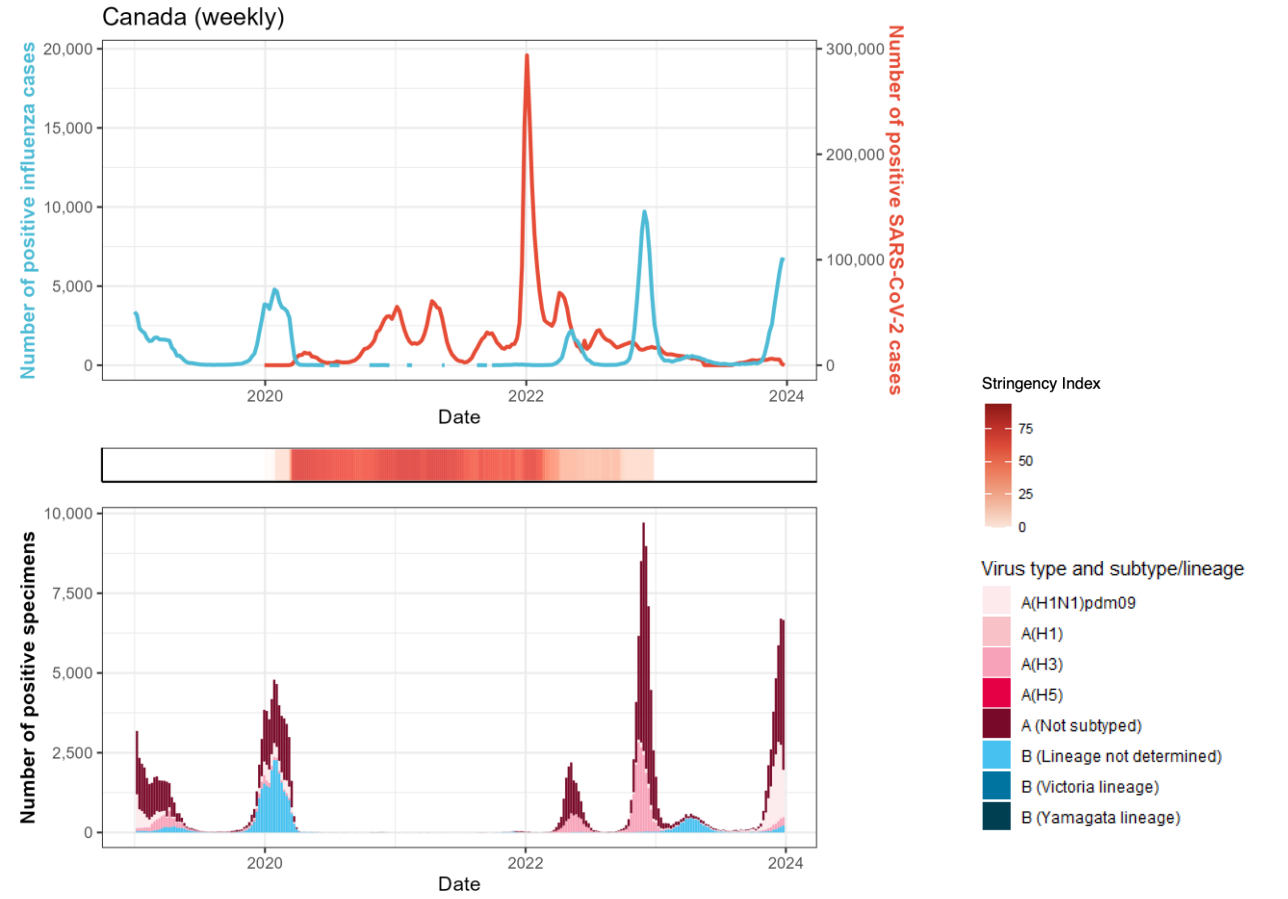
South East Asia
Philippines
Thailand
Vietnam

Western Asia
Israel

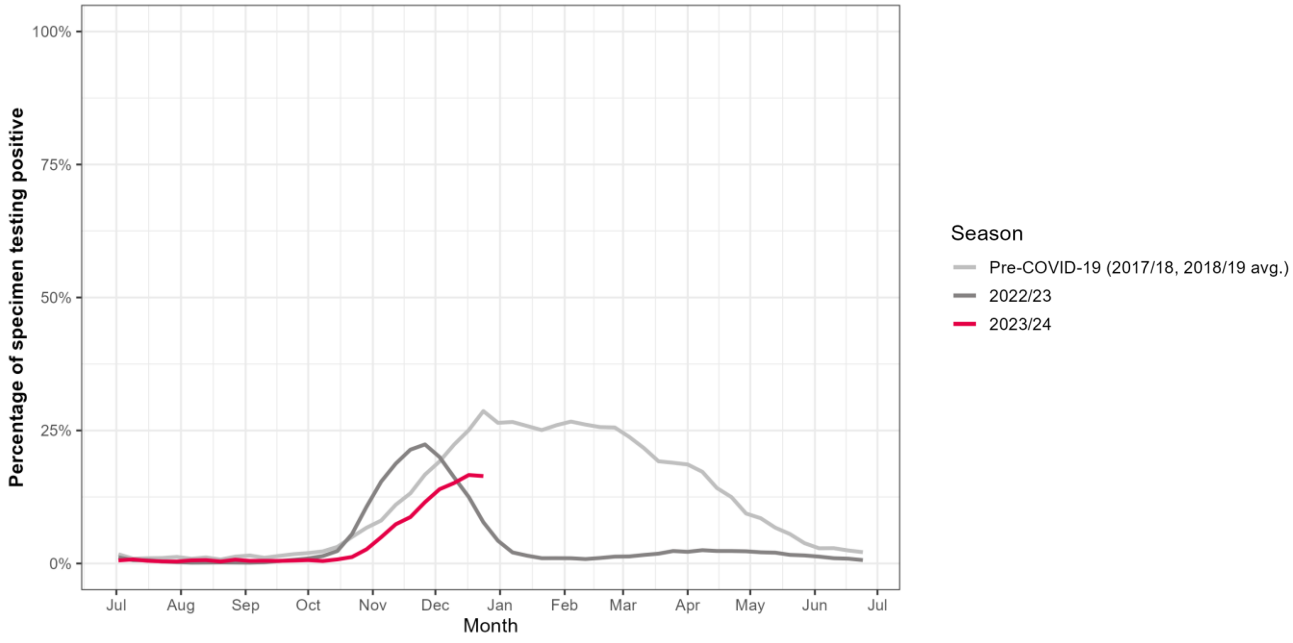
Oceania
Australia

North America

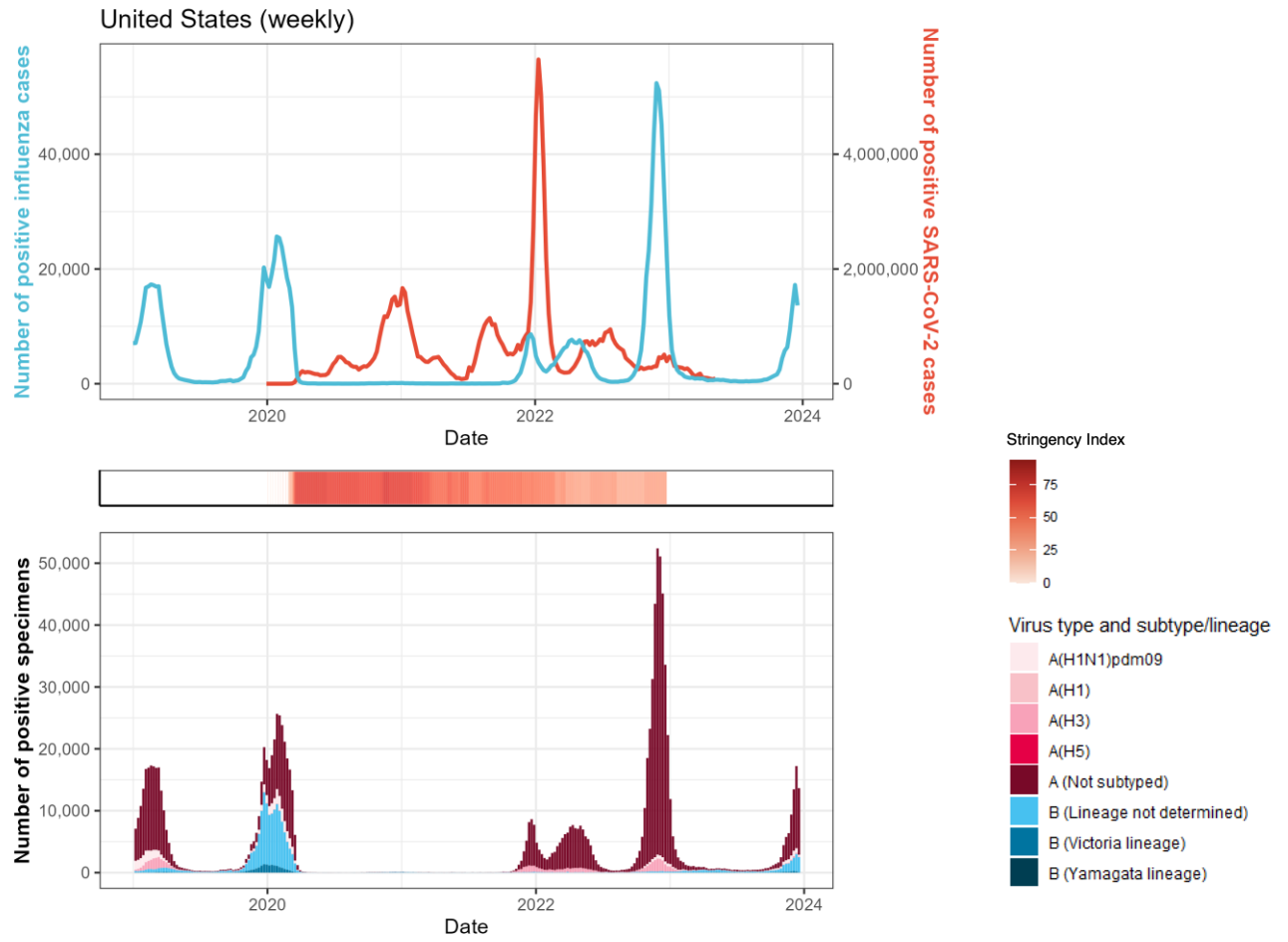
Canada



Percentage of specimens testing positive for influenza in different seasons



United States



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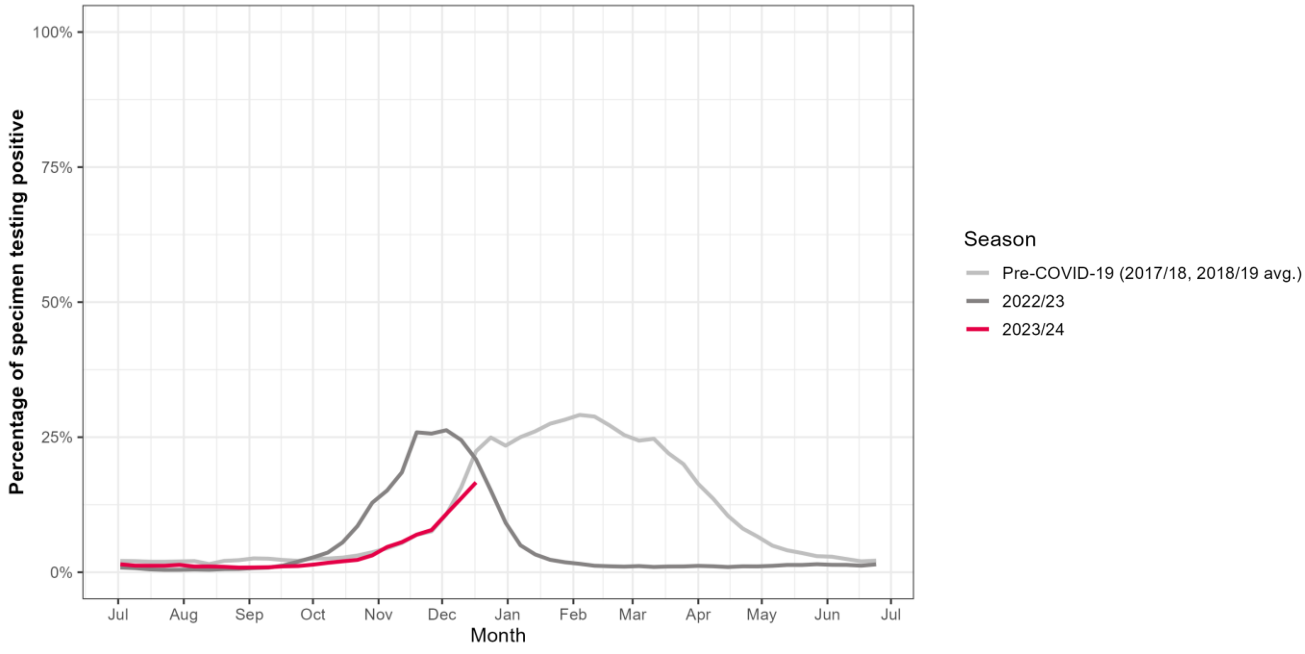
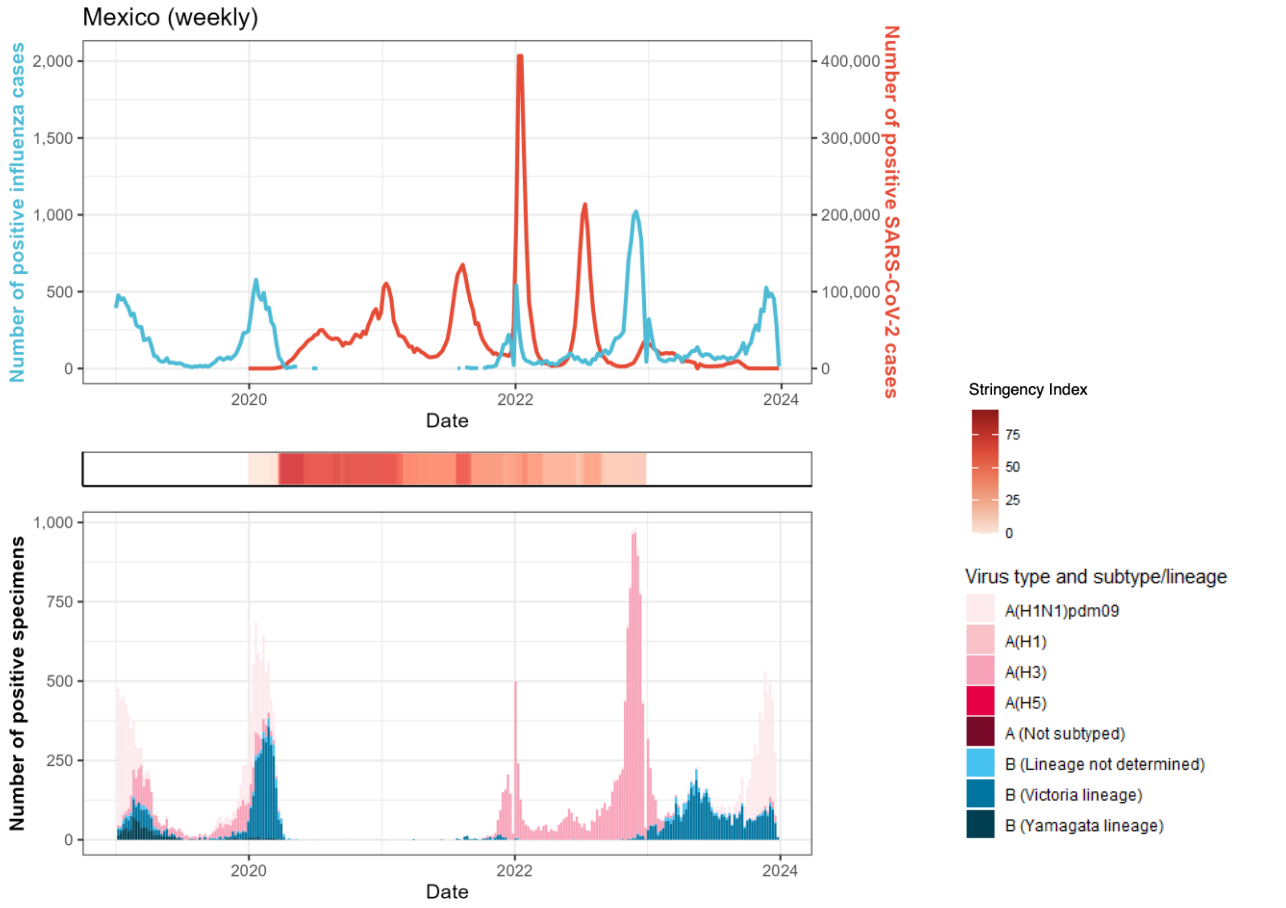


Central America Caribbean

Mexico



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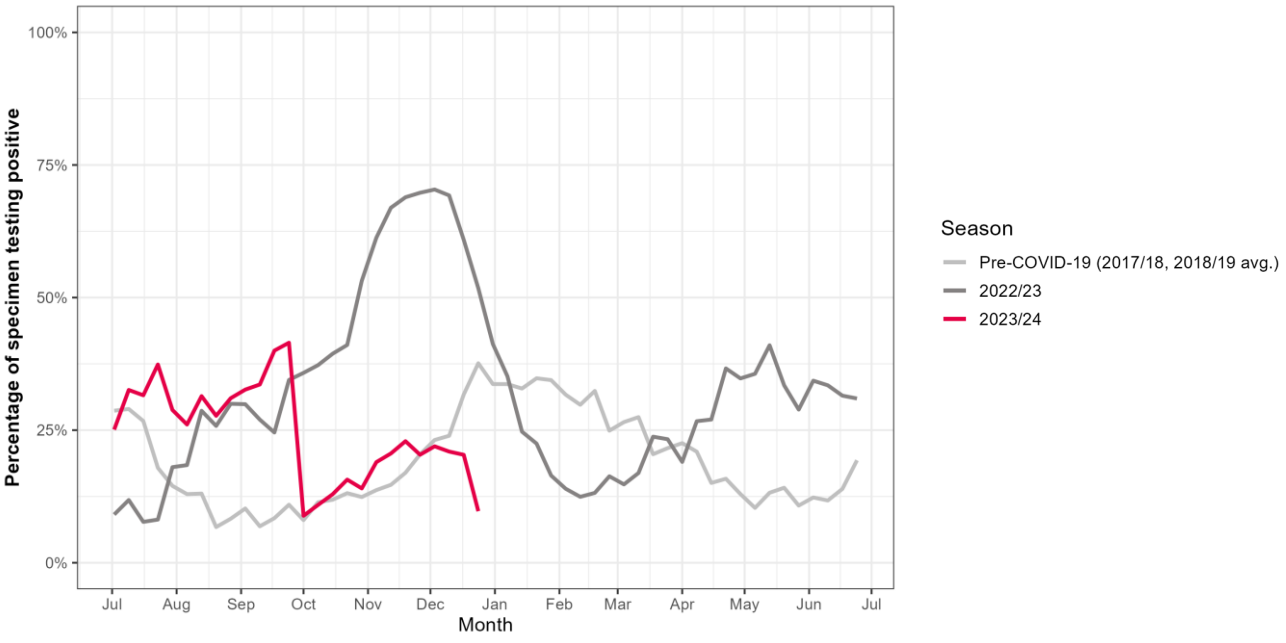
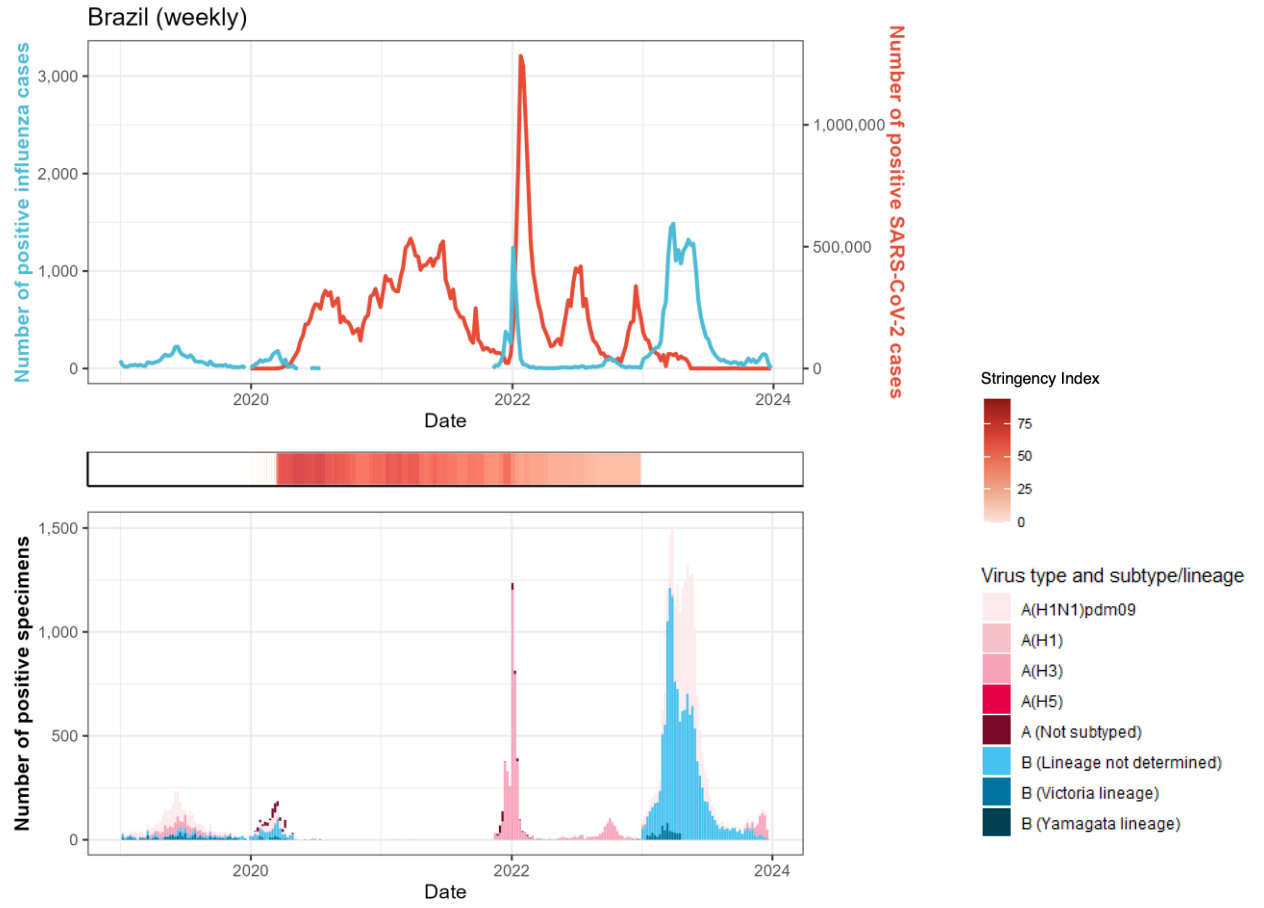


Tropical South America

Brazil



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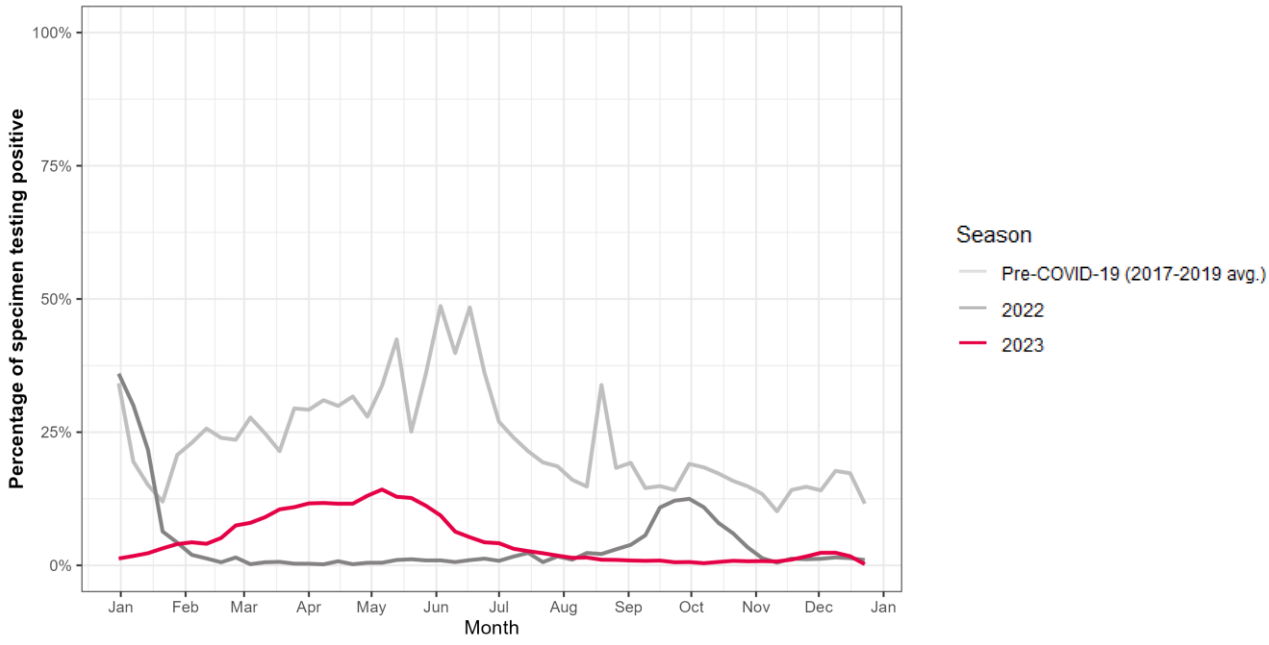
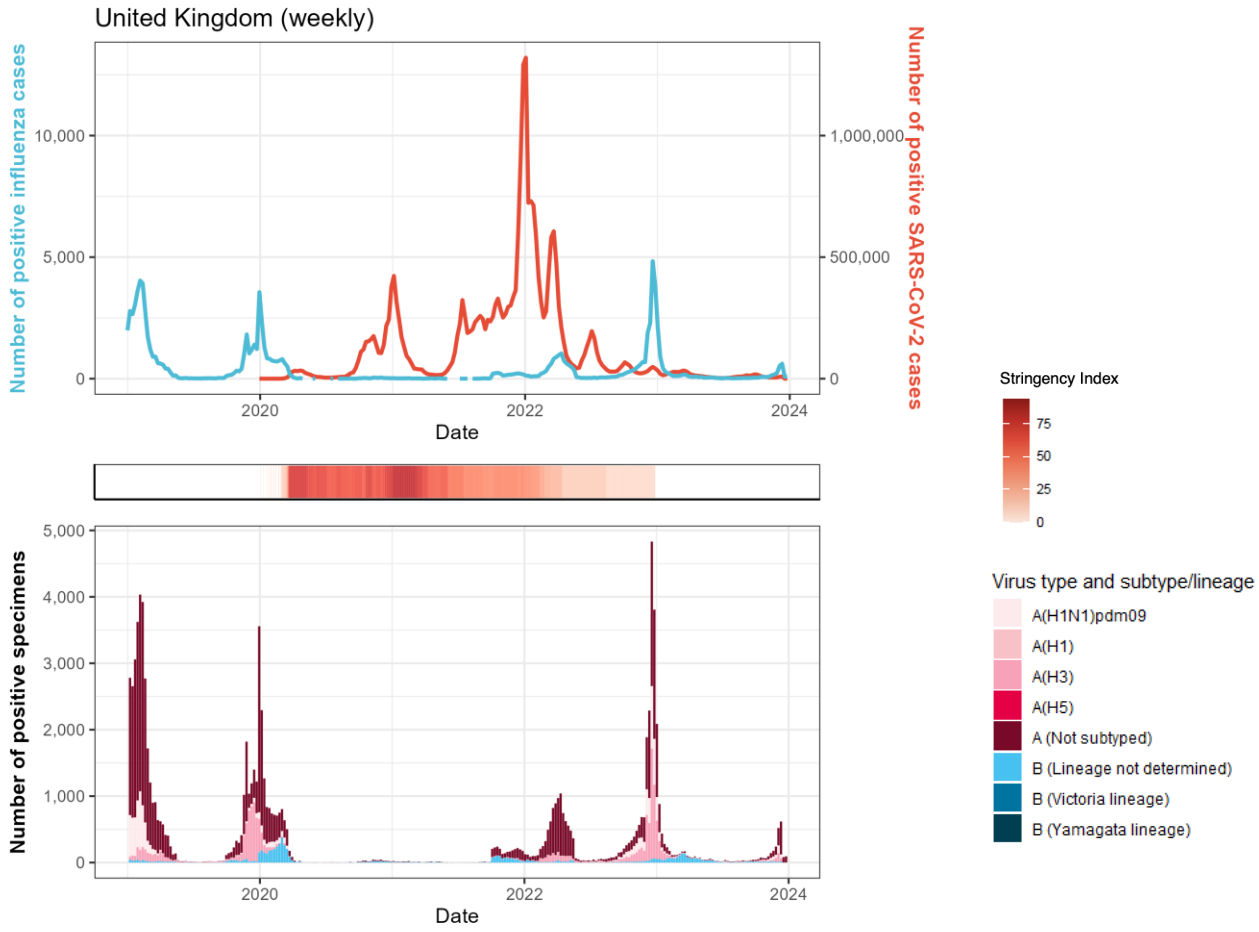


Northern Europe

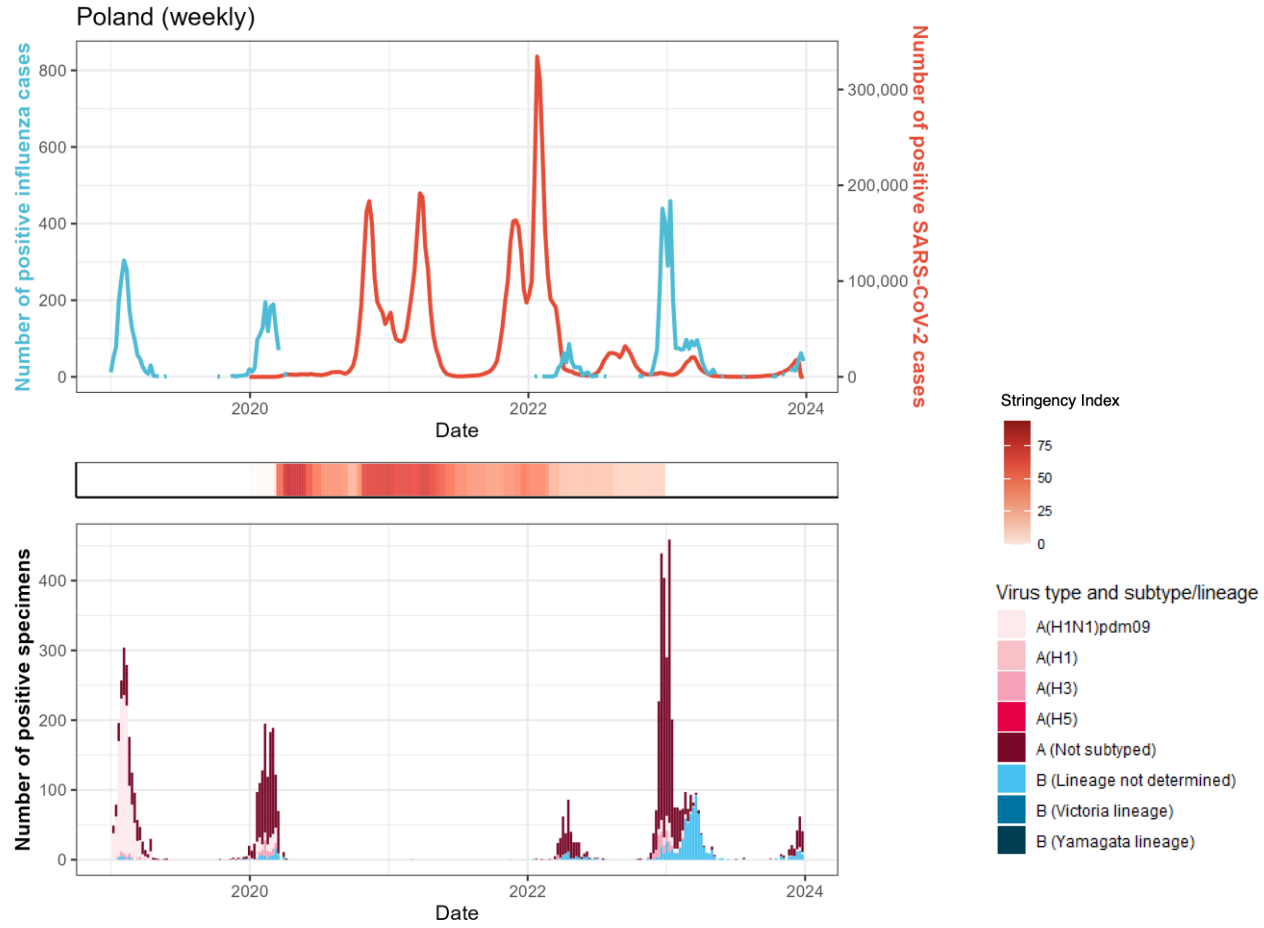
United Kingdom



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

Eastern Europe

Poland



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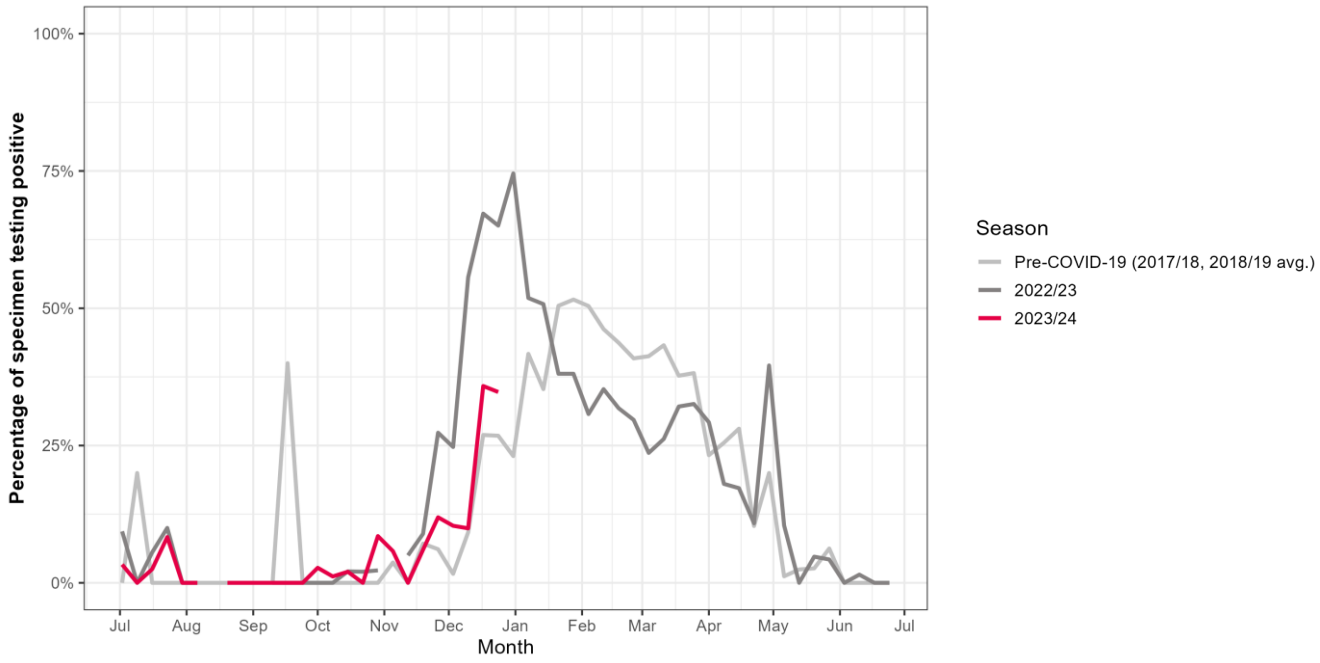
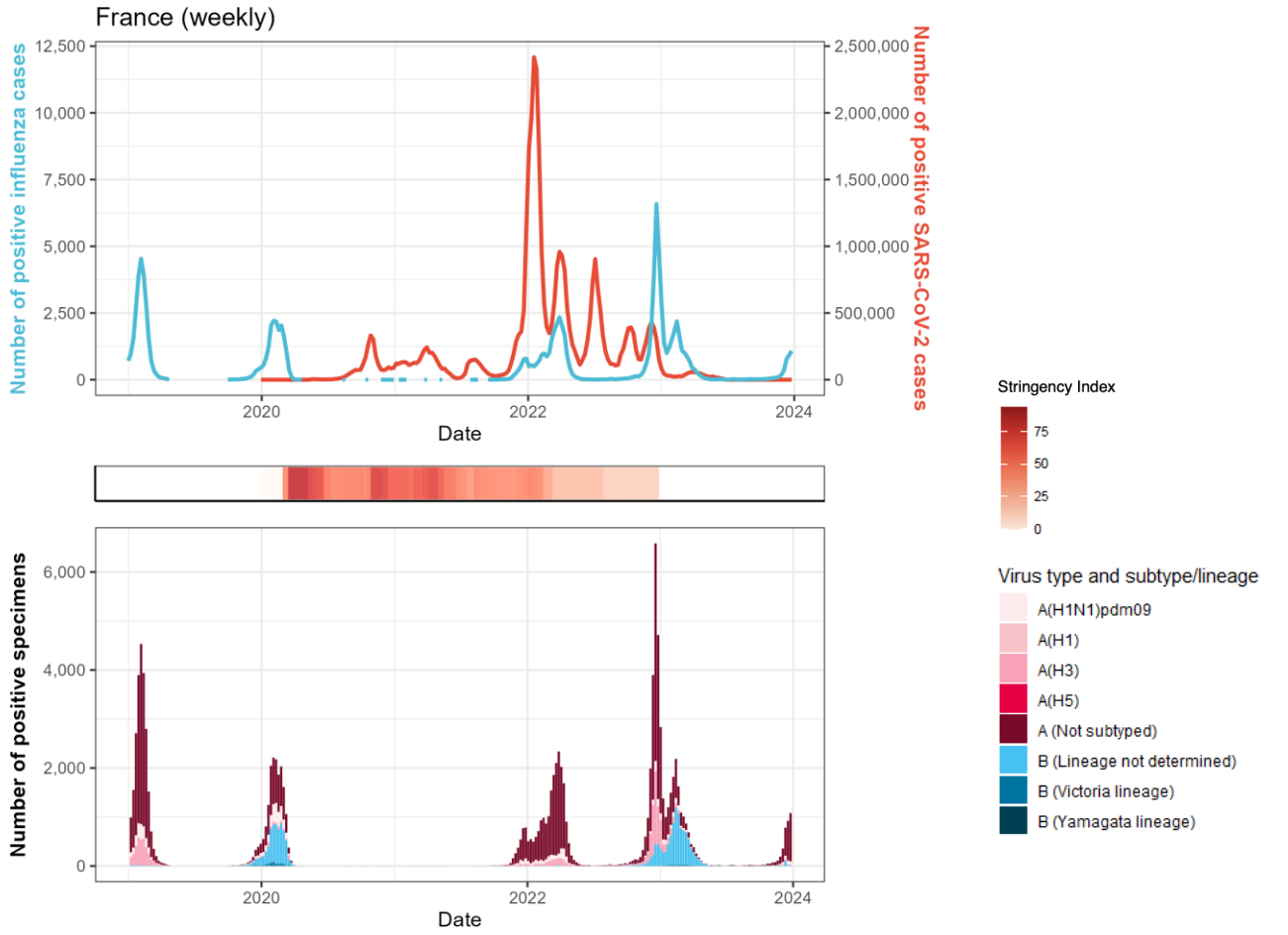


South West Europe

France



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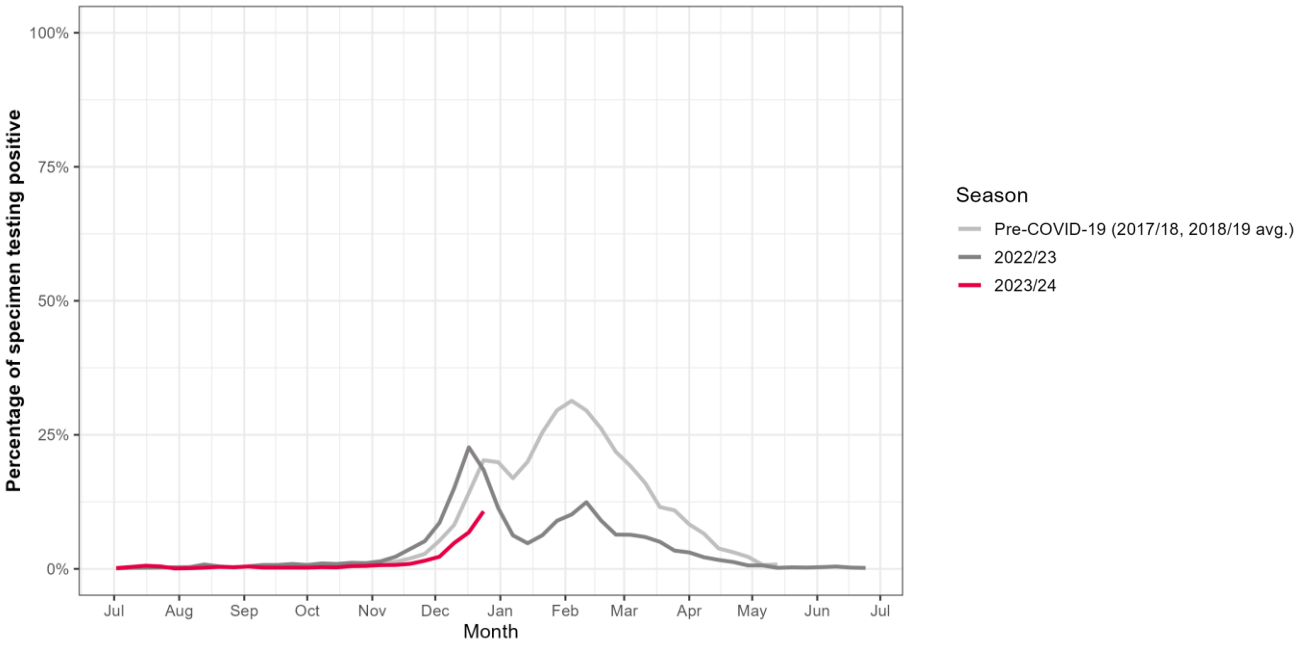
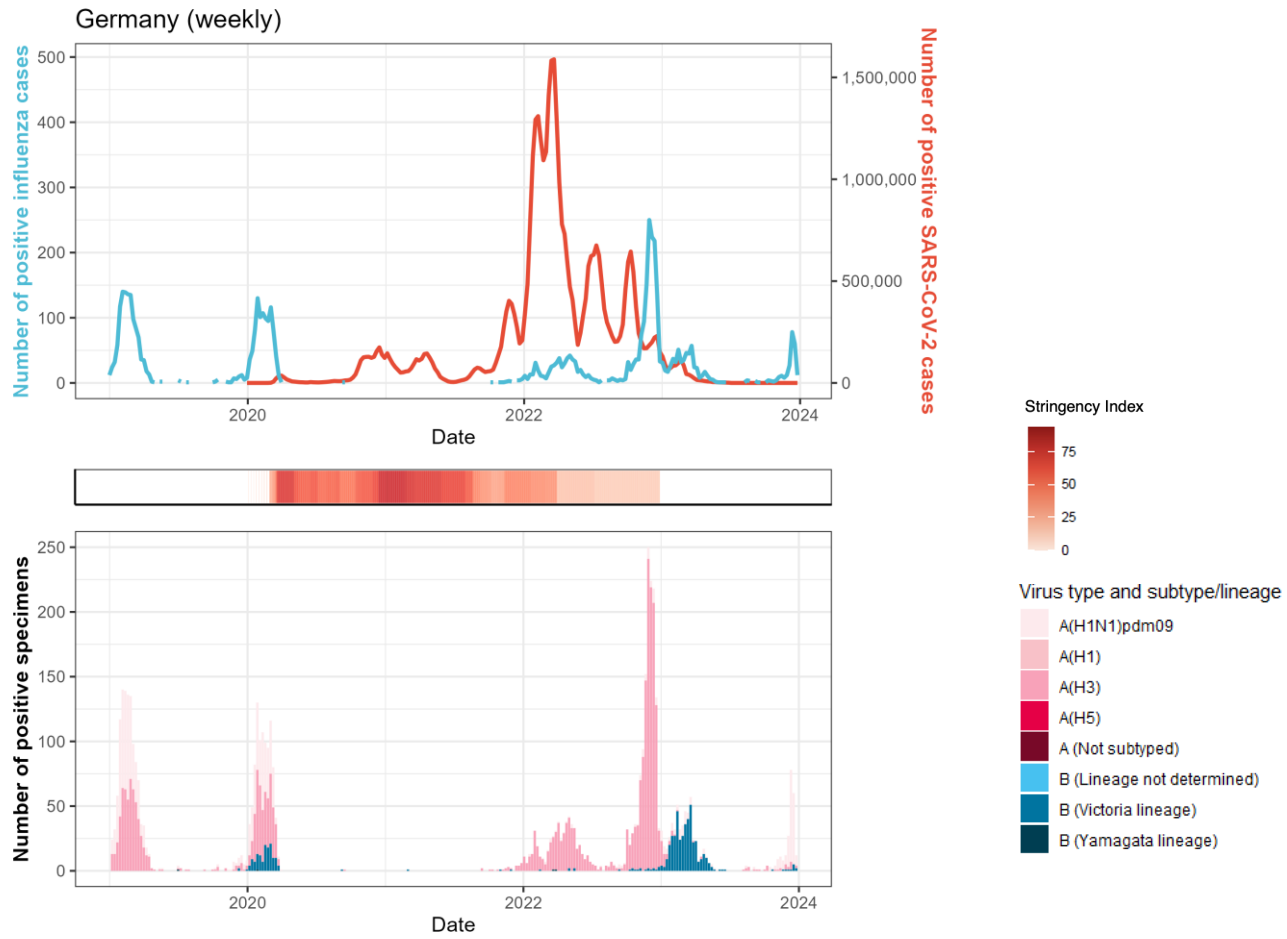


Germany



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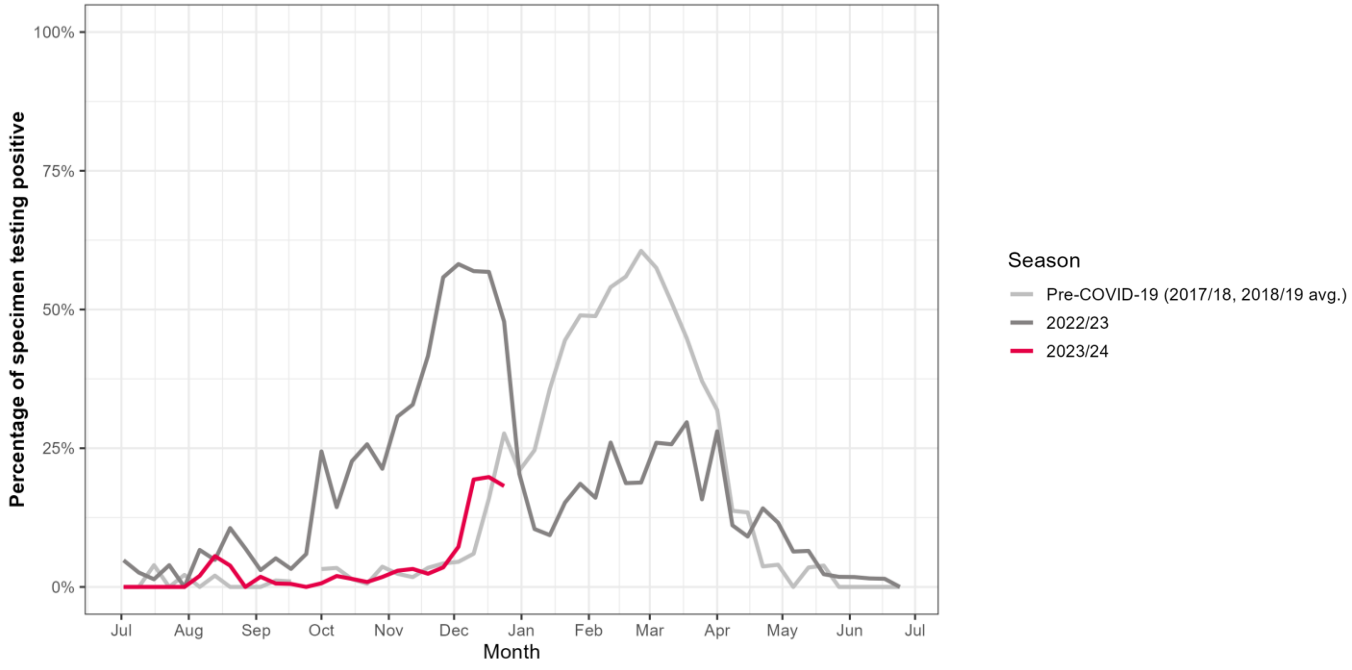
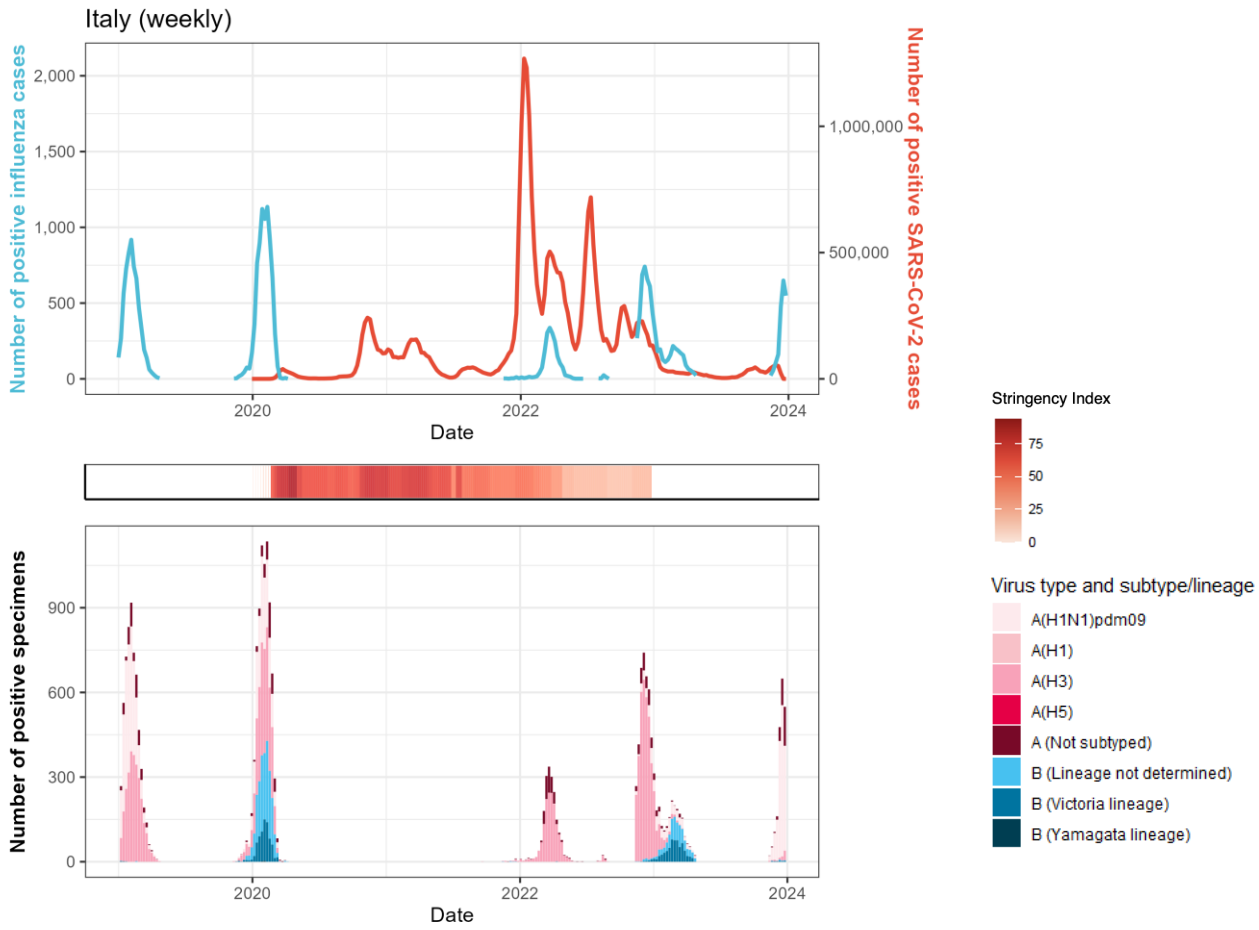
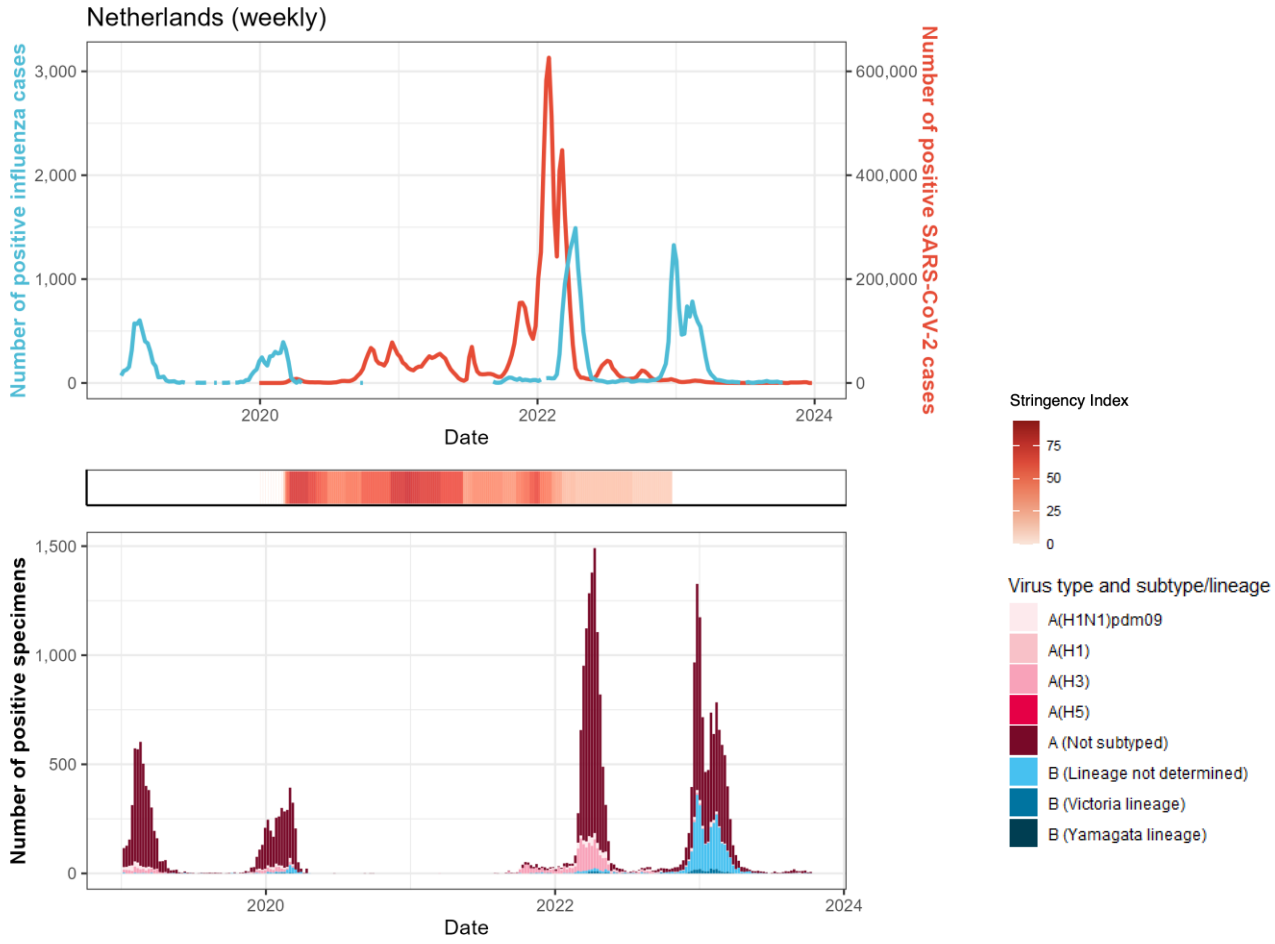


Italy



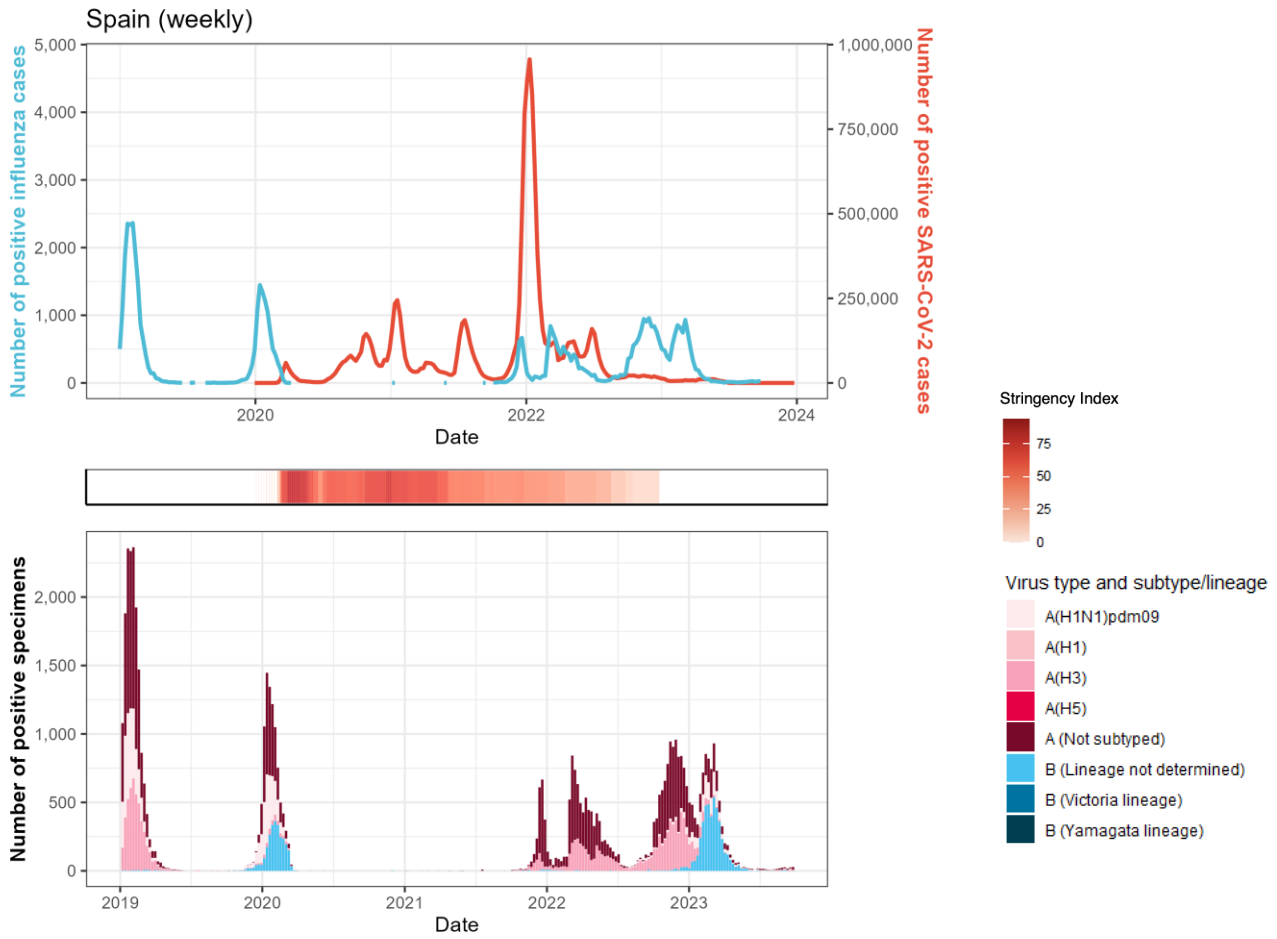
Percentage of specimens testing positive for influenza in different seasons: data not available

Netherlands



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

Spain



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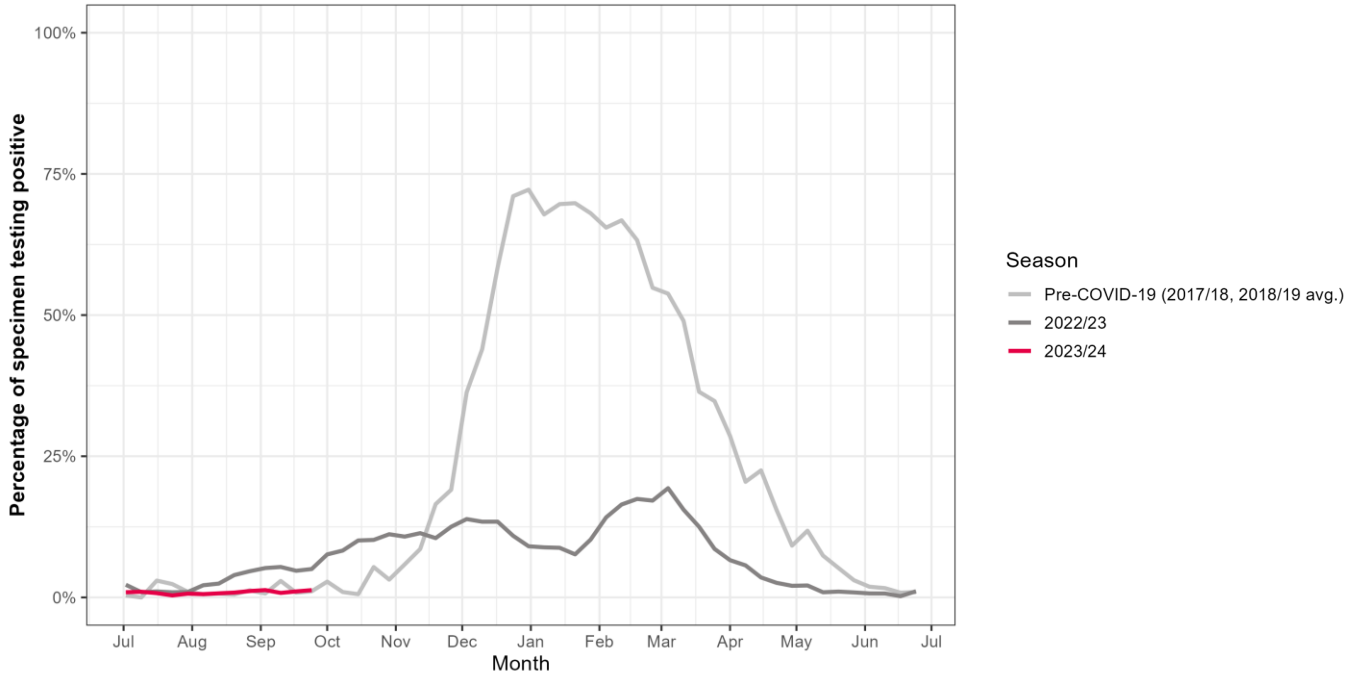
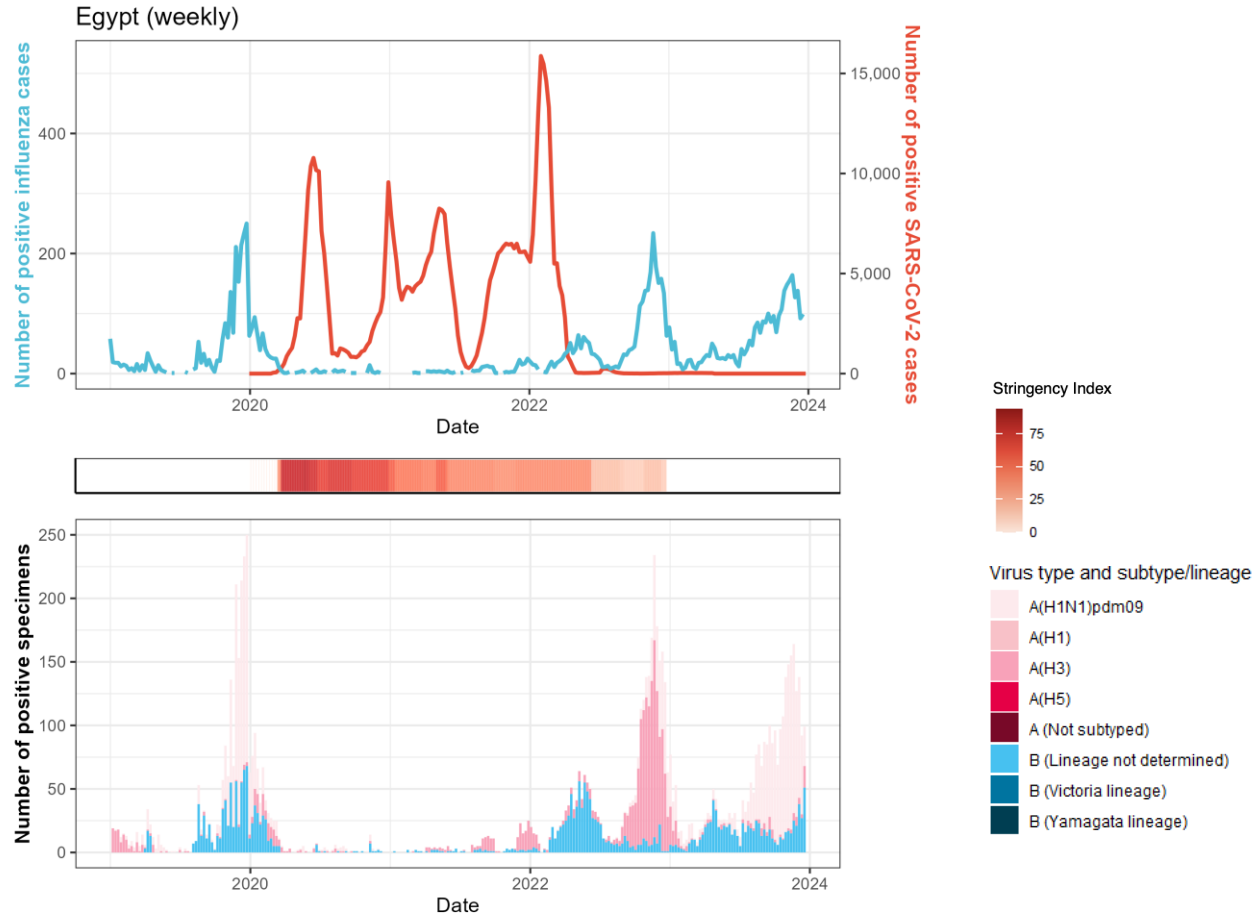


Northern Africa

Egypt



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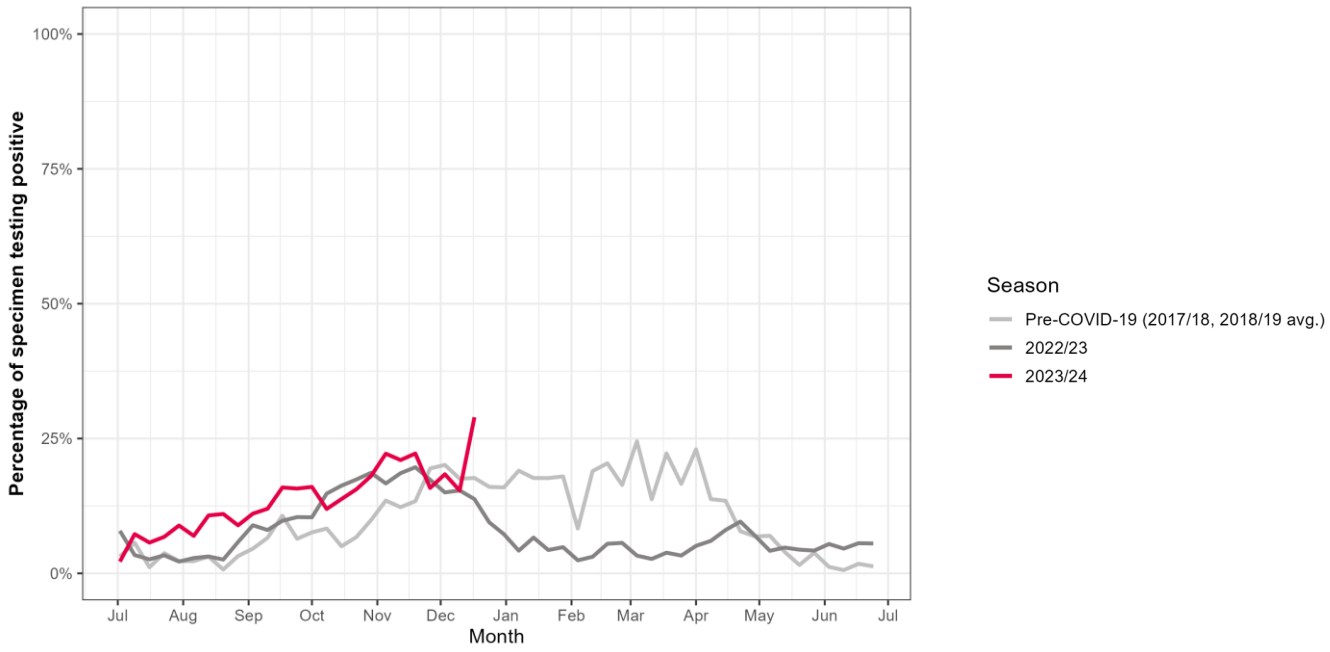
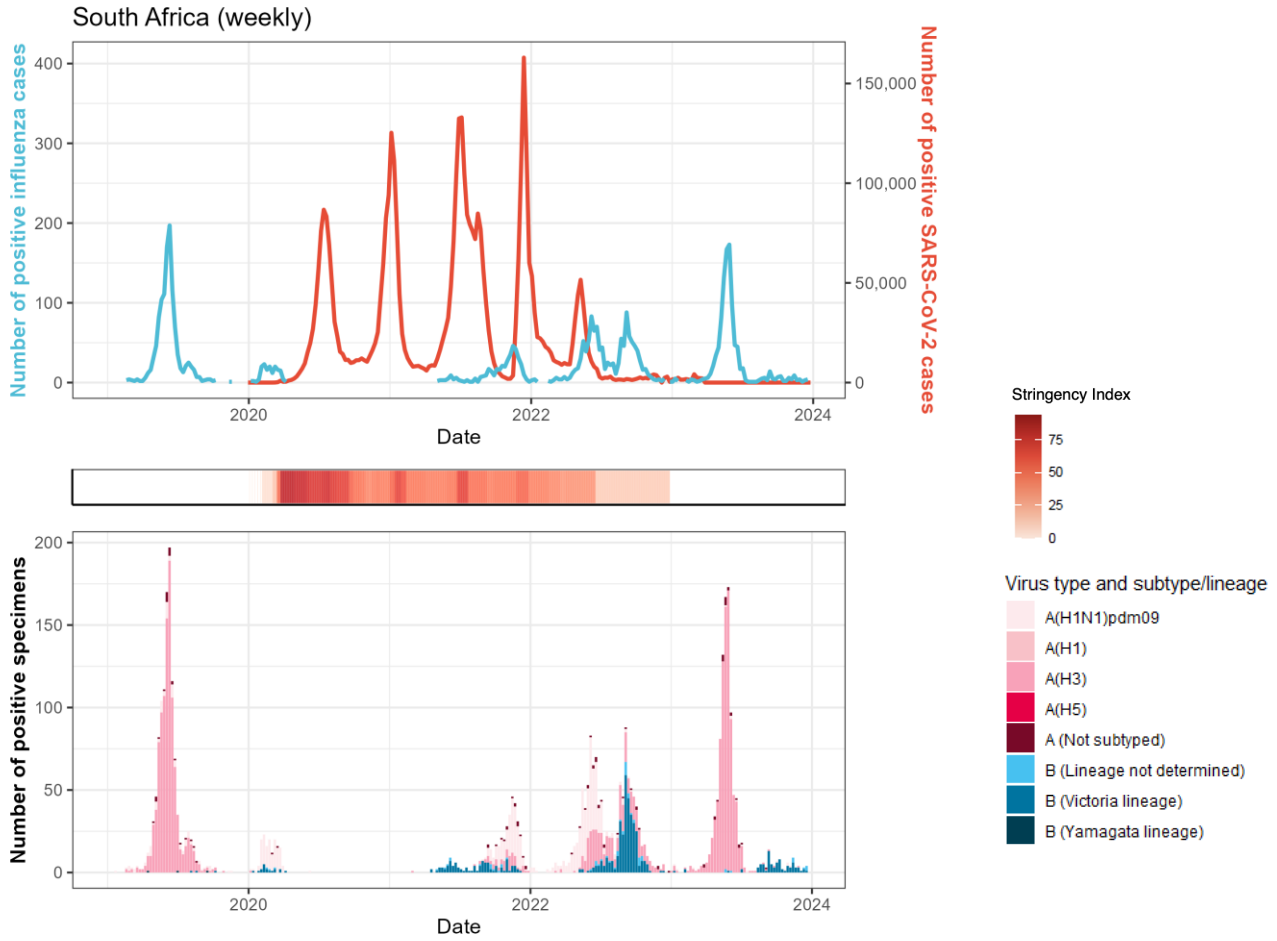


Southern Africa

South Africa



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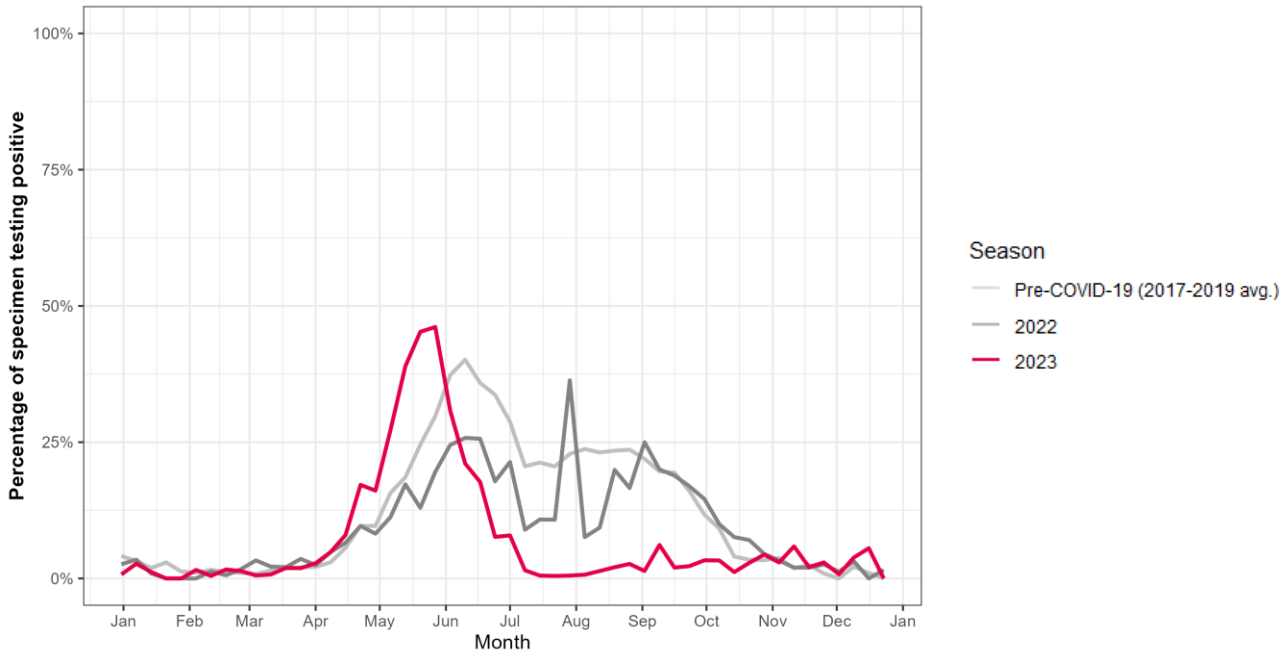
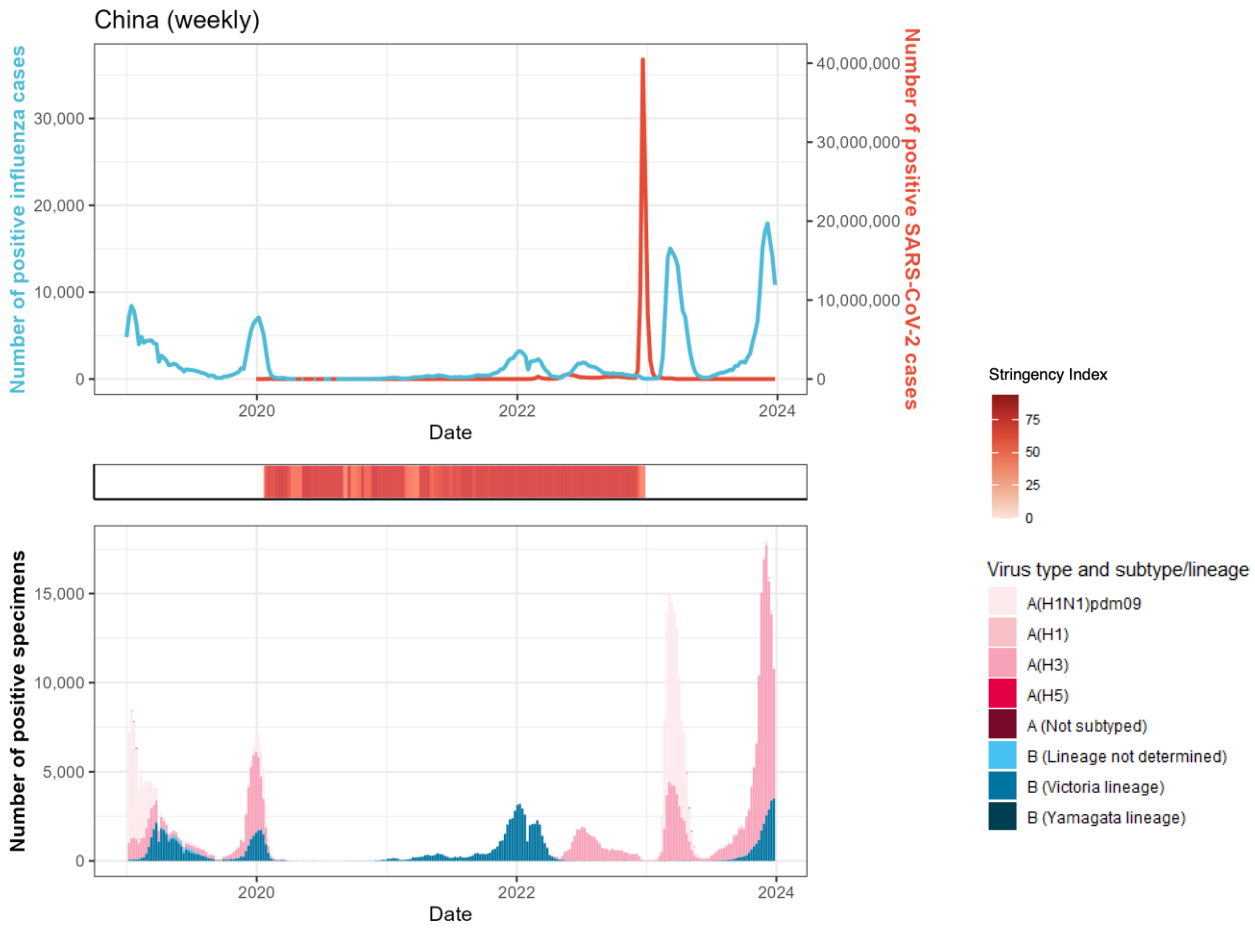


Eastern Asia

China



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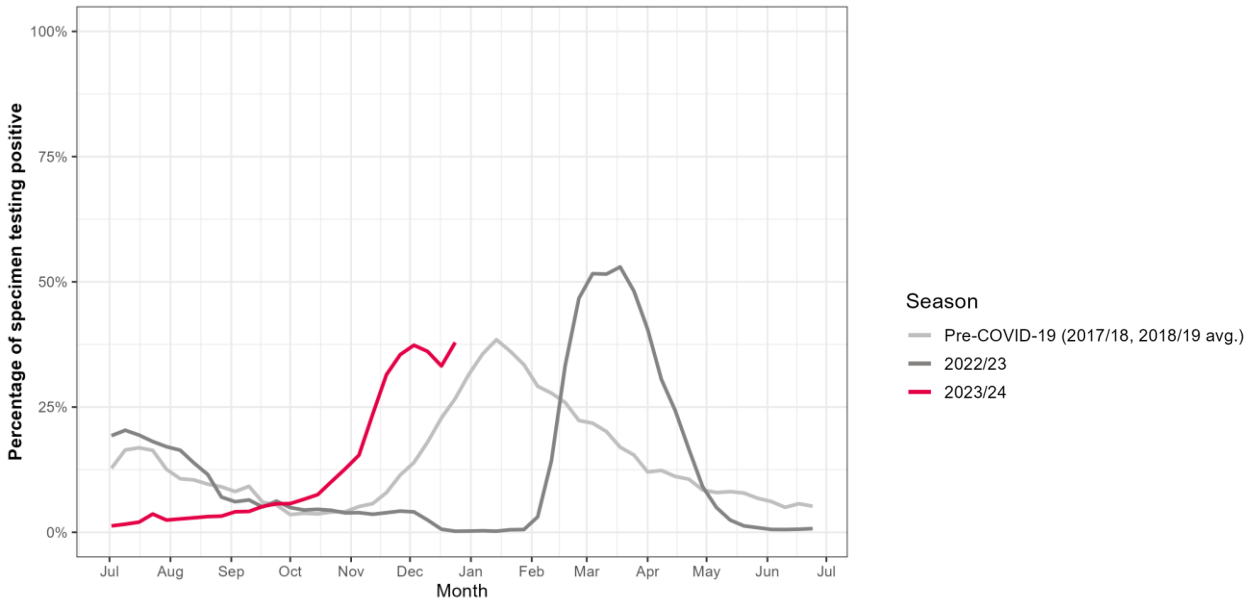
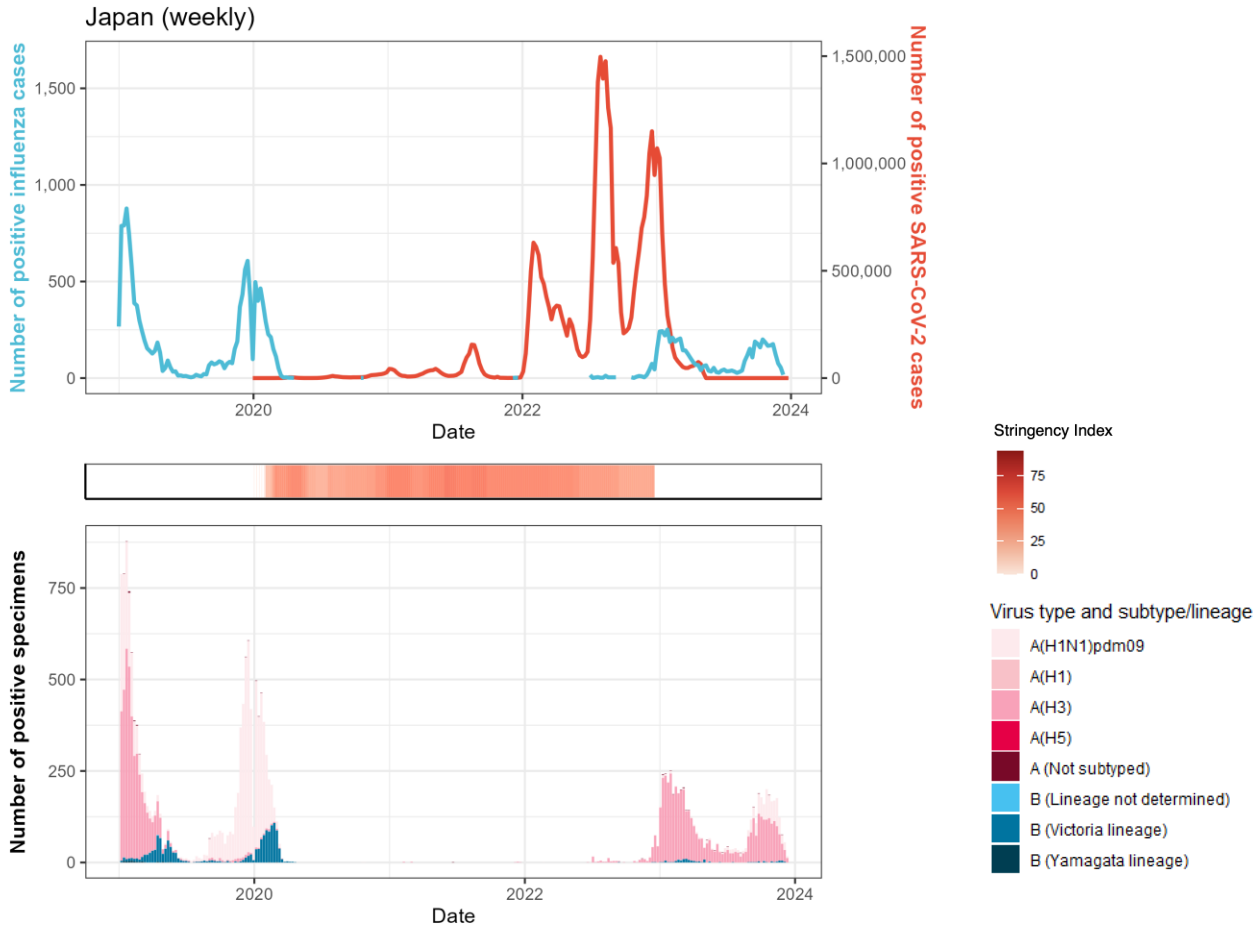
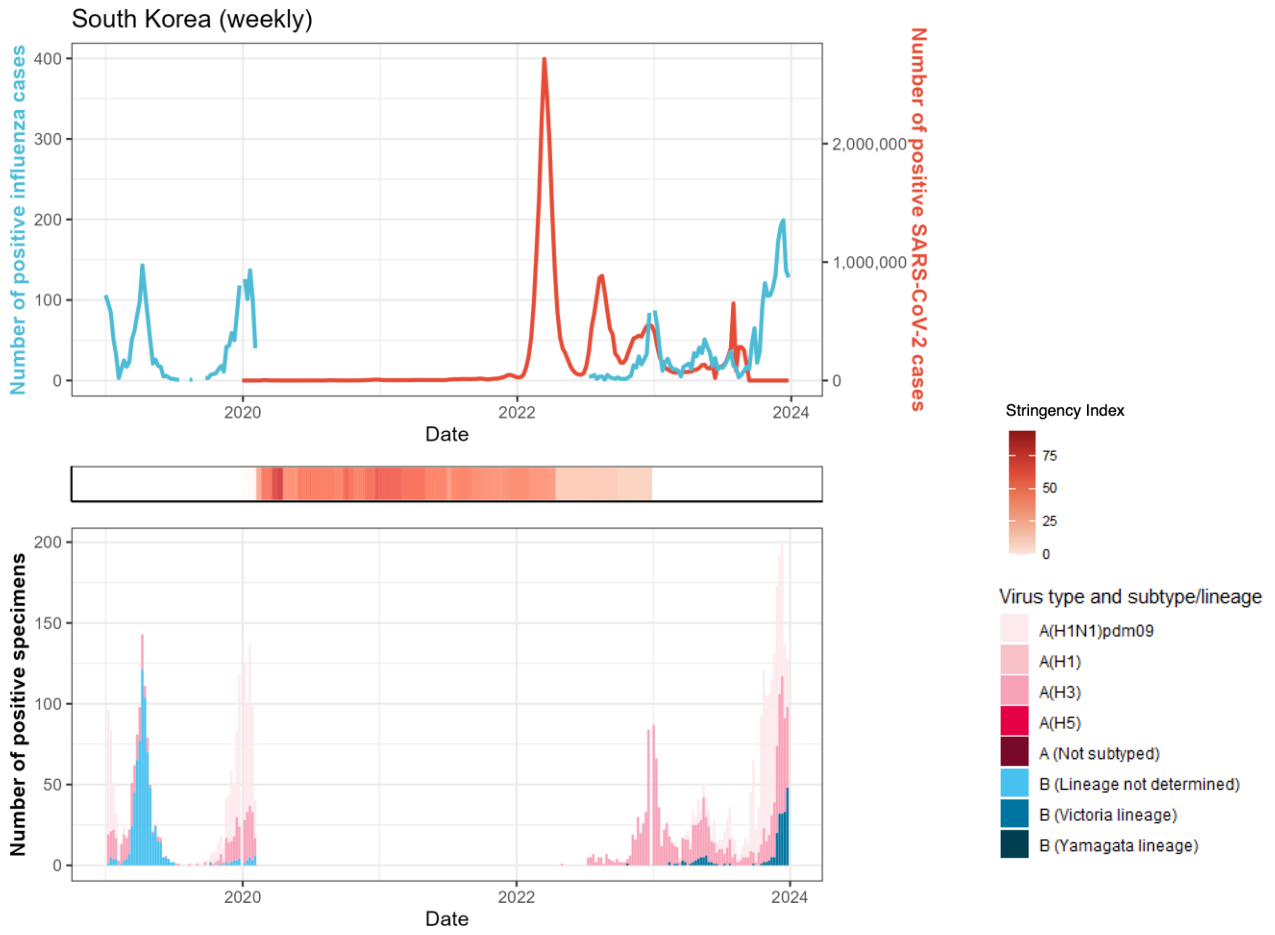


Japan



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

South Korea



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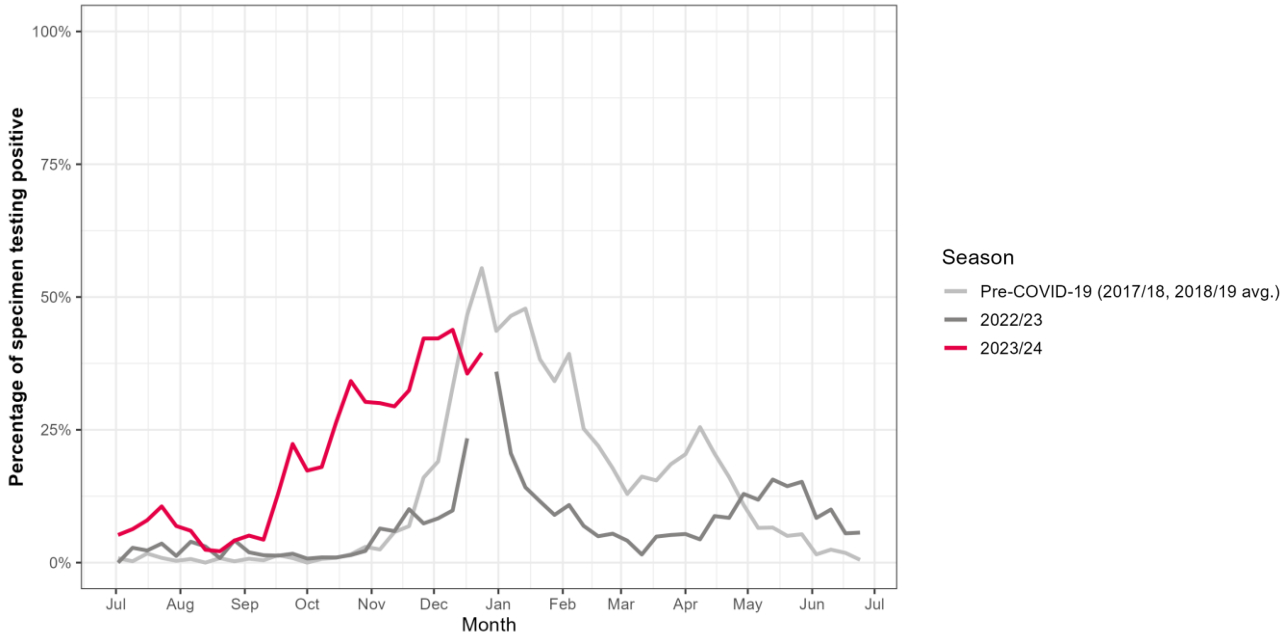
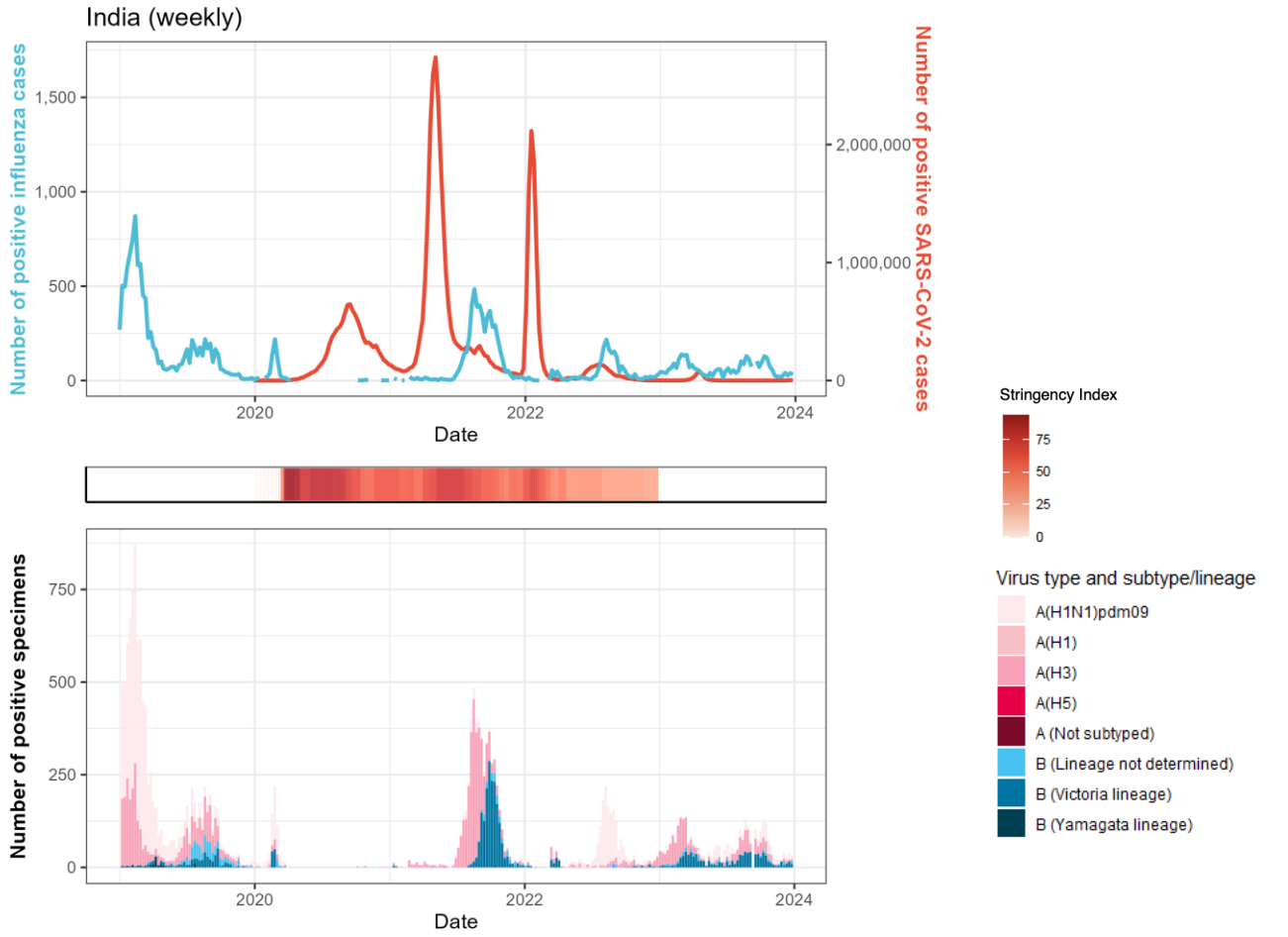


Southern Asia

India



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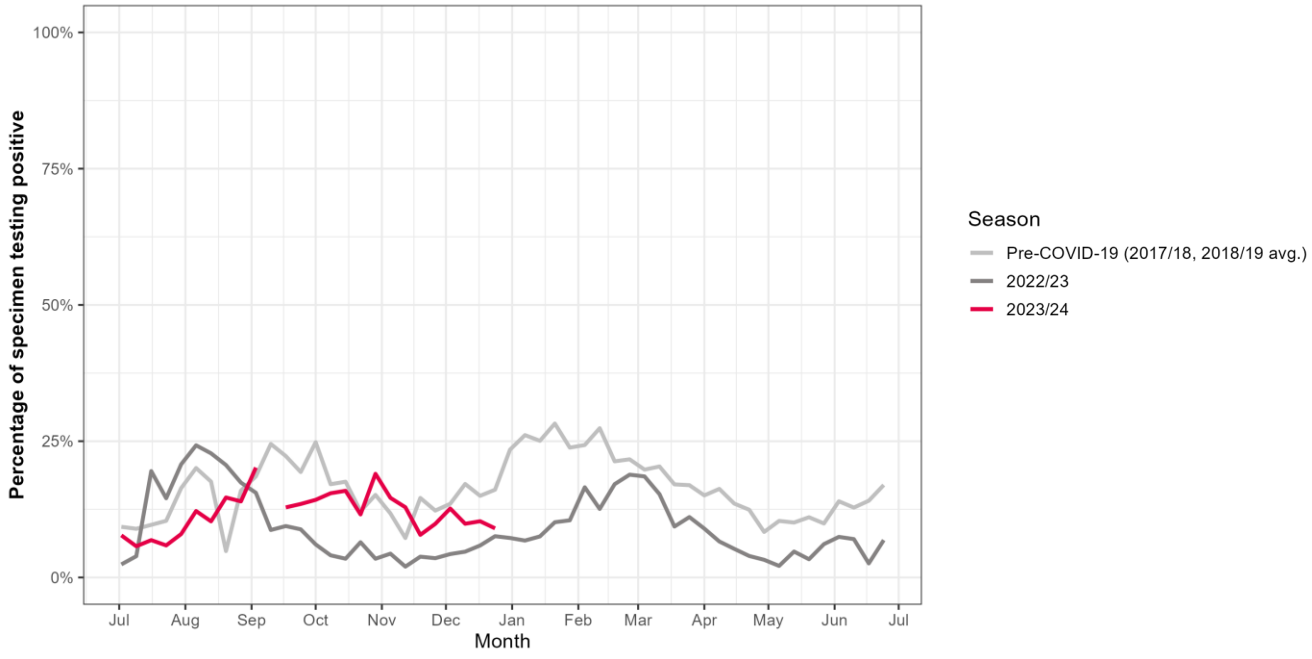
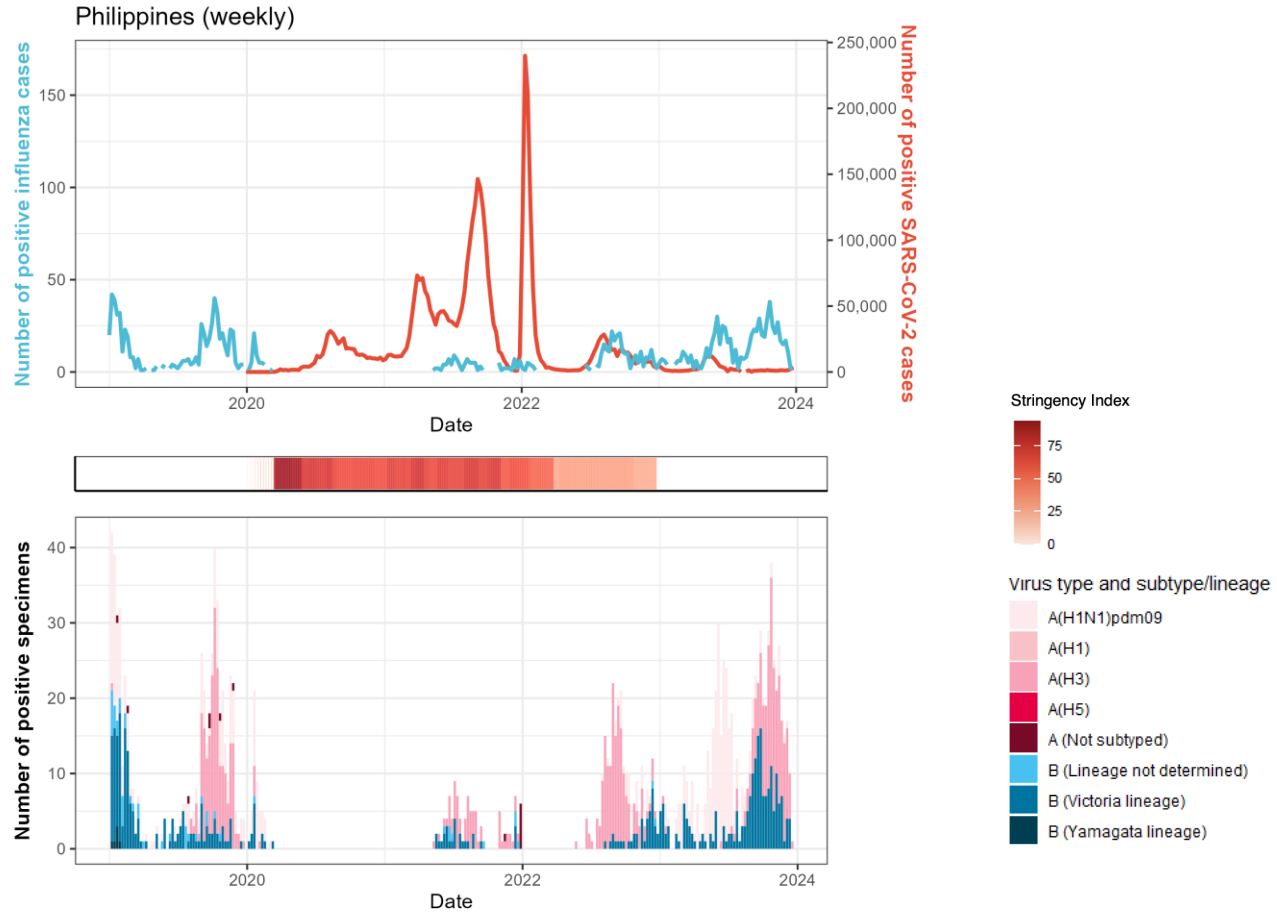


South-East Asia

Philippines



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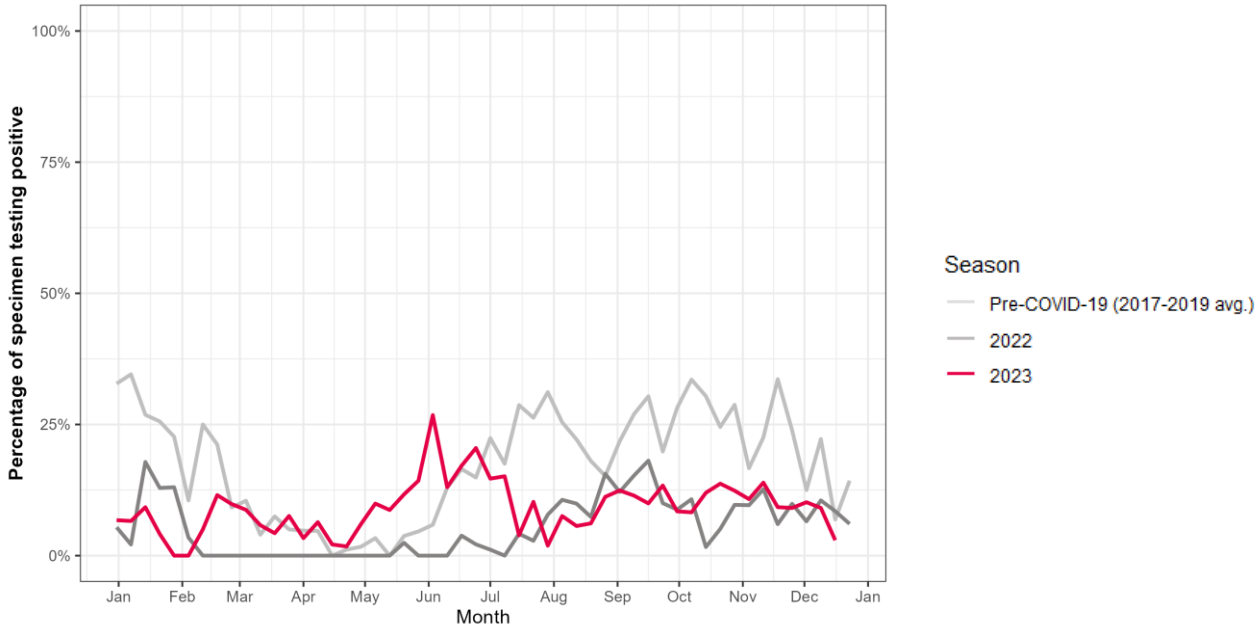
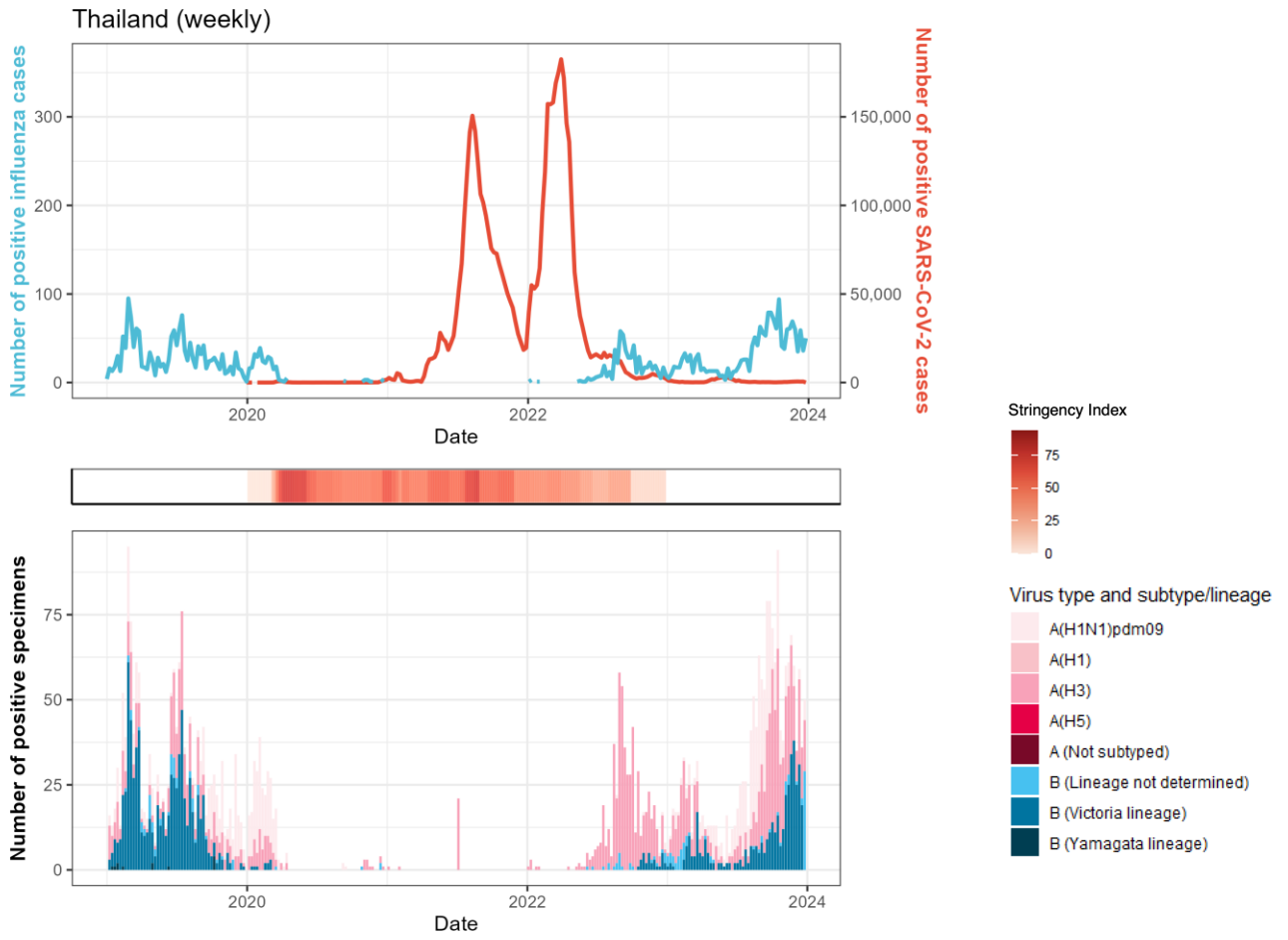
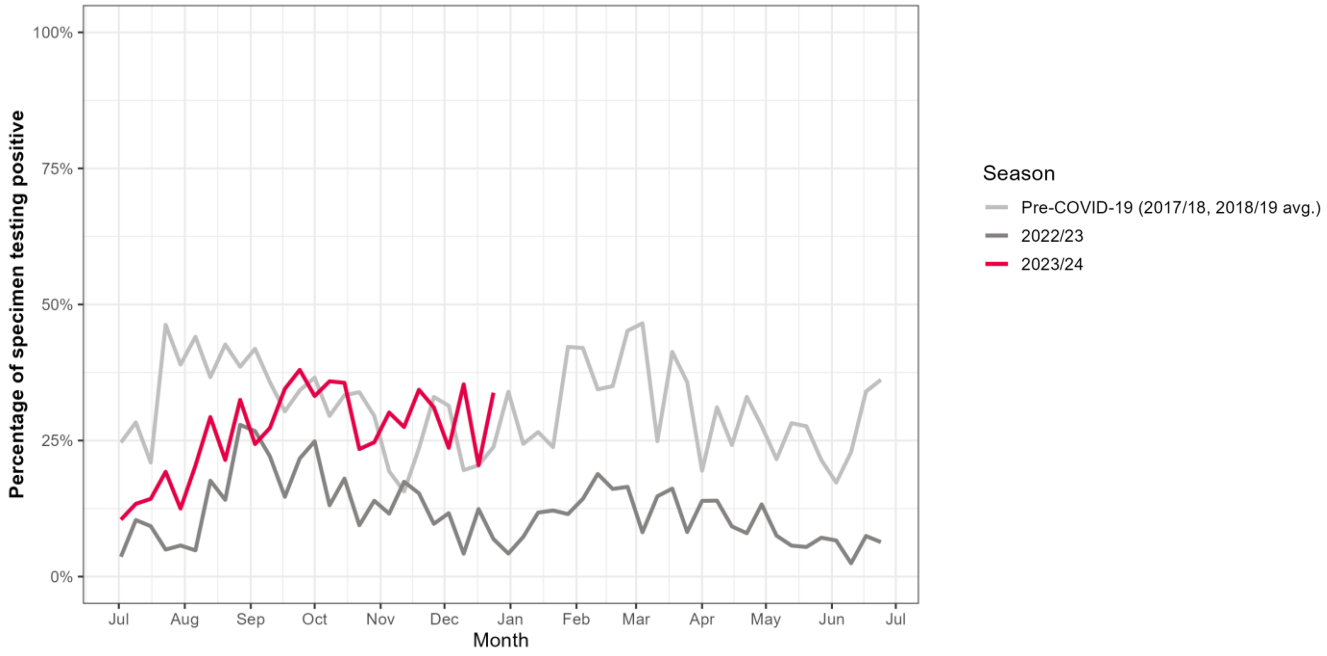


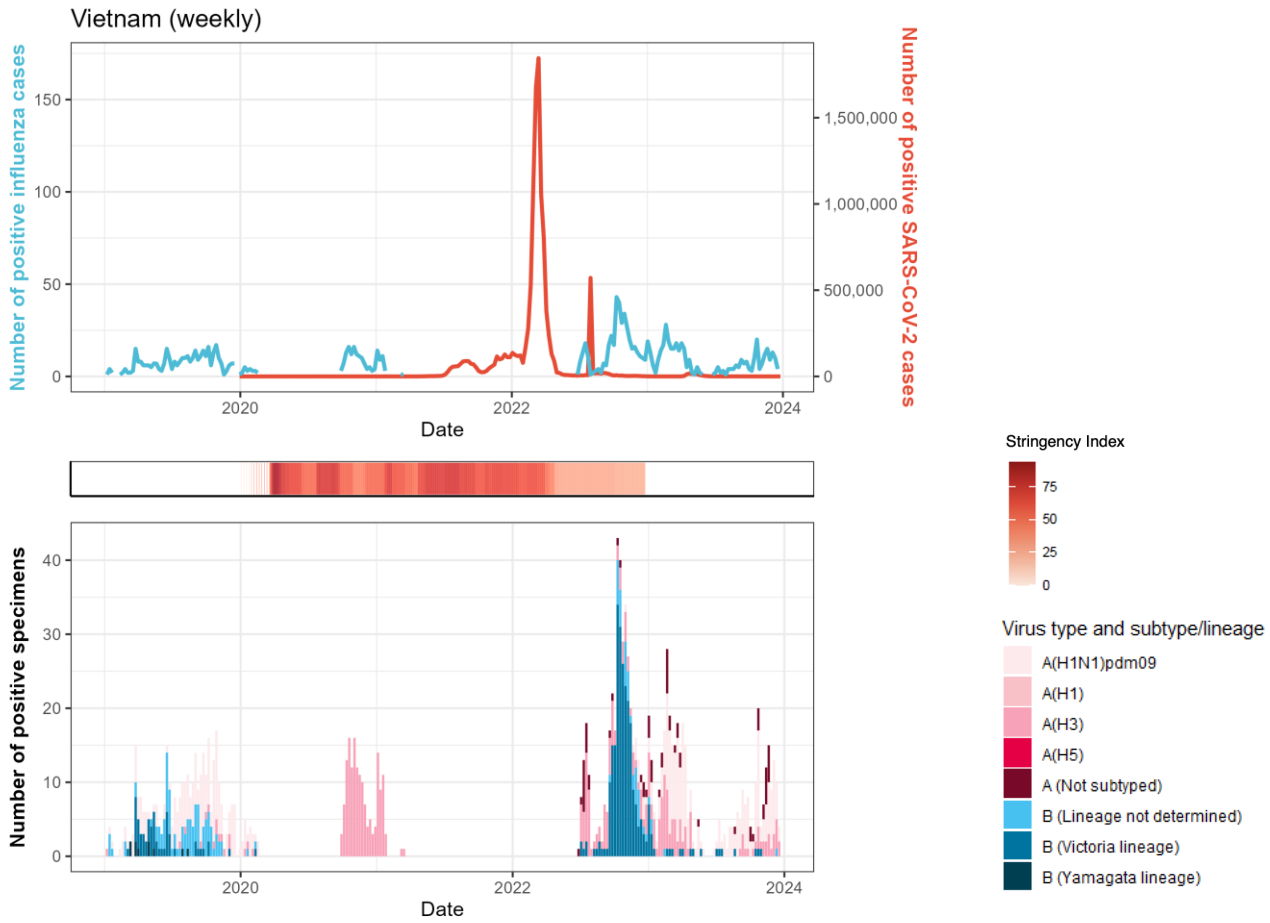
Thailand



Percentage of specimens testing positive for influenza in different seasons



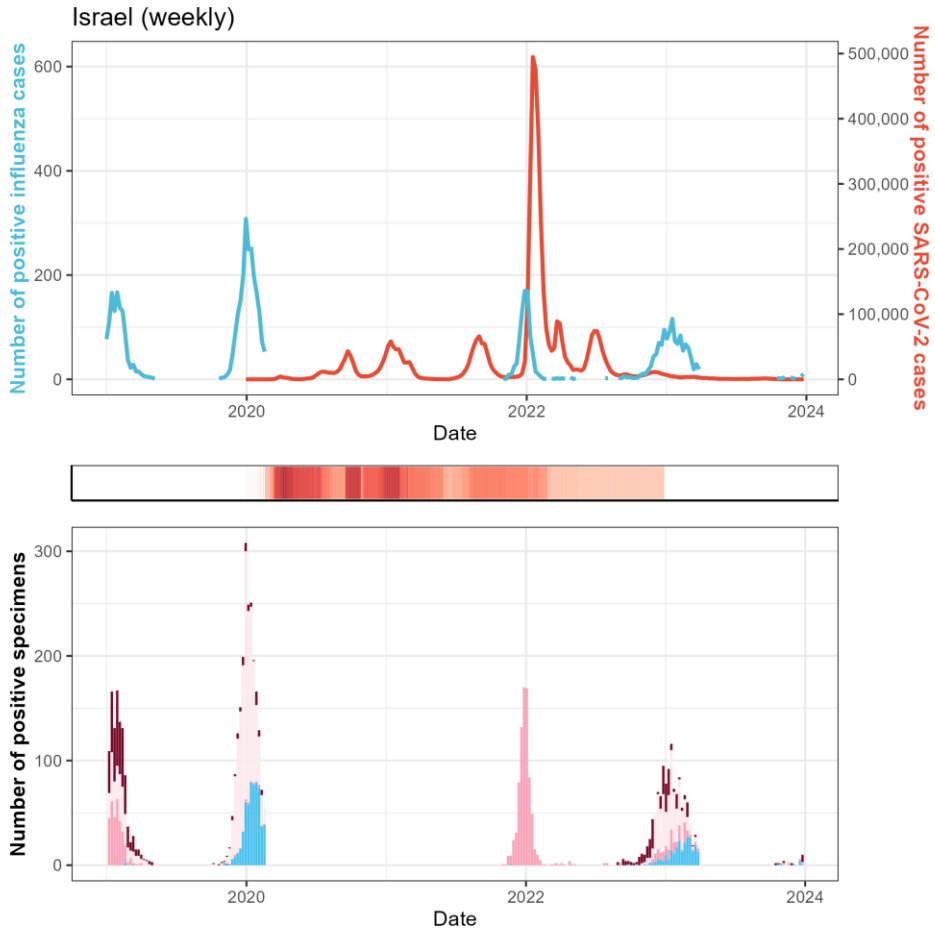
Vietnam



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

Western Asia

Israel



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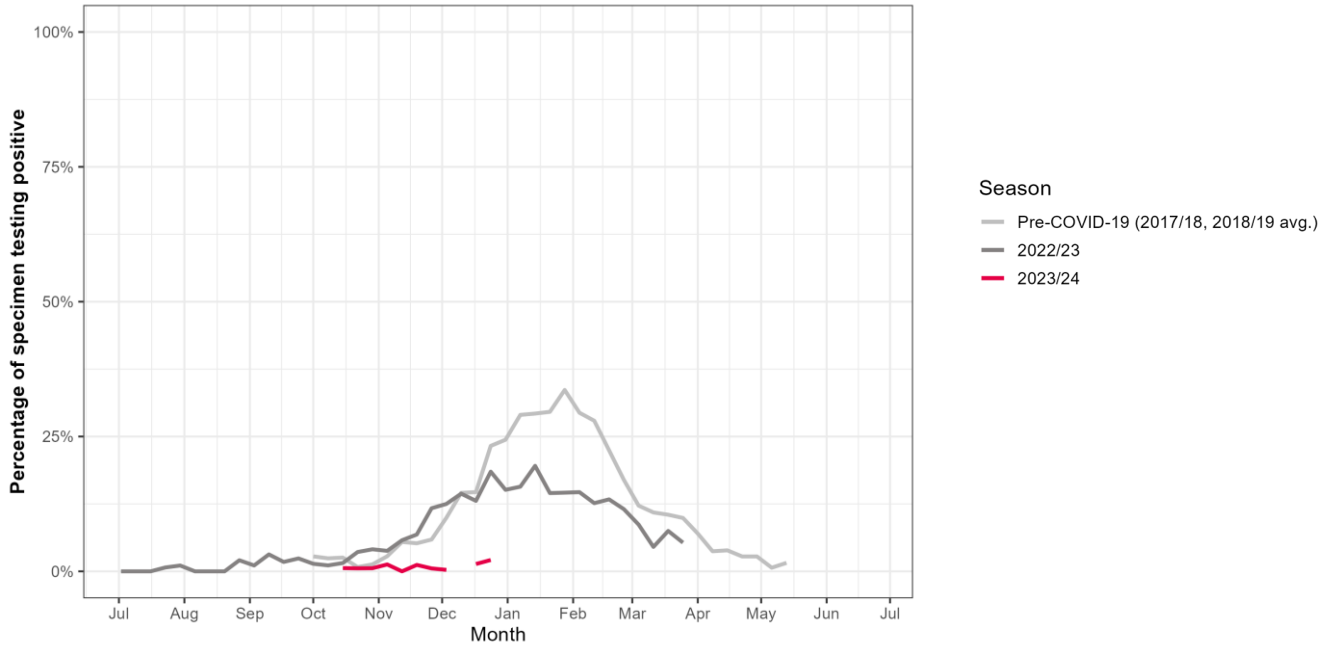
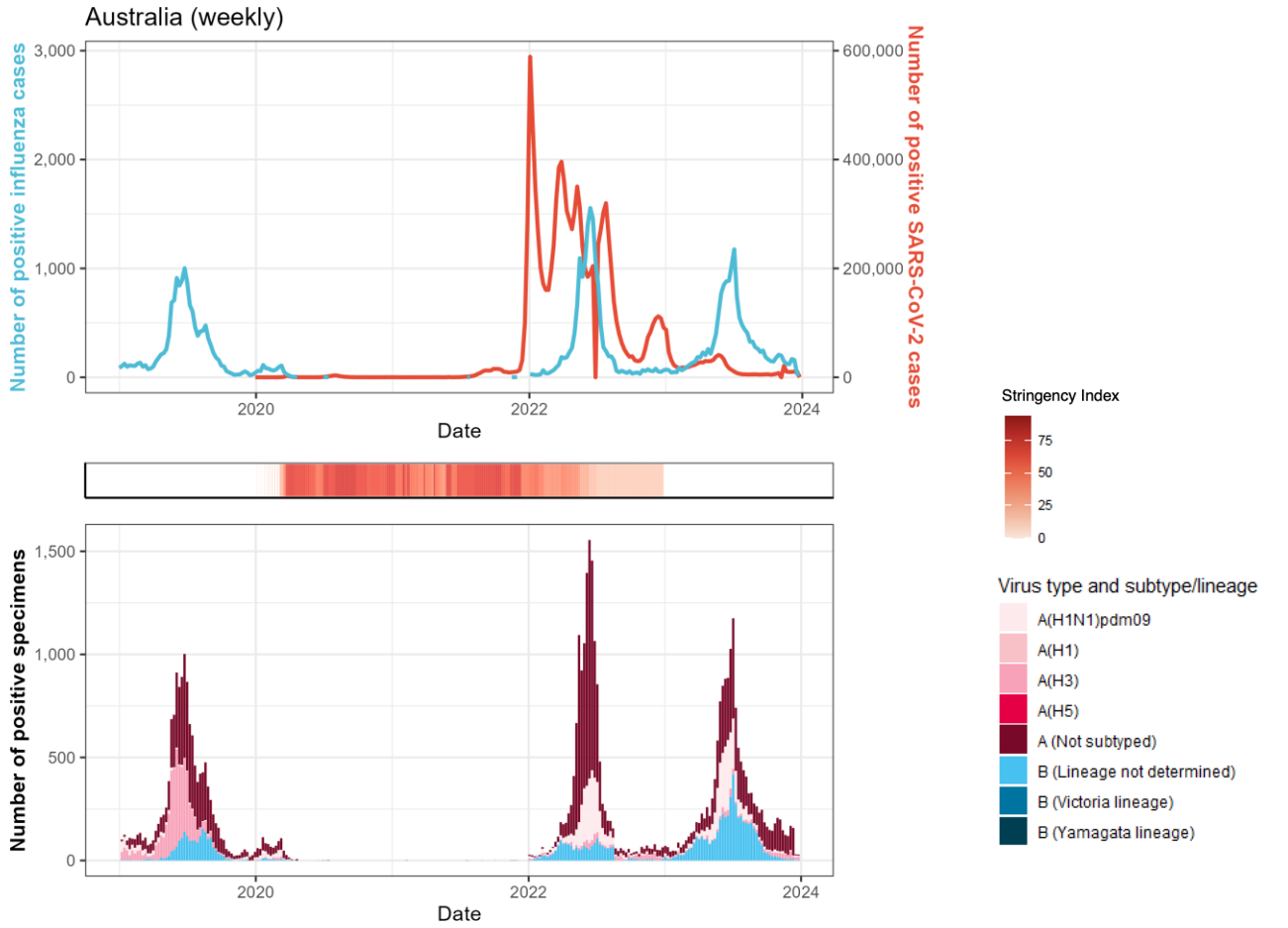


Oceania

Australia



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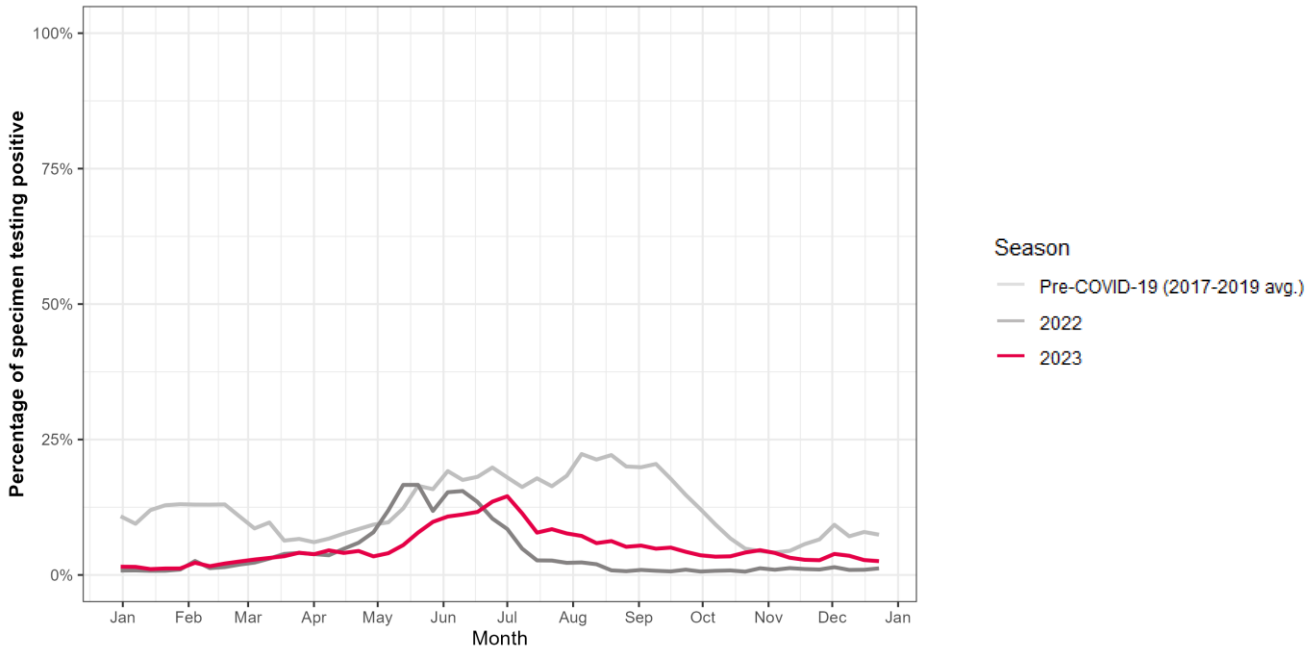

Absolute numbers per country

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	28,296		949		
Australia	2021	338,311		8		
Australia	2022	10,327,434		14,654		
Australia	2023	1,016,175	40,659	15,422	385	2023-52
Brazil	2019			3,459		
Brazil	2020	7,448,560		1,391		
Brazil	2021	14,782,177		1,240		
Brazil	2022	13,893,600		3,648		
Brazil	2023	1,395,623	0	21,933	340	2023-52
Canada	2019			43,196		
Canada	2020	539,241		44,956		
Canada	2021	1,422,482		337		
Canada	2022	2,514,662		71,314		
Canada	2023	274,383	17,598	47,166	24,067	2023-52
China	2019			122,757		
China	2020	96,324		31,237		
China	2021	34,534		26,151		
China	2022	62,314,792		56,455		
China	2023	36,876,875	2,149	257,319	58,675	2023-52
Egypt	2019			1,999		
Egypt	2020	131,315		659		
Egypt	2021	249,205		233		
Egypt	2022	134,994		2,709		
Egypt	2023	509	0	2,952	329	2023-51
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	22,690	3,140	2023-52
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	783	177	2023-52
India	2019			10,428		
India	2020	10,187,850		655		
India	2021	24,598,952		5,128		
India	2022	9,890,304		1,948		
India	2023	333,785	9,127	3,282	139	2023-52
Israel	2019			1,796		
Israel	2020	399,105		1,424		
Israel	2021	965,663		456		
Israel	2022	3,391,936		774		
Israel	2023	84,854	0	834	17	2023-52

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	2,039,182		7,485		
Italy	2021	3,583,249		31		
Italy	2022	19,438,072		5,817		
Italy	2023	1,457,203	127,979	4,433	1,836	2023-52
Japan	2019			10,343		
Japan	2020	217,312		2,915		
Japan	2021	1,514,477		9		
Japan	2022	26,534,616		273		
Japan	2023	5,537,167	0	5,667	72	2023-50
Mexico	2019			6,963		
Mexico	2020	1,453,414		4,799		
Mexico	2021	2,548,565		960		
Mexico	2022	3,243,611		10,314		
Mexico	2023	457,219	397	7,666	1,243	2023-52
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	61,626	4,034	7,980	0	2023-41
Philippines	2019			612		
Philippines	2020	469,003		52		
Philippines	2021	2,369,471		105		
Philippines	2022	1,220,895		260		
Philippines	2023	137,910	9,542	664	28	2023-51
Poland	2019			1,786		
Poland	2020	1,259,923		1,282		
Poland	2021	2,790,909		2		
Poland	2022	2,314,550		1,604		
Poland	2023	243,710	48,492	2,085	161	2023-52
South Africa	2019			1,164		
South Africa	2020	994,911		157		
South Africa	2021	2,413,026		413		
South Africa	2022	640,295		1,171		
South Africa	2023	24,404	7	1,024	8	2023-52
South Korea	2019			1,702		
South Korea	2020	56,855		505		
South Korea	2021	554,812		0		
South Korea	2022	28,047,388		295		
South Korea	2023	5,912,818	0	2,586	656	2023-52
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	6,142		297		
Thailand	2021	2,203,829		23		
Thailand	2022	2,511,838		575		
Thailand	2023	39,973	2,195	1,717	180	2023-52

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	2,344,433		14,377		
United Kingdom	2021	10,230,346		2,755		
United Kingdom	2022	11,584,258		26,896		
United Kingdom	2023	684,554	21,637	8,265	1,314	2023-52
United States	2019			268,524		
United States	2020	18,890,446		229,766		
United States	2021	32,988,414		39,507		
United States	2022	47,140,633		469,968		
United States	2023	4,417,336	0	127,244	44,332	2023-51
Vietnam	2019			355		
Vietnam	2020	1,440		146		
Vietnam	2021	1,650,233		39		
Vietnam	2022	9,872,529		399		
Vietnam	2023	99,798	0	419	27	2023-51

[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 [6]. The emergence of this new virus has had a major impact on the global circulation of respiratory viruses, including influenza and RSV [7]. 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) [8].

Data sources

- **Influenza**: FluNet [9] 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 [10]. 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 [11].
- **Government response tracker**: The Oxford COVID-19 Government Response Tracker (OxCGRT) [8] 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 8 January 2024 and cover the period 1 January 2019 to 31 December 2023. 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.

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Project Website: https://www.nivel.nl/en/flucov

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

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