



FluCov-Bulletin – March 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 more than three 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

Globally, a second, smaller, peak in influenza activity was observed during the current Northern Hemisphere winter (Figure 1). The following country patterns were observed for **influenza** in March 2023:

- The increase in **influenza** detections in **China**, driven by a mix of **influenza** A(H1N1)pdm09 and A(H3N2), continued. However, a peak seems to have been reached mid-March [1].
- **Influenza** detections, as well as the percentage of specimens testing positive for **influenza** (positivity rate), also increased in **Germany** and **Poland**, where **influenza** B (Victoria, if lineage was determined) is now dominant. An increase in **influenza** B/Victoria detections was also observed in **Brazil** (Southern Hemisphere).
- In other countries experiencing a second **influenza** peak dominated by B/Victoria (**France, Spain** and **Italy**), **influenza** activity has started to decrease again.
- **Influenza** activity also decreased in the **United States** (A(H3N2)), **Israel** (A(H1N1)pdm09) and the **Netherlands** (mix of A and B) [2].
- Low **influenza** activity was observed in **Canada** and **Mexico**, but the dominant type shifted to **influenza** B. In **Mexico**, the positivity rate increased during the month of March.
- No significant **influenza** activity was observed in **Australia** and **South Africa**, the two other Southern Hemisphere countries covered by the Bulletin.
- **Influenza** activity was relatively low, or decreasing in most Asian countries covered by the Bulletin (**Japan, Thailand, South Korea, Philippines** and **India**), except for **China**.

Globally, **SARS-CoV-2** detections have been generally decreasing since August 2022 (see Figure 1; note: the increase in November 2022 was largely driven by detections in Asia e.g. China). The following country patterns were observed for **SARS-CoV-2** in March 2023:

- Relatively low **SARS-CoV-2** activity was reported in most countries covered by the Bulletin: **Australia, Canada, China, Egypt, France, Germany, India, Israel, Italy, Mexico, Netherlands, Philippines, South Africa, South Korea, Spain, Thailand, United Kingdom, United States** and **Vietnam**
- A small increase in **SARS-CoV-2** cases was reported in **Brazil** and **Poland**.
- The decrease in **SARS-CoV-2** cases reported in **Japan** continued and the country has returned to relatively low **SARS-CoV-2** activity at the end of March.

Implications

After an early onset and a peak that was reached in December 2022 (around week 49/2022 in North American countries and week 51/2022 in European countries), the current **influenza** season is coming to an end. The steep increase in **influenza** cases in **China** (mainly caused by a mix of A(H1N1)pdm09 and A(H3N2)) continued during March, but seems to have reached its peak mid-March. A number of European countries (**France, Italy and Spain**) experienced a second **influenza** peak, driven by **influenza B/Victoria**, but detections decreased in March. In some new countries, an increase in **influenza B** was reported in March (**Germany, Poland and Brazil**) and there was also a shift in the dominant **influenza** type to B in **Canada and Mexico**, so it is unlikely that an **influenza B** epidemic will stay restricted to European countries.

Thus far, only **influenza B/Victoria** was found as the dominant lineage when this was determined. The detection and characterization of influenza B viruses has become increasingly important in the context of the COVID-19 pandemic, where influenza B/Yamagata appears to be extinct [3].

SARS-CoV-2 activity was relatively low, or decreasing in most countries covered by the Bulletin, except for a small increase in **Brazil and Poland**. It is of note that according to WHO, detections are also increasing in the Eastern Mediterranean Region and South-East Asia (including, **India**) [4].

Globally, **influenza** and **SARS-CoV-2** are co-circulating. The recent increase in cases of **influenza B** in some countries is a common characteristic of **influenza** epidemics, with first an **influenza A** peak and then an **influenza B** peak [5]. Strengthening surveillance activities is important to monitor the recent developments in **SARS-CoV-2** activity and possible unexpected events such as the emergence of human H5N1 avian **influenza** cases, most recently a severe case in **Chile**, confirmed on 29 March 2023, who was admitted to Intensive Care [6]. This is the second case of avian Influenza in humans reported in South America, following a case in Ecuador, in January 2023 [6].

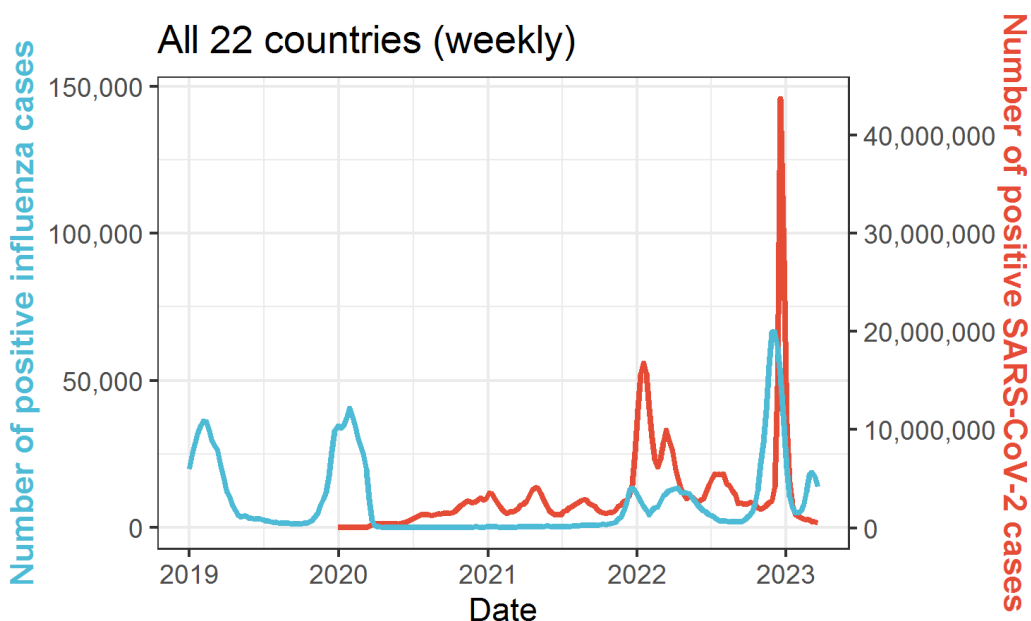


Figure 1: SARS-CoV-2 and influenza detections in the 22 countries covered by the Bulletin (period: from week 1/2019 to week 12/2023)^a

^a Due to a high number of retrospectively added SARS-CoV-2 detections in China, the peak in total SARS-CoV-2 detections in late 2022 increased significantly, compared to previous Bulletins.

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 January 1, 2019 up to March 26, 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/fluconv-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

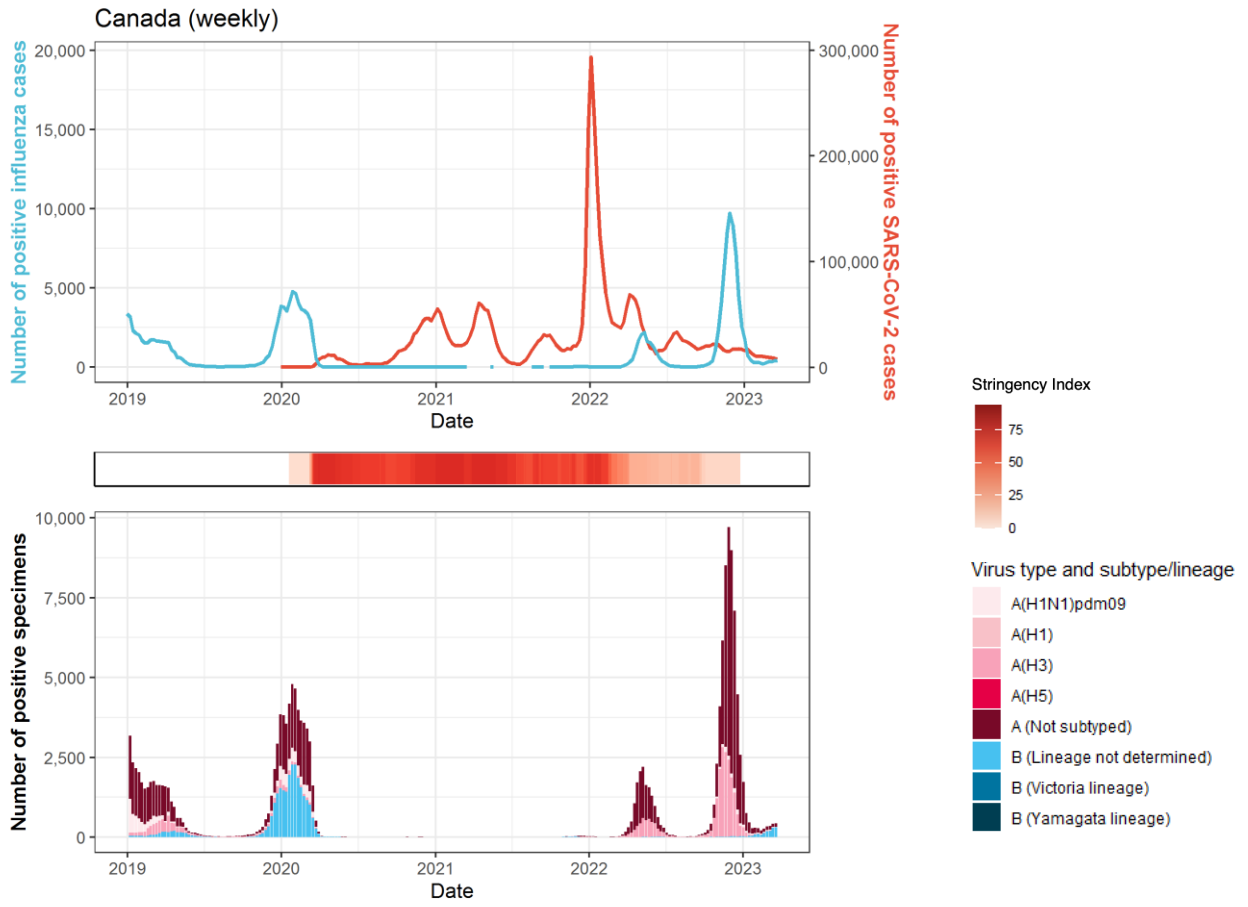
Israel

Oceania

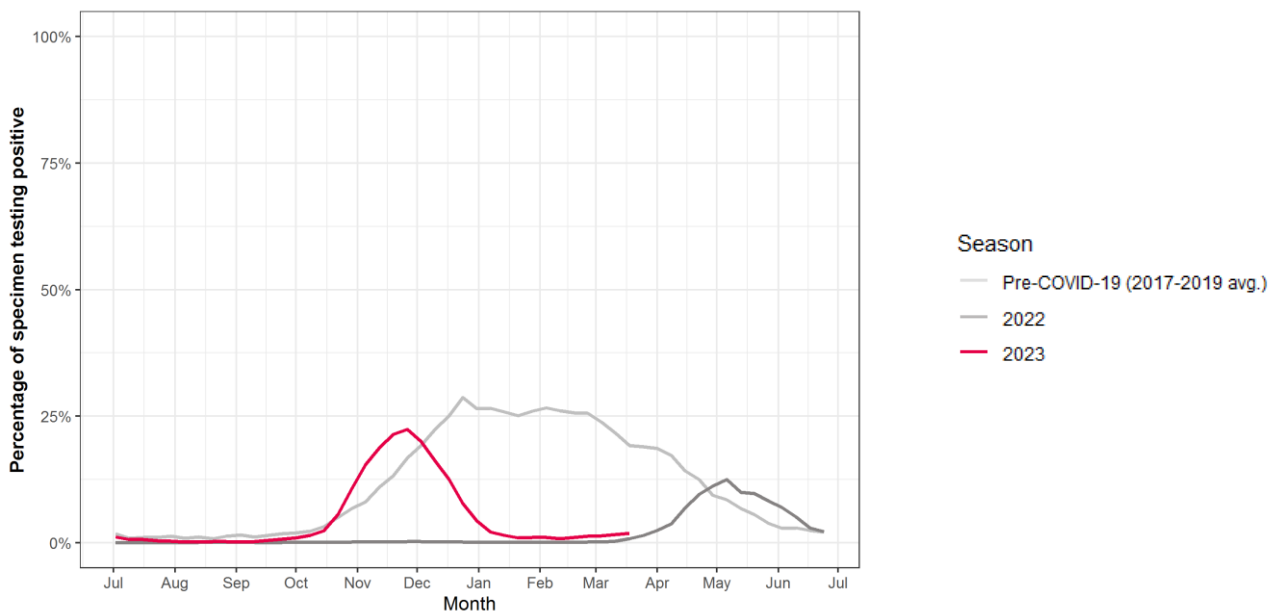
Australia

North America

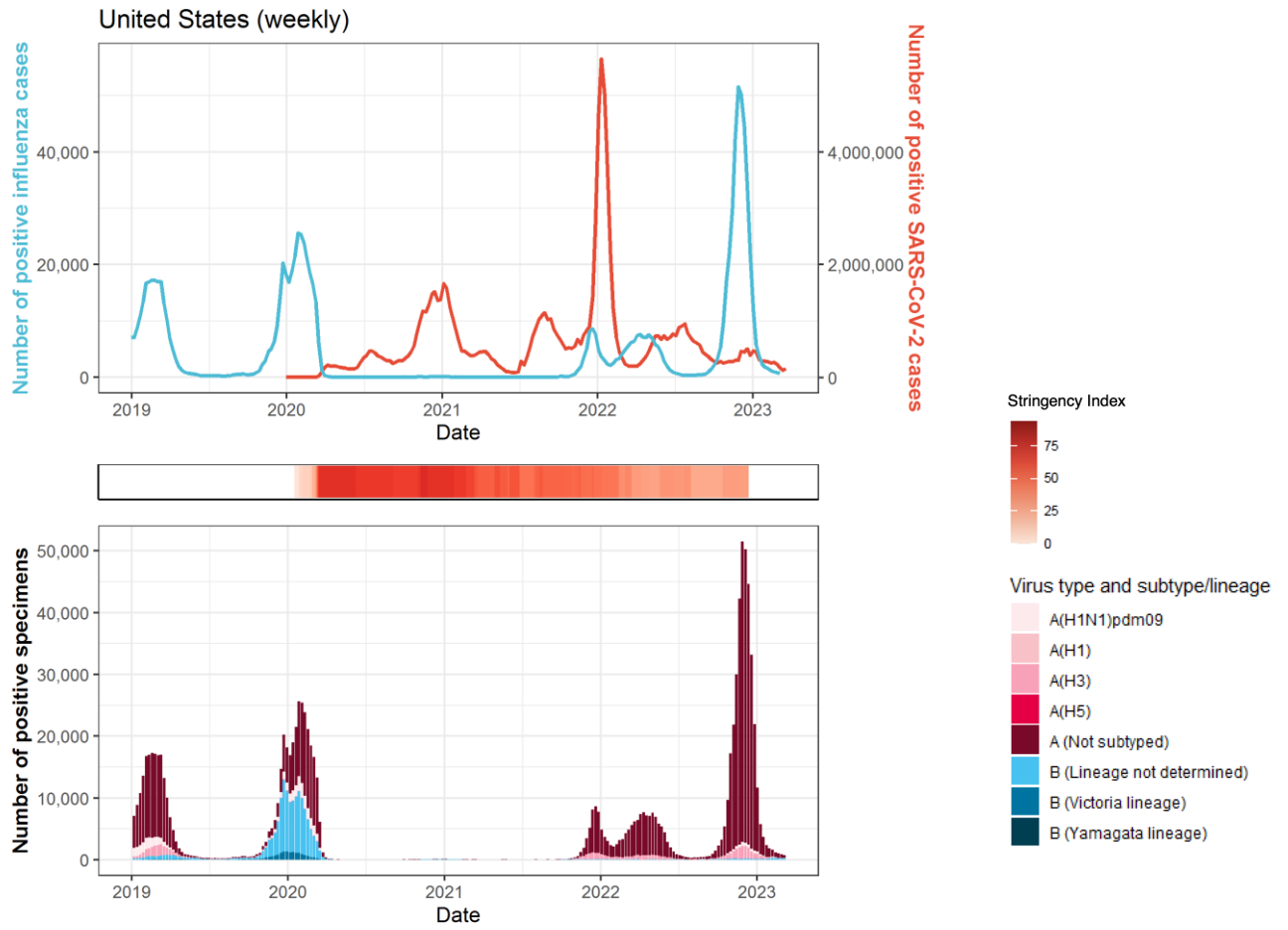
Canada



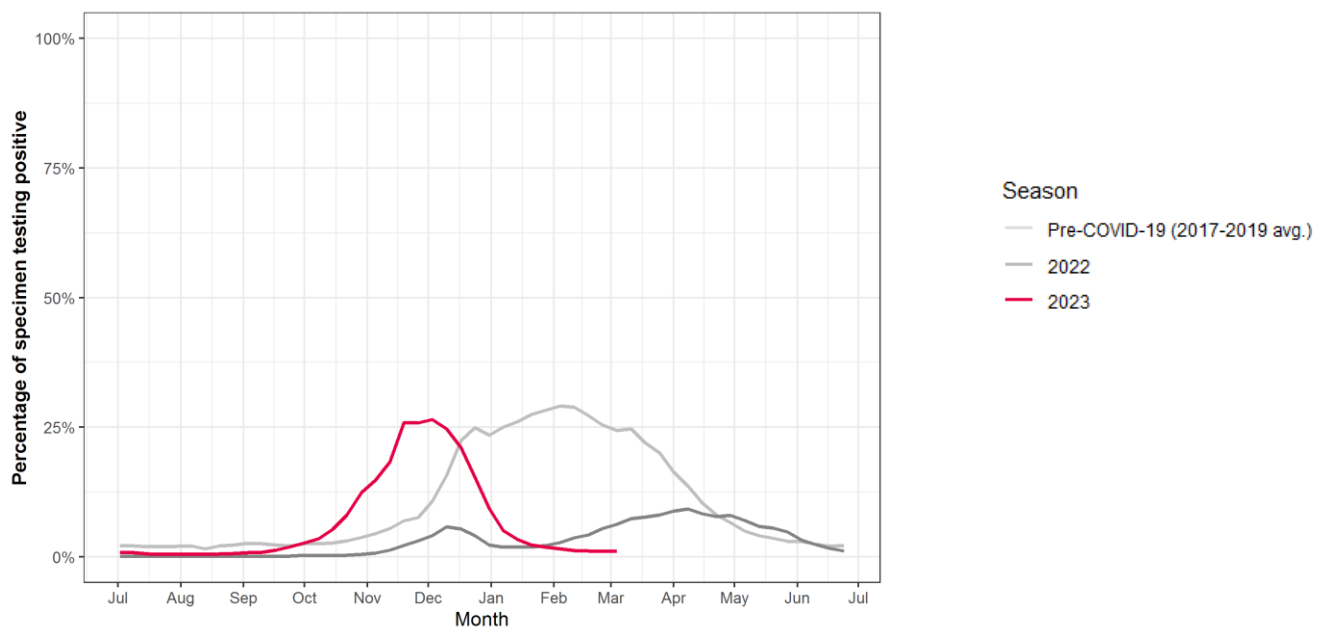
Percentage of specimens testing positive for influenza in different seasons



United States

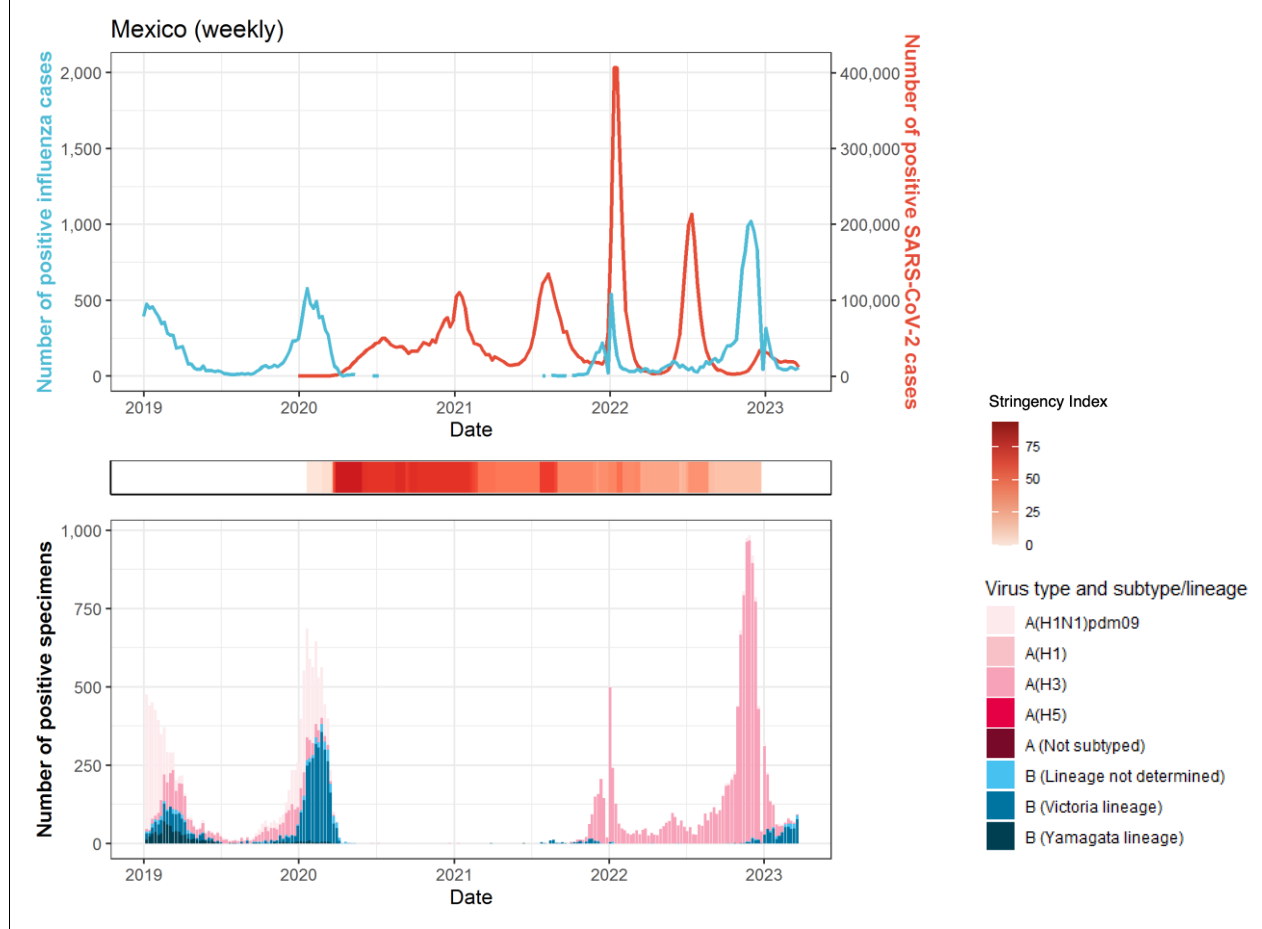


Percentage of specimens testing positive for influenza in different seasons

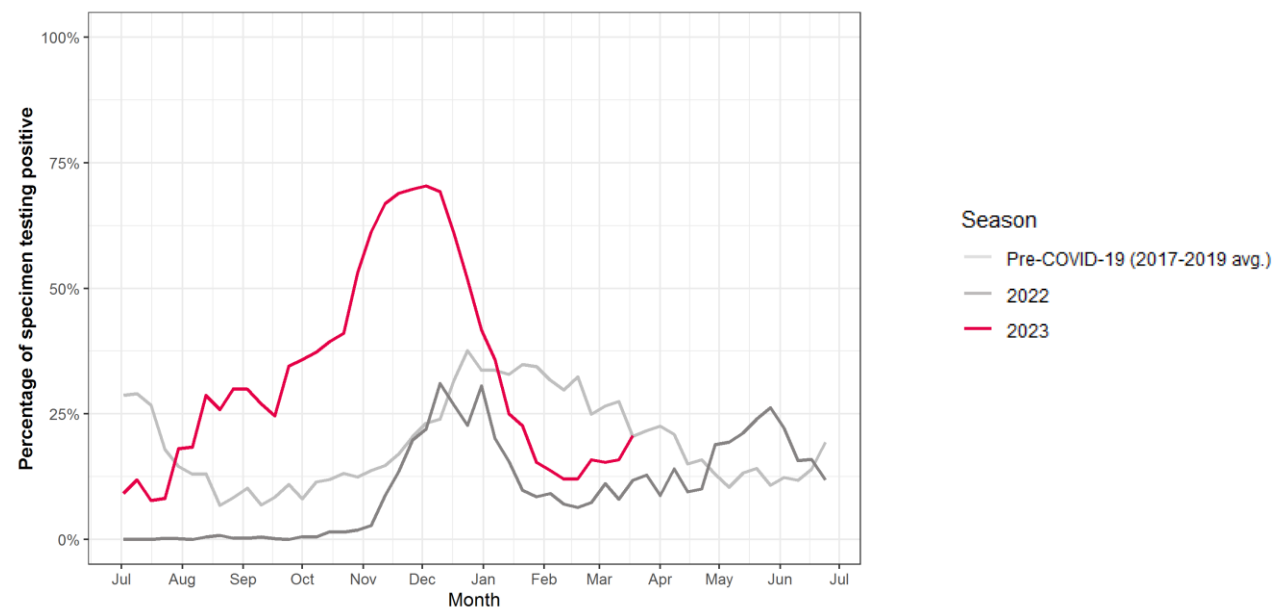


Central America Caribbean

Mexico

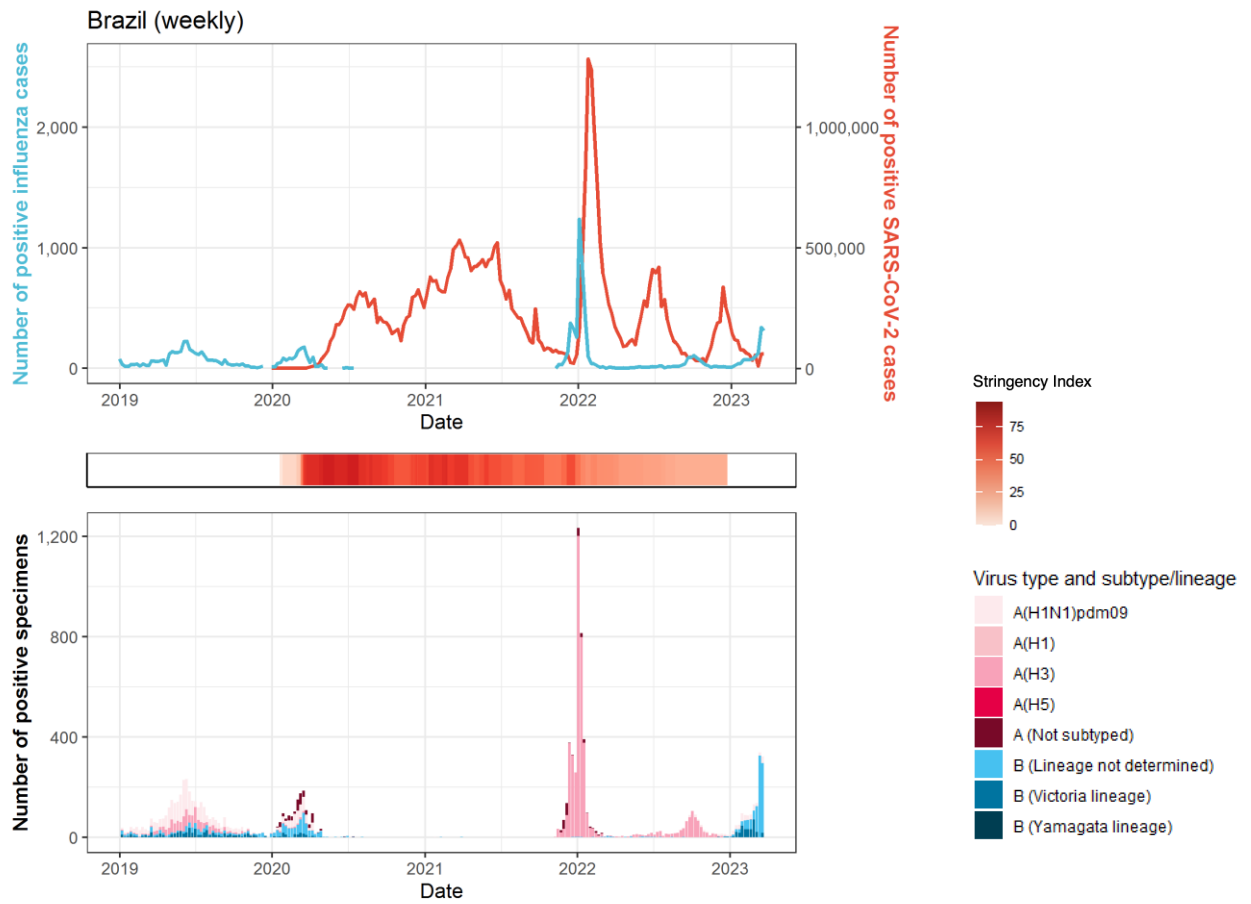


Percentage of specimens testing positive for influenza in different seasons

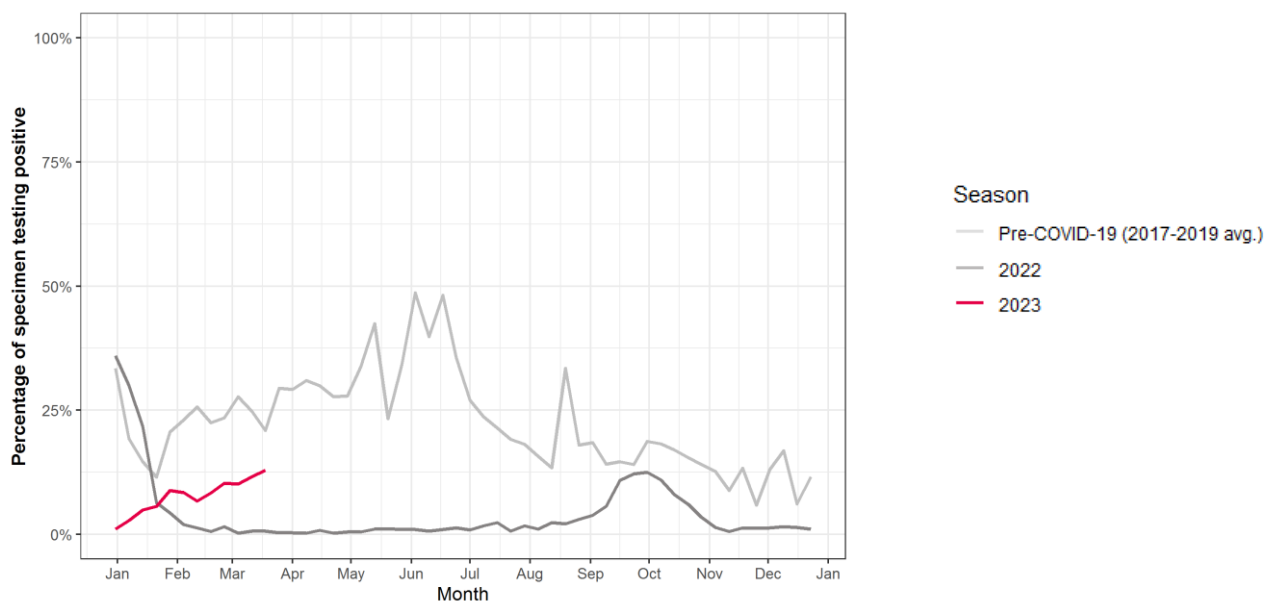


Tropical South America

Brazil

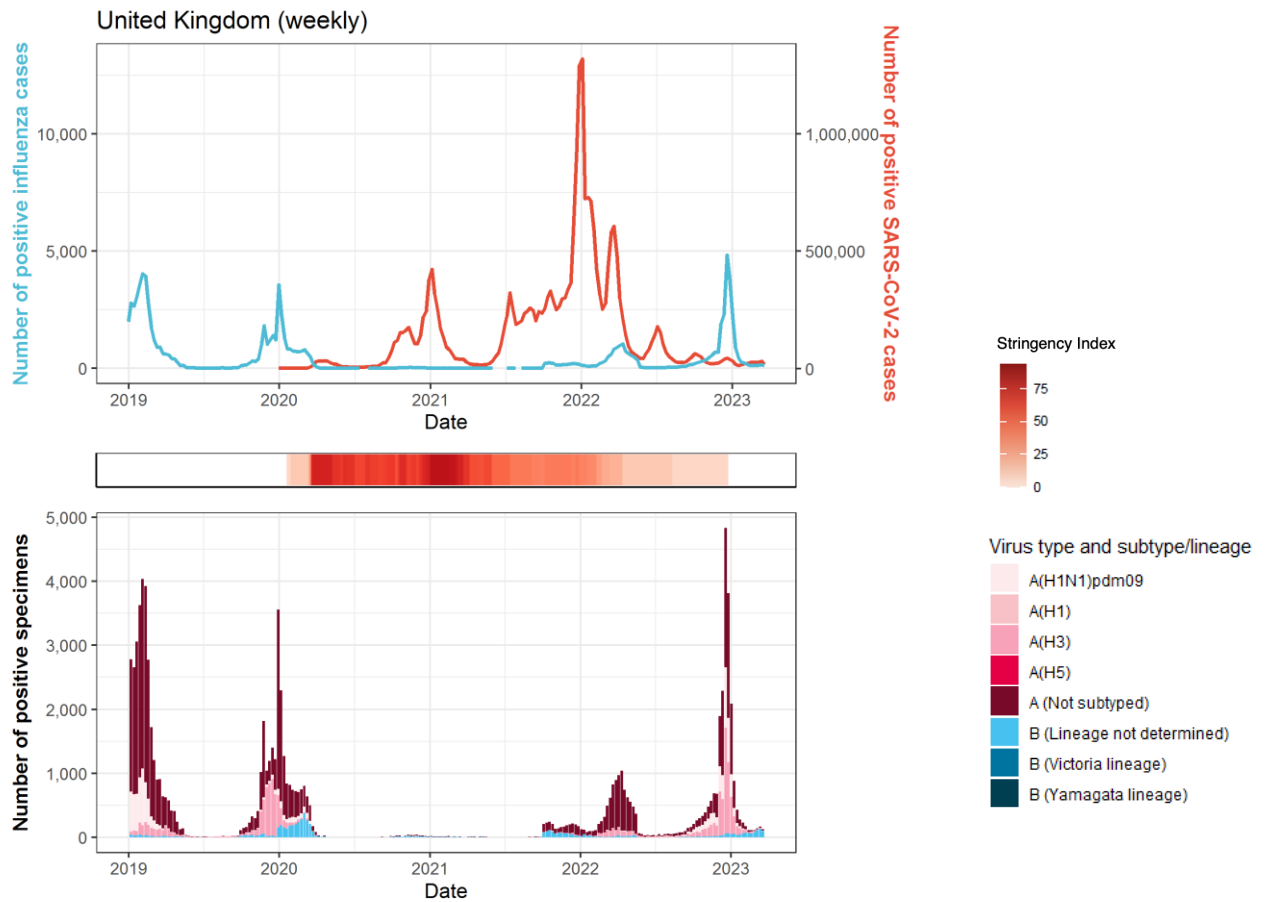


Percentage of specimens testing positive for influenza in different seasons



Northern Europe

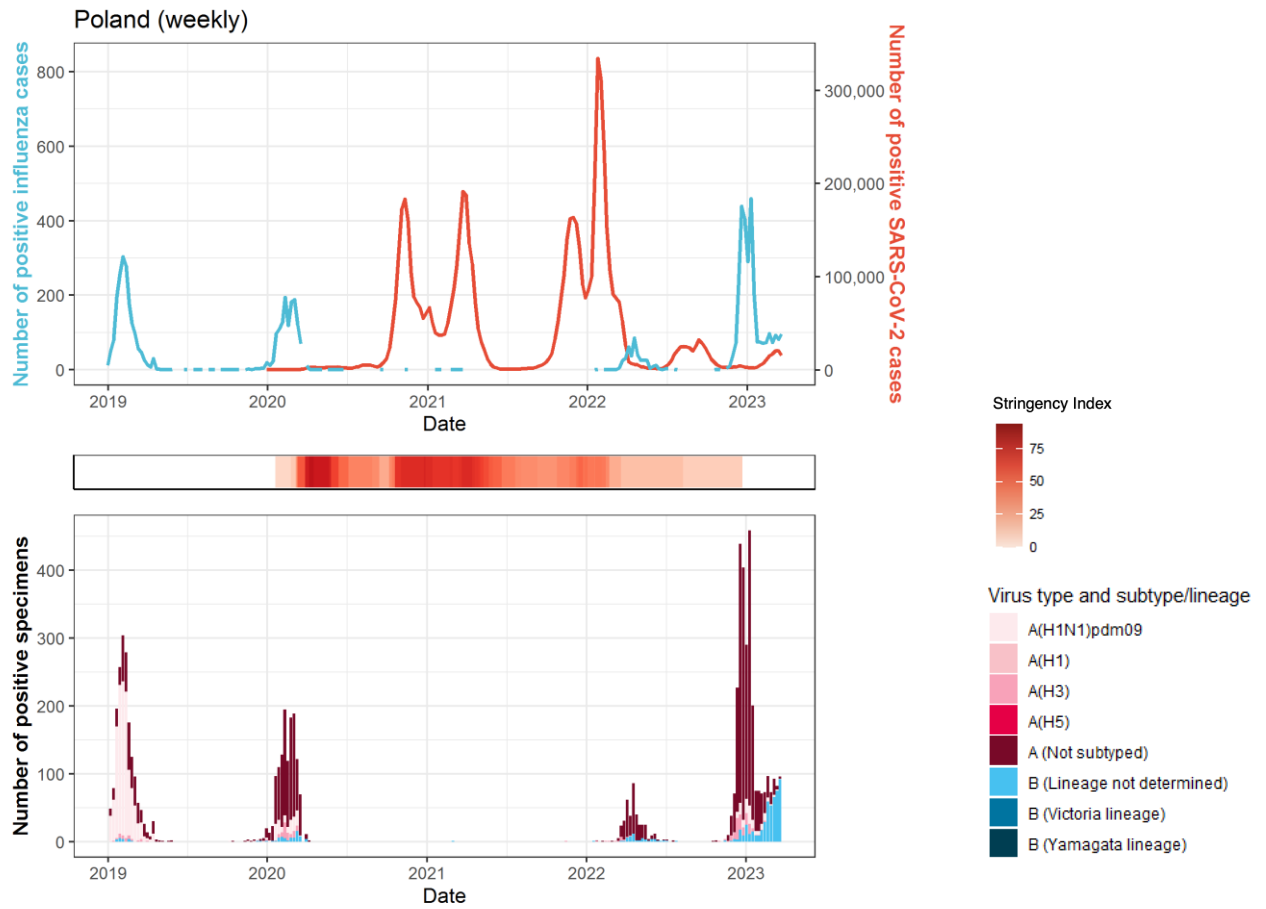
United Kingdom



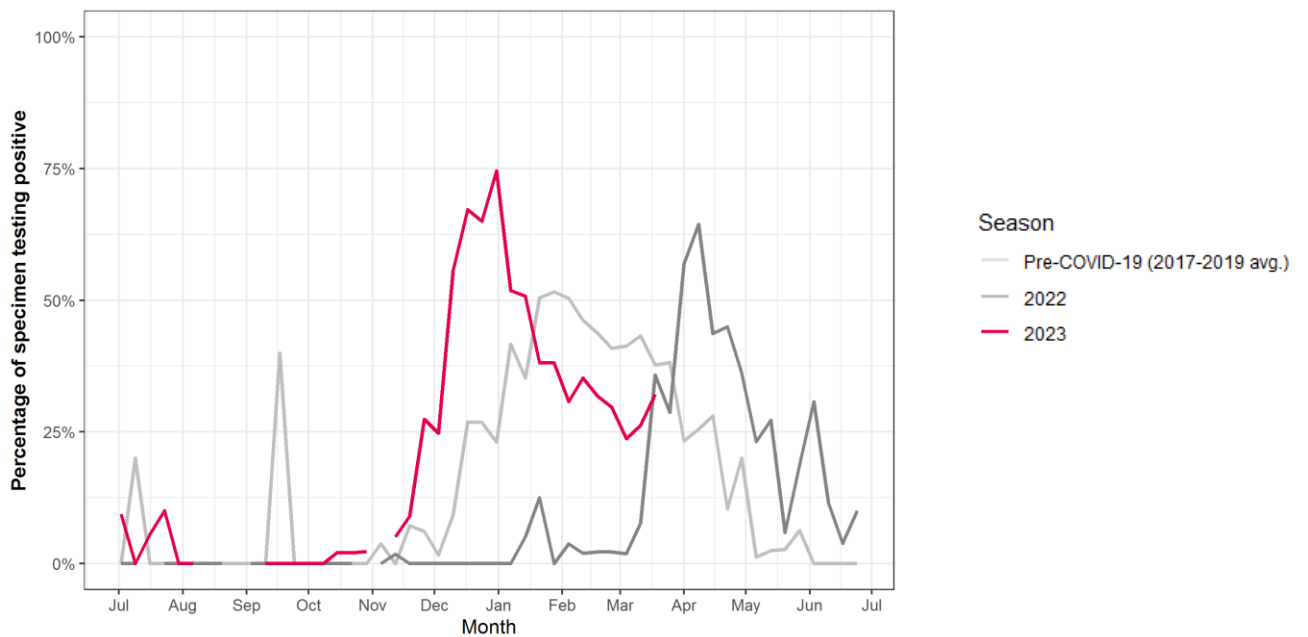
Percentage of specimens testing positive for influenza in different seasons: data not available

Eastern Europe

Poland

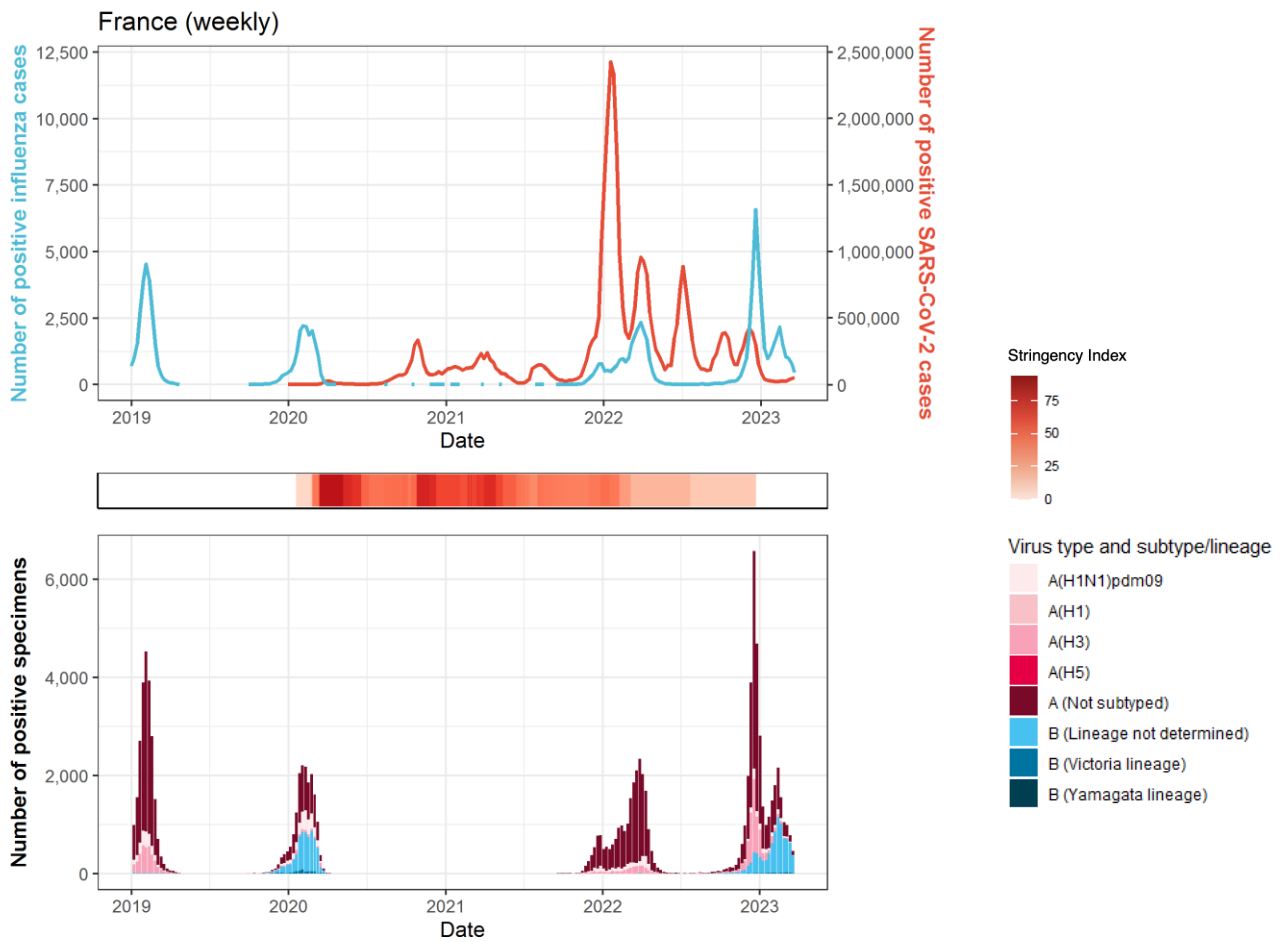


Percentage of specimens testing positive for influenza in different seasons

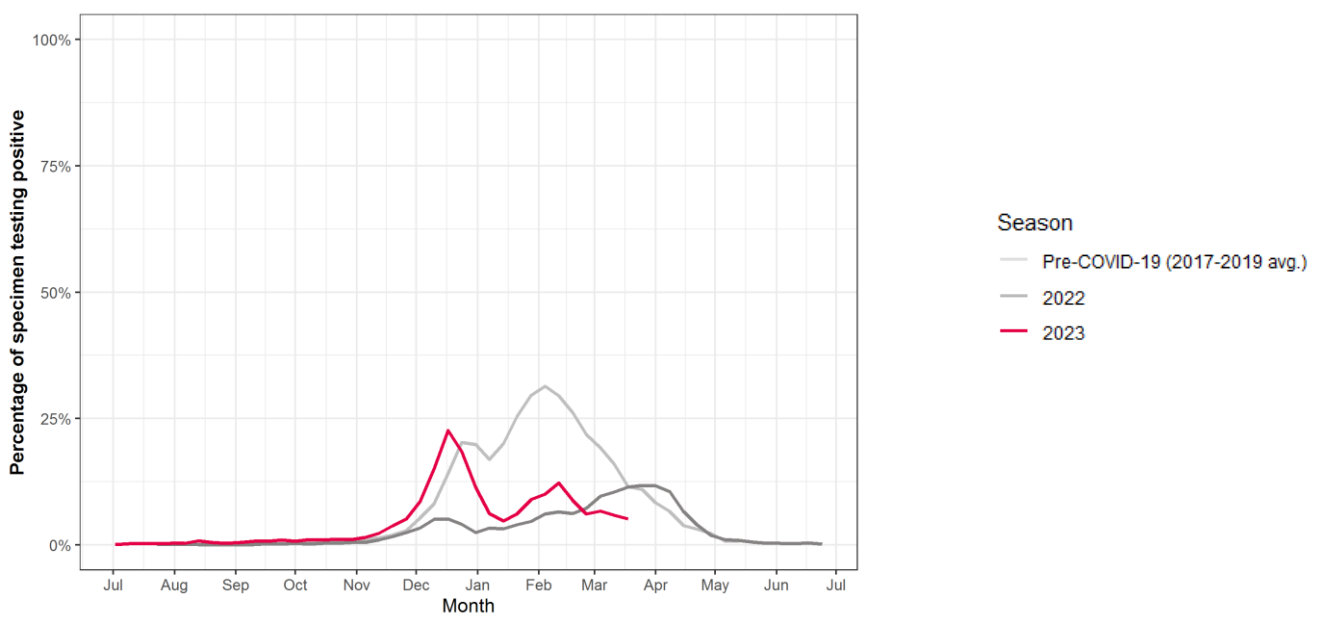


South West Europe

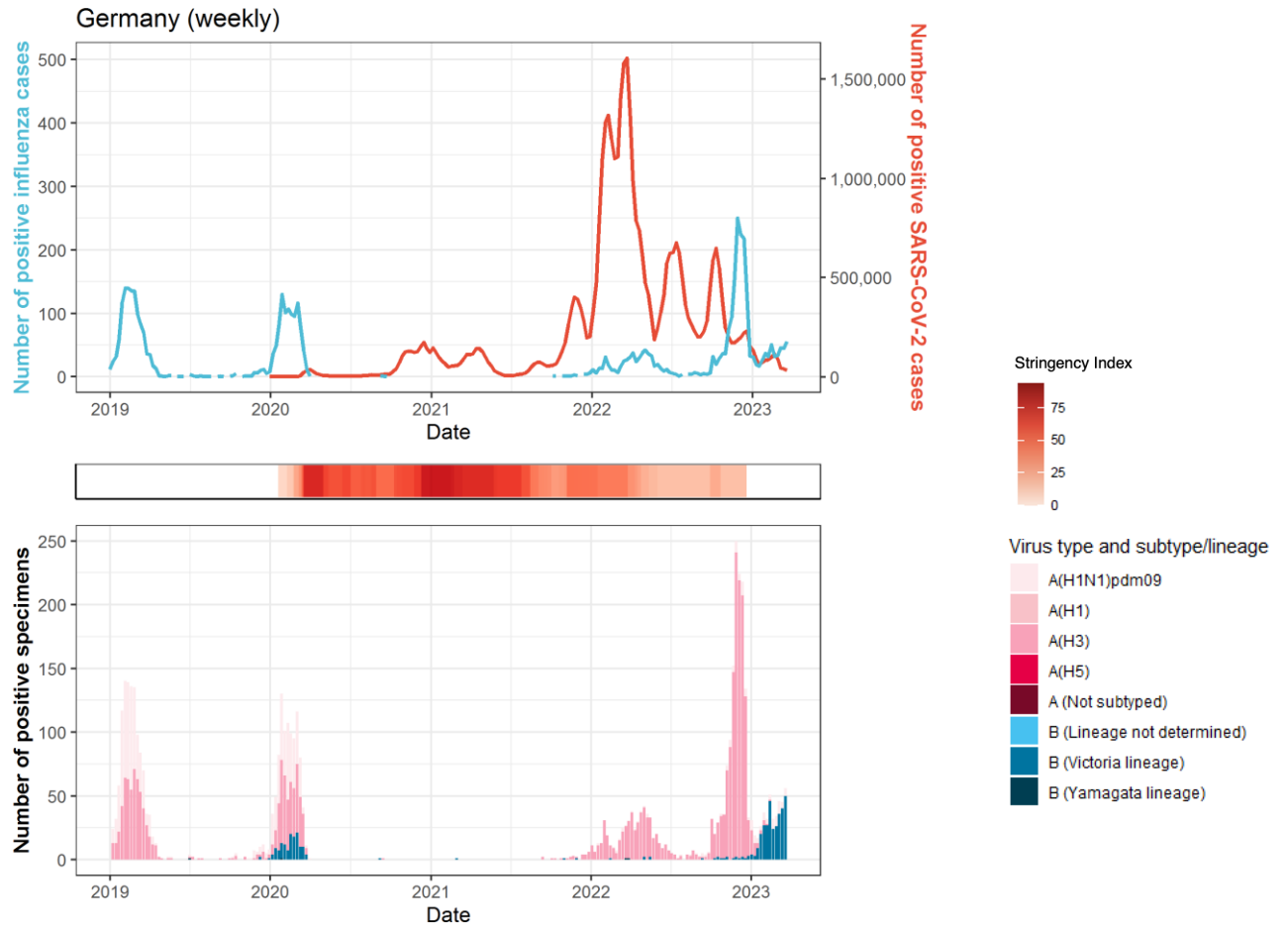
France



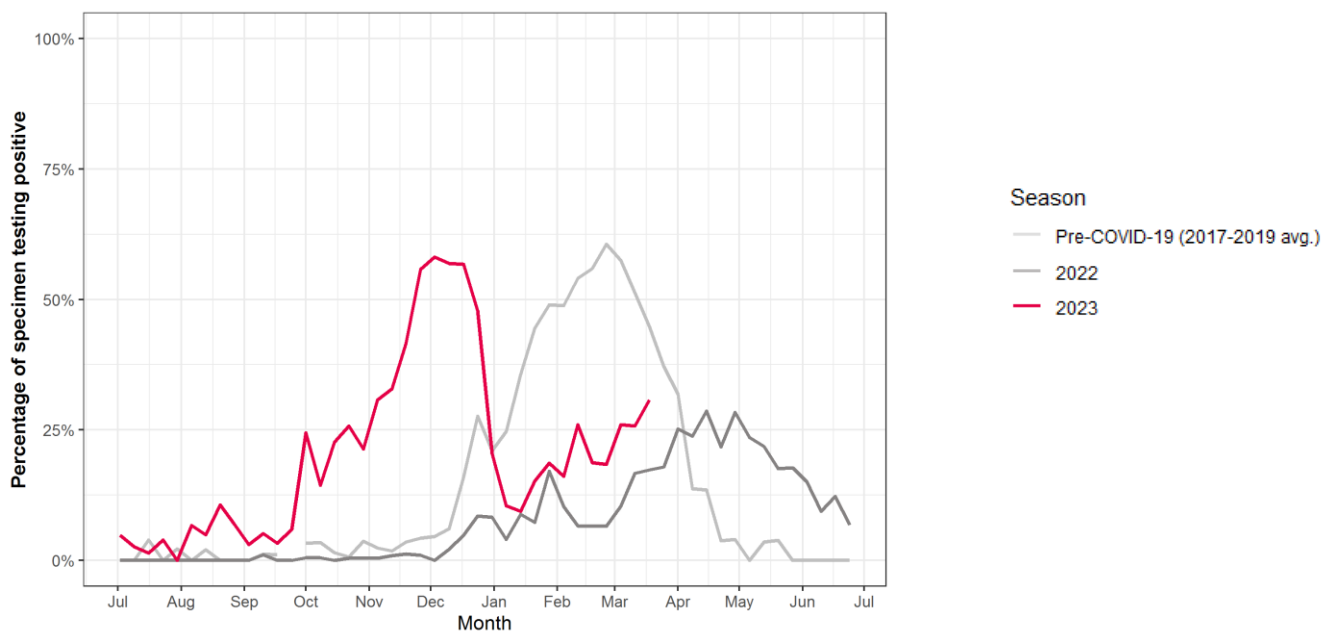
Percentage of specimens testing positive for influenza in different seasons



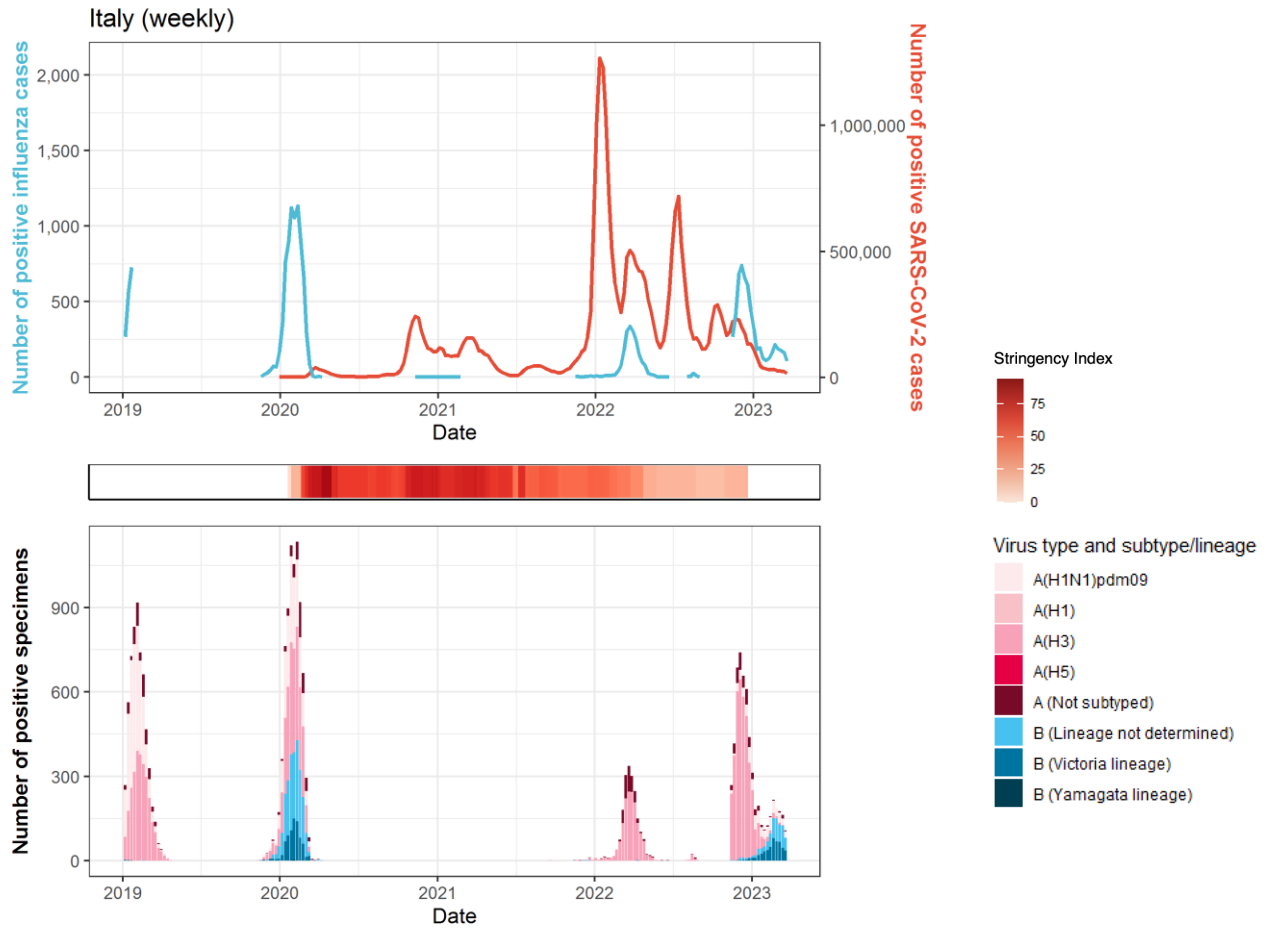
Germany



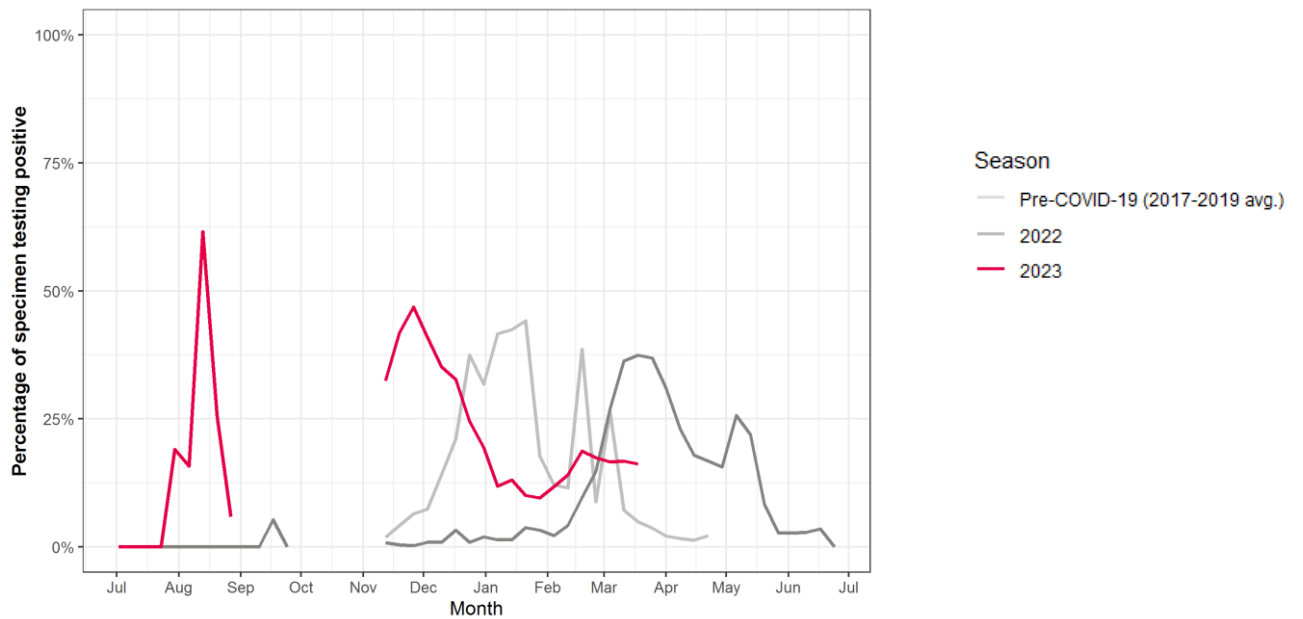
Percentage of specimens testing positive for influenza in different seasons



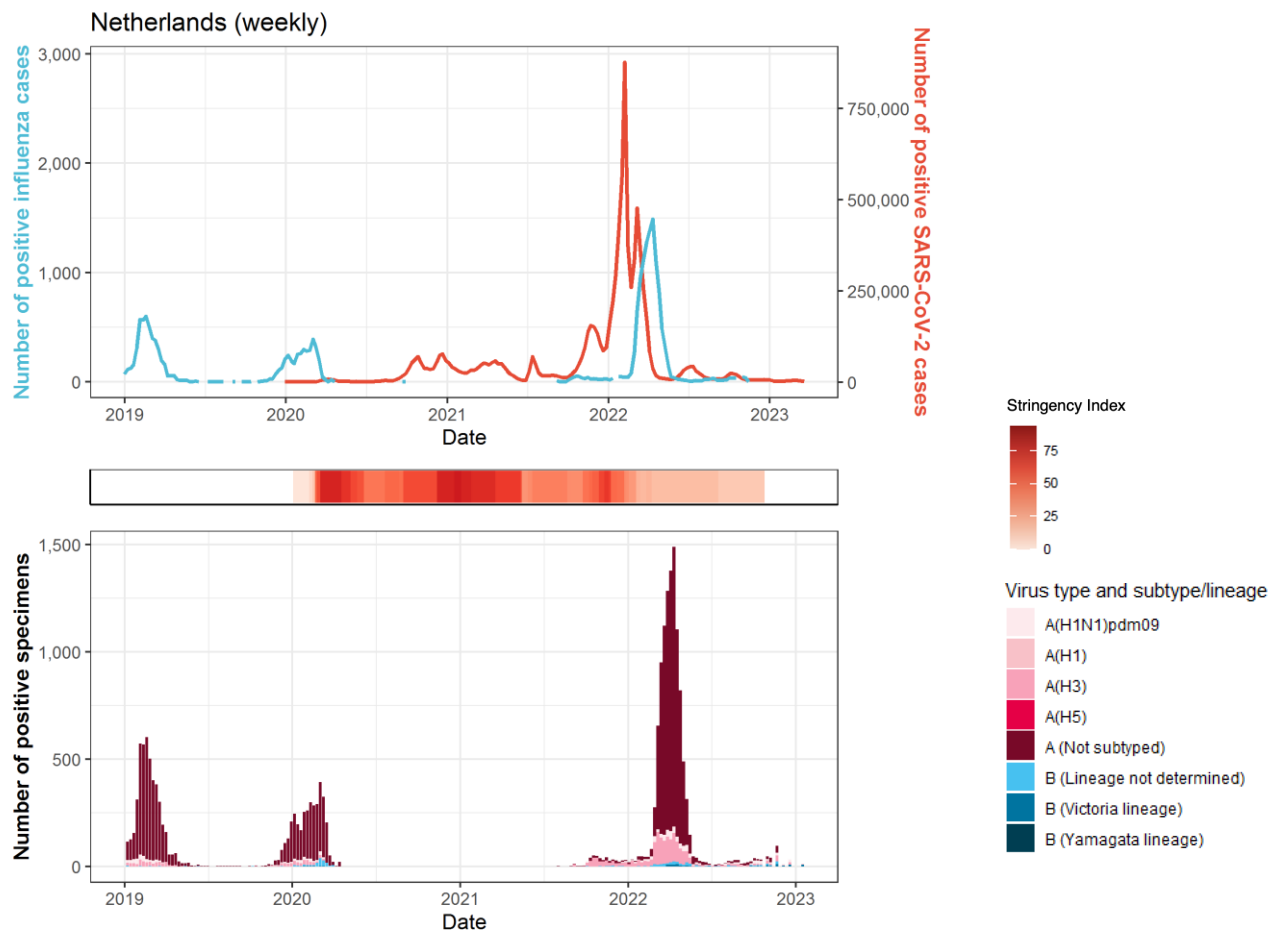
Italy



Percentage of specimens testing positive for influenza in different seasons



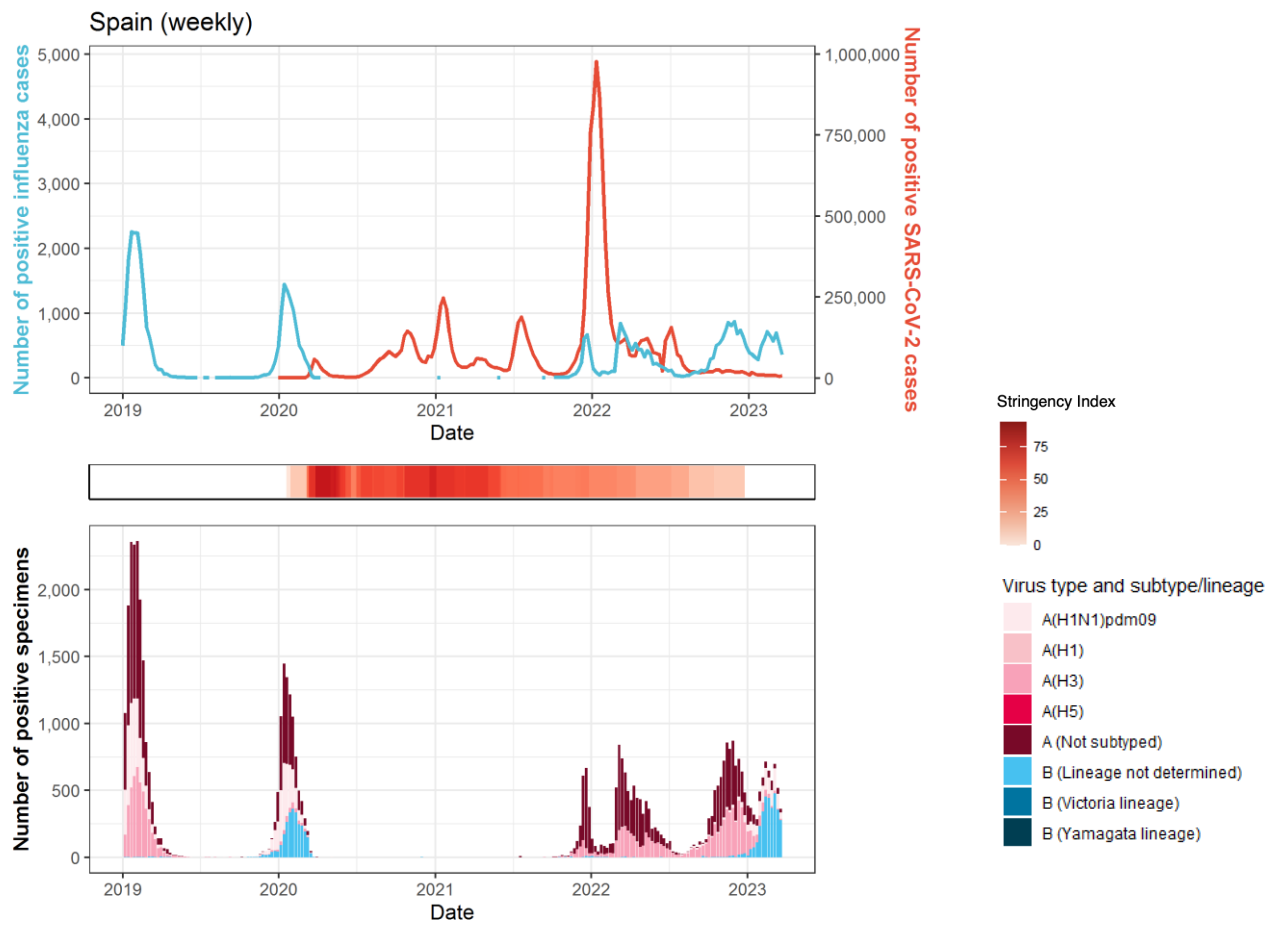
Netherlands



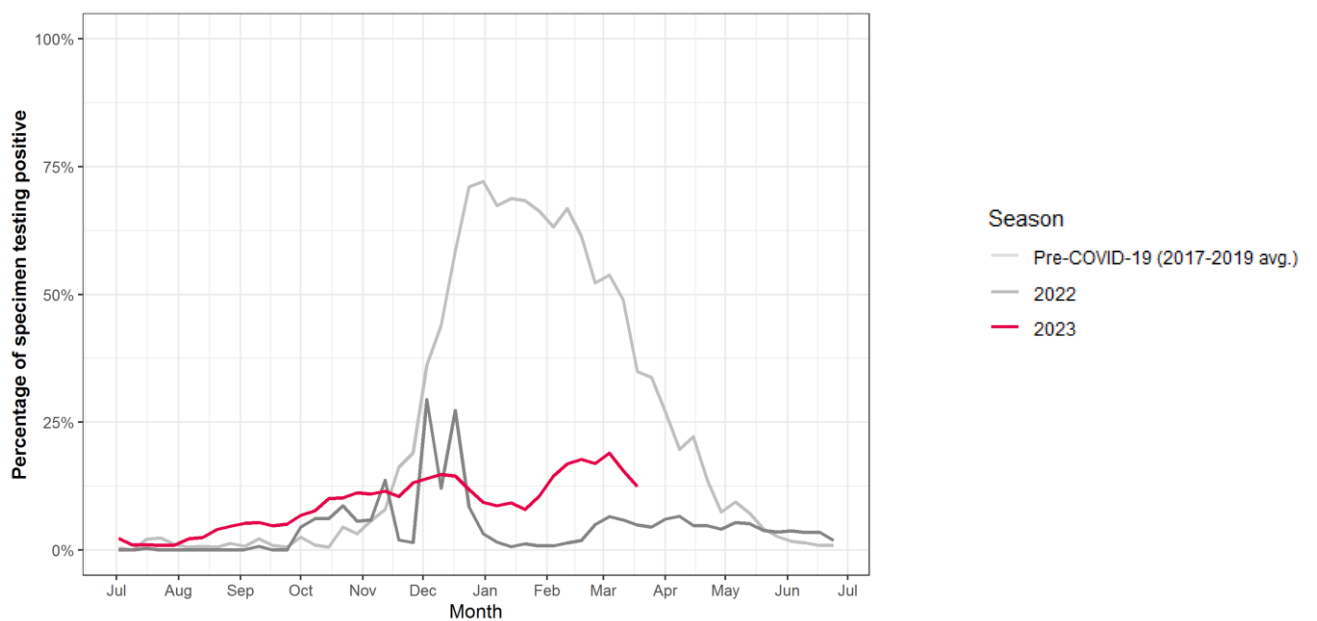
Note: As a result of a technical issue, influenza data for the Netherlands is missing for 2023.

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

Spain

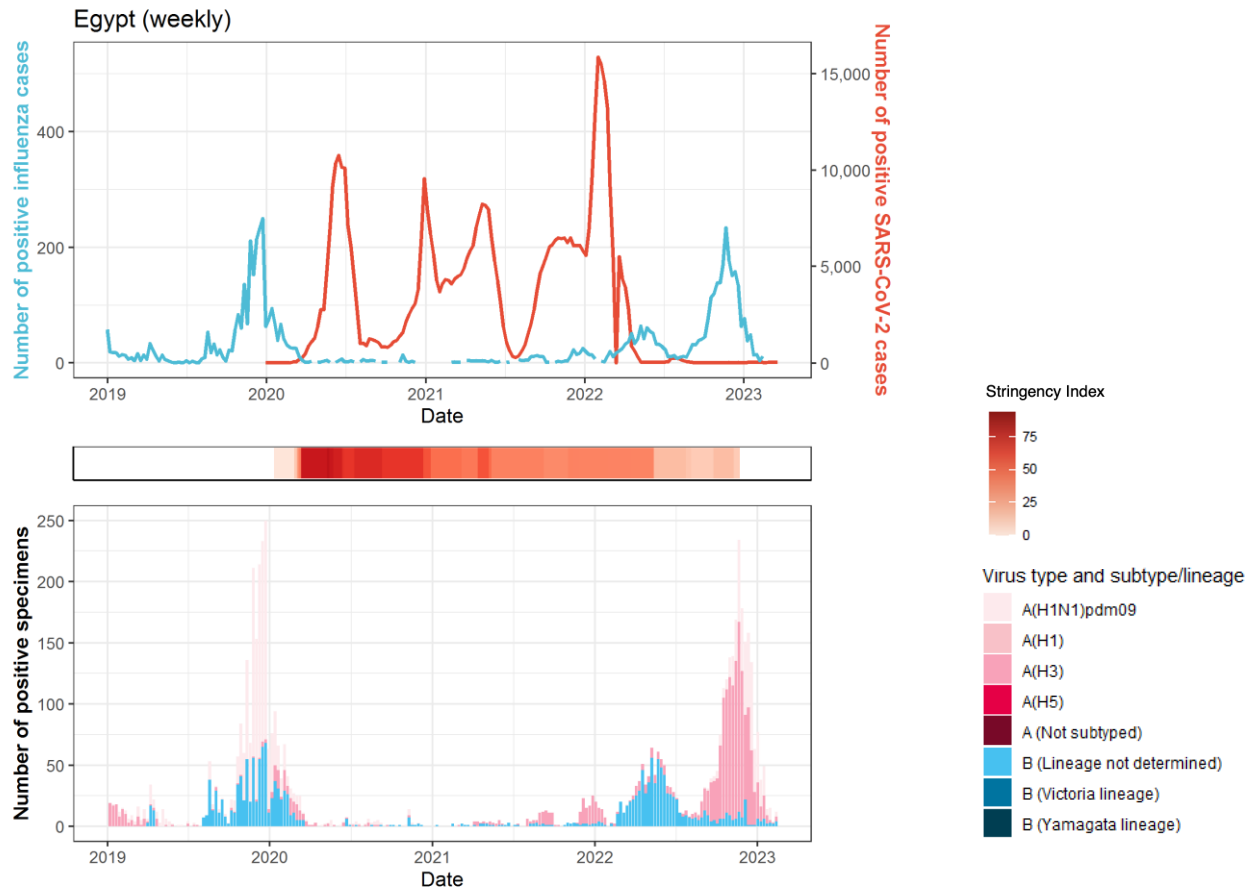


Percentage of specimens testing positive for influenza in different seasons

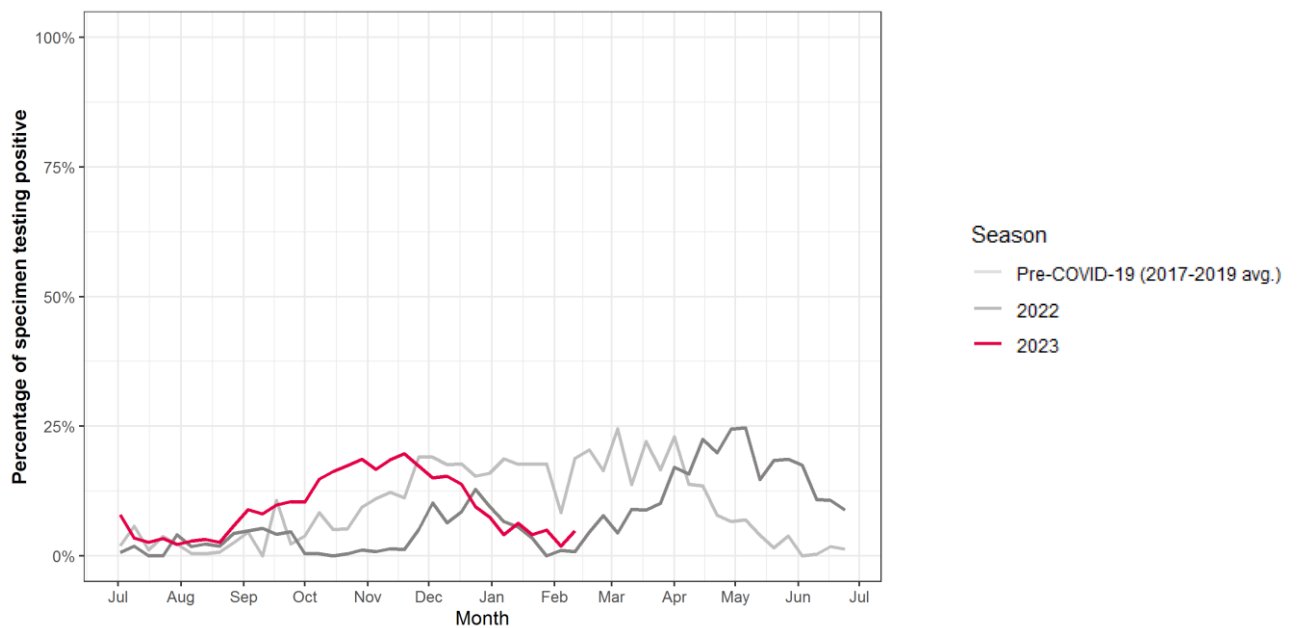


Northern Africa

Egypt

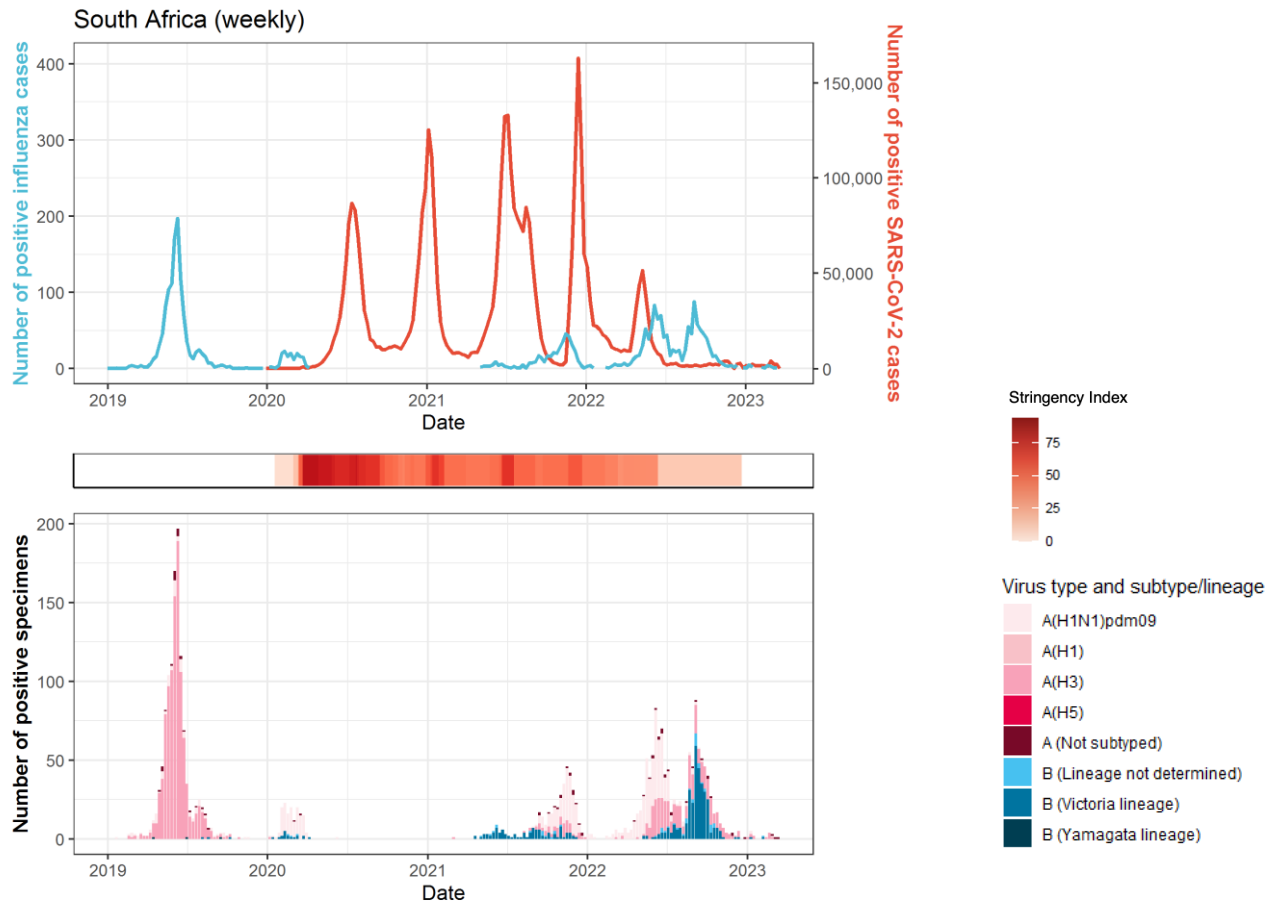


Percentage of specimens testing positive for influenza in different seasons

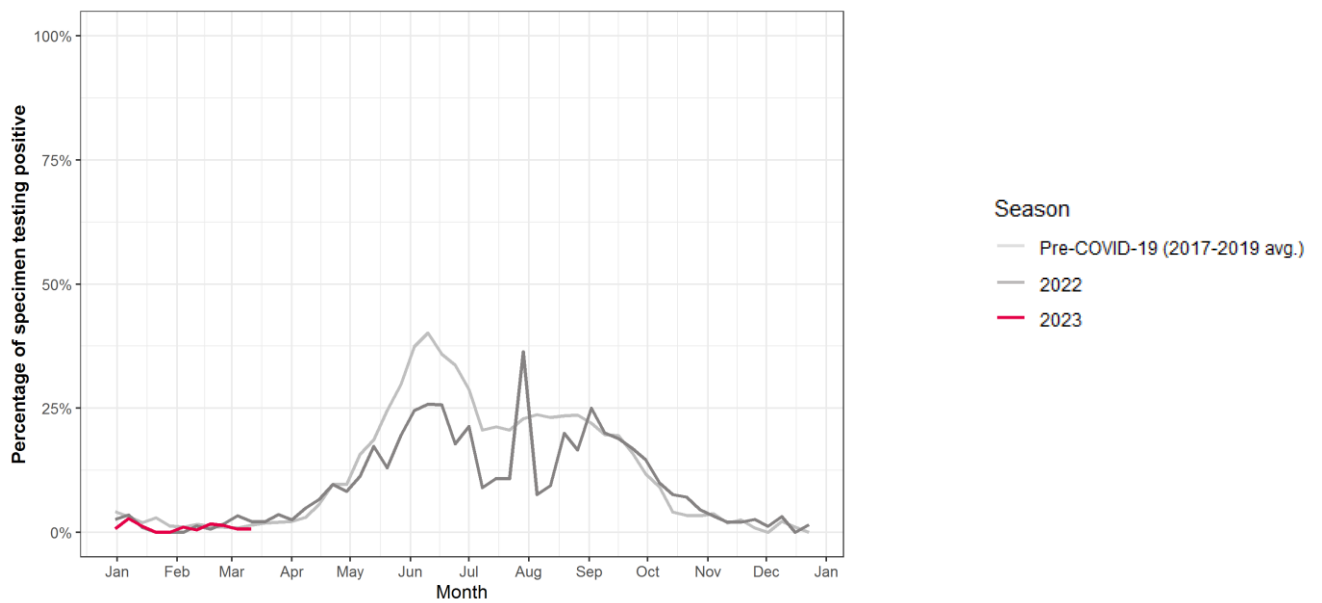


Southern Africa

South Africa

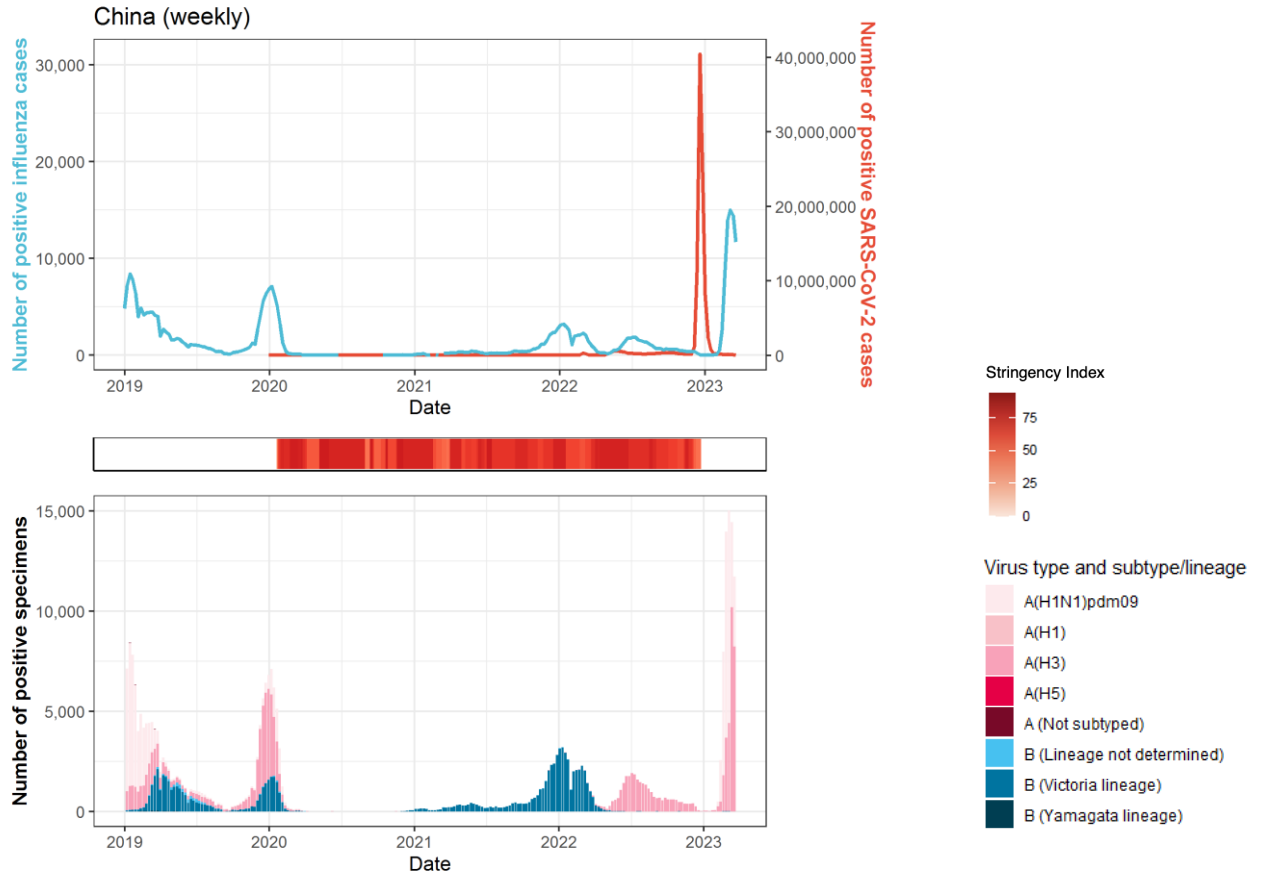


Percentage of specimens testing positive for influenza in different seasons



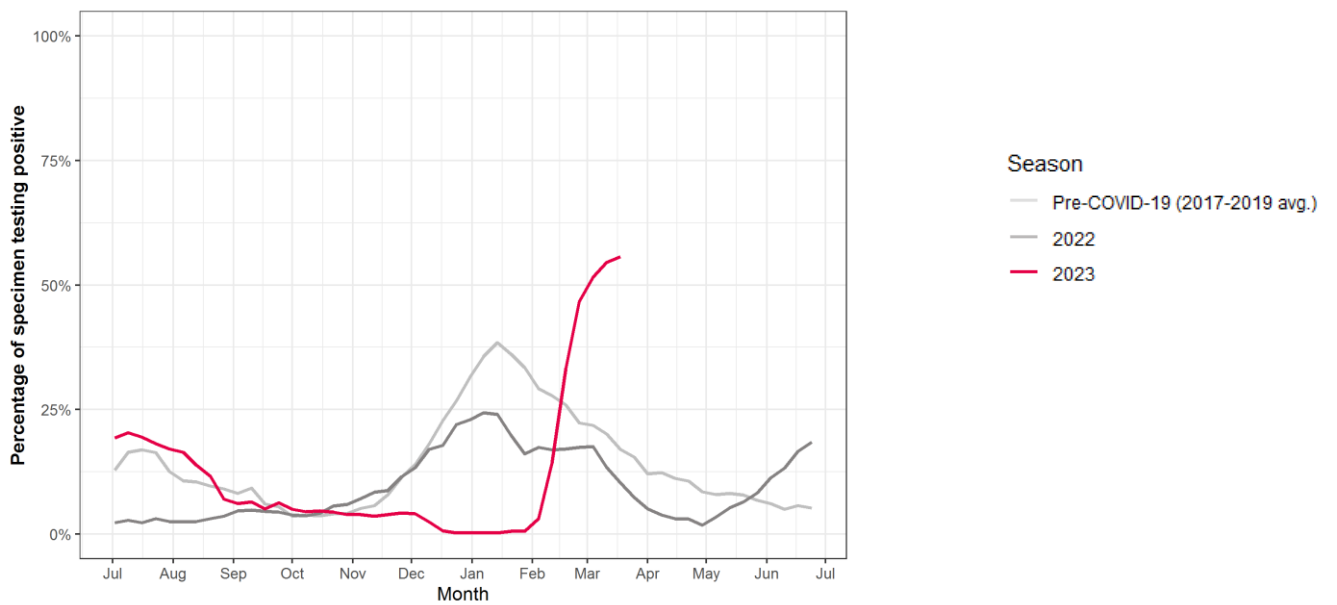
Eastern Asia

China

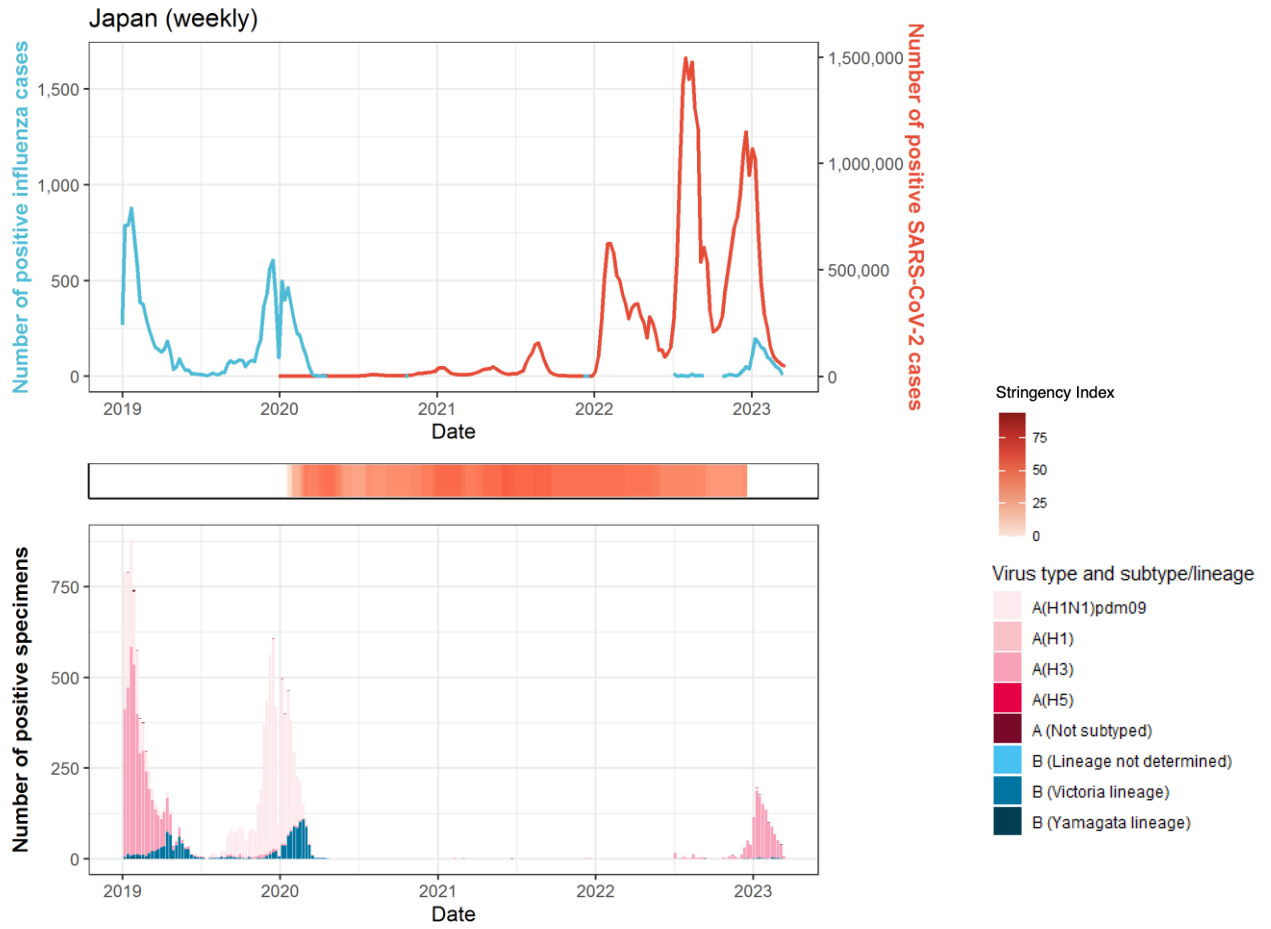


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Percentage of specimens testing positive for influenza in different seasons

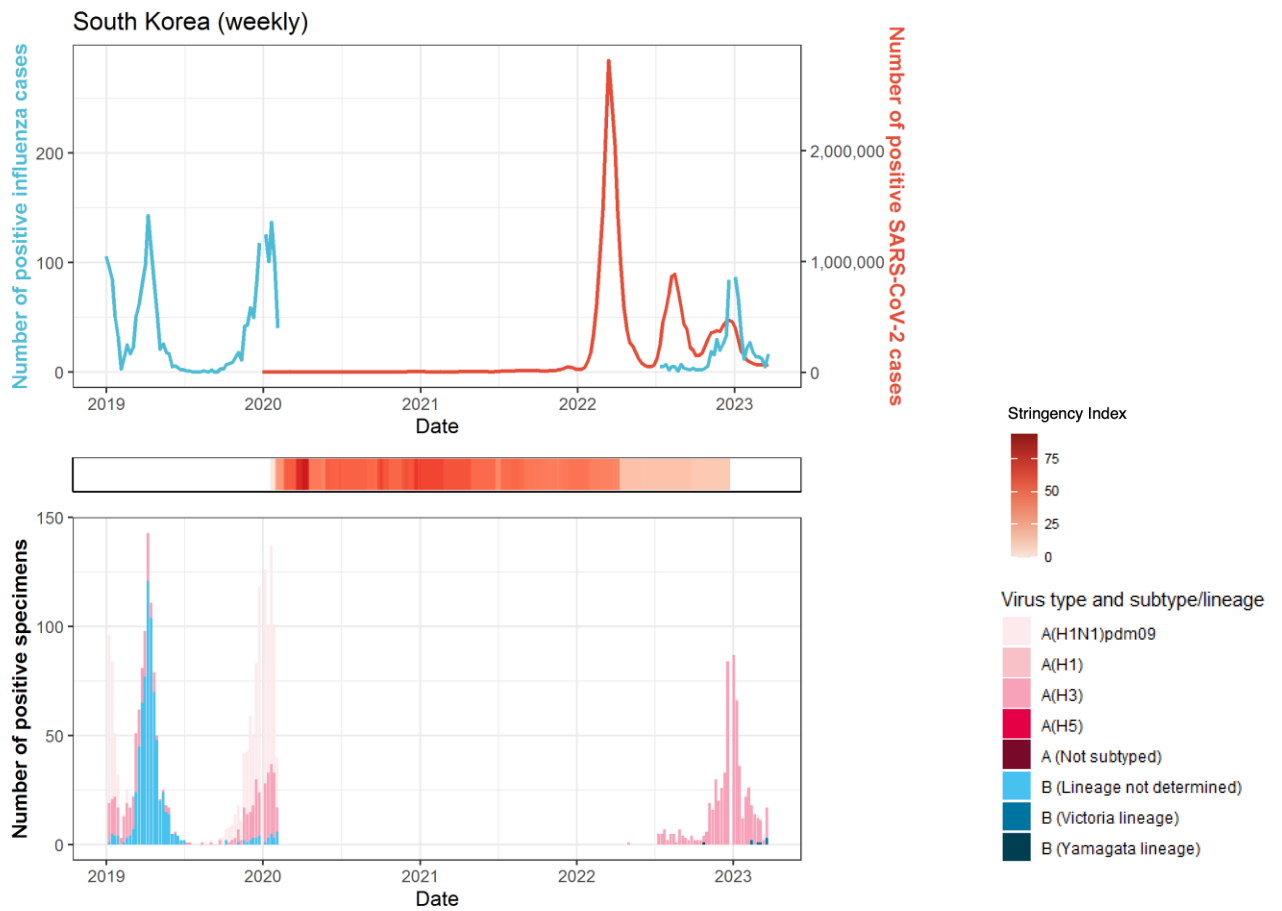


Japan

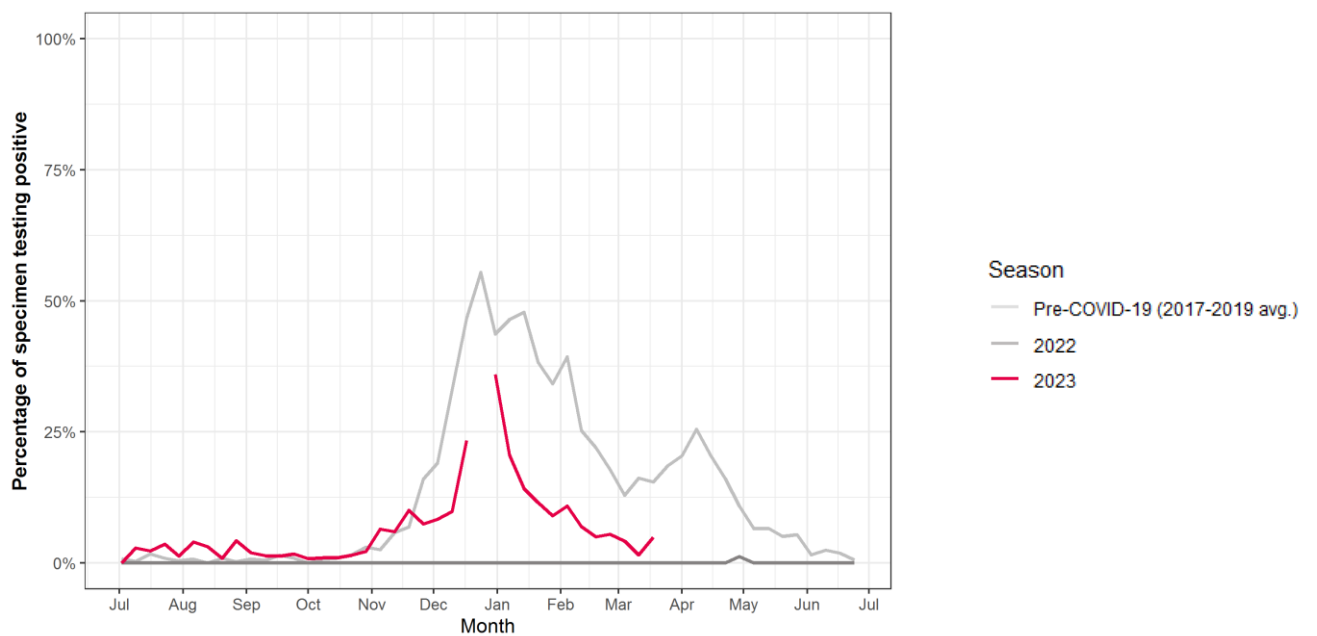


Percentage of specimens testing positive for influenza in different seasons: data not available

South Korea

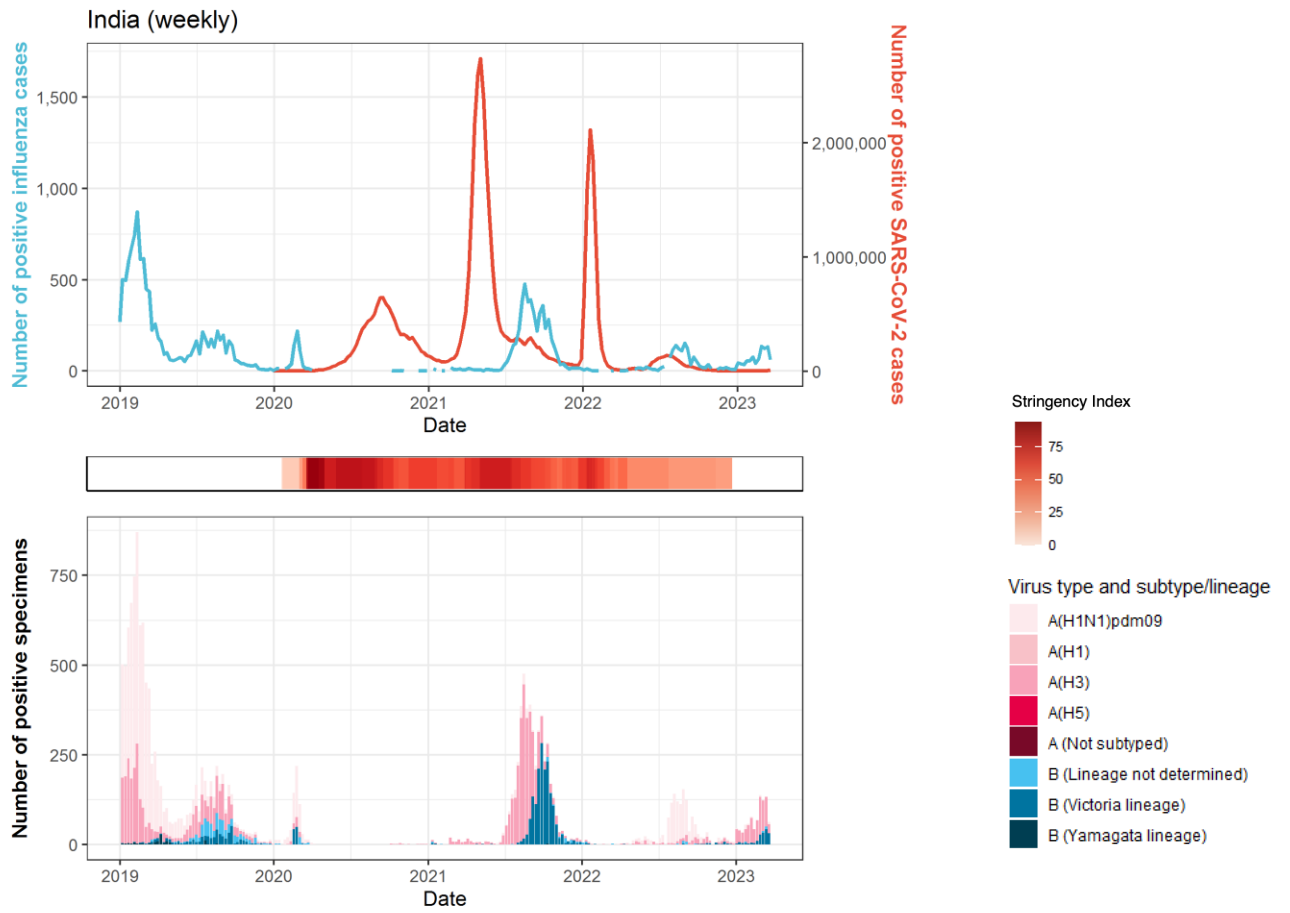


Percentage of specimens testing positive for influenza in different seasons

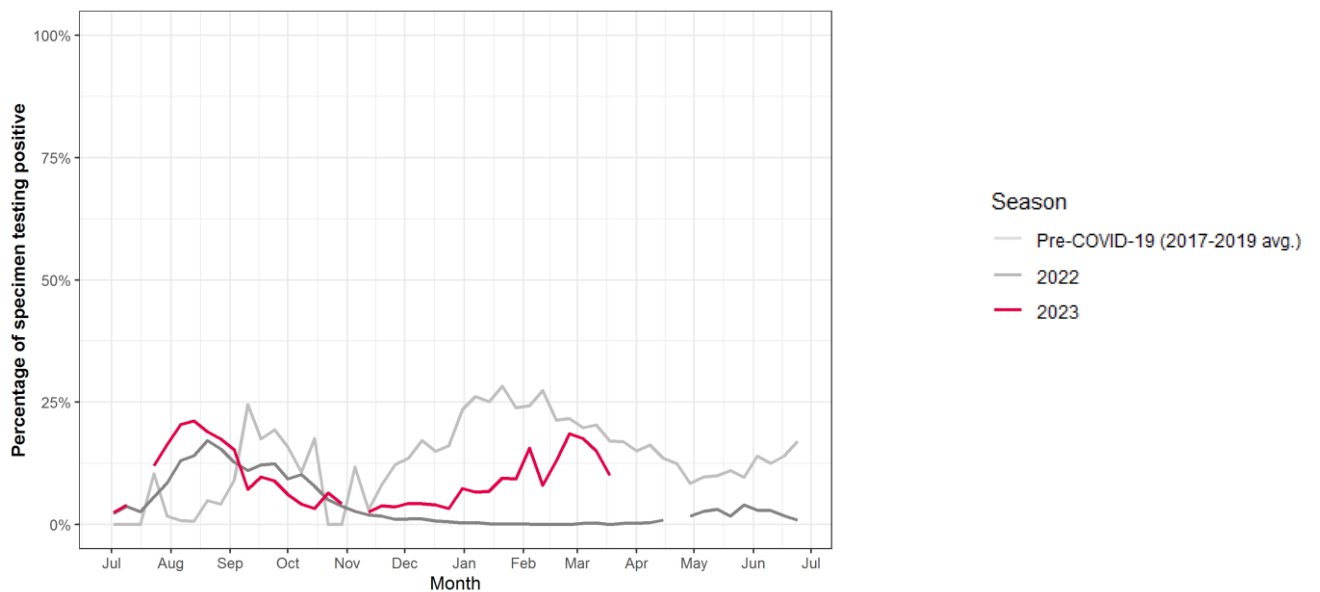


Southern Asia

India

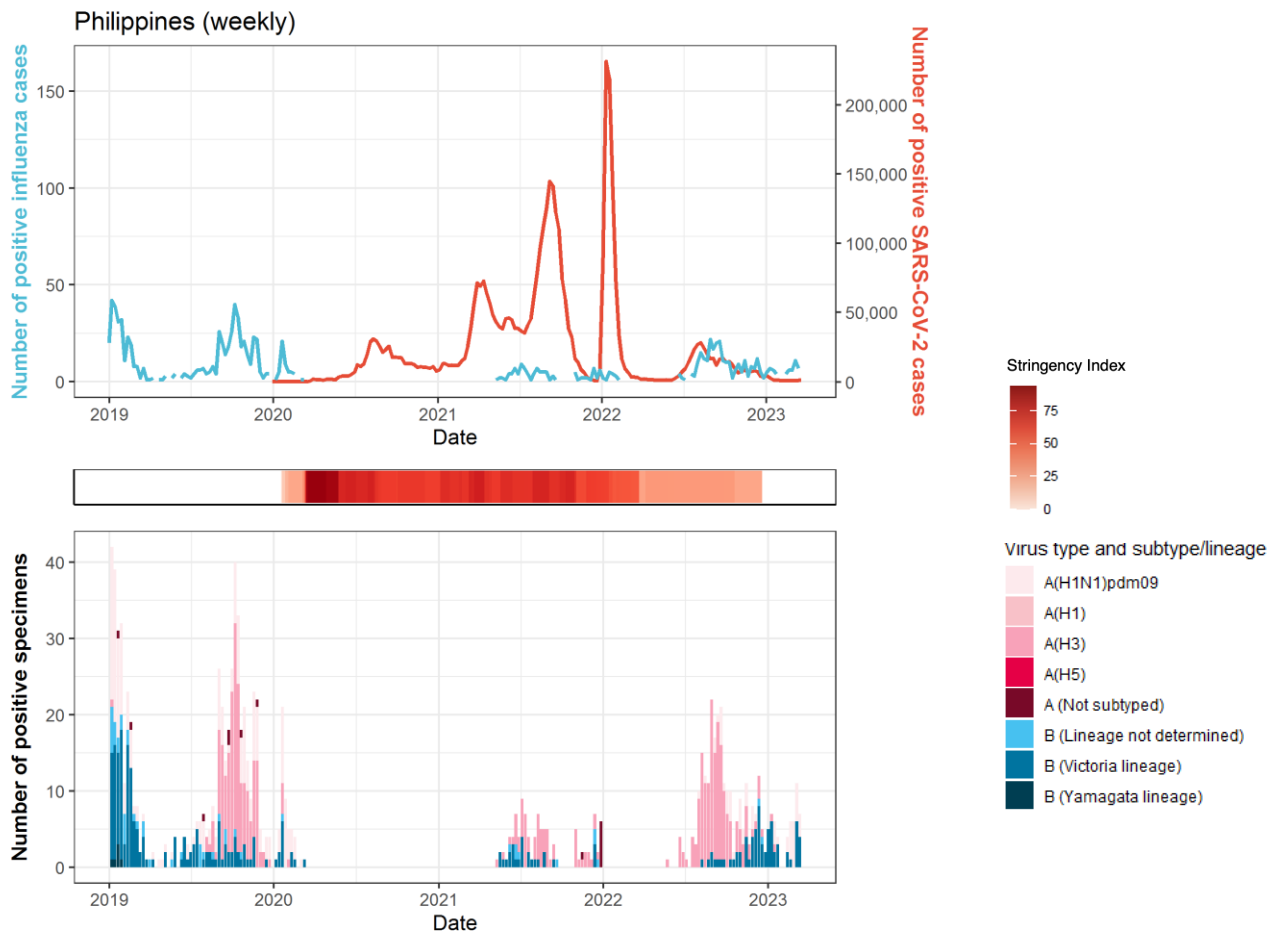


Percentage of specimens testing positive for influenza in different seasons



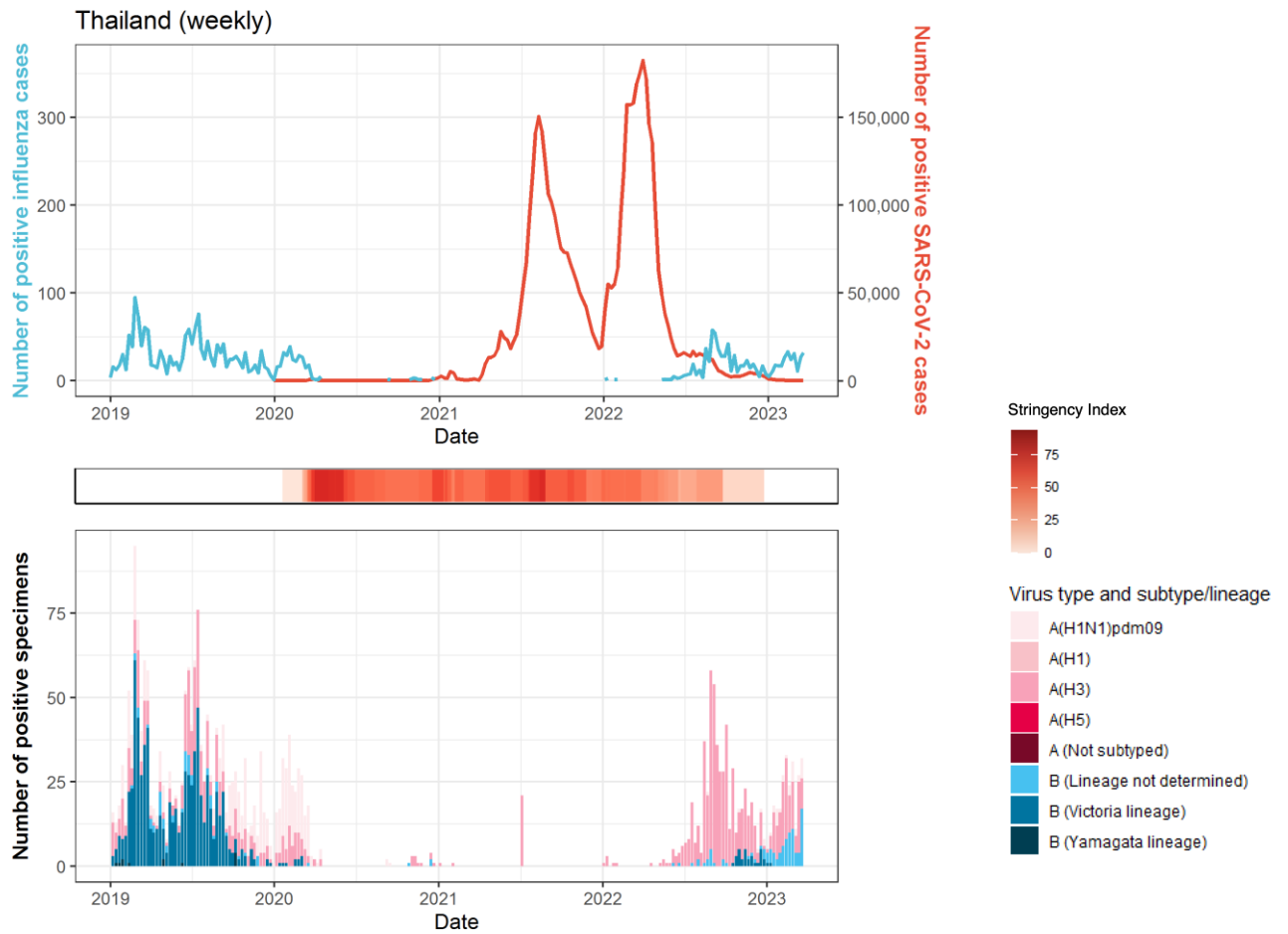
South-East Asia

Philippines

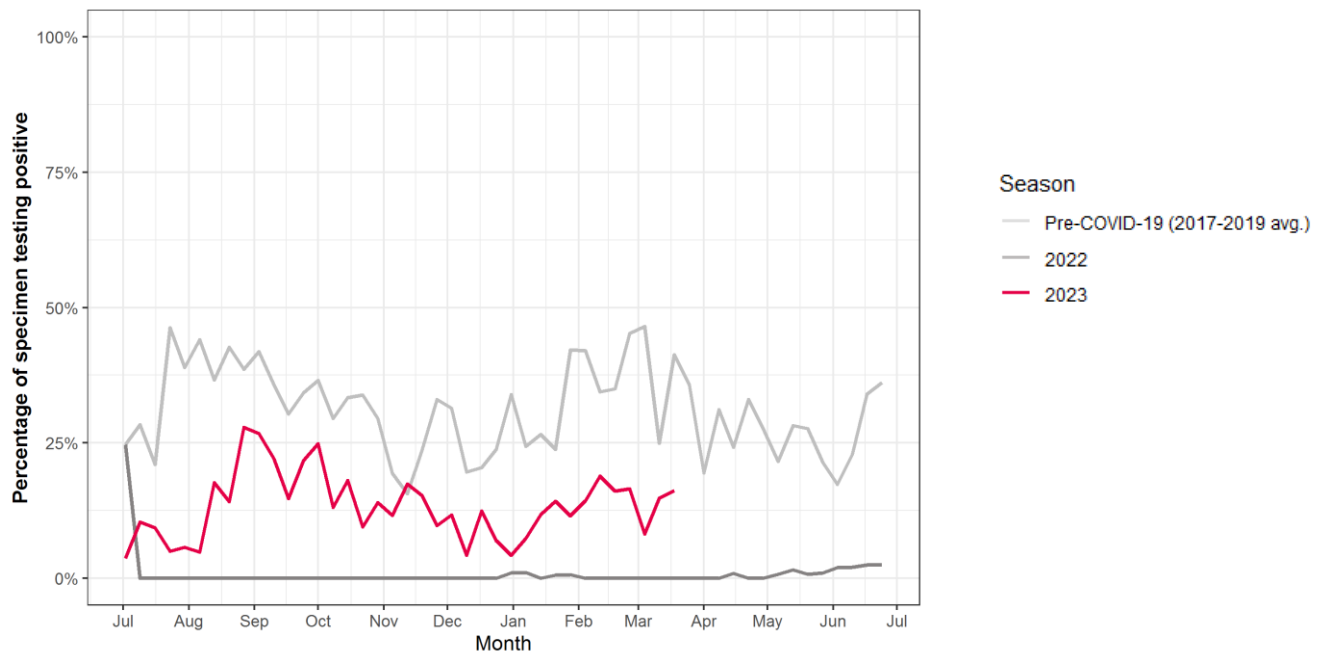


Percentage of specimens testing positive for influenza in different seasons: data not available

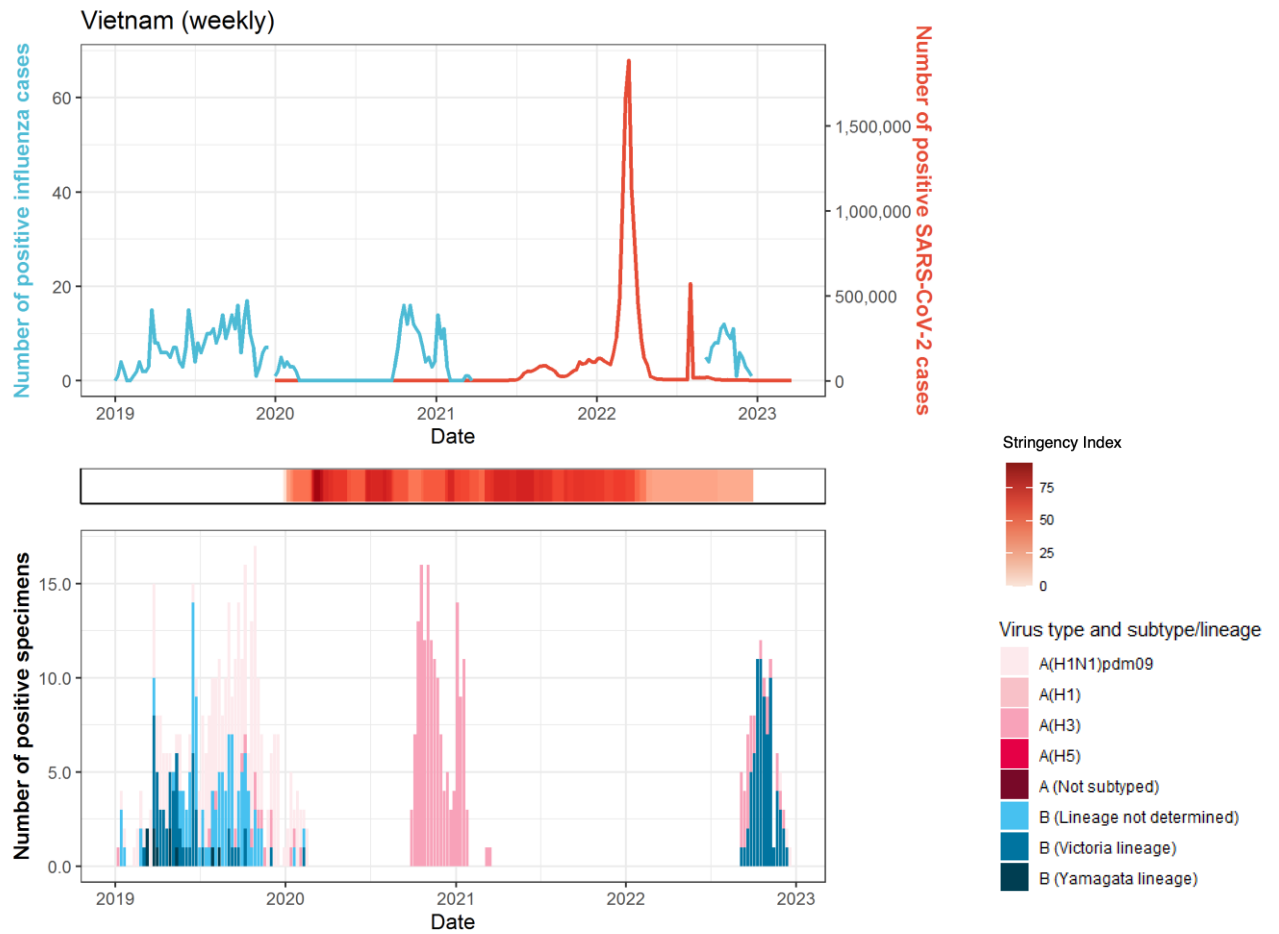
Thailand



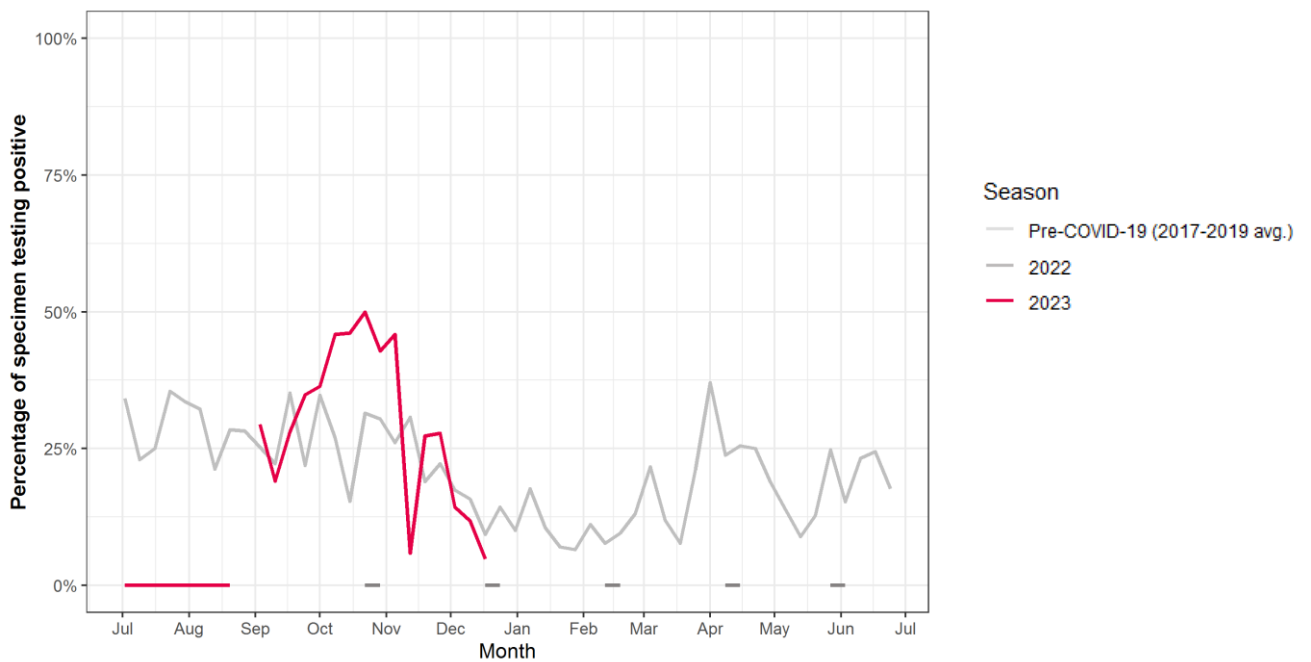
Percentage of specimens testing positive for influenza in different seasons



Vietnam

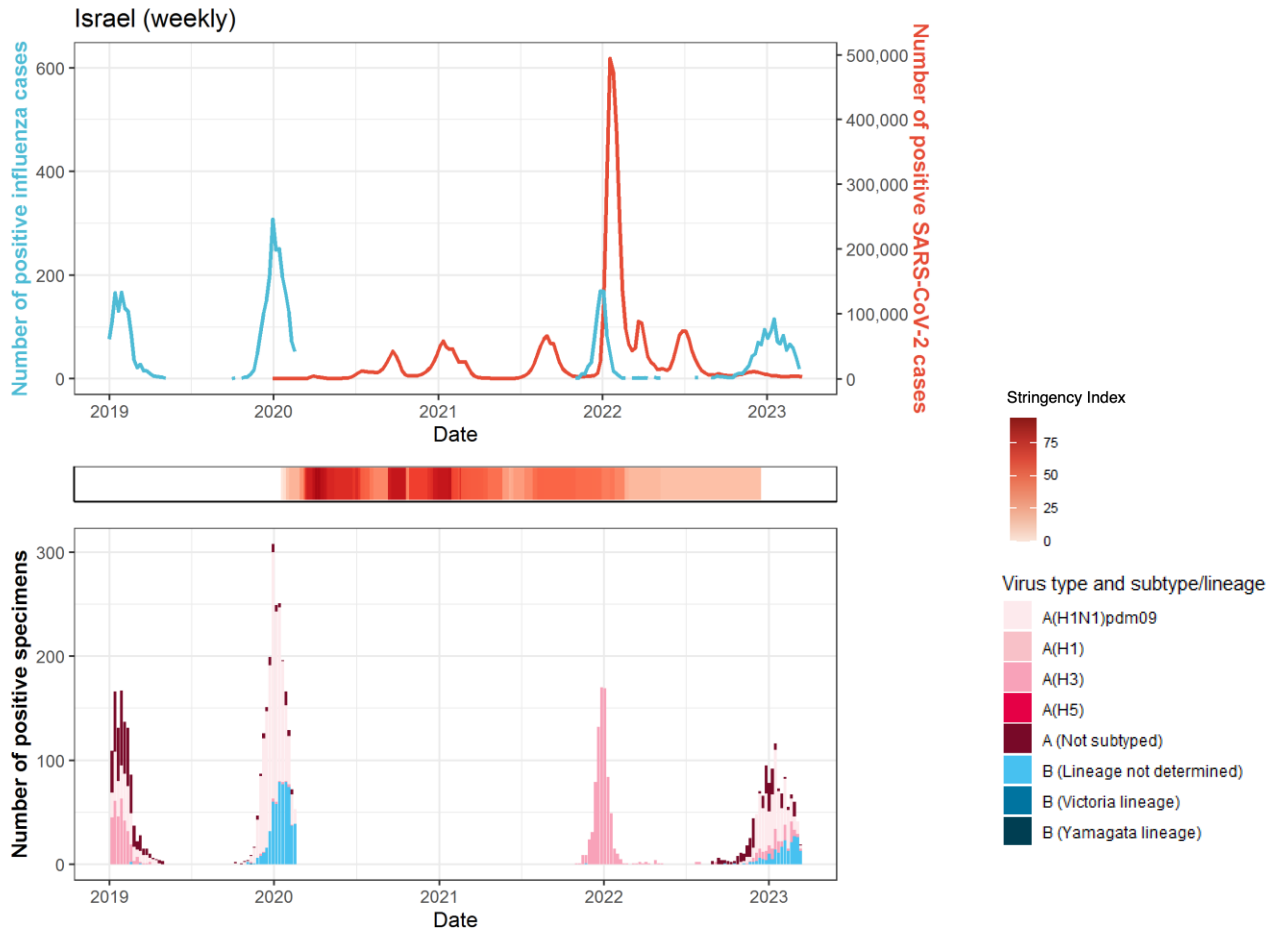


Percentage of specimens testing positive for influenza in different seasons

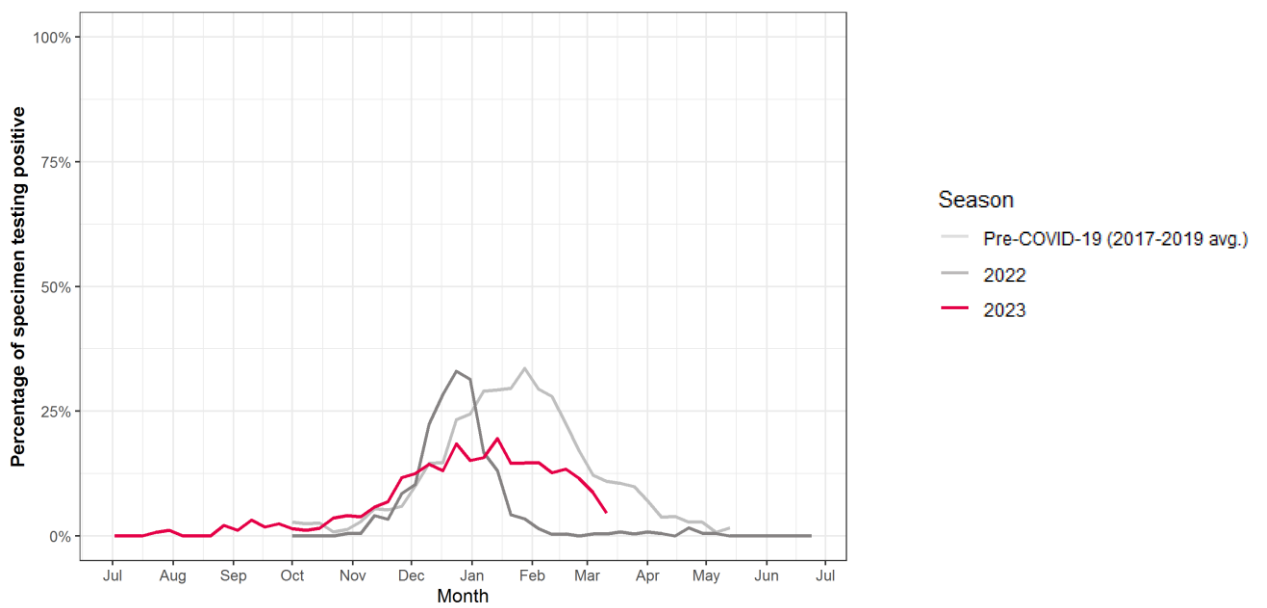


Western Asia

Israel

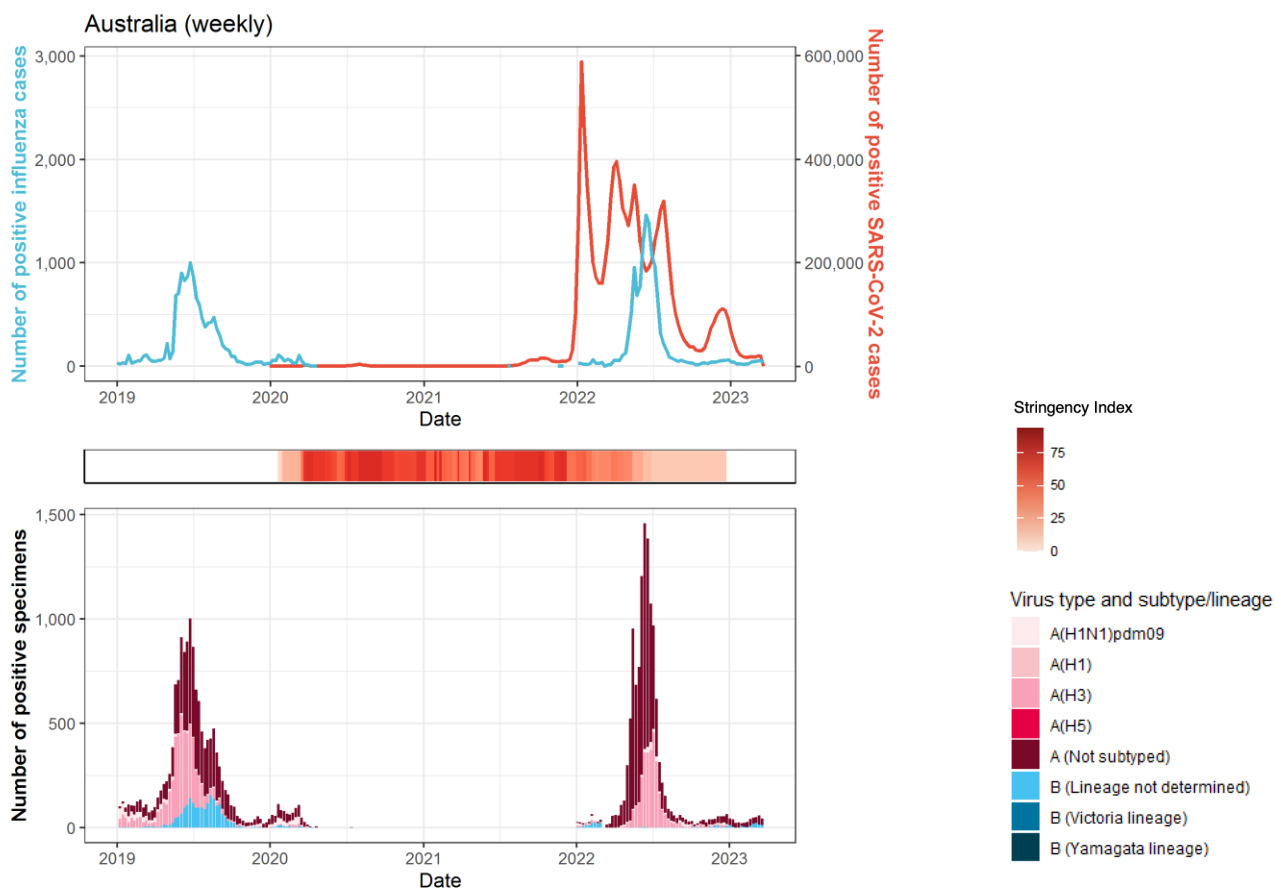


Percentage of specimens testing positive for influenza in different seasons

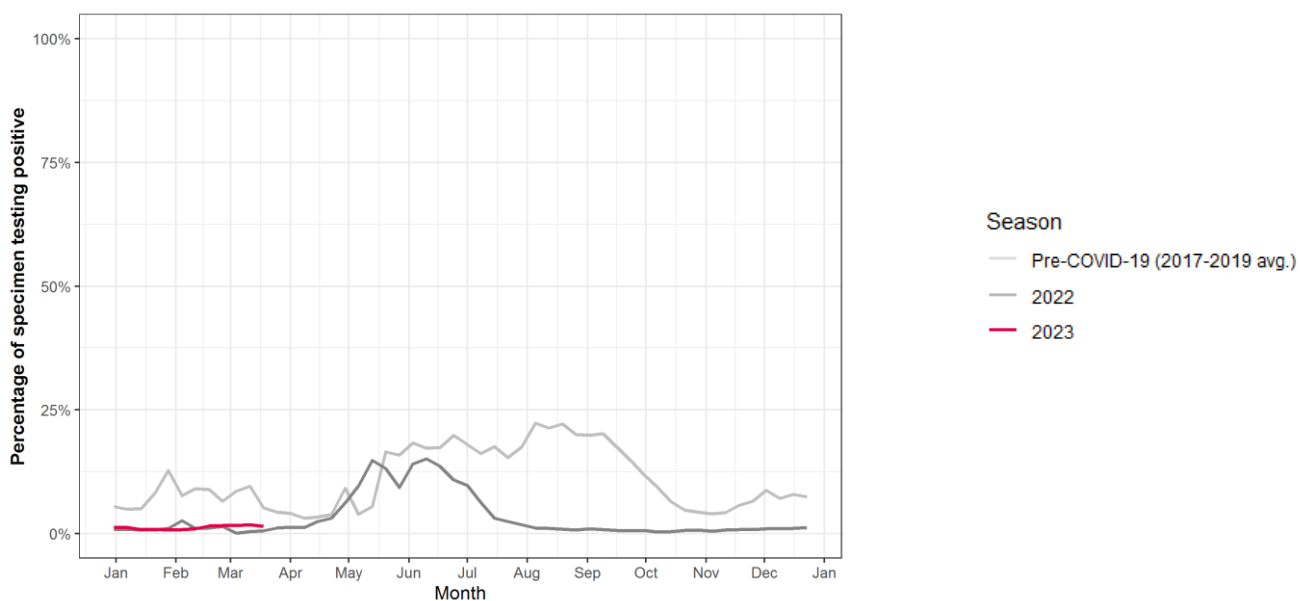


Oceania

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 | | | 12,404 | | |
| Australia | 2020 | 28,381 | | 784 | | |
| Australia | 2021 | 338,226 | | 7 | | |
| Australia | 2022 | 10,418,952 | | 8,650 | | |
| Australia | 2023 | 292,072 | 39,227 | 446 | 202 | 2023-12 |
| Brazil | 2019 | | | 3,320 | | |
| Brazil | 2020 | 7,563,551 | | 1,314 | | |
| Brazil | 2021 | 14,700,856 | | 1,183 | | |
| Brazil | 2022 | 14,038,581 | | 3,648 | | |
| Brazil | 2023 | 902,262 | 180,260 | 1,283 | 875 | 2023-12 |
| Canada | 2019 | | | 43,196 | | |
| Canada | 2020 | 565,508 | | 44,956 | | |
| Canada | 2021 | 1,536,966 | | 337 | | |
| Canada | 2022 | 2,390,012 | | 71,314 | | |
| Canada | 2023 | 133,360 | 34,468 | 5,780 | 1,520 | 2023-12 |
| China | 2019 | | | 122,757 | | |
| China | 2020 | 96,673 | | 31,164 | | |
| China | 2021 | 35,107 | | 10,145 | | |
| China | 2022 | 84,793,262 | | 52,705 | | |
| China | 2023 | 14,313,101 | 208,015 | 66,458 | 55,148 | 2023-12 |
| Egypt | 2019 | | | 1,998 | | |
| Egypt | 2020 | 136,644 | | 659 | | |
| Egypt | 2021 | 248,084 | | 233 | | |
| Egypt | 2022 | 130,786 | | 2,709 | | |
| Egypt | 2023 | 368 | 184 | 209 | 0 | 2023-07 |
| France | 2019 | | | 25,405 | | |
| France | 2020 | 2,564,972 | | 16,589 | | |
| France | 2021 | 6,917,610 | | 3,071 | | |
| France | 2022 | 28,717,231 | | 40,014 | | |
| France | 2023 | 477,600 | 164,180 | 16,627 | 3,280 | 2023-12 |
| Germany | 2019 | | | 1,215 | | |
| Germany | 2020 | 1,734,449 | | 958 | | |
| Germany | 2021 | 5,430,620 | | 29 | | |
| Germany | 2022 | 30,220,925 | | 1,923 | | |
| Germany | 2023 | 952,304 | 180,724 | 426 | 181 | 2023-12 |
| India | 2019 | | | 9,698 | | |
| India | 2020 | 10,266,679 | | 457 | | |
| India | 2021 | 24,572,130 | | 4,085 | | |
| India | 2022 | 9,840,329 | | 76 | | |
| India | 2023 | 29,141 | 21,154 | 879 | 457 | 2023-12 |
| Israel | 2019 | | | 1,796 | | |
| Israel | 2020 | 419,660 | | 1,424 | | |
| Israel | 2021 | 962,277 | | 456 | | |
| Israel | 2022 | 3,381,613 | | 774 | | |
| Israel | 2023 | 49,247 | 13,822 | 753 | 120 | 2023-11 |

| 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 | | | 2,787 | | |
| Italy | 2020 | 2,083,689 | | 7,484 | | |
| Italy | 2021 | 3,897,739 | | 31 | | |
| Italy | 2022 | 19,187,010 | | 5,817 | | |
| Italy | 2023 | 505,004 | 83,949 | 2,064 | 635 | 2023-12 |
| Japan | 2019 | | | 10,343 | | |
| Japan | 2020 | 230,304 | | 2,915 | | |
| Japan | 2021 | 1,503,021 | | 9 | | |
| Japan | 2022 | 27,371,745 | | 204 | | |
| Japan | 2023 | 4,316,715 | 231,221 | 1,144 | 100 | 2023-11 |
| Mexico | 2019 | | | 6,963 | | |
| Mexico | 2020 | 1,496,068 | | 4,799 | | |
| Mexico | 2021 | 2,538,755 | | 960 | | |
| Mexico | 2022 | 3,232,579 | | 10,314 | | |
| Mexico | 2023 | 260,484 | 66,545 | 1,179 | 221 | 2023-12 |
| Netherlands | 2019 | | | 5,166 | | |
| Netherlands | 2020 | 785,874 | | 3,235 | | |
| Netherlands | 2021 | 2,329,020 | | 471 | | |
| Netherlands | 2022 | 5,454,287 | | 14,863 | | |
| Netherlands ^d | 2023 | 38,942 | 12,868 | 6,394 | 3,128 | 2023-07 |
| Philippines | 2019 | | | 612 | | |
| Philippines | 2020 | 472,523 | | 52 | | |
| Philippines | 2021 | 2,368,495 | | 105 | | |
| Philippines | 2022 | 1,221,641 | | 260 | | |
| Philippines | 2023 | 17,523 | 3,952 | 56 | 24 | 2023-11 |
| Poland | 2019 | | | 1,786 | | |
| Poland | 2020 | 1,297,460 | | 1,282 | | |
| Poland | 2021 | 2,811,801 | | 2 | | |
| Poland | 2022 | 2,259,187 | | 1,604 | | |
| Poland | 2023 | 122,969 | 71,964 | 1,685 | 344 | 2023-12 |
| 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 | 21,854 | 8,856 | 20 | 5 | 2023-11 |
| South Korea | 2019 | | | 1,702 | | |
| South Korea | 2020 | 60,722 | | 505 | | |
| South Korea | 2021 | 570,113 | | 0 | | |
| South Korea | 2022 | 28,428,438 | | 295 | | |
| South Korea | 2023 | 1,714,187 | 259,739 | 332 | 48 | 2023-12 |
| Spain | 2019 | | | 16,580 | | |
| Spain | 2020 | 1,955,216 | | 8,827 | | |
| Spain | 2021 | 4,550,685 | | 2,206 | | |
| Spain | 2022 | 7,178,357 | | 16,841 | | |
| Spain | 2023 | 106,322 | 27,244 | 5,959 | 2,150 | 2023-12 |
| Thailand | 2019 | | | 1,568 | | |
| Thailand | 2020 | 6,919 | | 297 | | |
| Thailand | 2021 | 2,216,551 | | 23 | | |
| Thailand | 2022 | 2,500,484 | | 465 | | |
| Thailand | 2023 | 4,713 | 597 | 266 | 115 | 2023-12 |

| 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 | 2,563,565 | | 14,369 | | |
| United Kingdom | 2021 | 10,878,101 | | 2,755 | | |
| United Kingdom | 2022 | 10,568,632 | | 26,893 | | |
| United Kingdom | 2023 | 276,113 | 94,949 | 4,849 | 539 | 2023-12 |
| 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 | | 460,297 | | |
| United States | 2023 | 3,285,870 | 678,002 | 30,709 | 1,609 | 2023-10 |
| Vietnam | 2019 | | | 355 | | |
| Vietnam | 2020 | 1,456 | | 146 | | |
| Vietnam | 2021 | 1,713,286 | | 39 | | |
| Vietnam | 2022 | 9,810,402 | | 103 | | |
| Vietnam | 2023 | 2,066 | 305 | 0 | 0 | 2022-51 |

^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.

^d As a result of a technical issue, influenza data for the Netherlands is missing for 2023. Displayed here are data from the 23rd bulletin (end February).

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 [7]. The emergence of this new virus has had a major impact on the global circulation of respiratory viruses, including influenza and RSV [8]. 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) [9].

Data sources

- **Influenza:** FluNet [10] 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 [11]. 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 [12].
- **Government response tracker:** The Oxford COVID-19 Government Response Tracker (OxCGRT) [9] 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 3 April 2023 and cover the period 1 January 2019 to 2 April 2023 (29 March for 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 flu cov@nivel.nl.

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

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

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