



Update 99 COVID-19 Coronavirus Disease 19 January 2022



GLOBAL

334 465 582
Confirmed cases
287 800 000 recovered
5 557 810 deaths

USA

(7-days incidence 1.515)
67 128 385
confirmed cases
55 150 000 recovered
850 024 death

India

(7-days incidence 128,0)
37 901 241
confirmed cases
34 480 000 recovered
487 202 deaths

Brazil

(7-days incidence 249,0)
23 229 851
confirmed cases
21 680 000 recovered
621 803 deaths

News:

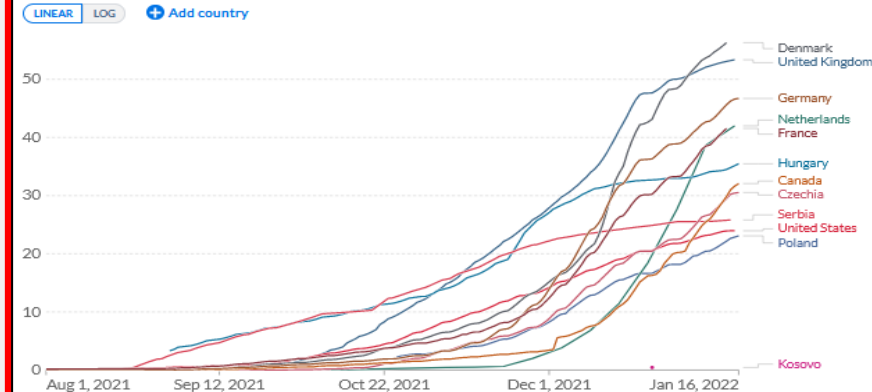
- **WHO:** has [recommended two new drugs for COVID-19](#), providing yet more options for treating the disease. The extent to which these medicines will save lives depends on how widely available and affordable they will be.
- **WHO:** On 15 January 2022, a shipment of 1.1 million COVID-19 vaccines to Rwanda included the [billionth dose supplied via COVAX](#). COVAX is leading the largest vaccine procurement and supply operation in history, with deliveries to 144 countries to date. As of 13 January 2022, out of 194 Member States, 36 WHO Member States have vaccinated less than 10% of their population, and 88 less than 40%.
- **CDC:** published a new [CDC study](#) shows that flu vaccination protected children against serious flu illness even when they were infected with a flu virus that was antigenically different from the vaccine virus. This reinforces the benefit of flu vaccination, even when circulating flu viruses have drifted and are different from the virus used in vaccine production.
- **CDC:** Updated the [consumer mask website](#) describing the [types of masks and respirators](#) used to prevent the transmission of SARS-CoV-2. The updated page will lay out the protection provided by available masks and respirators, noting that some provide better protection than others. These updates to our webpage reflect the science on masking, including what we have learned in the past two years.

Topics:

- Global situation
- European situation
- Vaccination news
- Spotlight on Israel: Booster Dose
- SARS-CoV-2 VOIs and VOCs
- Subject in Focus: Understanding the COVID-19 Situation Using Different Metrics
- Other Infectious Disease Outbreaks

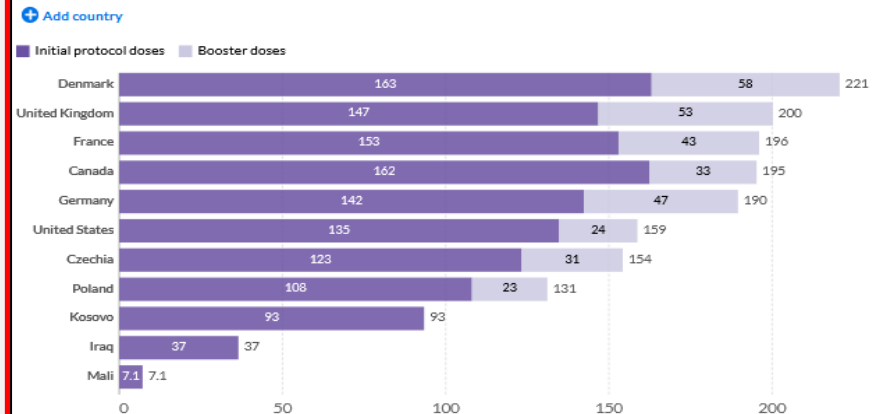
COVID-19 vaccine boosters administered per 100 people

Total number of vaccine booster doses administered, divided by the total population of the country. Booster doses are doses administered beyond those prescribed by the original vaccination protocol.



COVID-19 vaccine initial doses and boosters per 100 people, Jan 17, 2022

Total number of doses administered, broken down by whether they are part of the initial protocol or booster doses, divided by the total population of the country.



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EUROPE

117 807 555
confirmed cases

98 910 000
recovered
1 667 265 deaths

GBR

(7-days incidence 1.003,5)
15 399 304
confirmed cases

13 250 000 recovered
152 513 deaths

France

(7-days incidence 2.384)
14 172 384
confirmed cases
10 370 000 recovered
127 638 deaths

Russia

(7-days incidence 122,5)
10 682 826
confirmed cases
10 030 000 recovered
316 168 deaths

Situation by WHO Region, as of 18 January

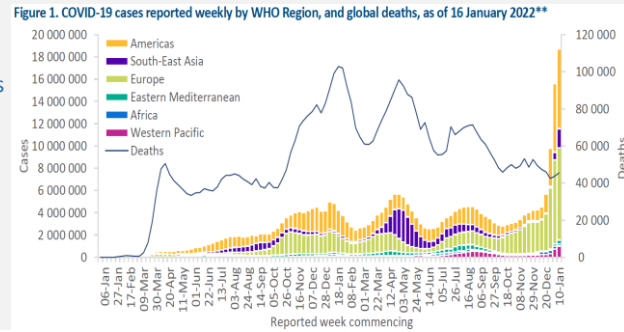
Global epidemiological situation overview; WHO as of 18 January 2022

Globally, the number of new COVID-19 cases increased in the past week (10-16 January 2022), while the number of new deaths remained similar to that reported during the previous week (Figure 1). Across the six WHO regions, over 18 million new cases were reported this week, a 20% increase, as compared to the previous week. Over 45 000 new deaths were also reported (Table 1). As of 16 January 2022, over 323 million confirmed cases and over 5.5 million deaths have been reported worldwide.

Despite a slowdown of the increase in case incidence at the global level, all regions reported an increase in the incidence of weekly cases with the exception of the African Region, which reported a 27% decrease. The South-East Asia Region reported the largest increase in new cases last week (145%), followed by the Eastern Mediterranean Region (68%), the Western Pacific Region (38%), the Region of the Americas (17%) and the European Region (10%). New weekly deaths increased in the South-East Asia Region (12%) and Region of the Americas (7%), while remaining similar to the number reported during the previous week in the other Regions.

The highest numbers of new cases were reported from:

- United States of America (4 688 466 new cases; similar to previous week),
- France (2 012 943 new cases; 26% increase),
- India (1 594 160 new cases; 150% increase),
- Italy (1 268 153 new cases; 25% increase) and,
- United Kingdom (813 326 new cases; 33% decrease),

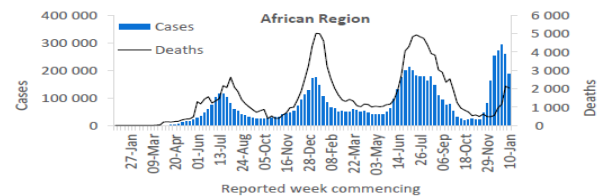


WHO regional overviews Epidemiological week 10 – 16 January 2022

African Region

The number of new cases in the Africa Region continues to decline following the most recent peak in December 2021, with over 190 000 new cases reported, a 27% decrease as compared to the previous week. While most countries in the region reported a decline in the number of new cases, nearly a third of the countries in the region (13/41; 32%) reported an increase of 10% or more as compared to the previous week. The largest proportional increase in cases was observed in Mayotte (9086 vs 2760 new cases, a 229% increase), Central African Republic (865 vs 291; 197%) and Eritrea (573 vs 277; 107%). The highest numbers of new cases were reported from South Africa (35 121 new cases; 59.2 new cases per 100 000 population; a 34% decrease), Réunion (16 256 new cases; 1815.7 new cases per 100 000; a 74% increase), and Zambia (13 452 new cases; 73.2 new cases per 100 000; a 43% decrease).

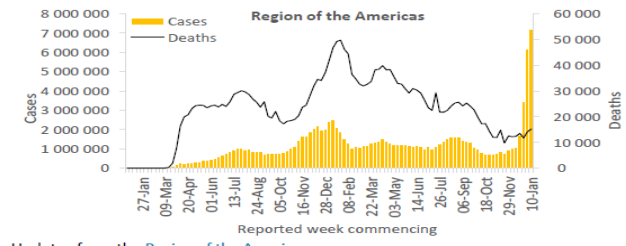
The number of new deaths reported in the Region was just over 2000, similar to the number reported during the previous week. The highest numbers of new deaths were reported from South Africa (907 new deaths; 1.5 new deaths per 100 000 population; a 23% decrease), Ethiopia (111 new deaths; <1 new death per 100 000; a 52% increase), and Namibia (106 new deaths; 4.2 new deaths per 100 000; a 63% increase).



Region of the Americas

The number of new cases in the Region of the Americas increased, albeit at a slower rate, in the past week, with just under 7.2 million new cases reported, a 17% increase as compared to the previous week. The majority of the countries in the Region reported increases of over 10% (39/56; 70%). The countries with the highest proportionate increases were Martinique (13 540 vs 1385; 638%) El Salvador (1343 vs 289; 365%) and Ecuador (42 992 vs 10 532; 308%). The highest numbers of new cases were reported from the United States of America (4 688 466 new cases; 1416.4 new cases per 100 000; similar to the previous week's figures), Argentina (797 136 new cases; 1763.7 new cases per 100 000; a 73% increase), and Brazil (476 981 new cases; 224.4 new cases per 100 000; a 193% increase).

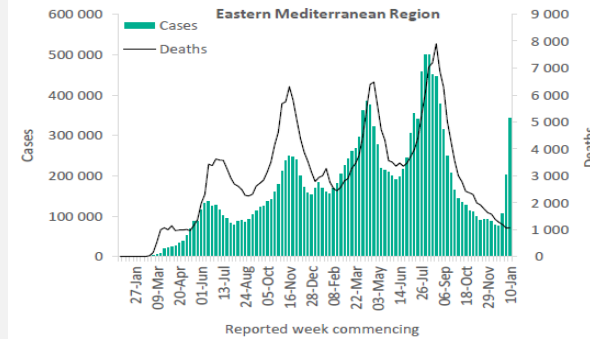
The number of new deaths also increased in the past week, with over 15 000 new deaths, a 7% increase as compared to the number reported during the previous week. The highest numbers of new deaths were reported from the United States of America (10 412 new deaths; 3.1 new deaths per 100 000; a 5% decrease), Brazil (974 new deaths; <1 new death per 100 000; a 27% increase), and Canada (523 new deaths; 1.4 new deaths per 100 000; a 50% increase).



Eastern Mediterranean Region

The Eastern Mediterranean Region showed a substantial increase in new cases reported during this past week, with over 345 000 new cases, a 68% increase as compared to the previous week. All but two countries (Libya and Somalia) in the Region reported increases in the number of new cases in the past week. The highest numbers of new cases were reported from Morocco (46 104 new cases; 124.9 new cases per 100 000; a 45% increase), Lebanon (45 231 new cases; 662.7 new cases per 100 000; a 19% increase), and Tunisia (39 487 new cases; 334.1 new cases per 100 000; a 194% increase).

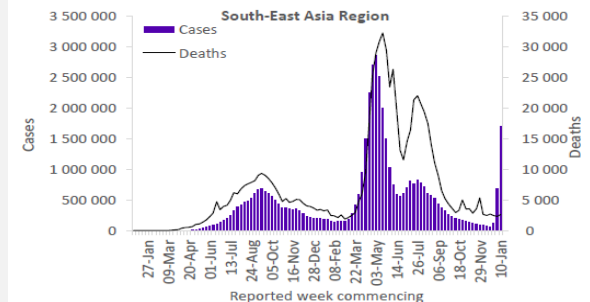
The number of new deaths remained similar to the number reported during the previous week, with just over 1000 new deaths reported. The highest numbers of new deaths were reported from the Islamic Republic of Iran (197 new deaths; <1 new death per 100 000; a 5% decrease), Egypt (185 new deaths; <1 new death per 100 000; a 9% increase), and Tunisia (122 new deaths; 1.0 new deaths per 100 000; a 54% increase).



South-East Asia Region

The number of new cases in the South-East Asia Region continues to increase, with over 1.7 million new cases reported, a 145% increase as compared to the previous week. All but one country (Timor-Leste; a 58% decrease) reported an increase in the number of new weekly cases, with the largest proportional increases observed in Nepal (21149 vs 3603 new cases, a 486% increase), Bangladesh (24011 vs 7234; a 231% increase) and the Maldives (5529 vs 2000, a 176% increase). The highest numbers of new cases were reported from India (1 594 160 new cases; 115.5 new cases per 100 000; a 150% increase), Thailand (54 935 new cases; 78.7 new cases per 100 000; a 37% increase), and Bangladesh (24 011 new cases; 14.6 new cases per 100 000; a 232% increase).

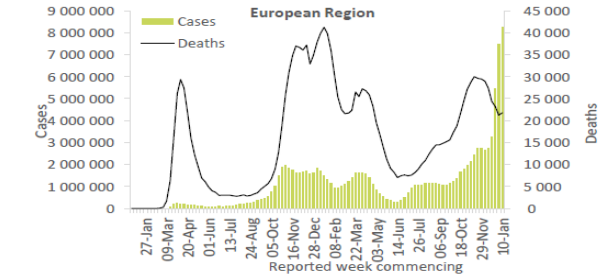
Over 2500 new weekly deaths were reported, a 12% increase as compared to the previous week. The highest numbers of new deaths were reported from India (2276 new deaths; <1 new death per 100 000; a 13% increase), Thailand (100 new deaths; <1 new death per 100 000; a 5% decrease), and Sri Lanka (92 new deaths; <1 new death per 100 000; a 8% decrease).



European Region

The number of new cases continued to increase this week in the European Region with over 8.2 million new cases reported, a 10% increase as compared to the previous week. Most of the countries in the Region (39/61; 64%) reported an increase greater than 10%, with the highest increases reported from Kazakhstan (54 927 vs 6672 new cases, a 723% increase), Uzbekistan (4744 vs 1223 new cases, a 287% increase) and Kosovo^[1] (2990 vs 842 new cases, a 255% increase). The highest numbers of new cases were reported from France (2 012 943 new cases; 3095.0 new cases per 100 000; a 26% increase), Italy (1 268 153 new cases; 2126.3 new cases per 100 000; a 25% increase), and the United Kingdom (813 326 new cases; 1198.1 new cases per 100 000; a 33% decrease).

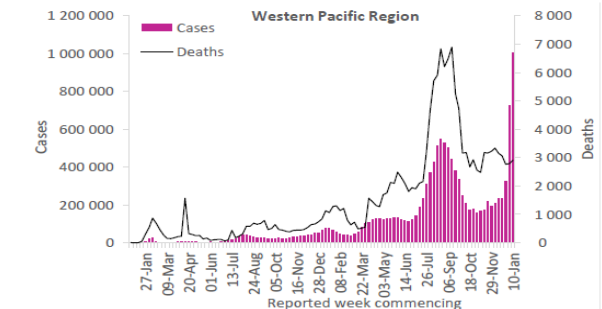
The number of weekly deaths was similar to the previous week, with over 21 000 new deaths reported. The highest numbers of new deaths were reported from the Russian Federation (5157 new deaths; 3.5 new deaths per 100 000; a 9% decrease), Poland (2563 new deaths; 6.8 new deaths per 100 000; a 19% increase), and Italy (1975 new deaths; 3.3 new deaths per 100 000; a 44% increase).



Western Pacific Region

The numbers of new weekly cases and deaths have continued to increase in the Western Pacific Region, with over one million new cases and over 2900 new deaths, increases of 38% and 5% increase respectively as compared to the previous week. Twelve countries in the Region (44%), reported increases of over 10% in new cases, with the highest increases reported from Palau (46 vs 5 new cases; an 820% increase), French Polynesia (475 vs 109 new cases; a 335% increase) and Japan (95498 vs 23168; a 312% increase). The highest numbers of new cases were reported from Australia (472 564 new cases; 1853.2 new cases per 100 000; a 12% increase), the Philippines (231 502 new cases; 211.3 new cases per 100 000; a 159% increase), and Viet Nam (131 468 new cases; 135.1 new cases per 100 000; similar to the previous week's figures).

The highest numbers of new deaths were reported from Viet Nam (1363 new deaths; 1.4 new deaths per 100 000; a 10% decrease), the Philippines (723 new deaths; <1 new death per 100 000; a 23% increase), and Australia (288 new deaths; 1.1 new deaths per 100 000; a 213% increase).



Global Situation



Overview of COVID-19 in Argentina

Disease Activity – As of January 17, **disease activity has been exponentially increasing** over the past month during the **third wave** in Argentina, with a continuous increase in weekly new cases. For the week of January 10 to January 17, the incidence rate per 100,000 over the past seven days was 1,548, which has increased when compared to the previous week when it was 1,370 cases per 100,000. While case counts predominantly include PCR testing, not all cases may be captured in the official case counts due to testing capacity. Both the Delta variant and the Omicron variant are circulating in the country, with Delta remaining the predominant variant. However, the rapid increase in cases is suggested to be due to **increases in the Omicron variant**, the easing of restrictions in late November 2021, and resident summer vacations in the country. **The 14-day average test positivity rate has risen from 44% on January 10 to 65% as of January 16**, while testing has also remained stable in the same time period. This is currently the highest test positivity rate globally.¹

Hospital Occupancy – Argentina’s health system is strained during the third wave of the pandemic. As of January 15, **ICU units are reported to be at 41.7% capacity nationwide**, with 2,268 individuals hospitalized due to COVID-19. As of January 18, approximately **15% to 20% of the countries health care workers are currently infected** with the virus. Due to a shortage of healthcare professionals, the province of Buenos Aires has mandated healthcare workers to return to work even if they have encountered someone positive with COVID-19, provided they are asymptomatic and fully vaccinated. Similar mandates are being considered for other provinces across the nation.^{2,3,4}

Public Measures – Argentina’s land and air border remain open but has increased testing requirements for travellers entering the country. As of January 3, all national and foreign travellers over the age of six must isolate themselves until they undergo a PCR test between days three and five of arrival in the country. Individuals who are not fully vaccinated must undergo a one-week quarantine until a negative PCR test on the seventh day of entering the country. As of January 1, all residents over the age of 13 years must have proof of complete vaccination to participate in both indoor and outdoor group activities such as group trips outside their households, attending parties or attending mass events. Other COVID-19 mandates which remain include: wearing facemasks when in public spaces, continuing to physically distance, and avoiding large gatherings when possible.^{5,6,7,8}

Vaccination Coverage – As of January 17, **86.8%** (39,005,575) of Argentina’s total population over the age of 12 have received their **first dose of a COVID-19 vaccine**, while **75.2%** (33,781,649) have received the **full regime of a vaccine**. As of January 14, only **18%** of the population has received a third **‘booster’ dose**. Argentina’s vaccination campaign began in December 2020, and five vaccines are approved for use, including Comirnaty (Pfizer-BioNTech), Vaxzevria (Oxford/AstraZeneca), Spikevax (Moderna), Sputnik-V (Gamaleya Research Institute) and BBIBP-CorV (Sinopharm).^{9,10,11,12}

1. <https://www.nytimes.com/2021/12/30/world/americas/cases-surge-in-argentina-raising-questions-about-what-is-to-come-in-south-america.html>
2. <https://www.wsj.com/articles/2022/01/18/arge-j18.html>
3. <https://www.newsobserver.com/news/article257406542.html>
4. <https://toymatrix.com/buenos-aires-times-argentina-sets-new-daily-high-of-139853-covid-cases-in-24-hours/>
5. <https://ctoro.cancilleria.gob.ar/en/requirements-entry-argentina>
6. <https://www.sandiegouniontribune.com/en-espanol/noticias/story/2022-01-03/argentina-mas-testeos-para-viajeros-por-ola-de-covid-19>
7. <https://www.as-coa.org/articles/how-latin-america-faring-against-omicron>
8. <http://www.news.cn/english/20220117/4aac437ec1504293bbb1de9423a0865d/c.html>
9. <https://covidvax.live/location/arg>
10. <https://www.laprensalatina.com/omicron-variant-slams-argentina-during-summer-holiday-season/>
11. <https://www.batimes.com.ar/news/argentina/covid-erupts-in-argentina-at-height-of-summer-vacation-season.phtml>
12. <https://www.as-coa.org/articles/are-kids-all-right-look-vaccine-age-eligibility-latin-america>

Overview of COVID-19 in London, United Kingdom

Disease activity – Although London’s weekly reported cases between December 2021 and January 2022 remain high, there is a **decrease in weekly new cases**. For the week of January 2 to January 8, the incidence was **1,526 cases per 100,000** which decreased from 1,763 cases per 100,000 in the previous week. Although case counts include both PCR and rapid lateral flow tests (LFTs; otherwise known as a rapid antigen test), **not all LFT results may be included in official case counts as it is self-reported**. Thus case counts alone are not entirely indicative of the trend. In fact, the 14-day average test positivity rate has risen from 6.08% on December 23, 2021, to 7.73% as of January 6, 2022.^{1,2}

Test eligibility – As of January 12, 2022, tests for residents are free of charge and offered through the National Health Service (NHS), unless you are travelling or returning abroad from England, in which case a paid test must be completed with a private provider. For those **with symptoms of COVID-19, individuals are eligible for a PCR test**, whereas those without **symptoms are eligible for an LFT**. LFTs are available in limited supply at pharmacies and individuals are encouraged to report their test result(s) online or by calling 119. Currently, for those who have been in close contact with an individual who has tested positive, rapid lateral flow tests are recommended for those who are fully vaccinated and older than 18 years of age. However, a PCR test is required for those who are unvaccinated.^{3,4}

Hospital occupancy – Compared to the previous week, there has been a **slight decrease in the number of patients hospitalized due to COVID-19 and those in mechanical ventilation beds**. As of January 13, **3,662 patients were hospitalized** due to COVID-19, which includes **217 patients in mechanical ventilation beds** (versus 4,053 patients hospitalized and 242 were in mechanical ventilation beds on January 6). On January 10, news media reported that the government was deploying 200 armed forces personnel into NHS hospitals across London, in order to alleviate the strain caused by staff shortages due to COVID-19 illness and/or isolation.^{1,5}

Public measures – A **mask mandate** went into effect for public areas such as supermarkets, banks, pharmacies, and public transport since December 10, 2021. Residents are encouraged to work from home if they are able and to complete an LFT before entering any high-risk settings. For access into large-scale events, individuals are required to show proof of vaccination and have recently tested negative for COVID-19. For students and staff in secondary school settings, two LFTs must be completed per week and face masks are mandated until at least January 26.⁶

Vaccination coverage – As of January 12, **83.7%** (6,339,115/7,574,634) of London’s total population over 12 years of age, have received their **first dose of a COVID-19 vaccine**, **76.1%** (n=5,760,871) have received **two doses**, and **50.6%** (n=3,835,887) have received their **third dose**. Four vaccines are approved for use among individuals aged 12 years or older in the United Kingdom; Comirnaty (Pfizer/BioNTech), Janssen (Johnson & Johnson), Spikevax (Moderna), and Vaxzevria (Oxford/AstraZeneca). There are no vaccines approved for use in children under 12 years of age at this time.^{1,7}

1. <https://www.london.gov.uk/updates/news-feed?fi=3611#news-item-3611>
2. <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/datasets/coronaviruscovid19infectionsurveydata>
3. <https://www.bbc.com/news/health-51943612>
4. <https://www.nhs.uk/conditions/coronavirus-covid-19/testing/get-tested-for-coronavirus/>
5. <https://www.bbc.com/news/health-51943612>
6. <https://www.bmj.com/content/376/bmj.o47>
7. <https://www.bbc.com/news/explainers-52530518>

DEU/military: According to a report, dozens of soldiers in the Bundeswehr are being investigated for violating compulsory vaccination. For the approximately 180,000 soldiers, refusing the vaccination is considered a refusal to obey orders. According to figures from the Ministry of Defense, between 50 and 60 procedures are currently being carried out against servicewomen and men who vehemently rejected the vaccination despite the so-called toleration obligation. Initially, those who refused to vaccinate were threatened with disciplinary sanctions. Ultimately, refusing vaccination would result in removal from the force.

Global Situation

Treatment of COVID-19

WHO recommends two new drugs to treat COVID-19

WHO has recommended two new drugs for COVID-19, providing yet more options for treating the disease. The extent to which these medicines will save lives depends on how widely available and affordable they will be.

The first drug, baricitinib, is strongly recommended for patients with severe or critical COVID-19. It is part of a class of drugs called Janus kinase (JAK) inhibitors that suppress the overstimulation of the immune system. WHO recommends that it is given with corticosteroids.

Baricitinib is an oral drug, used in the treatment of rheumatoid arthritis. It provides an alternative to other arthritis drugs called Interleukin-6 receptor blockers, [recommended](#) by WHO in July 2021.

WHO has also conditionally recommended the use of a monoclonal antibody drug, sotrovimab, for treating mild or moderate COVID-19 in patients who are at high risk of hospitalization. This includes patients who are older, immunocompromised, having underlying conditions like diabetes, hypertension, and obesity, and those unvaccinated.

Sotrovimab is an alternative to casirivimab-imdevimab, a monoclonal antibody cocktail [recommended](#) by WHO in September 2021. Studies are ongoing on the effectiveness of monoclonal antibodies against Omicron but early laboratory studies show that sotrovimab retains its activity.

The panel of experts developing the guidelines also looked at two other drugs for severe and critical COVID-19: ruxolitinib and tofacitinib. Given their uncertain effects, WHO made a conditional recommendation against their use.

Today's recommendations, forming the eighth update of WHO's living guidelines on [therapeutics and COVID-19](#), are based on evidence from seven trials involving over 4,000 patients with non-severe, severe, and critical COVID-19.

WHO is in discussions with manufacturers to secure global supply capacity and equitable and sustainable access to the newly recommended therapeutics. The Access to COVID-19 Tools Accelerator (ACT-A) Therapeutics pillar has been engaging with pharmaceutical companies to seek comprehensive access plans for low- and middle-income countries, so that these treatments can be rapidly deployed everywhere, not just in rich countries. The ACT-A is also looking to expand licensing scope to make the products more affordable.

The two newly recommended drugs - baricitinib and sotrovimab - have been invited for [WHO Prequalification](#), which assesses the quality, efficacy and safety of priority health products to increase access in lower income countries.

- <https://www.who.int/news/item/06-07-2021-who-recommends-life-saving-interleukin-6-receptor-blockers-for-covid-19> <https://www.who.int/news/item/24-09-2021-on-new-recommendation-for-treatment-of-covid-19-patients-who-calls-for-equitable-access-to-casirivimab-and-imdevimab-for-covid-19>
- <https://www.who.int/teams/health-care-readiness-clinical-unity/covid-19/therapeutics>
- https://extranet.who.int/pqweb/sites/default/files/documents/EOI-COVID-19_v7.pdf

First COVID-19 home oral treatment approved by Health Canada

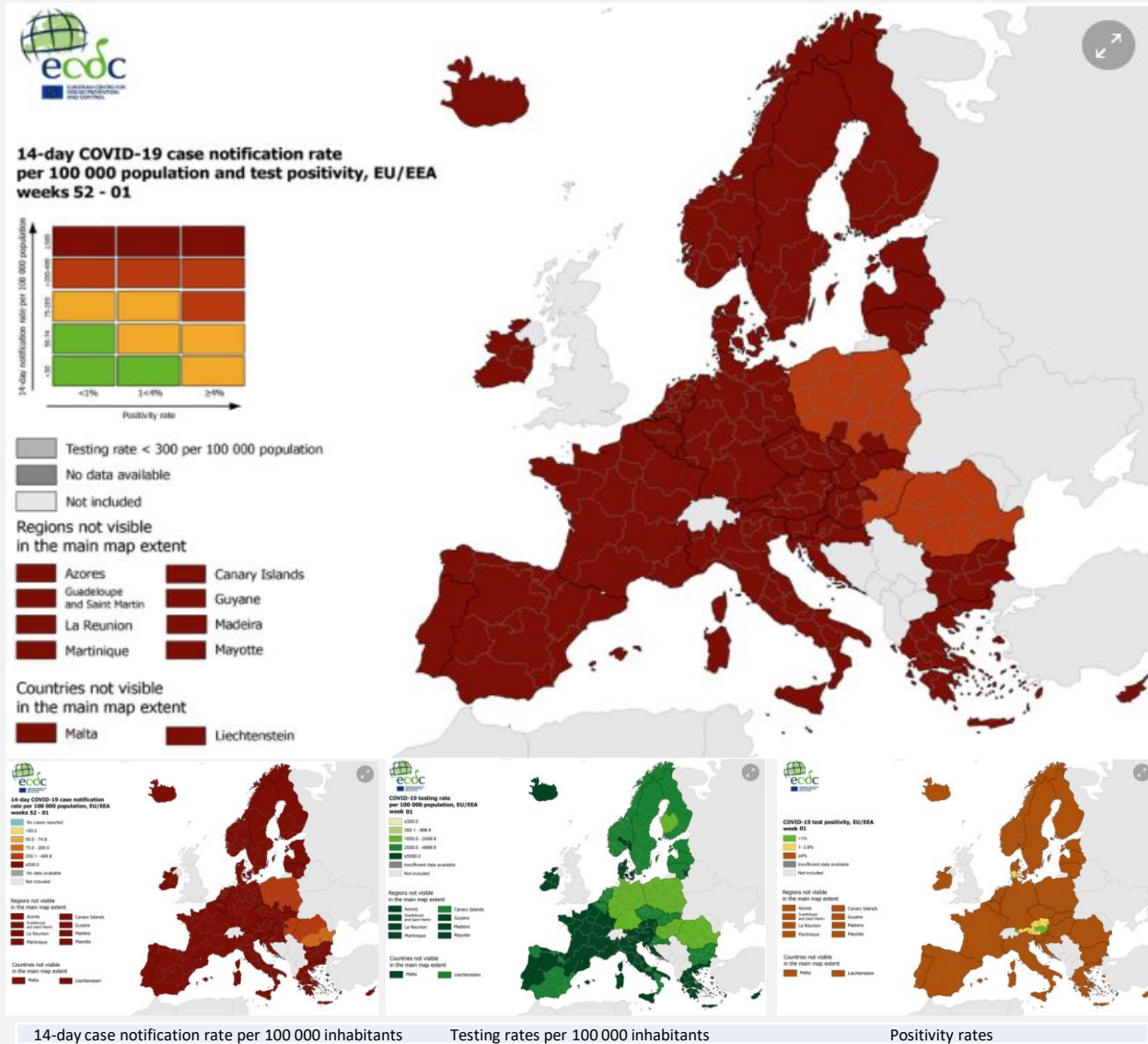
On Monday, January 17, 2022, Health Canada has **approved Pfizer's drug Paxlovid as the first take-home treatment for COVID-19**.¹

- According to clinical trial data submitted to Health Canada, in a randomized, double-blind study of more than 380 patients, there was an **89% reduction in the risk of being hospitalized or dying of COVID-19** in patients that received Pfizer's pill within three days of displaying COVID-19 symptoms, compared to the study group that received a placebo.
- **Paxlovid** is comprised of two antiviral drugs (Nirmatrelvir and Ritonavir) which help stop SARS-CoV-2 from multiplying and thus has proven to help overcome the virus infection faster.
- Paxlovid has been approved for adults aged 18 and older to treat mild to moderate cases of COVID-19 with a confirmed positive PCR or antigen test and that are at a **high risk of becoming seriously ill leading to hospitalization or death**. In addition, treatment should be started within five days of symptom onset.
- This is a **significant milestone** in the treatment landscape for COVID-19 as Paxlovid may provide a more accessible antiviral treatment option for those at high risk of progression to severe COVID-19 and may reduce hospitalization and death rates. However, **the effectiveness is highly dependent on early diagnoses and requires a robust testing capacity** to identify infections among those at the highest risk of severe disease in a timely manner.
- Paxlovid is not authorized:
 - For initiation of treatment in patients requiring hospitalization due to severe or critical COVID-19.
 - For pre-exposure or post-exposure prophylaxis of prevention of COVID-19.
- Prior to Paxlovid approval's, COVID-19 treatments in Canada needed to be administered in a clinical setting. The potential for Paxlovid to be prescribed outside hospitalization may reduce the acute pressures on healthcare systems and protect against the long-term implications of COVID-19 among the most vulnerable.
- COVID-19 treatments, along with vaccinations and public health measures, **might reduce the number of cases and lessen the burden across healthcare facilities**.
- So far, Canada has received 30,400 treatment courses of Paxlovid, with 120,000 more expected to be delivered between January and March.

1. <https://globalnews.ca/news/8516373/pfizers-paxlovid-covid-antiviral-pill-approved-canada/>

European Situation

[Maps in support of the Council Recommendation on a coordinated approach to the restriction of free movement in response to the COVID-19 pandemic in the EU, as of 13 January 2022](#)



ECDC COVID-19 country overviews report Week 01, as of 13 January 2022

At the end of week 1 (week ending Sunday 9 January 2022), the overall epidemiological situation in the EU/EEA was characterised by a high overall case notification rate which has increased rapidly in the past three weeks and an elevated but stable death rate. Increases in hospital or ICU indicators have been observed in 13 of 28 countries with this information. High and increasing case notification rates or an epidemiological situation of high or very high concern was observed in all but two EU/EEA Member States. While the rapid spread of the Omicron variant continues, both Delta and Omicron are co-circulating, with reported cases due to Omicron that are younger than those due to Delta. The overall COVID-19 case notification rate for the EU/EEA was 2 008 per 100 000 population (1 353 the previous week). This rate has been increasing for three weeks. The 14-day COVID-19 death rate (49.2 deaths per million population, compared with 51.9 deaths the previous week) has been stable for seven weeks. Of 29 countries with data on hospital or ICU admissions up to week 1, 16 reported an increasing trend in at least one of these indicators compared to the previous week.

ECDC's assessment of each country's epidemiological situation is based on a composite score based on the absolute value and trend of five weekly COVID-19 epidemiological indicators. As shown below, for week 1, 16 countries (Belgium, Bulgaria, Croatia, Cyprus, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Latvia, Liechtenstein, Luxembourg, Malta and Portugal) were categorised as of very high concern, 12 countries (Austria, Czechia, Denmark, Estonia, Italy, Lithuania, the Netherlands, Norway, Poland, Slovenia, Spain and Sweden) as of high concern and two countries (Romania and Slovakia) as of moderate concern. Compared with the previous week, 10 countries (Austria, Belgium, Bulgaria, Croatia, Germany, Hungary, Ireland, Liechtenstein, Portugal and Spain) moved to a higher category, five countries (Denmark, Estonia, Italy, Slovakia and Sweden) moved to a lower category and 15 countries stayed in the same category.

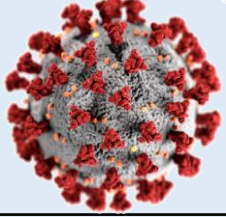
By the end of week 1, the cumulative uptake of full vaccination in the EU/EEA was 80.4% (country range: 33.5–94.2%) among adults aged 18 years and older and 69.0% (country range: 28.1–82.7%) in the total population. Cumulative uptake of an additional dose was 39.1% (country range: 6.7–69.7%) among adults aged 18 years and older and 32.1% (country range: 5.5–55.0%) in the total population. The estimated distribution (median and range of values from 21 countries for weeks 51 to 52, 20 December to 2 January 2022) of variants of concern (VOC) was 48.5% (1.4–98.6%) for B.1.617.2 (Delta), 46.4% (1.1–98.5%) for B.1.1.529 (Omicron) and 0.0% (0.0–0.1%) for B.1.351 (Beta). The distribution was 0.0% (0.0–0.4%) for B.1.1.7 (Alpha), which was downgraded from the list of VOCs on 3 September 2021.

In the same period, B.1.1.529 (Omicron) was the dominant variant (accounting for >50% of sequenced viruses) in 10 of the 21 EU/EEA countries with adequate sequencing volume. A description of trends in aggregate detections and of the epidemiology of 70 410 reported Omicron cases is available in the [virus variants summary](#) and [variants sections](#).

Weekly COVID-19 epidemiological category by country, weeks 39 to 01 2022

Composite score (1-10) based on value and trend of five indicators. Categories are derived from score quintiles.

		Level of concern																																													
		very low (1 - 2.6)		low (2.8 - 4.6)		moderate (4.8 - 6.4)		high (6.4 - 8.2)		very high (8.2 - 10)																																					
43	42	57	72	83	85	85	83	80	75	55	53	EU/EEA																																			
37	59	63	64	67	75	77	80	73	62	67	65	Austria																																			
30	37	46	68	69	80	80	80	80	87	85	85	Belgium																																			
80	80	80	82	80	87	77	64	65	66	71	71	Bulgaria																																			
82	83	82	83	85	100	87	83	80	72	67	78	Croatia																																			
42	45	45	54	54	55	55	72	78	73	73	72	Cyprus																																			
40	49	60	67	62	93	97	100	100	83	72	70	Denmark																																			
40	46	55	60	61	76	67	70	70	67	72	80	Estonia																																			
80	80	87	93	93	80	68	75	69	67	67	82	Finland																																			
80	80	82	43	35	78	80	75	75	68	72	83	France																																			
80	87	93	97	97	97	97	97	97	97	97	97	Germany																																			
43	50	60	67	70	83	87	90	87	80	75	70	Greece																																			
59	67	73	77	86	83	83	83	68	68	65	79	Hungary																																			
40	43	67	75	67	80	83	80	83	80	70	67	Iceland																																			
49	43	65	69	78	72	77	72	72	71	67	73	Ireland																																			
20	20	22	28	28	32	32	32	32	32	32	32	Italy																																			
23	22	22	27	27	37	30	30	27	23	27	27	Latvia																																			
50	53	100	100	92	75	68	68	65	65	77	68	Lithuania																																			
37	26	32	68	96	78	67	65	82	87	85	70	Malta																																			
83	83	87	87	80	100	88	75	72	65	72	73	Netherlands																																			
40	67	96	72	72	77	77	77	77	73	67	67	Norway																																			
40	43	60	82	62	63	63	63	63	63	63	63	Poland																																			
40	46	45	70	70	87	83	83	83	77	80	85	Portugal																																			
40	40	60	70	77	87	90	90	93	75	70	70	Spain																																			
27	37	33	45	37	37	37	37	37	37	37	37	Sweden																																			
80	100	82	82	77	72	72	72	72	67	67	72	Slovakia																																			
65	65	70	87	93	93	92	83	70	85	86	58	Slovenia																																			
23	25	28	33	33	47	50	50	50	63	63	83	Switzerland																																			
27	32	32	49	55	55	47	47	47	60	73	67	Denmark																																			
2020 W53	2020 W54	2020 W55	2020 W56	2020 W57	2020 W58	2020 W59	2020 W60	2020 W61	2020 W62	2020 W63	2020 W64	2020 W65	2020 W66	2020 W67	2020 W68	2020 W69	2020 W70	2020 W71	2020 W72	2020 W73	2020 W74	2020 W75	2020 W76	2020 W77	2020 W78	2020 W79	2020 W80	2020 W81	2020 W82	2020 W83	2020 W84	2020 W85	2020 W86	2020 W87	2020 W88	2020 W89	2020 W90	2020 W91	2020 W92	2020 W93	2020 W94	2020 W95	2020 W96	2020 W97	2020 W98	2020 W99	2020 W100



Vaccination News



A total of 10 countries accounted for **64.6%** of cumulative vaccine doses administered globally as of January 13. The top five countries/territories with the highest number of cumulative people fully vaccinated per 100,000 population are **Gibraltar** (119,070), **United Arab Emirates** (91,870), **Brunei Darussalam** (90,750), **Portugal** (90,010), and **Chile** (86,880). Conversely, the five countries with the lowest number of cumulative people fully vaccinated per 100,000 population are **Burundi** (30), the **Democratic Republic of the Congo** (140), **Chad** (560), **Haiti** (650), and **Guinea-Bissau** (1,150).

According to data collected by Our World in Data, more than 9.54 billion COVID-19 vaccine doses have been administered in 184 countries. As of January 12, the WHO's COVAX program has shipped 989 million doses to 144 eligible countries.

GBR: A [recent study](#) investigated the effects of COVID-19 infection and stillbirth and premature birth within 91,183 pregnancies in Scotland. It was found that unvaccinated mothers had increased likelihood of stillbirth or premature birth compared to vaccinated pregnant women. It was also found that pregnant women are less likely to be vaccinated compared to the overall population. In their conclusion the researchers urge (pregnant) women to get vaccinated in order to protect themselves and their babies.

Findings from a study by the CDC about the effects of COVID-19 vaccination on pregnant women are reported on the right.

USA: A [study](#) conducted by Yale Medicine found pregnant women with symptomatic COVID-19 infection to be twice as likely to be admitted to the hospital's ICU and to be 70% more likely to die compared to non-pregnant women with symptomatic COVID-19 infection.

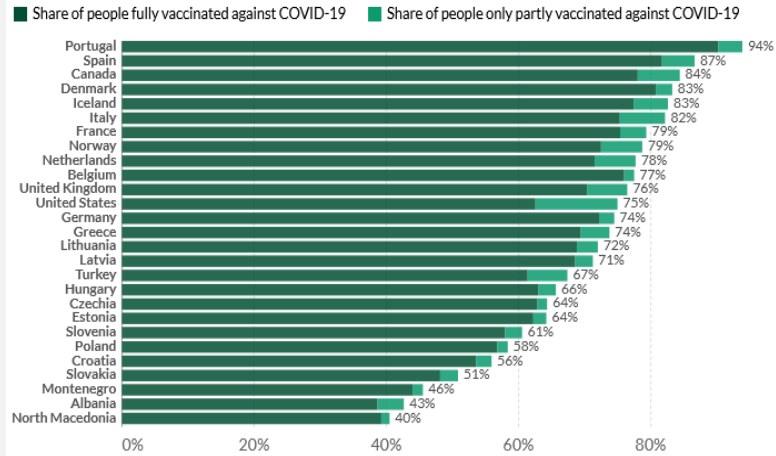
A [systematic review](#) conducted by researchers from Harvard Medical School came to the conclusion that a large share of mild adverse effects following a vaccination against the Coronavirus can be attributed to the nocebo effect. 76% of systemic adverse effects reported after administration of the first dose and 52% of all systemic adverse effects reported after the second dose can be attributed to this nocebo effect. The authors suggest that these findings should be used to re-shape governmental advertisement campaigns for the vaccination program.

ISR: In a preliminary study ([see media report](#)) the Israeli Sheba Medical Center investigated the effects of a fourth shot (i.e. second booster shot after two regular doses) in a number of employees. The not yet peer-reviewed results indicate that the number of antibodies increased but is likely too low to provide protection against an infection with the Omicron variant. This is in line with EMA's concern that no data available proofs increased effectiveness of the fourth dose.

Share of people vaccinated against COVID-19, Jan 18, 2022



+ Add country



What does a most recent study suggest on COVID-19 vaccination in pregnant women?
 Pregnant women are at a greater risk than their non-pregnant counterparts for severe outcomes with symptomatic COVID-19, including an increased risk of death.¹ However, according to the CDC only 41.5% of pregnant people in the USA aged 18-49 are fully vaccinated (prior to or during pregnancy) as of January 1.² Results for a large retrospective cohort study, published as an early release by the CDC in the Morbidity and Mortality Weekly Report, further adds to the current evidence supporting the safety of COVID-19 vaccines in pregnant individuals. The study of 46,079 pregnant women (among which, 10,064 had received their dose between December 15, 2020–July 22, 2021) evaluated the risk of a preterm birth or small-for-gestational-age birth after receiving at least one COVID-19 vaccine during pregnancy. Notably, over 98% of the sample population had received the vaccine during their second or third trimester, with the majority (95.8%) receiving an mRNA vaccine. The data collected through the Vaccine Safety Datalink was used to calculate the hazard ratios adjusted for time-dependent vaccine exposures and propensity to be vaccinated (including factors such as including week of pregnancy start, maternal age, race and ethnicity, prenatal care, maternal comorbidities, neighbourhood poverty level, and state-level COVID-19 test positivity) to account for confounding factors that may influence the participants decision to get vaccinated. The sample population observed an overall prevalence of 6.6 preterm births per 100 live births and 8.2 small-at-gestational births per 100 live births. There was no association between COVID-19 vaccination and preterm birth (HR= 0.91, 95% CI: 0.82–1.01) or small-at-gestational-birth (HR= 0.95, 95%CI: 0.87–1.03), meaning the risk of each event is similar in both vaccinated and unvaccinated groups. Additionally, stratifying the sample based on number of doses and trimester produced similar results. The risk of events could not be determined in the first-trimester due to the limited number of vaccinated participants in their first trimester of pregnancy included in the study, requiring additional insight.

- 1 https://www.cdc.gov/mmrw/volumes/69/wr/mm6944e3.htm?s_cid=mm6944e3_w
- 2 <https://covid.cdc.gov/covid-data-tracker/#vaccinations-pregnant-women>

Update on some vaccine candidates in Phase 3 or Phase 2/3 trials

Novavax NVX-CoV2373	On December 21, 2021, Novavax released a press release announcing the extension of their Phase 3 clinical trial to assess the safety and efficacy of a third dose of NVX-CoV2373. On December 22, 2021 Novavax announced from their Phase 2study that while a two-dose primary regimen of NVX-CoV2373 provided cross-reactive immune response against variants such as Omicron, a third dose provided a comparable or greater level of protection against variants. Furthermore, the immune response against various variants in adolescents was found to be two to four-fold higher than in adults.
Corbevax	On December 28, Texas Children's Hospital and Baylor College of Medicine announced that after completing two Phase 3 clinical trials, Corbevax was found to have a superior immune response when compared with AstraZeneca's Covishield. Additionally, it was shown that patients who took Corbevax had 50% fewer adverse events when compared to Covishield. It's been reported that full results from the Phase 3 clinical trial will be published in a scientific manuscript.
Valneva VLA2001	On December 16, 2021, Valneva reported that according to their Phase 1/2 clinical trial a strong immune response was shown by those who received a third dose of VLA2001 seven to eight months after their second dose of VLA2001. Antibody titers were four-fold higher for these patients, compared to two weeks after their primary immunization. Valneva has said that sera from the boosted patients will be evaluated for cross-neutralization against variants such as Omicron.

European Situation on Vaccination

Source: <https://gap.ecdc.europa.eu/public/extensions/COVID-19/vaccine-tracker.html#uptake-tab>

Total doses distributed to EU/EEA countries

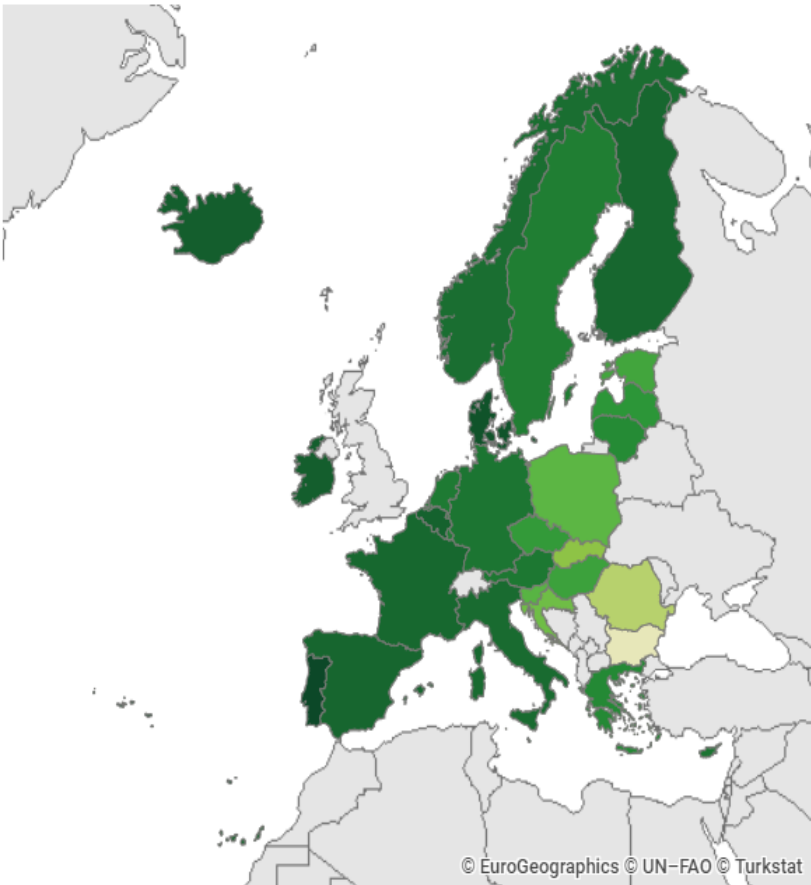
990,507,969

776,316,228

Cumulative uptake (%) of full vaccination by age group in EU/EEA countries as of 2022-01-14

Indicator: Uptake full vaccination

Cumulative uptake (%) of full vaccination in the total population in EU/EEA countries as of 2022-01-14

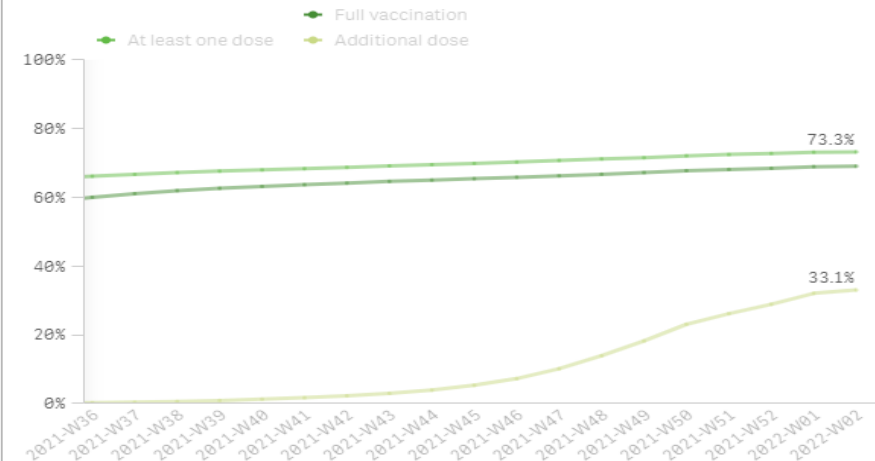


Uptake full vaccination (%)



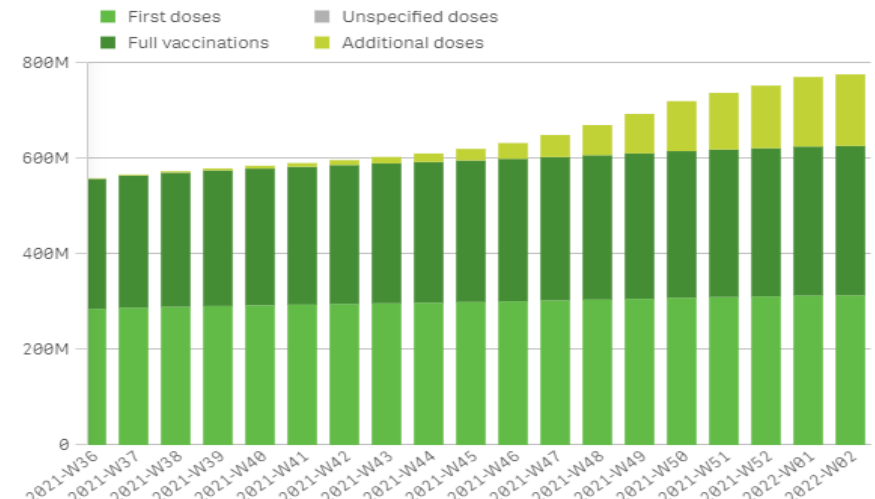
Cumulative vaccine uptake (%) in the total population in EU/EEA countries as of 2022-01-14

by reporting week (data for the current week are preliminary)



Cumulative number of vaccine doses administered to the total population in EU/EEA countries as of 2022-01-14

by reporting week (data for current week are preliminary)



Country	60+ years	50-59 years	25-49 years	18-24 years	<18 years
Austria	91.4%	81.4%	74.6%	72.0%	25.6%
Belgium	94.1%	91.1%	84.4%	81.9%	29.6%
Bulgaria	36.3%	37.3%	31.1%	25.9%	1.6%
Croatia	76.2%	68.4%	56.0%	42.3%	3.6%
Cyprus	94.0%	87.3%	83.2%	68.8%	15.4%
Czechia	85.4%	77.5%	64.5%	67.3%	16.9%
Denmark	99.5%	94.0%	84.8%	81.9%	36.7%
Estonia	75.5%	73.2%	66.4%	68.9%	17.3%
Finland	95.3%	87.8%	81.4%	75.8%	26.7%
France	90.6%	88.7%	83.7%	85.2%	24.7%
Germany	-	-	-	-	-
Greece	85.4%	80.6%	72.8%	67.2%	14.8%
Hungary	81.3%	74.6%	64.1%	51.6%	20.2%
Iceland	100.0%	92.4%	87.1%	85.8%	27.1%
Ireland	100.0%	99.4%	88.6%	85.9%	25.4%
Italy	90.1%	84.1%	77.5%	82.6%	24.6%
Latvia	73.7%	76.4%	74.2%	76.5%	18.0%
Liechtenstein	-	-	-	-	-
Lithuania	77.9%	78.1%	78.4%	73.4%	14.6%
Luxembourg	90.5%	85.9%	76.2%	70.8%	25.7%
Malta	99.1%	88.4%	92.3%	84.3%	26.9%
Netherlands	-	-	-	-	21.1%
Norway	98.9%	94.5%	84.5%	83.1%	9.8%
Poland	75.9%	67.2%	58.9%	53.9%	16.3%
Portugal	100.0%	94.2%	88.4%	86.3%	30.3%
Romania	45.7%	55.5%	48.6%	47.7%	6.5%
Slovakia	70.3%	59.9%	50.9%	49.8%	8.3%
Slovenia	83.1%	69.1%	55.8%	57.1%	9.6%
Spain	98.3%	89.9%	77.4%	72.7%	27.1%
Sweden	93.8%	89.7%	79.7%	74.0%	11.6%

1 <https://www.cnn.com/2021/11/24/health/israel-covid-booster-lessons-intl-cmd/index.html>
2 <https://www.nytimes.com/2022/01/06/health/covid-vaccines-boosters.html>
3 <https://www.haaretz.com/israel-news/fourth-covid-shot-boosts-protection-fivefold-preliminary-israeli-study-suggests-1.10513735>
4 <https://www.gov.uk/government/news/boosters-continue-to-provide-high-levels-of-protection-against-severe-disease-from-omicron-in-older-adults>
5 <https://globalnews.ca/news/8480902/ontario-long-term-care-residents-fourth-vaccine-dose-boosters/>
6 <https://www.medrxiv.org/content/10.1101/2021.12.30.21268565v1>

Spotlight on Israel: Booster Dose



How has early roll out of first booster (third) doses in Israel impacted its epidemic situation?

The fully vaccinated population has been steadily on the rise in Israel, but is limited in part by under-coverage in certain subpopulations. Approximately 63% of people in Israel have been vaccinated twice, while around 46% have received third shots. Israel has been vaccinating its population using the Moderna and the Pfizer/BioNTech vaccine.

Israel began offering first boosters (i.e., third dose) five months after the second dose to those over the age of 60 since the end of July 2021 then to anyone over the age of 16 since late August 2021. A person is not considered fully vaccinated in Israel until they have received a third dose of the vaccine.

First boosters helped limit the fourth wave of the COVID-19 that swept the country in August and September 2021 due to waning immunity.¹ The data highlights stark differences between those with the first booster and those without. In the country's fourth wave, data from the Israel health ministry indicated that, among those hospitalized with COVID-19, the rate of people over the age of 60 in serious condition with two doses of the vaccine was five times that of people with three doses. Furthermore, there were four times as many people over the age of 60 in serious condition who had only received two shots, compared to those considered fully vaccinated with three doses. During the same time period, more than 75% of positive cases were among the unvaccinated.

While Israel is currently report record-high daily cases, it is too early to understand the potential impact of the third and fourth doses on severe disease, or whether further restrictions may be necessary to protect hospitals.

On December 30, 2021, Israel became the first country to launch a second-booster (i.e., fourth dose) campaign, making it available to anyone 60 and older who received their first booster at least four months ago. More than 100,000 Israelis registered or were vaccinated for their second booster in the first two days of the campaign. However, experts noted that the second-booster campaign was made in the absence of sufficient data on a second booster's safety and effectiveness. Although there is no current evidence to support a potential negative impact of multiple doses on the immune system², many have also advocated to prioritize vaccines to those who have not been vaccinated yet.

What does preliminary research suggest about the safety of a second booster of vaccine?

According to preliminary results of a study³ released by the Israeli government last week, a second booster (i.e., fourth dose) of a Pfizer/BioNTech COVID-19 vaccine generated a fivefold increase in antibodies after one week of receiving the vaccine. Researchers recruited subjects from the first round of 150 healthy adult medical workers of all ages in Israel who had been given the second booster shot in December 2021. All participants had received previous doses of the Pfizer vaccine. The study first screened for adverse reactions to the fourth shot but found nothing concerning.

From this small sample, preliminary findings on the safety of the fourth dose showed results similar to those with the first booster shot (the third dose). About 80% of the participants in the study reported a minor localized reaction to the vaccination. About 45% reported mild symptoms such as weakness, muscle aches, or a headache. Approximately 10% reported a fever that subsided within 24 hours in most cases. It is unclear what the additional effectiveness of a fourth dose is against infection, severe disease, and duration of protection, particularly among the vulnerable population when compared to the third dose.

What is the justification that can be considered to make second booster dose decisions? What have other countries decided on thus far?

Concerns over waning immunity and SARS-CoV-2 variants have convinced some countries to deploy extra vaccine doses. The number of studies is limited and preliminary.

A population-based analysis from the U.K. examined vaccine effectiveness of first booster doses. Results indicate that while vaccine effectiveness against symptomatic disease caused by Omicron does indicate waning at 10 weeks after the first booster, vaccine effectiveness against severe disease outcomes are sustained at the same timeframe. Thus, the U.K. has decided that at this time (on Jan 7, 2022)⁴ "there is no immediate need to introduce a second booster dose, or fourth jab, to the most vulnerable (care home residents and those aged over 80)" however data will continually be evaluated to review the decision. They will continue prioritizing first booster doses for all age groups and vaccinations for those unvaccinated. In contrast, the province of Ontario in Canada announced on Dec 30, 2021 that second boosters (84 days after the first booster) would be available residents in care home and other congregate care settings.⁵

A pre-print study published on Jan 1, 2022 from Ontario, Canada indicated that a first booster provides some protection against infection of Omicron among adults, however it is markedly less than that against Delta variant infections.⁶

As more evidence emerges and time elapses, it is anticipated that more countries will begin offering boosters given the more transmissible Omicron variant of concern. Meanwhile, not enough is known about sub-populations that might really need extra doses, such as older people and those with compromised immune systems. Furthermore, these decisions will also need to be made in context of limited supply of doses and competing demands (i.e., global supply constraints, the need to expand administration of first boosters and administration of first/second doses to those unvaccinated). It will also depend on whether a country's strategy is to control transmission using booster doses, or use them to protect against hospitalizations and severe disease.

Executive summary

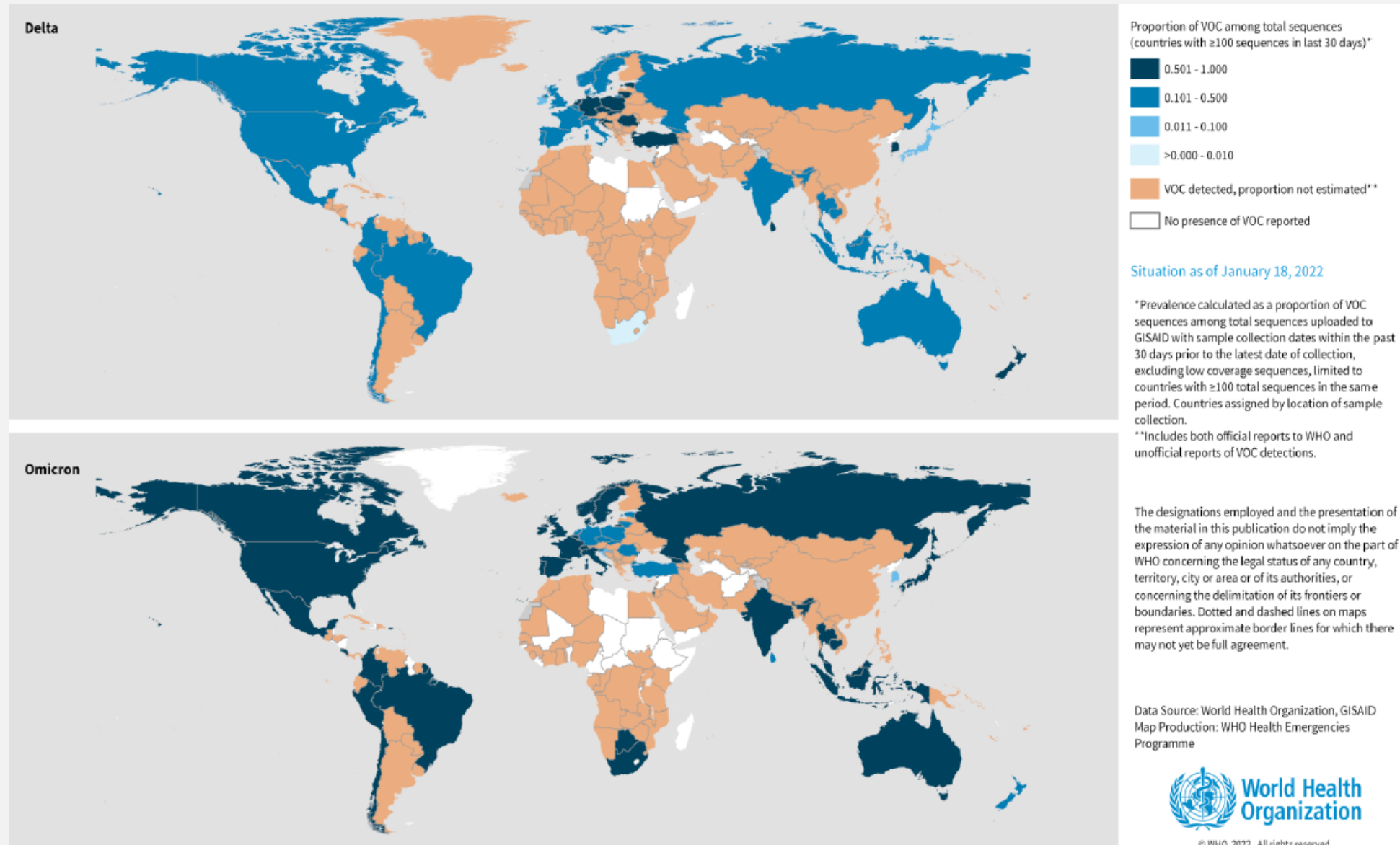
- The vaccinated population has been steadily on the rise in Israel. However, there is substantial under-coverage in certain sub-populations. Approximately 63% of people in Israel have been vaccinated twice, while around 46% have received first boosters (i.e., third doses).
- On December 30, 2021, Israel became the first country to launch a second-booster (i.e., fourth dose) campaign, making second boosters available to anyone 60 and older whose first booster (i.e., third dose) was at least four months ago.
- According to preliminary results of a study released by the Israeli government, a second booster (i.e., fourth dose) of a Pfizer/BioNTech COVID-19 vaccine generated a fivefold increase in antibodies after one week of receiving the vaccine. However, more research is needed to understand vaccine effectiveness against infection and severe outcomes from Omicron, as well as the safety and duration of protection.

SARS-CoV-2 Variant of Concern: Geographic spread and prevalence of VOCs

The current global epidemiology of SARS-CoV-2 is characterized by the emergence and rapid spread of the Omicron variant on a global scale, continued decline in the prevalence of the Delta variant, and a very low level of circulation of the Alpha, Beta and Gamma variants. Following the identification of travel-related cases of the Omicron variant, many countries are now reporting community transmission. Countries that experienced a rapid rise in Omicron cases in November and December 2021 are beginning to see declines in cases. The Omicron variant includes Pango lineages B.1.1.529, BA.1, BA.2 and BA.3. BA.1 accounts for >99% of sequences submitted to GISAID as of 18 January 2022. All these variants are being monitored by WHO under the umbrella of 'Omicron'. Among the 405 739 sequences uploaded to GISAID with specimens collected in the last 30 days, 291 600 sequences (71.9%) were Omicron, 113 652 (28%) were Delta, 47 (<0.1%) were Gamma, ten (<0.1%) were Alpha and three sequences (<0.1%) comprised other circulating variants (including VOIs Mu and Lambda). To note, global VOCs distribution should be interpreted with due consideration of surveillance limitations, including differences in sequencing capacities and sampling strategies between countries, as well as delays in reporting.

Criteria for variant classification, and the current lists of VOCs, VOIs and VUMs, are available on the [WHO Tracking SARS-CoV-2 variants website](https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---18-january-2022).

Prevalence of variants of concern (VOCs) Delta and Omicron in the last 30 days, data as of 18 January 2022



SARS-CoV-2 Variant of Concern: Omicron (B.1.1.529)



Effective Reproduction Number (Rt) of Omicron variant concerning the Delta variant in Denmark

Initial Interpretation: The replacement of the Delta variant by Omicron variant is seen at a remarkable speed, countries with the widespread use of mRNA vaccines should recognize the substantial risk of immune evasion and therefore prepare healthcare systems for a potentially overwhelming wave of illness and enhance airborne transmission precautions.

- The **effective reproduction number (Rt)** is the average number of new infections caused by a single infected individual at a time in the susceptible population.
- A recent study in Denmark determined the (Rt) effective reproduction number of the **Omicron variant is 3.19** (95%CI 2.82–3.61) **times greater than of the Delta variant** under the same epidemiological conditions.
- This is a **significant finding**, given that before the appearance of the Omicron variant, the Delta variant or variants less transmissible than Delta were still dominant in most countries, and implies **a rapid increase in Omicron variant among populations is likely to occur soon after introduction in populations with similar epidemiological characteristics as Denmark.**
- In Denmark, the effective reproduction number (Rt) of SARS-CoV2 infections in Denmark was expected to **increase more than three fold** from December 1, 2021, to January 1, 2022. As of December 18, 2021, there were at least **272 Omicron variant sequences**, while there have been at least **61,563 Omicron variant cases** as of January 6, which **surpasses the three-fold increases** and with the caveat that as of December 21, 2021, Denmark's Omicron variant case data has not been fully representative of the true extent of this outbreak. Health authorities indicated that due to the sharp increase of COVID-19 infections, the Statens Serum Institut testing strategy changed, with only a portion of positive specimens undergoing variant PCR COVID-19 testing. Previously, and until December 19 all positive specimens had been tested for the variant PCR test.
- The **enormous advantage of increased transmission likely stems from two independent factors.** Firstly, the intrinsically greater transmissibility of Omicron variant may outcompete the Delta variant, causing the Omicron variant to become the dominant strain. Secondly, with increased transmissibility there is a substantial capacity for the Omicron variant to escape from existing population-level immunity conferred either naturally or by vaccination.
- **Denmark's significant increase in COVID-19 cases due to Omicron is comparable to South Africa's epidemiological Omicron wave description.**
- However, while **vaccination coverage in South Africa was approximately 30%, however it is believed that a proportion** of the remaining population were thought to have acquired infection during prior waves, **more than 70% of Denmark's population was fully vaccinated** using mRNA vaccines during the time of introduction of the Omicron variant.

Source: <https://onlinelibrary.wiley.com/doi/epdf/10.1002/jmv.27560>

Rapid COVID-19 tests reliability in the early days of the Omicron variant infection - Initial Interpretation -

Rapid antigen tests are useful, but they might not be highly effective at identifying the presence of the virus during the pre-symptomatic phase. When someone develops symptoms, it is best to assume they are positive and that they have been infectious (i.e., are able to transmit the virus to others) for at least two days prior to symptoms onset, even if rapid test results are negative.

A study that assessed 30 individuals that were tested daily with both a nasal rapid antigen and a saliva SARS-CoV-2 PCR (Polymerase Chain Reaction) test, found that it is unlikely that an **at-home rapid antigen test can detect the Omicron variant before infected people can transmit the virus to others.**

In the study, all the antigen tests **taken on days zero and one following a positive PCR test, resulted in false-negative even though levels of virus detected by the PCR test were high enough to infect other people.** Furthermore, in four of these cases, researchers were able to confirm that infected people transmitted the virus to others during the period before they had a positive result on the rapid antigen test. Additionally, all individuals in the cohort developed symptoms within two days of their first positive PCR test; and the rapid antigen tests detected the virus in every case two days after the first PCR test was positive.

Another study that evaluated 731 people seeking COVID-19 testing, in which simultaneous nasal rapid antigen testing and PCR testing was performed, found that while rapid antigen test detected **95%** of high viral load Omicron cases from nasal specimens, this sensitivity (ability to correctly identify people with the disease) decreased to **82%**, and to **65%** in the samples where the viral load was lower.

It has previously been established that PCR tests are more sensitive than rapid antigen tests and there is an **overall decrease in sensitivity of the latter when assessing samples of the Omicron variant** during the first few days and that it might also vary depending on which rapid test is used. However, the surge in overall cases has prompted the use of rapid antigen tests in settings where PCR tests are not practical or available. Although the first study had a small sample, **it is not clear whether the infections were missed due to the antigen test's lower sensitivity to Omicron or because saliva tests may be better at detecting the new variant.** There is a need for more data to further understand the implications of the use of different sample collection sites (nasal swab and throat swab) for the optimal site for the most accurate results.

These findings support the premise that while **rapid antigen tests are useful in identifying cases, they might lag in identifying Omicron cases during the first days of infection and may not accurately rule out disease**, thus, making them not completely suited for settings such as workplaces as routine screening to detect early infections and prevent the asymptomatic spread of Omicron due to this variant's shorter time from exposure to infectiousness.

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2. <https://www.dw.com/en/hope-for-carnival-comeback-amid-brazils-covid-19-success/a-59972382>
3. <https://www.ft.com/content/689c4c92-c67e-4e4e-94fd-33b18a43c852>
4. <https://www.bnnbloomberg.ca/private-covid-tests-in-brazil-show-omicron-variant-is-taking-off-1.1704005>
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https://covid.cdc.gov/covid-data-tracker/#cases_community
<https://www.governor.ny.gov/news/governor-hochul-announces-department-health-partnership-syracuseuniversity-expand-innovative>
<https://storymaps.arcgis.com/stories/b30ca571e00b42779875e3eaf7577b1b>

Subject in Focus

'Understanding the COVID-19 Situation Using Different Metrics

<https://www.governor.ny.gov/news/governor-hochul-announces-major-action-address-winter-surge-and-prevent-business-disruption>
<https://healthdata.gov/Hospital/COVID-19-Reported-Patient-Impact-and-Hospital-Capa/g62h-syeh>
<https://coronavirus.health.ny.gov/daily-hospitalization-summary>
https://www.health.ny.gov/press/releases/2022/2022-01-08_hospital_bed_capacity.htm



The global spread of the Omicron variant has led to many locations around the world seeing unprecedented incidence of COVID-19 cases. As a result, COVID-19 case counts alone are not able to reflect the true level of community transmission in a given location. In this report, we explain why case incidence may not be reliable and propose additional metrics that can be helpful in interpreting case trends and impact.

Question I: Why are case counts alone not sufficient to understand the level of community transmission?

The soaring COVID-19 case numbers fuelled by the highly transmissible Omicron variant in many countries/territories has pushed COVID-19 testing and contact tracing capacity to its limits. For example, many locations no longer have the capacity to test everyone who has symptoms or has been exposed to someone who tested positive (e.g., Canadian provinces of Ontario and Alberta, the United Kingdom). Additionally, many cases are under-detected as breakthrough cases tend to present with milder or no symptoms or mistaken for seasonal illness. Therefore, the true number of COVID-19 cases in many locations is far higher than reported case counts and are likely unrepresentative of the trend in community transmission.

Question II: What additional metrics can we use to understand community transmission and impact of the Omicron variant?

A) Test Positivity Rate

The test positivity rate is the percentage of the total COVID-19 tests performed that produced a positive result. *How to use/interpret:* This metric can be helpful to understand the trend in incident cases among those eligible for testing. In locations where the test eligibility policy (see C) is “testing is available to any individuals who have symptoms” or “testing is open to all public including asymptomatic individuals”, this metric is likely the best available to gauge the trend in community transmission. The utility of test positivity rate as a metric in locations with a test eligibility policy of “testing is available only to those who have symptoms AND those who meet specific criteria” must be evaluated on a case-by-case basis. A high test positivity rate (> 5%) even when the overall number of tests done is low — indicates that there is a potentially high level of community transmission where mild or asymptomatic cases are not being detected. Improvement in the test positivity rates in the country suggest an overall improvement in the epidemiological situation. A positivity rate below 5% represents a satisfactory threshold that is generally considered sufficient to capture a majority of mild and asymptomatic cases in the community. When the test positivity rate starts to come down, in the absence of a change in testing strategy or testing rates, it could be an indicator that the Omicron wave has peaked.

B) Number of COVID-19 Hospitalizations

The number of COVID-19 hospitalizations represent the number of patients currently hospitalized due to COVID-19. *How to use/interpret:* This metric can be a lagging indicator of community transmission. It is helpful to understand the impact of Omicron on the healthcare system, which could in turn influence government policies such as lockdowns or resource allocation.

C) COVID-19 Test Eligibility Policy

Data is available at the country level from Our World in Data. All countries are categorized into four categories, including 0) No testing policy (testing may be available, but eligibility is vague); 1) Testing is available only to those who have symptoms AND those who meet specific criteria (eg. Key workers, international travellers, those who were exposed to a known case); 2) Testing is available to any individual who have symptoms; and 3) Testing is open to all public including asymptomatic individuals. *How to use/interpret:* This metric can be used to evaluate how reliable reported case counts are in a location. A location’s case counts are more reliable when it test eligibility policy falls under the category of “testing is open to all public individuals including asymptomatic”. However, it is also important to supplement this with an understanding of ease of access to timely tests (e.g., via media reports) and test-seeking behaviour.

Caveats:

- If the number of infections in a community goes down or testing expands to include more people who are not infected, percent positivity will decline. We would expect percent positivity to decline as more people are screened in non-outbreak settings (such as routine screening in schools, long-term care facilities, and workplaces). However, if a community has widespread transmission and testing becomes more accessible, testing might find more people who are infected and percent positivity may increase.
- Reporting processes and delays can also impact percent positivity, which is why it is important to look at trends in percent positivity, such as over a 7-day or 14-day average.

D) Wastewater surveillance of SARS-CoV-2 specimen

There is no centralized, open data source on a global level. Different locations began piloting and expanding this form of surveillance earlier in the pandemic. As the catchment area of wastewater surveillance and publicly available data differs across locations, the representativeness and availability of must be reviewed on a case-by-case basis for each location. *How to use/interpret:* When data is available, the trends in wastewater surveillance are reflective of the level of SARS-CoV-2 transmission of the population within its catchment areas. In fact, it can also serve as an early indicator of transmission and prevalence as individuals may excrete viral particles prior to symptom onset.

E) Reported disruptions to healthcare and ambulatory services

Examples can include: cancellation of elective surgeries, reported critical staff shortages, expansion of COVID-19 wards/field hospitals, aggregation of healthcare services (e.g., closing of facilities), and limited availability of ambulances. Information can be captured via media reports or for certain locations, may be available as a routinely reported quantitative metric (e.g., U.S. state-level number of hospitals reporting current or anticipated critical staffing shortages – see Question 3). *How to use/interpret:* Given fluctuating constraints in healthcare capacity (e.g., healthcare staff shortage which affects availability of staffed beds and services), any reported disruptions to hospital services is highly indicative of current and anticipated impact on the healthcare system.

Key Result

The level of community COVID-19 burden based on the above metrics should inform the degree of public health measures implemented at the regional level by public health units, considering local vaccination coverage rate and metrics of COVID-19 disease severity and to a lesser extent, SARS-CoV-2 transmission rate. Measures including vaccination of all eligible individuals, masking, physical distancing, hand hygiene, adequate ventilation, and environmental cleaning should continue to be implemented in all setting

New York State, USA as an example

New York State, USA (Note: there may be geographic variation within the state)	Other state-level metrics to track trends in community transmission of COVID-19 and impact on healthcare system	Number of COVID-19 Hospitalizations*
<p>Case counts & test policy</p> <p>COVID-19 Test Eligibility Policy</p> <ul style="list-style-type: none"> • Free public PCR and rapid antigen testing is available for any asymptomatic individuals or people who may have been exposed to COVID-19 • However, media reports suggest that citizens are struggling to find availability for test appointments given the high demand. • COVID-19 cases are included in official case counts for New York City based on confirmation from molecular tests, like PCR² <p>Contact Tracing Capacity³</p> <ul style="list-style-type: none"> • In the most recent week with data (week ending on Jan 1, 2022), 48.7% of contacts were reached. This is a sharp decline from 80-85% on contacts consistently reached prior to the Omicron wave in 2021. <p>BlueDot's Comment: Cases are not entirely reported in a timely manner. Thus, other metrics beyond case counts must also be considered to examine the trend in community transmission of COVID-19 in New York State.</p>	<p>Test Positivity⁴:</p> <ul style="list-style-type: none"> • 7-day test positivity (as of Jan 11): 20.2% • Rapid rise since since Dec 2021 but appears to be on a declining trend since Jan 7) appears to be slowing. <p>Positive tests by county⁵:</p> <p>CDC Categories for Level of Community Transmission⁶:</p> <p>High</p> <p>Wastewater surveillance: In the process of expanding wastewater surveillance in collaboration with academic institutions.⁷ At the time of writing, there are limited locations with data; four counties (Jefferson, Orange, Otsego, Steuben) are currently reporting data, none in New York City⁸. The 2-week trend in SARS-CoV-2 intensity is: Jefferson - increase, Otsego - slight increase (only one wastewater plant), Orange - decrease, Steuben - conflicting (one increase, one decrease)</p> <p>Masking Policy: Masks are required in all indoor public places unless a vaccine requirement is implemented.⁹</p>	<p>Hospital Occupancy by suspected/confirmed COVID-19 cases¹⁰:</p> <ul style="list-style-type: none"> • Compared to two weeks ago, the % of inpatient hospital beds occupied by an individual with suspected/confirmed COVID-19 has doubled (from 13.2% to 25.2%) <p>Disruptions to healthcare services:</p> <ul style="list-style-type: none"> • Jan 8 – Elective surgeries suspended in 40 hospitals that have “met the state’s threshold for “high risk regions” or low-capacity facilities”, are predominantly in upstate New York (Mohawk, Finger Lakes, Central) and none in New York City.¹¹ <p>Percentage of hospitals with critical staffing shortages¹²:</p> <p>Today</p>

Other Infectious Disease Outbreaks / Human Disasters



Leptospirosis

Sri Lanka - Cases of leptospirosis continue to be reported in Sri Lanka since the beginning of 2022. Leptospirosis is endemic in Sri Lanka. However, the true extent of cases is grossly underestimated in Sri Lanka. The estimated annual incidence of leptospirosis in Sri Lanka was 300 (95% CI 96.54–604.23) per 100,000 people in 2019. Leptospirosis outbreaks occur predictably in Sri Lanka after seasonal rains and flooding in the endemic wet zone.

Source: https://epid.gov.lk/web/index.php?option=com_casesanddeaths&Itemid=448&lang=en#

Hepatitis E virus

Chad - As of 11 January 2022, 385 suspected cases of Hepatitis E virus (HEV) have been reported, of which, 12 are confirmed and two associated deaths (case fatality ratio (CFR): 0.5%) have been reported in six villages in Lai district, Tandjile region, Chad. Heavy rain in Chad since June 2021 have greatly impacted the Tandjile region and by October 2021, approximately 161 000 people were affected. Floodwaters caused substantial infrastructural damage in a setting that has pre-existing water, sanitation and hygiene (WASH) challenges such as a poor access to safe drinking water and high rates of open defecation. The last known outbreak of HEV in Chad began in August 2016 and lasted for 17 months before the Ministry of Health declared the end of the outbreak in February 2018. A total of 1874 suspected HEV cases and 23 associated deaths were reported. The area affected in this outbreak was located in the Salamat region, just over 700 km north east of the current outbreak.

Source: WHO – <https://www.who.int/emergencies/disease-outbreak-news/item/hepatitis-e-virus---chad>

Influenza

Europe - Week 1/2022 (03 – 09 Januar 2022)

- Albania, Belarus, Georgia, Israel, Luxemburg, Norway, North Macedonia, Republic of Moldova, Russian Federation and Sweden reported widespread influenza activity and/or medium influenza intensity.
- 5% of all sentinel primary care specimens from patients presenting with ILI or ARI symptoms tested positive for influenza virus, a decrease from 10% in week 52/2021
- Six countries reported seasonal influenza activity at or above 10% positivity in sentinel primary care: Armenia (64%), Belarus, (44%) Serbia (36%), France (16%), Georgia (15%) and Estonia (10%).
- Hospitalized cases with confirmed influenza virus infection were reported from intensive care units (19 type A viruses), other wards (3 type A viruses) and SARI surveillance (39 type A viruses and 1 type B).
- Both influenza type A and type B viruses were detected with A(H3) viruses being dominant across all monitoring systems.

Source: <https://flunewseurope.org/>

Unknown illness

Columbia - Initial Assessment: This is an update to a previously reported event, based on new information on additional cases and one death. The event is notable due to the involvement of military personnel and proximity to military installations, but we do not anticipate disruption to the wider region.

In a follow-up to the Unknown Illness that affected military personnel stationed at a base in Cesar, Colombia on December 21, 2021, there are new reports of 10 additional cases and a death amongst military personnel who are stationed in the same mining area as the previously reported cases and deaths. As indicated in the previous situational update, it was unlikely that the underlying cause of the disease would be directly linked to acute Chagas disease. This is because cases included in the outbreak presented with cardiac and/or respiratory failure which is instead typical of chronic Chagas disease. New reports indicate acute neurological involvement, with a probability of meningococcal meningitis as the underlying cause. Currently it is unclear what symptoms and signs have been present in this outbreak and laboratory sample testing is still underway to rule out different infectious disease agents. Probable causes and diagnosis are still being investigated.

Source: ProMed - <https://promedmail.org/promed-post/?id=8700837>

Malaria

Kericho District, Kenya - Cases of malaria continue to be reported in Kericho county, Kenya in 2022. Media reports have stated that medical doctors from the malaria control unit have been dispatched to the affected villages in the region, including Kusumek village which has reported the majority of cases. Additionally, water samples have been collected from nearby swamps which are believed to be breeding zones for the mosquitos. According to doctors, the recent surge in malaria cases in the region could be a result of abandoned quarries that have accumulated water over time, serving as a breeding ground for mosquitos. Officials are calling on the general public to take precautions and implement measures to prevent malaria. In December 2021, the Kericho country government conducted a mass distribution of mosquito nets to help prevent malaria outbreaks in the region and a further 621,237 long lasting insecticidal nets will be distributed among 1,016,565 people in the region.

India - Cases of malaria continue to be reported in India in 2022. Early reported cases come from Mumbai, India's largest city which is located on the west coast of the country. News media reports that outbreaks tend to be exacerbated by the heavy rains experienced during the months of December and January. In late December 2021, health officials called for the reduction of fogging practices (a form of vector control involving the use of spraying pesticides) due to increased pollution levels and the changing weather. Instead, the continuation of institutions and households to remove stagnant water and take precautionary measures is encouraged.

Source: ProMed - <https://promedmail.org/promed-post/?id=8700908>

NewsMedia - <https://www.mymahanagar.com/mumbai/malaria-an-increase-in-the-number-of-gastroenteritis-patients/386762/>

Cutaneous Leishmaniasis

Syria – Cases of leishmaniasis continue to be reported in northeastern Syria from 2021. According to officials, the number of recorded cases of the disease in the Khabur area has reached more than 16,500 between August 2021 and the end of the year 2021 with cases concentrated in the eastern countryside of Deir Ez-Zor and the countryside of Hasaka near the Khabur river. The Kurdish Red Crescent, which is a non-governmental organization responsible for treating individuals suffering from leishmaniasis in the region, is carrying out campaigns to spray insecticides for sandflies, the vector that transmits the Leishmania parasite from one person to another.

Varamin, Ostan-e Tehran, Iran - Cases of cutaneous leishmaniasis have been reported in Varamin, Iran in 2022. Varamin, located on the southern edge of Tehran province, is an endemic region in the country for cutaneous leishmaniasis. Officials have stated that healthcare centres in the region are ready to provide care to those suffering from the disease and officials are working towards eliminating contaminated rodents and dogs to bring the disease under control. Outside of Tehran, cutaneous leishmaniasis is endemic and very common in many rural areas, especially in the plains of the northeast, near the Russian border, and in the north of the Esfahan province. The disease has also recently spread to southern regions of the country and to Fars province in southwest Iran.

Source: ProMed - <https://promedmail.org/promed-post/?id=8700840>

- <https://promedmail.org/promed-post/?id=8700887>

Influenza A (H5)

GBR/Northern Ireland - On 6 January 2022, the public health authorities of UK notified WHO of the detection of a laboratory confirmed human case of avian influenza A(H5) from South West England. The case lived with a large number of domestically kept birds which had onset of illness on 18 December 2021, and subsequently tested positive with Highly Pathogenic Avian Influenza (HPAI) A(H5N1) by the United Kingdom National Reference Laboratory at the Animal and Plant Health Agency (APHA) Weybridge laboratory. The case has remained clinically asymptomatic and is now considered to not be infectious.

Source: WHO - [https://www.who.int/emergencies/disease-outbreak-news/item/influenza-a-\(h5\)--united-kingdom-of-great-britain-and-northern-ireland](https://www.who.int/emergencies/disease-outbreak-news/item/influenza-a-(h5)--united-kingdom-of-great-britain-and-northern-ireland)

Travel Recommendations and other Useful Links

Travel Recommendations

Many countries have halted some or all international travel since the onset of the COVID-19 pandemic but now have re-open travel some already closed public-travel again. This document outlines key considerations for national health authorities when considering or implementing the gradual return to international travel operations.

The decision-making process should be multisectoral and ensure coordination of the measures implemented by national and international transport authorities and other relevant sectors and be aligned with the overall national strategies for adjusting public health and social measures.

Travel has been shown to facilitate the spread of COVID-19 from affected to unaffected areas. Travel and trade restrictions during a public health event of international concern (PHEIC) are regulated under the International Health Regulations (IHR), part III.

The majority of measures taken by WHO Member States relate to the denial of entry of passengers from countries experiencing outbreaks, followed by flight suspensions, visa restrictions, border closures, and quarantine measures. Currently there are exceptions foreseen for travellers with an essential function or need.

Information on COVID-19 testing and quarantine of air travellers in the EU and the US you can find following the link:

- <https://www.ecdc.europa.eu/en/publications-data/guidelines-covid-19-testing-and-quarantine-airtravellers>
- <https://www.cdc.gov/coronavirus/2019-ncov/travelers/how-level-is-determined.html>

More information about traveling worldwide:

- National regulation regarding travel restrictions, flight operation and screening for single countries you will find [here](#) (US) and [here](#) (EU).
- Official IATA travel restrictions. You will find [here](#).

More information about traveling in the EU

- by the **European Commission** you will find here:

<https://www.consilium.europa.eu/en/policies/coronavirus/covid-19-travel-and-transport/>

- The **ECDC** publishes a map of EU Member States, broken down by regions, which show the risk levels across the regions in Europe using a traffic light system. Find it [here](#).

As a general rule, information on new measures will be published 24 hours before they come into effect.

All information should also be made available on [Re-open EU](#), which should contain a cross-reference to the map published regularly by the European Centre for Disease Prevention and Control.

Useful links

ECDC:

- [All info about the COVID-19 pandemic](#); (situation updates, latest news and reports, risk assessments etc.)
- [COVID-19 Vaccine tracker](#)
- [SARS-CoV-2 variants dashboard](#) for EU
- [Latest Risk assessment on COVID-19](#), 15 Feb 2021
- All “guidance's and technical reports” can be found under “All COVID-19 outputs” on this page [here](#)

WHO:

- Epi-WIN [webinars and updates](#)
- Status of “[COVID-19 Vaccines within WHO](#) EUL/PQ evaluation process” and the “Draft landscape and tracker of [COVID-19 candidate vaccines](#)”
- Weekly [Epidemiological and operational updates](#)
- COVID-19 new variants: [Knowledge gaps and research](#)
- COVID-19 [Dashboard](#)
- [Vaccines explained](#)
- Tracking [SARS-CoV-2 variants](#)
- Science in 5: [WHO's series on science and COVID-19](#)
- [Quick links](#)

CDC:

- COVID [Data Tracker](#) and [weekly review](#)
- [What's new and Updated](#)
- [Guidance for COVID-19](#)

References:

- European Centre for Disease Prevention and Control www.ecdc.europa.eu
- World Health Organization WHO; www.who.int
- Centres for Disease Control and Prevention CDC; www.cdc.gov
- European Commission; https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/travel-and-transportation-during-coronavirus-pandemic_en
- Our World in Data; <https://ourworldindata.org/coronavirus>
- Morgenpost; <https://interaktiv.morgenpost.de/corona-virus-karte-infektionen-deutschland-weltweit/>
- BlueDot; <https://bluedot.global/>