NIVEL
Research for better care

Epi-Bulletin - September 2022

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

Commentary

Contents

It has been over two 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 Epi-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 4).

Results

Globally, **influenza** circulation is levelling off after months of decreasing cases since April 2022 (see Figure 1). The following patterns have been observed for **influenza** during the month of September:

- A number of countries reported a slight increase in **influenza** cases, including **Brazil**, **Canada**, **France**, **Mexico**, **Philippines**, and **Thailand**. The increase is most pronounced in the **United Kingdom** and **Spain**.
- Although still present, **influenza** circulation in **China**, driven by **Influenza** A(H3) since May 2022 (see Figure 2), further decreased after the peak in July.
- In **South Africa**, **influenza** circulation increased compared to August, however, numbers are declining in the last weeks of September. Whereas the first **influenza** wave was dominated by **influenza** A, the second wave mostly consisted of **influenza** B (Victoria and lineage not determined) (see Figure 3).
- Both **Brazil** and **Australia**, the other southern hemisphere countries in the Bulletin, reported a relatively low number of cases in September. **Brazil** is seeing a slight increase in cases compared to previous months.
- A number of countries reported no or very few **influenza** cases in September: **France**, **Germany**, **India**, **Israel**, **Japan**, **Netherlands**, **Poland**, **South Korea**, and **Vietnam**.
- **Vietnam** registered their first case of **influenza** of 2022 in September.
- **Italy**, **Egypt** and the **United States** have not yet provided **influenza** data for September.

In most countries covered by the Bulletin, **SARS-CoV-2** numbers continue to decline after the overall increase in the early summer of 2022. The following patterns have been observed for **SARS-CoV-2** in the month of September:

- Most countries reported a lower number of **SARS-CoV-2** cases in September compared to August, with the exception of **France**, **Poland** and **South Africa** (all reporting a slightly higher number of cases).
- In a number of European countries, an increase in cases was seen at the end of September: **Germany**, **Italy**, **France**, **Netherlands** and **United Kingdom**.
- **SARS-CoV-2** circulation in East and Southeast Asia peaked in August and is now decreasing in **China**, **Japan**, **South Korea**, **Philippines**, and **Vietnam.**

Implications

After reduced activity was reported in August in **Australia** and **Brazil**, and with cases now also decreasing in **South Africa**, the **influenza** season in the Southern Hemisphere is now coming to an end. With the Northern Hemisphere winter approaching, the tentative increase in both **influenza** and **SARS-CoV-2** cases in some countries (especially in European countries such as **France, Germany, Netherlands, and United Kingdom**), may signal the start of the new season, with a likely co-circulation of **influenza** and **SARS-CoV-2**. It will be important to monitor if **SARS-CoV-2** and **influenza** will be co-circulating, in the absence of non-pharmaceutical interventions (NPIs) and what **influenza** subtypes will be involved.

In Spain, one of the European countries already seeing an increase in **influenza**, the dominant subtype has been **influenza** A(H3), similar to the recent season in **Australia, China** and the first wave in **South Africa** (see Figure 4). Moreover, following the start of the COVID-19 pandemic in 2022, no detections of the **influenza** B/Yamagata lineage have been reported in GISAID, and very few in FluNet [1]. The possible circulation of **Influenza** B/Yamagata will need to be closely monitored in the upcoming Northern Hemisphere winter.

Figure 1: Virus detections by subtype reported to FluNet (all countries and areas)

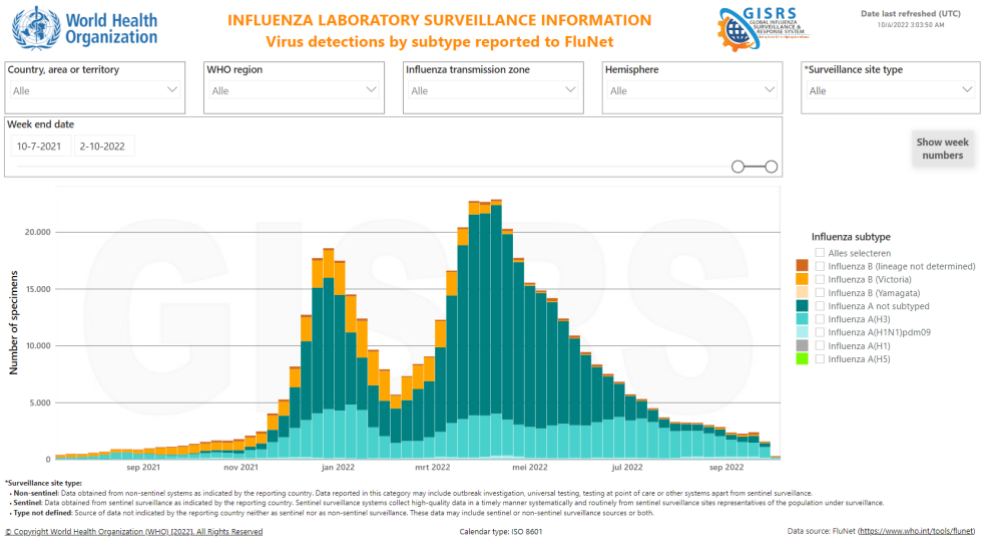


Figure 2: Virus detections by subtype reported to FluNet: China

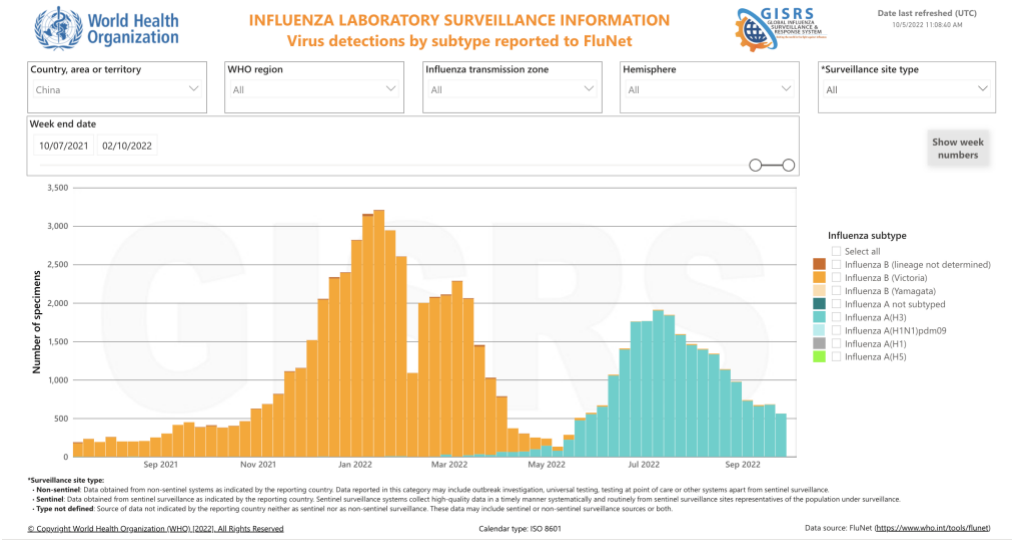


Figure 3: Virus detections by subtype reported to FluNet: South Africa

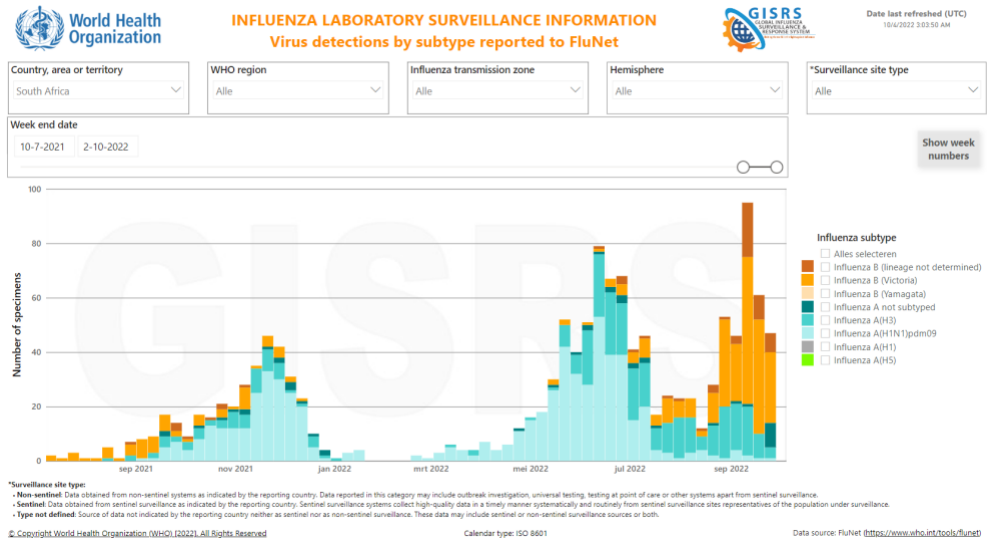
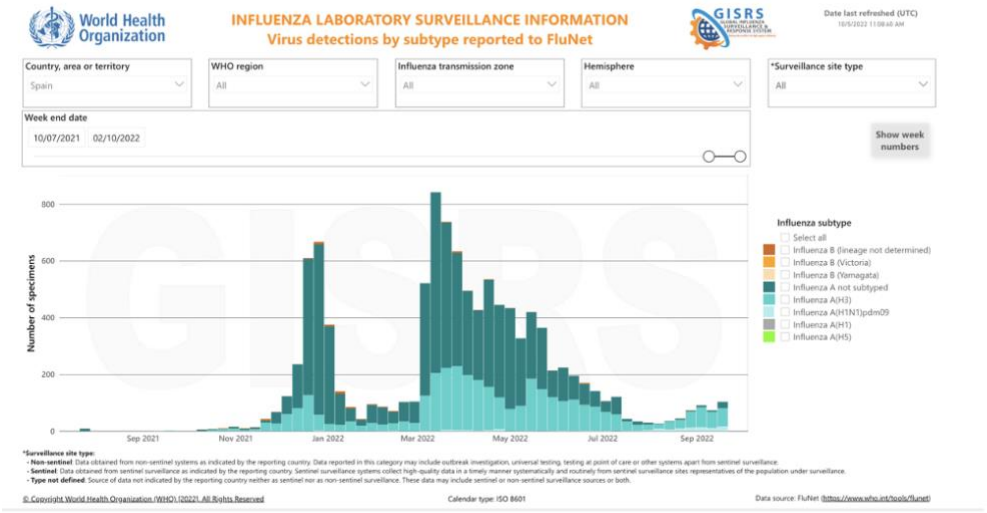


Figure 4: Virus detections by subtype reported to FluNet: Spain



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 October 3, 2022. This Epi-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 top plot displays the number of positive **influenza** (in blue) and of **SARS-CoV-2** (in red) cases. An overview of the absolute number of **influenza** and of **SARS-CoV-2** cases per country can be found on **pages 16-17** of this Epi-Bulletin. The bar in the middle displays the Stringency Index (SI; a country-specific composite metric of the mitigation measures that are in place) over time, where light red indicates loose measures and dark red indicates strict measures. The bottom plot displays the percentage of **influenza** (in blue) and of **SARS-CoV-2** (in red) specimen testing positive

Countries (click to view plot)

North America
Canada
United States

Central America Caribbean
Mexico

Tropical South America
Brazil

Northern Europe
United Kingdom

South West Europe
FranceGermany
Italy
Netherlands
Spain

Eastern Europe
Poland

Northern Africa
Egypt

Southern Africa
South Africa

Eastern Asia
China
Japan
South Korea

Southern Asia
India

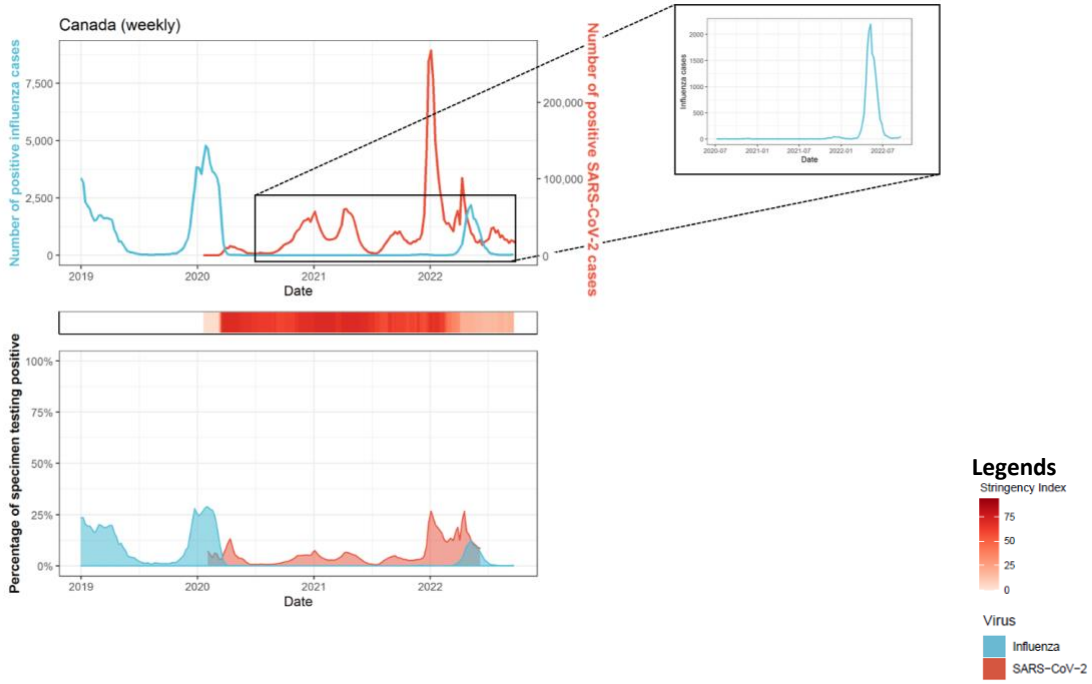
South East Asia
Philippines
Thailand
Vietnam

Western Asia
Israel

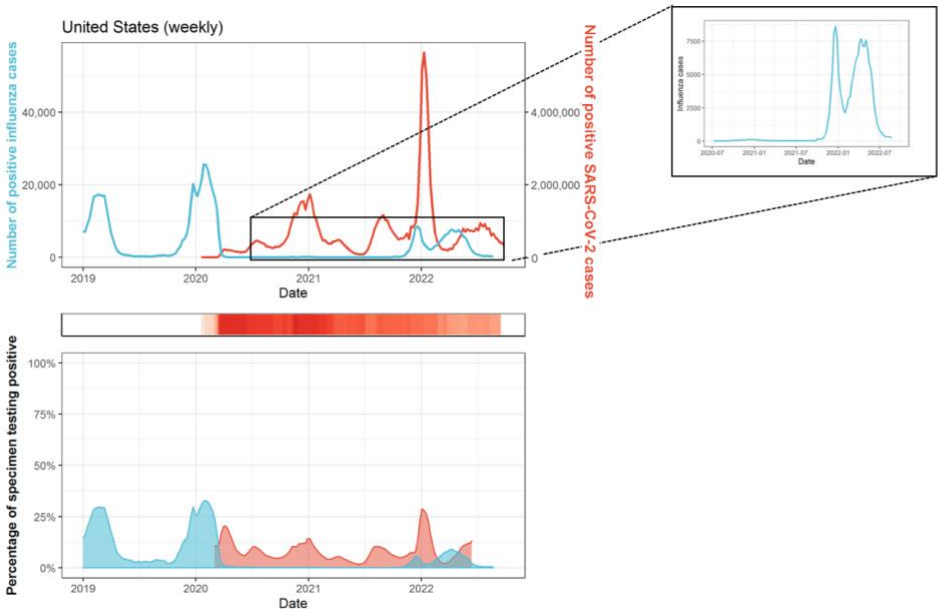
Oceania
Australia

North America

Canada

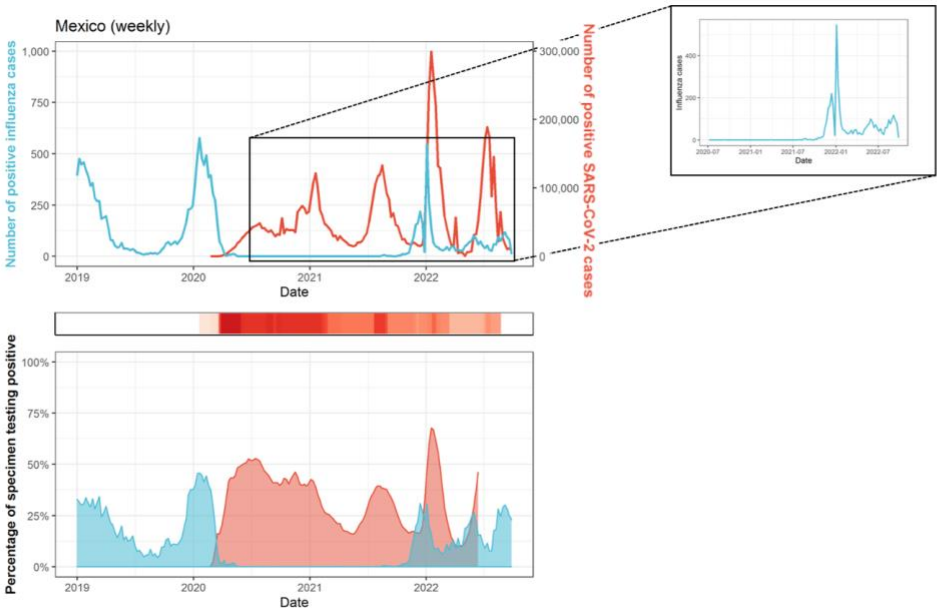


United States



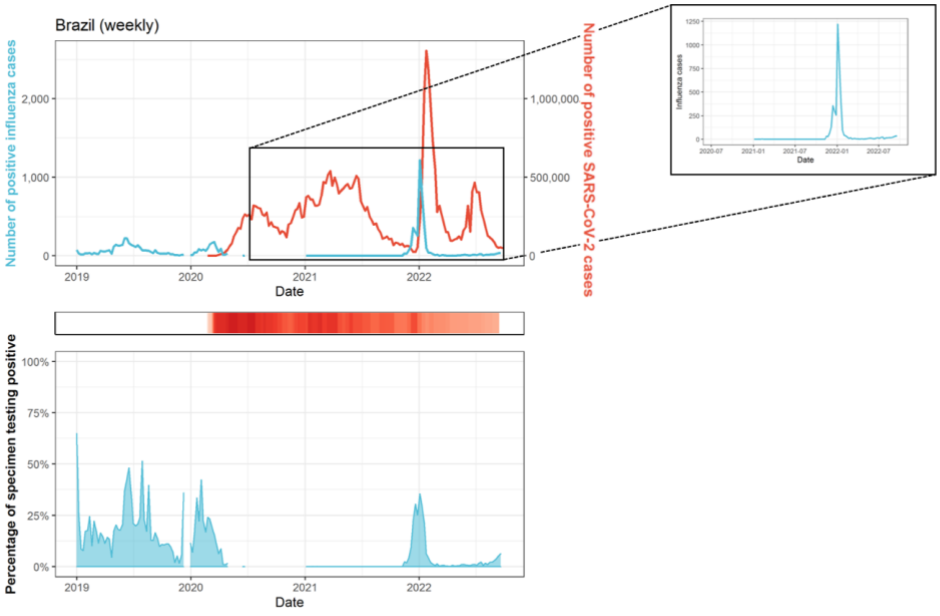
Central America Caribbean

Mexico

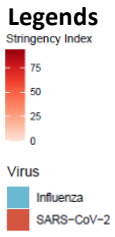


Tropical South America

Brazil

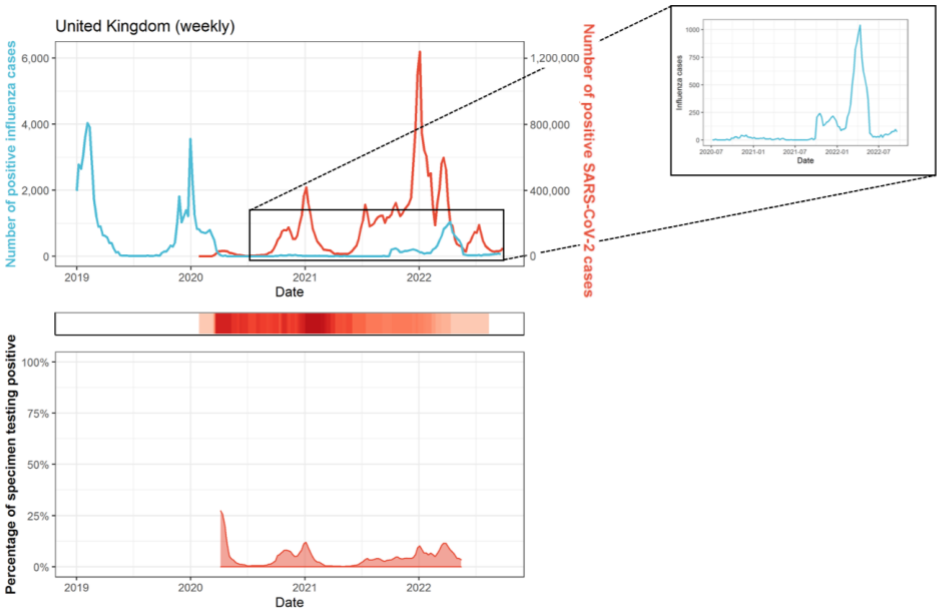


Note. Brazil has no positivity rate for SARS-CoV-2 because no denominator was available.



Northern Europe

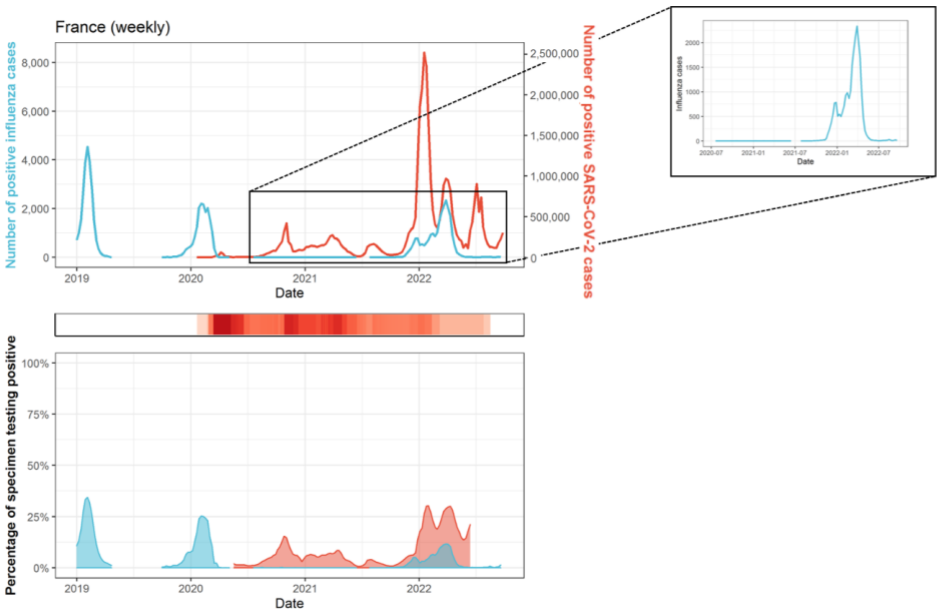
United Kingdom



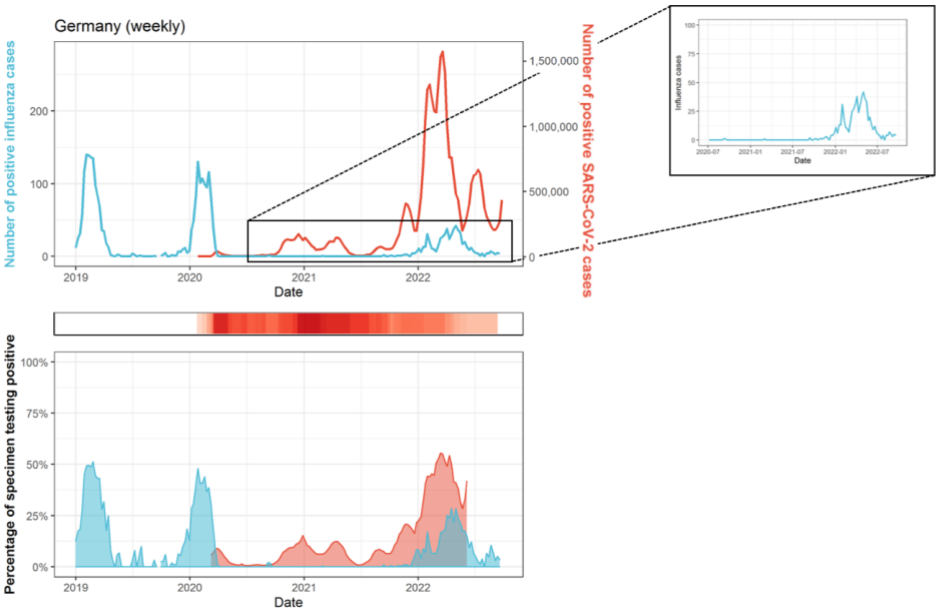
Note. The United Kingdom does not have a positivity rate for influenza because the denominator was deemed unreliable.

South West Europe

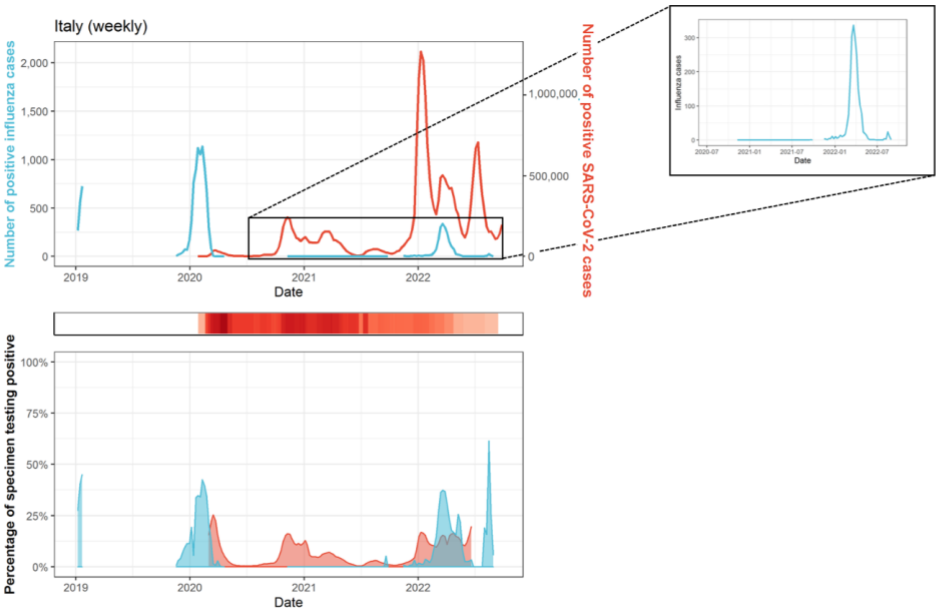
France



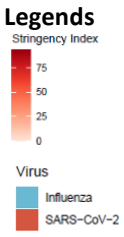
Germany



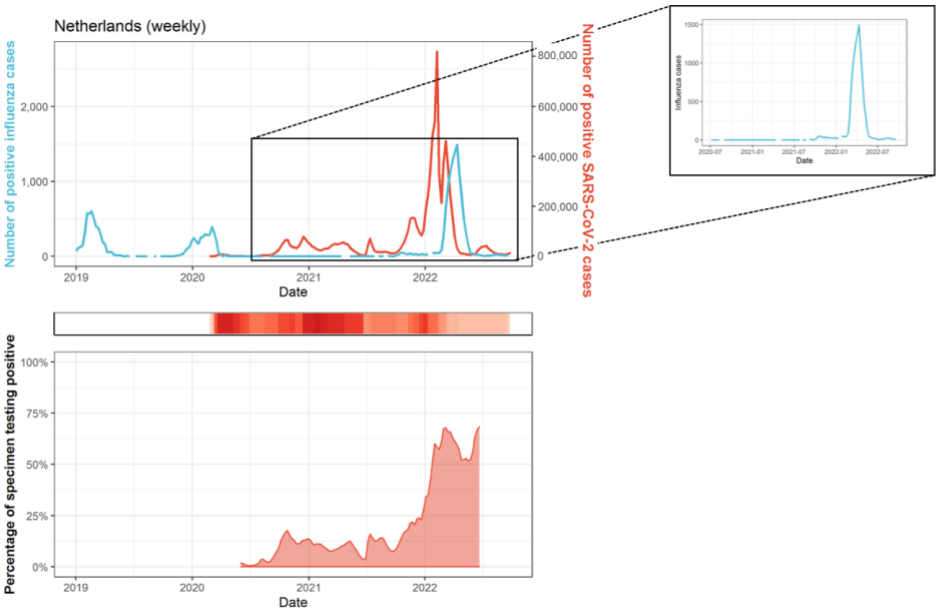
Italy



Note. No influenza data for Italy has been uploaded onto FluNet since week 17, 2022

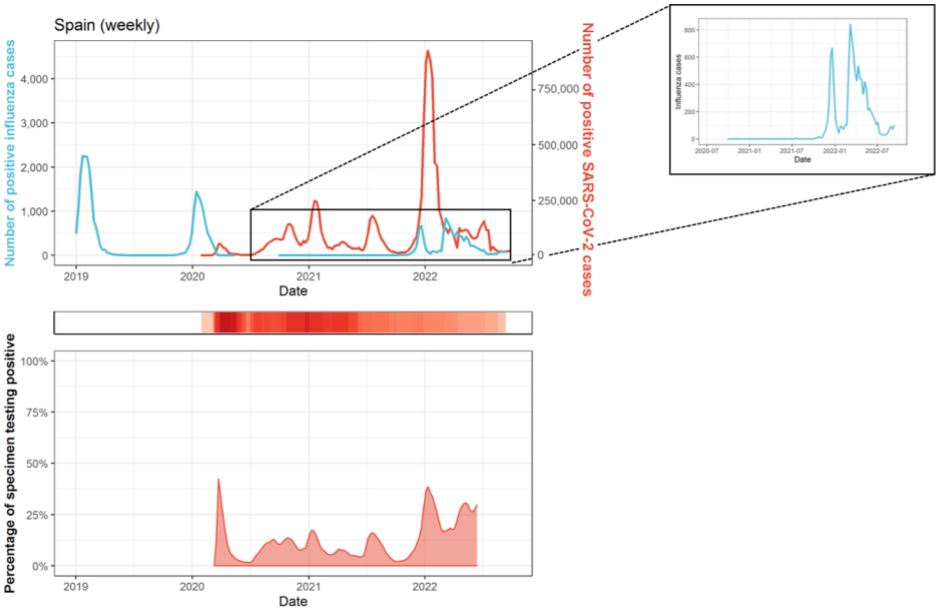


Netherlands

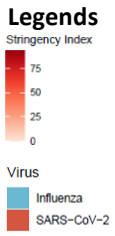


Note. The Netherlands does not have a positivity rate for influenza because the denominator was deemed unreliable.

Spain

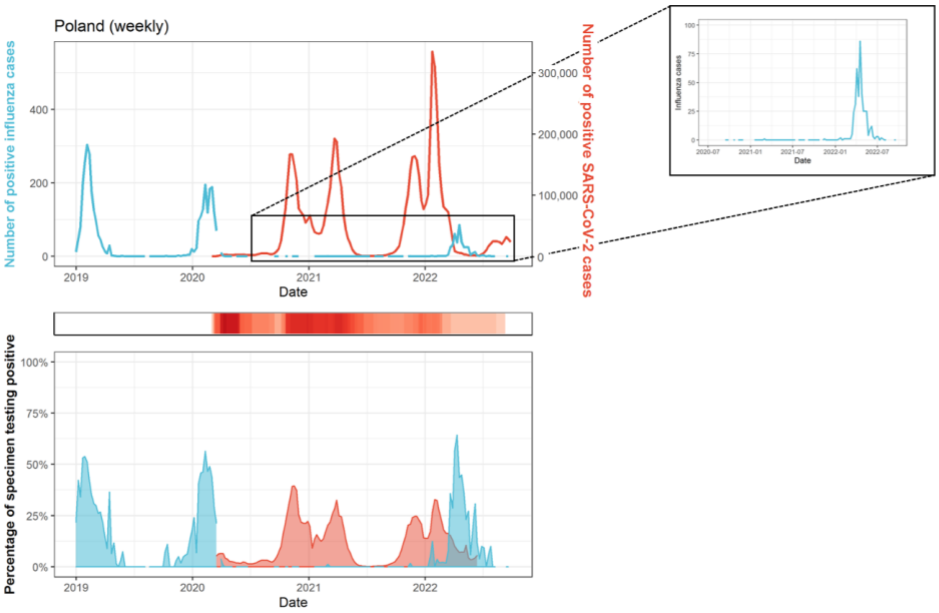


Note. Spain does not have a positivity rate for influenza because the denominator was deemed unreliable.



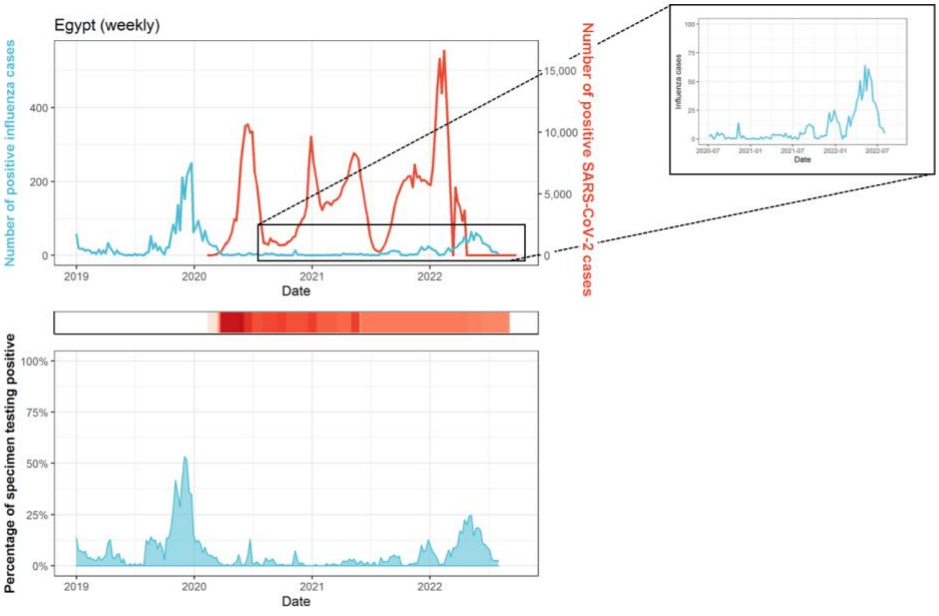
Eastern Europe

Poland

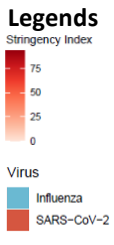


Northern Africa

Egypt

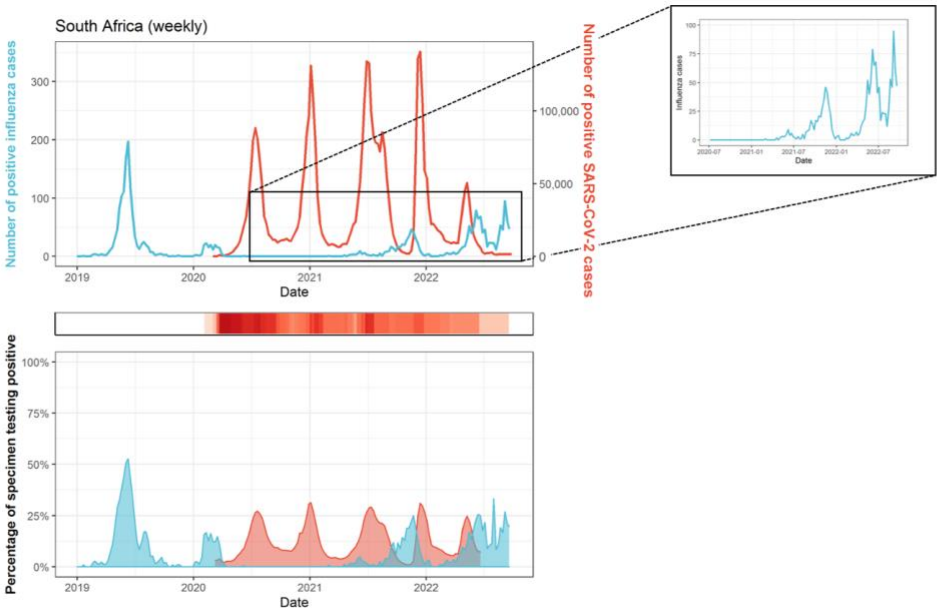


Note. Egypt does not have a positivity rate for SARS-CoV-2 because no denominator was available. No influenza data for Egypt has been uploaded onto FluNet since week 16, 2022



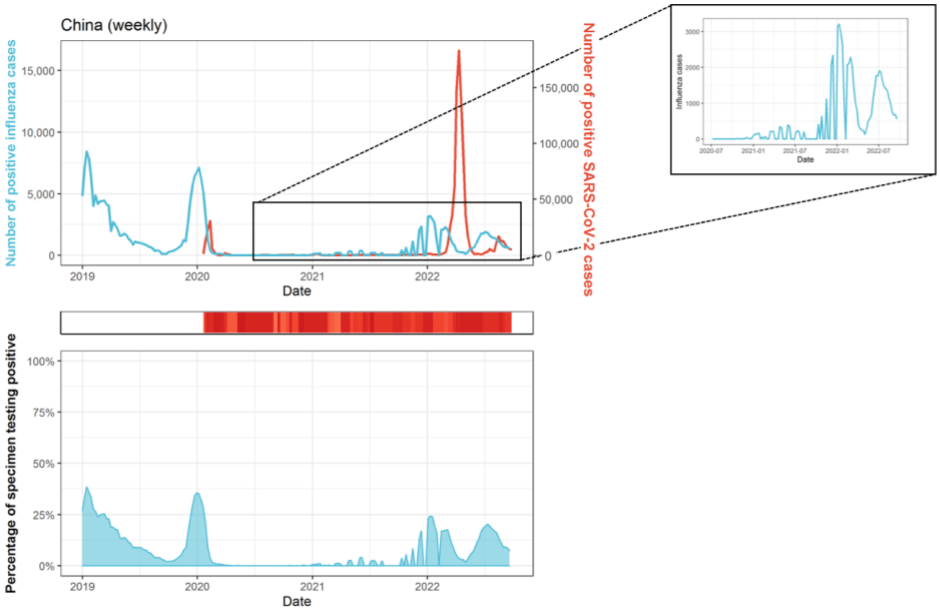
Southern Africa

South Africa



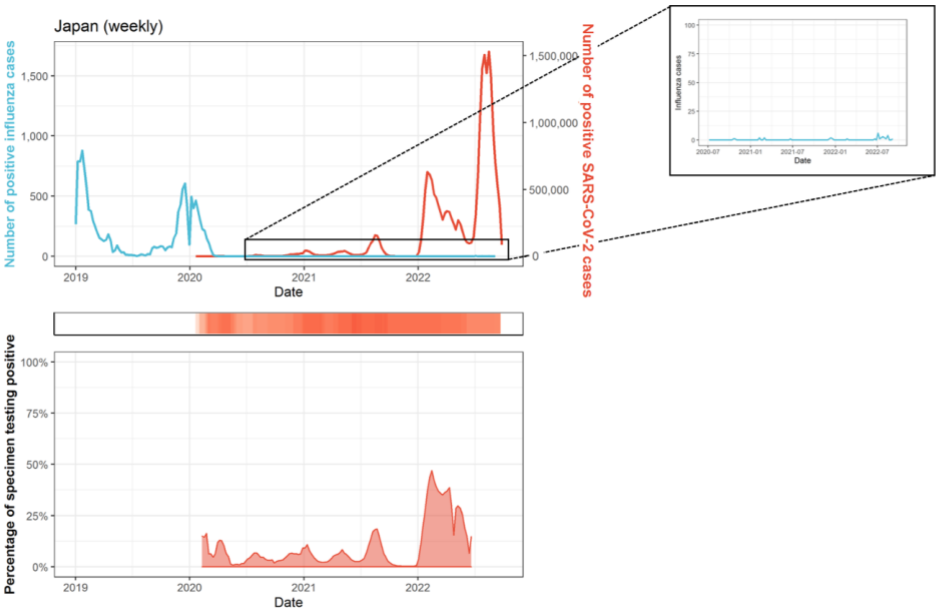
Eastern Asia

China



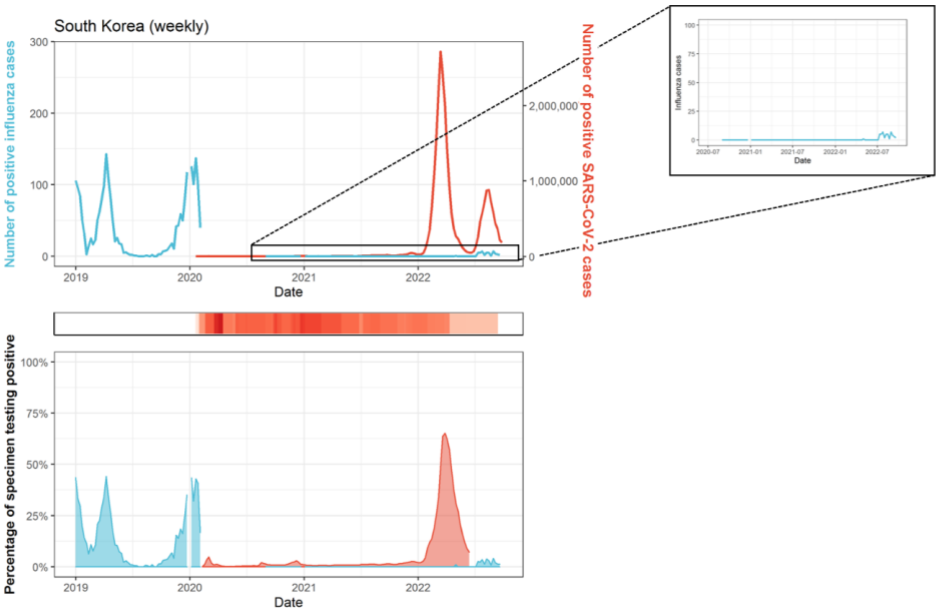
Note. China has no positivity rate for SARS-CoV-2 because no denominator was available.

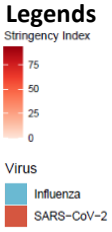
Japan



Note. Japan does not have a positivity rate for influenza because the denominator was deemed unreliable.

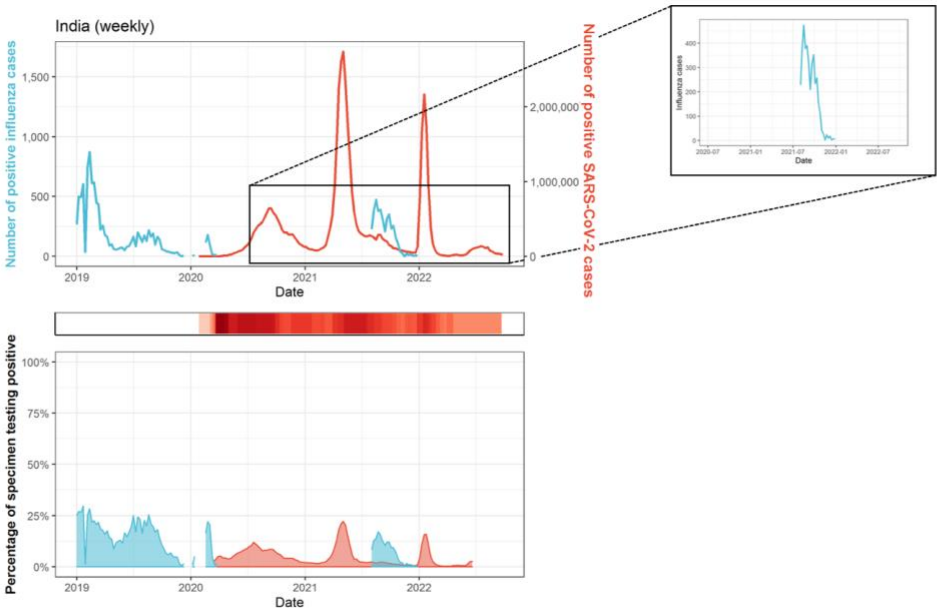
South Korea





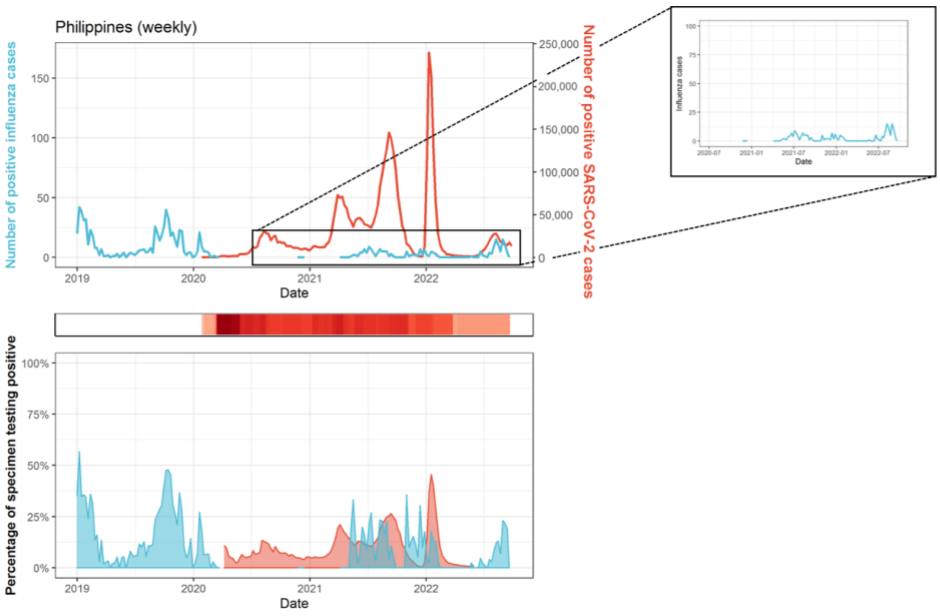
Southern Asia

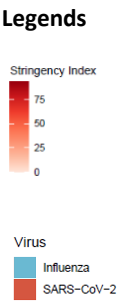
India



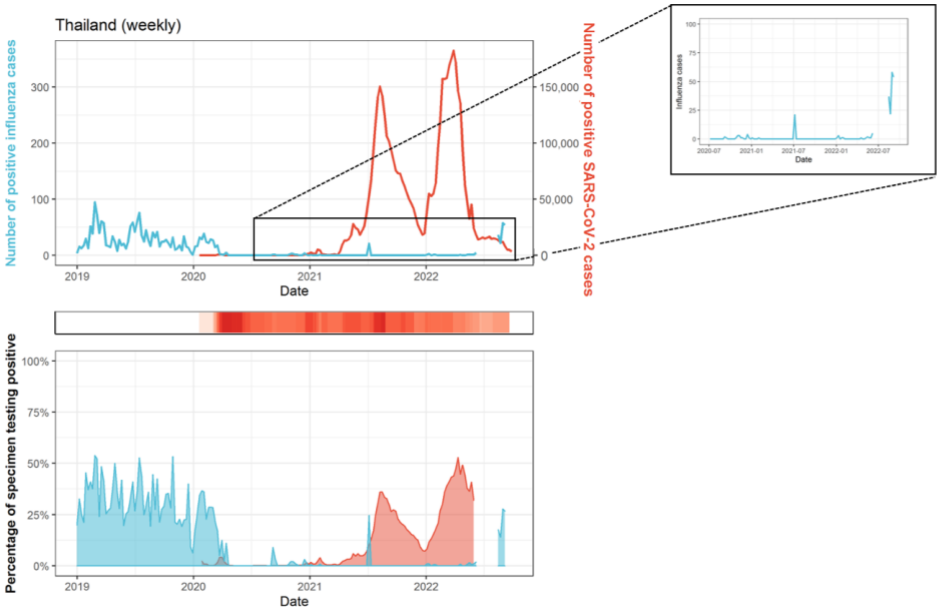
South East Asia

Philippines

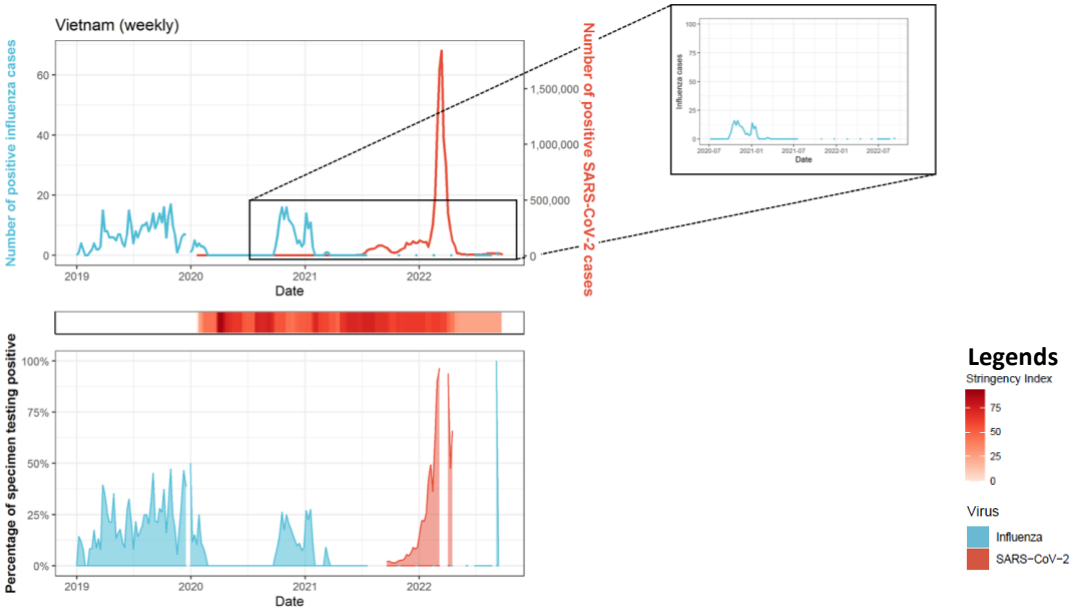




Thailand

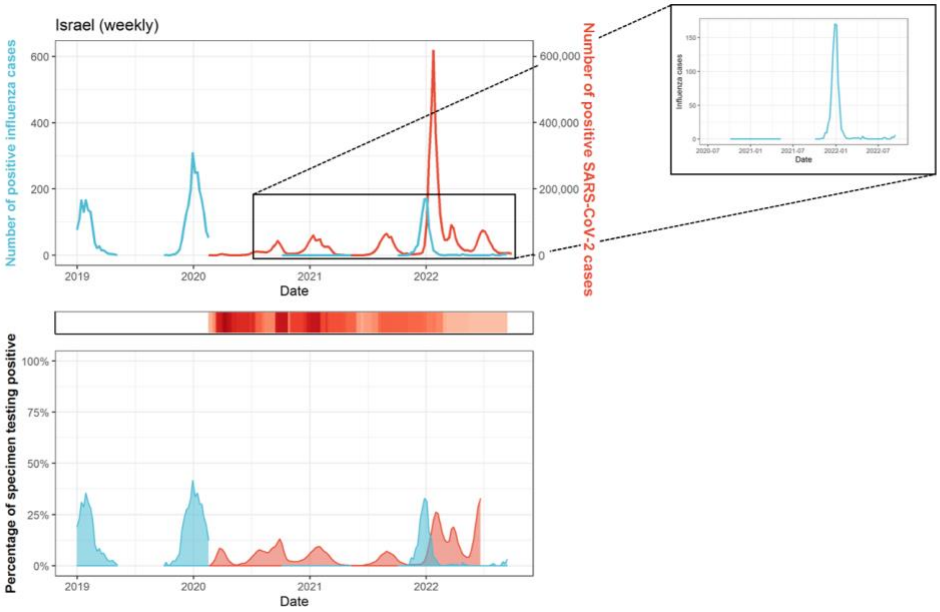


Vietnam



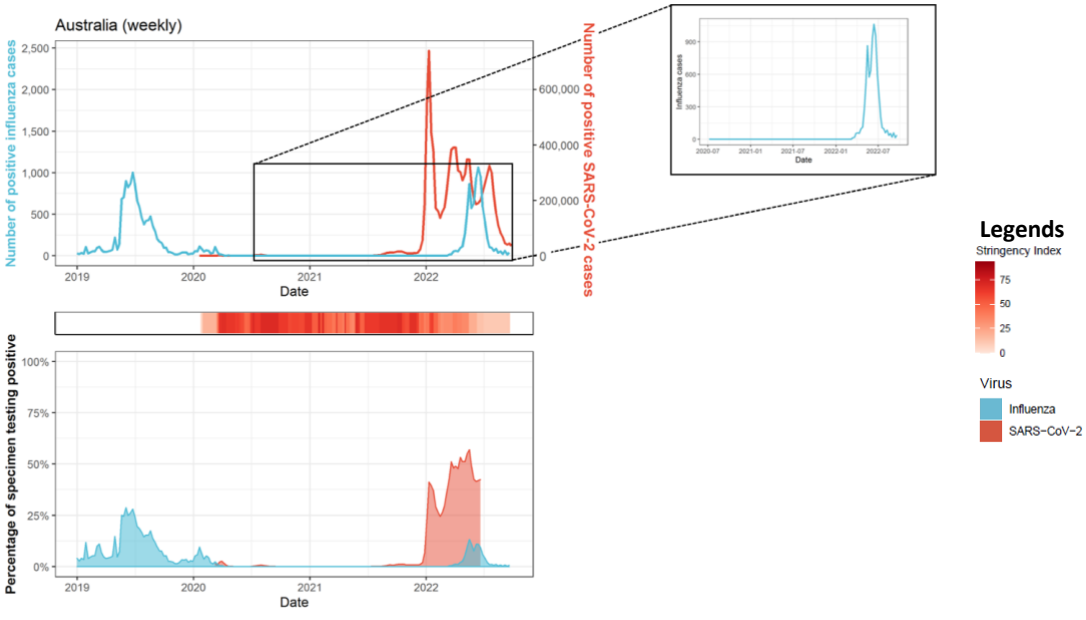
Western Asia

Israel



Oceania

Australia



Absolute numbers per country

Country	Year	Cases[a] of SARS-CoV-2	+/- since last month[b]	Cases[a] of influenza	+/- since last month[b]	Week of last influenza update
Australia	2019			12,404		
Australia	2020	28,425		784		
Australia	2021	397,071		7		
Australia	2022	9,843,587	197,572	8,024	135	2022-38
Brazil	2019			3,320		
Brazil	2020	7,700,828		1,314		
Brazil	2021	14,485,929		1,183		
Brazil	2022	12,380,821	242,671	3,006	119	2022-39
Canada	2019			43,196		
Canada	2020	590,249		44,956		
Canada	2021	1,633,486		337		
Canada	2022	2,071,542	84,424	15,503	122	2022-38
China	2019			122,757		
China	2020	93,153		31,164		
China	2021	21,489		10,145		
China	2022	876,077	34,753	48,503	2,653	2022-38
Egypt	2019			1,998		
Egypt	2020	138,062		659		
Egypt	2021	247,513		233		
Egypt	2022	130,070	0	788	0	2022-31
France	2019			25,405		
France	2020	2,735,590		16,589		
France	2021	7,706,191		3,071		
France	2022	25,465,175	862,069	20,269	59	2022-38
Germany	2019			1,215		
Germany	2020	1,719,737		958		
Germany	2021	5,430,685		29		
Germany	2022	26,235,866	1,201,676	585	17	2022-38
India	2019			9,698		
India	2020	10,286,709		457		
India	2021	24,574,870		4,085		
India	2022	9,729,533	154,773	23	16	2022-39
Israel	2019			1,796		
Israel	2020	423,290		1,424		
Israel	2021	961,872		456		
Israel	2022	3,278,638	29,153	363	11	2022-37
Italy	2019			2,787		
Italy	2020	2,107,314		7,484		
Italy	2021	4,018,517		31		
Italy	2022	16,341,595	599,521	1,997	1	2022-35
Japan	2019			10,343		
Japan	2020	235,747		2,915		
Japan	2021	1,496,547		9		
Japan	2022	19,415,172	2,197,675	22	1	2022-36

Country	Year	Cases[a] of SARS-CoV-2	+/- since last month[b]	Cases[a] of influenza	+/- since last month[b]	Week of last influenza update
Mexico	2019			6,963		
Mexico	2020	1,426,094		4,799		
Mexico	2021	2,553,629		960		
Mexico	2022	3,110,027	74,699	2,966	404	2022-39
Netherlands	2019			5,166		
Netherlands	2020	806,620		3,235		
Netherlands	2021	2,346,892		454		
Netherlands	2022	5,288,090	44,577	10,727	56	2022-38
Philippines	2019			612		
Philippines	2020	474,064		52		
Philippines	2021	2,369,926		105		
Philippines	2022	1,104,695	67,811	102	30	2022-38
Poland	2019			1,786		
Poland	2020	1,294,878		1,282		
Poland	2021	2,813,337		2		
Poland	2022	2,185,343	116,673	407	0	2022-38
South Africa	2019			1,164		
South Africa	2020	1,057,161		157		
South Africa	2021	2,382,539		413		
South Africa	2022	560,791	7,140	991	249	2022-38
South Korea	2019			1,702		
South Korea	2020	61,768		505		
South Korea	2021	573,484		0		
South Korea	2022	24,160,761	1,468,117	47	16	2022-38
Spain	2019			16,580		
Spain	2020	1,938,671		8,829		
Spain	2021	4,440,910		2,210		
Spain	2022	7,129,874	80,454	8,633	267	2022-37
Thailand	2019			1,568		
Thailand	2020	6,882		297		
Thailand	2021	2,216,551		23		
Thailand	2022	2,468,039	29,209	223	112	2022-38
United Kingdom	2019			42,447		
United Kingdom	2020	2,488,780		14,377		
United Kingdom	2021	10,456,330		2,755		
United Kingdom	2022	9,891,534	151,060	9,943	325	2022-38
United States	2019			268,524		
United States	2020	20,221,638		229,766		
United States	2021	34,690,590		39,492		
United States	2022	41,472,819	1,829,264	122,497	0	2022-34
Vietnam	2019			355		
Vietnam	2020	1,465		146		
Vietnam	2021	1,729,792		39		
Vietnam	2022	9,189,159	67,677	1	1	2022-37

[a] Laboratory-confirmed cases.
[b] 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.

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 [2]. The emergence of this new virus has had a major impact on the global circulation of respiratory viruses, including influenza and RSV [3]. 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 Epi-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) [4].

Data sources

- **Influenza**: FluNet [5] 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 [6]. We used this platform to extract data on the number of cases, as well as tests performed per country. This data is extracted both from the John Hopkins repository on daily confirmed COVID-19 [7] cases as well as various national public health institutions.
- **Government response tracker**: The Oxford COVID-19 Government Response Tracker (OxCGRT) [4] 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 October 2022 and cover the period 1 January 2019 to 2 October 2022. 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 per

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Websites

Project Website: https://www.nivel.nl/en/flucov
FluCoV Dashboard: to be released.

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