



Update 100 COVID-19 Coronavirus Disease 26 January 2022



On our own account:

100th

issue of our weekly COVID-19 update

Dear readers,

Today we „celebrate“ the 100th issue of our weekly COVID-19 update. Since 23rd January 2020 we provided interested NATO personnel and other stakeholders with a total of 156 updates (in early days up to 3 updates were sent per week) and organized 28 VTCs to secure and improve the flow of recent (scientific) information and insights on COVID-19 within NATO.

We want to use this opportunity to thank all participants and speakers at the VTCs as well as everyone who provided content and feedback to our updates. We wish all our readers to stay healthy and safe especially during these extraordinary and challenging times.

We're looking forward to our next VTC on 09 Feb 2022 and to receiving your feedback on our updates.

We'd also like to make you aware of our webpage.

An unclassified (releasable to the internet) version of our updates can be found there:

<https://www.coemed.org/resources/COVID19/updates>

Please feel free to forward this link to everyone interested in scientific and up-to-date information on COVID-19. The link can be accessed by anyone.

For those who haven't followed our updates from early on, there is a copy of the first COVID-19 (then known as "novel Corona-virus / 2019-nCoV") [update from 23rd January 2020](#) on the right.

Information about infection disease novel Corona-virus 2019-nCoV

Force Health Protection Branch FHPB (former DHSC) NATO MILMED COE
in Munich
23rd of January 2020
email: info.dhsc@coemed.org

Background about novel Corona-virus

An outbreak of pneumonia of unknown etiology in Wuhan City was initially reported to WHO on December 31, 2019. Chinese health authorities have confirmed more than 40 infections with a novel coronavirus as the cause of the outbreak. Reportedly, most patients had epidemiological links to a large seafood and animal market. 8 patients identified without any contact to the seafood and animal market.

Coronaviruses are common in many different species of animals, including camels and bats. Rarely, these coronaviruses can evolve and infect humans and then spread between humans. Recent examples of this include SARS-CoV and MERS-CoV. Most coronaviruses infect animals, but not people. In the future, one or more of these other coronaviruses could potentially evolve and spread to humans, as has happened in the past. Science do not know why only certain coronaviruses are able to infect people.

The virus has been identified as a novel (new) coronavirus (2019-nCoV) first occurred in Wuhan, Hubei Province, China. It has resulted in hundreds of confirmed cases in China, including cases outside Wuhan City, with additional cases being identified in a growing number of countries internationally.

WHO and CDC cannot rule out that limited person-to-person spread may occur.

Situation:

World wide 579 Cases (23rd of January 2020)

- Chinese authorities report most patients in the Wuhan City outbreak have been epidemiologically linked to a large seafood and animal market, suggesting a possible zoonotic origin to the outbreak.
- 15 Cases from medical personnel in CHN
- Cases CHN: Wuhan/Hubei 375, Peking 10, Chongqing 5, Province Guangdong 26, Shanghai 9, Zhejiang 5, Henan 1, Hunan 1, Jiangxi 2, Shandong 1, Sichuan 2, Tianjin 1, Yunnan 1.
- Cases international: Thailand 3, Japan 1, South Korea 1, USA (Seattle) 1, Taiwan 1, Macao 1 and suspected cases in Australia and Philippines
- China has reported that six of the patients have died, all with pre-existing medical conditions.
- High preventive measure in China
- Public Transportation and all Airports from and to Wuhan/Hubei are closed!
- As for other corona-virus infection no vaccine or specific treatment for 2019-nCoV infection is available; care is supportive



Update 100 COVID-19 Coronavirus Disease 26 January 2022



News:

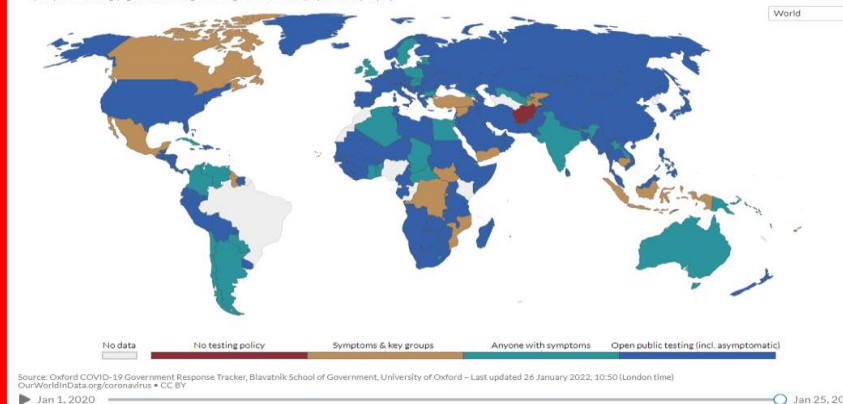
- **WHO:** This week, the U.S. Environmental Protection Agency ([EPA](#)) and [WHO](#) signed a five-year [Memorandum of Understanding](#). The agreement continues EPA-WHO collaboration on a wide range of specific and crosscutting environment and health issues, particularly air pollution, water and sanitation, children's health, and health risks due to climate change. The updated agreement includes exciting new actions on crosscutting issues including infrastructure and environmental justice.
- **WHO:** published the [Statement on the tenth meeting of the International Health Regulations \(2005\) Emergency Committee regarding the coronavirus disease \(COVID-19\) pandemic](#).
- **ECDC:** published an update on [Interim analysis of COVID-19 vaccine effectiveness](#) against Severe Acute Respiratory Infection due to laboratory-confirmed SARS-CoV-2 among individuals aged 50 years and older,
- **ECDC:** published the third report for the 2021-2022 influenza season on [Influenza virus characterisation](#). Of the 23 246 detections, 96% were type A viruses, with A(H3N2) (96%) dominating over A(H1N1)pdm09 (4%), and 4% type B with only 13 having been ascribed to a lineage, one of which was B/Yamagata. This represents a large increase (22 831, 5 601%) in detections compared to the 2020-2021 season.
- **CDC:** published a [new study](#) on the trends in disease severity and health care utilization during the early Omicron variant period compared with previous SARS-CoV-2 high transmission periods, covering December 2020 to January 2022.
- **CDC:** published a [new study](#) on COVID-19 incidence and death rates among unvaccinated and fully vaccinated adults with and without booster doses during periods of Delta and Omicron variant emergence.

Topics:

- Global situation
- European situation
- Vaccination news
- SARS-CoV-2 VOIs and VOCs
- Subject in Focus: EMA approved – Nuvaxovid COVID-19 vaccine
- Other Infectious Disease Outbreaks

COVID-19 Testing Policies, Jan 25, 2022

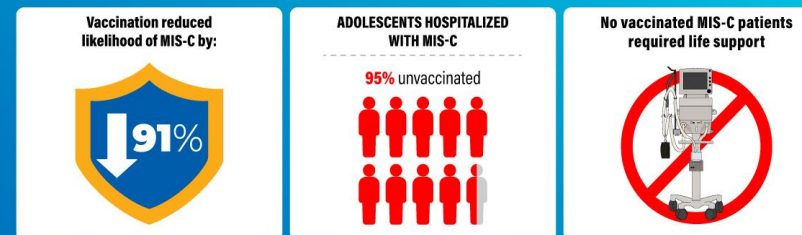
- No testing policy.
- Only those who both (a) have symptoms and also (b) meet specific criteria (e.g. key workers, admitted to hospital, came into contact with a known case, returned from overseas).
- Testing of anyone showing COVID-19 symptoms.
- Open public testing (e.g. "drive through" testing available to asymptomatic people).



Source: Oxford COVID-19 Government Response Tracker, Blavatnik School of Government, University of Oxford – Last updated 26 January 2022, 10:50 (London time)

OurWorldinData.org/coronavirus • CC BY Jan 1, 2020 Jan 25, 2022

COVID-19 vaccination protects against multisystem inflammatory syndrome in children (MIS-C) among 12–18 year-olds hospitalized during July–December 2021



COVID-19 VACCINATION IS THE BEST PROTECTION AGAINST MIS-C



* Case-control study, 238 patients in 24 pediatric hospitals—20 U.S. states
* 2 doses of Pfizer-BioNTech vaccine received ≥28 days before hospital admission

bit.ly/MMWR7102

MMWR

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GLOBAL



358 942 505

Confirmed cases

303 800 000 recovered

5 618 267 deaths

USA

(7-days incidence 1.459)



71 678 505

confirmed cases

59 630 000 recovered

867 806 death

India

(7-days incidence 160,2)



40 085 116

confirmed cases

35 330 000 recovered

491 127 deaths

Brazil

(7-days incidence 497,9)



24 342 322

confirmed cases

21 940 000 recovered

624 129 deaths

EUROPE



129 158 400

confirmed cases

106 100 000

recovered

1 688 851 deaths

France

(7-days incidence 3.821)



17 302 548

confirmed cases

12 130 000 recovered

129 489 deaths

GBR

(7-days incidence 976)



16 047 720

confirmed cases

14 250 000 recovered

154 356 deaths

Russia

(7-days incidence 253,8)



11 055 246

confirmed cases

10 150 246 recovered

320 844 deaths

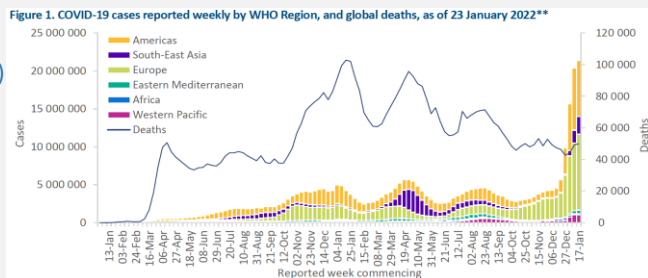
Situation by WHO Region, as of 25 January

Global epidemiological situation overview; WHO as of 25 January 2022

Globally, the number of new COVID-19 cases increased by 5% in the past week (17-23 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 21 million new cases were reported, representing the highest number of weekly cases recorded since the beginning of the pandemic. Nearly 50 000 new deaths were also reported. As of 23 January 2022, over 346 million confirmed cases and over 5.5 million deaths have been reported in total. A slower increase in case incidence was observed at the global level, with only half of the regions reported an increase in the number of new weekly cases, as compared to five out of six regions in the previous week. The Eastern Mediterranean Region reported the largest increase in the number of new cases (39%), followed by the South-East Asia Region (36%) and the European Region (13%). The African Region reported the largest decrease in the number of new cases (31%), followed by the Region of the Americas (10%), while the number of new cases in the Western Pacific Region remained similar to that reported during the previous week. The number of new weekly deaths increased in the South-East Asia Region (44%), the Eastern Mediterranean Region (15%) and the Region of the Americas (7%), while the other Regions all reported declines in new weekly deaths.

The highest numbers of new cases were reported from:

- United States of America (4 215 852 new cases; 24% decrease)
- France (2 443 821 new cases; 21% increase),
- India (2 115 100 new cases; 33% increase),
- Italy (1 231 741 new cases; similar to previous week) and,
- Brazil (824 579 new cases; 73% increase),

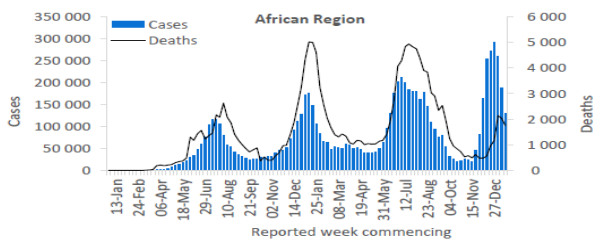


WHO regional overviews Epidemiological week 17 – 23 January 2022

African Region

The African Region reported a continued decline in case incidence in the past week with over 131 000 new cases reported, a 31% decrease. However, four countries (4/49; 8% reported increases of 20% or greater: Algeria, Réunion, Burkina Faso (542 vs 425 new cases; 28% increase) and the United Republic of Tanzania (998 vs 831 new cases; 20% increase). The highest numbers of new cases were reported from Réunion (31 401 new cases; 3507.3 new cases per 100 000 population; a 93% increase), South Africa (22 795 new cases; 38.4 new cases per 100 000; a 35% decrease), and Algeria (9052 new cases; 20.6 new cases per 100 000; a 142% increase).

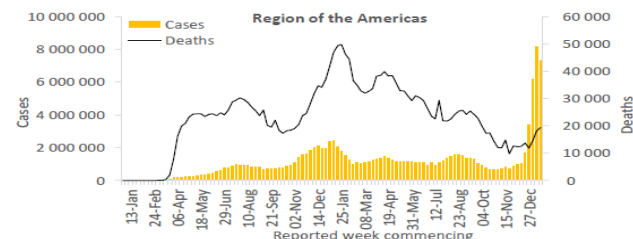
The number of new deaths also continued to decline in the Region with over 1700 new deaths reported, a 14% decrease compared to the previous week. The highest numbers of new deaths were reported from South Africa (785 new deaths; 1.3 new deaths per 100 000 population; a 13% decrease), Ethiopia (105 new deaths; <1 new death per 100 000; a 5% decrease), and Namibia (98 new deaths; 3.9 new deaths per 100 000; an 8% decrease).



Region of the Americas

Following four weeks of increases in the number of new cases, the Region of the Americas reported over 7.3 million new cases, a 10% decrease as compared to the previous week. However, nearly one-third of the countries in the Region reported increases of 20% or greater (18/56; 32%), with the highest increases reported from Dominica (754 vs 273 new cases; 176%), El Salvador (3435 vs 1343 new cases; 156%) and Venezuela (Bolivarian Republic of) (13033 vs 6003 new cases; 117%). The highest numbers of new cases were reported from the United States of America (4 215 852 new cases; 1273.7 new cases per 100 000; a 24% decrease), Brazil (824 579 new cases; 387.9 new cases per 100 000; a 73% increase), and Argentina (761 534 new cases; 1685.0 new cases per 100 000; similar to the figures of the previous week).

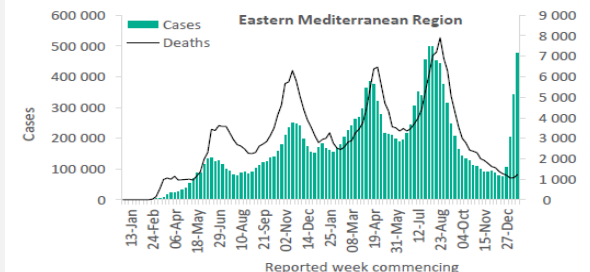
Over 19 000 new deaths were reported in the Region, corresponding to a 7% increase as compared to the previous week. The highest numbers of new deaths were reported from the United States of America (10 795 new deaths; 3.3 new deaths per 100 000; a 17% decrease), Brazil (1767 new deaths; <1 new death per 100 000; an 81% increase), and Mexico (1317 new deaths; 1.0 new deaths per 100 000; an 83% increase).



Eastern Mediterranean Region

The Eastern Mediterranean Region reported a continued increase in new cases this week, albeit at a lower rate when compared to the previous week; with over 479 000 new cases reported, a 39% increase. Half of the countries (13/22, 59%) reported increases of 20% or greater, with the highest increases reported from Iraq (38 623 vs 13 877 new cases; 178% increase), Afghanistan (870 vs 333 new cases; 161% increase) and the occupied Palestinian territory (7239 vs 3040 new cases; 140% increase). The highest numbers of new cases were reported from Tunisia (66 015 new cases; 558.6 new cases per 100 000; a 67% increase), Morocco (50 753 new cases; 137.5 new cases per 100 000; a 10% increase), and Lebanon (44 217 new cases; 647.8 new cases per 100 000; similar to the previous week's figures).

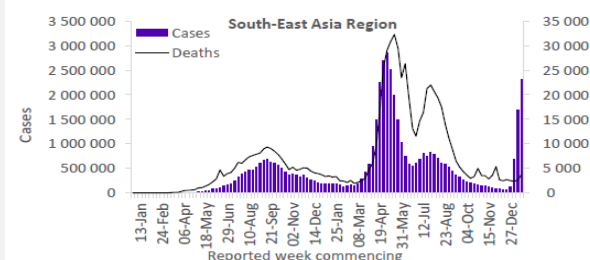
Over 1200 new deaths were reported in the Region, a 15% increase as compared to the previous week. The highest numbers of new deaths were reported from Egypt (207 new deaths; <1 new death per 100 000; a 12% increase), Tunisia (177 new deaths; 1.5 new deaths per 100 000; a 45% increase), and the Islamic Republic of Iran (158 new deaths; <1 new death per 100 000; a 20% decrease).



South-East Asia Region

The number of new cases in the South-East Asia Region increased for the third consecutive week, with over 2.3 million new cases reported this week, a 36% increase as compared to the previous week; this represents a slower rise compared to last week when the increase was 145%. Six out of ten countries in the region reported an increase greater than 20% in the number of new weekly cases, with the largest increases reported from Bhutan (721 vs 147 new cases; a 390% increase), Bangladesh (67 425 vs 24 011; a 181% increase) and Indonesia (14 729 vs 5454 new cases; a 170% increase). The highest numbers of new cases were reported from India (2 115 100 new cases; 153.3 new cases per 100 000; a 33% increase), Bangladesh (67 425 new cases; 40.9 new cases per 100 000; a 181% increase), and Nepal (56 656 new cases; 194.4 new cases per 100 000; a 168% increase).

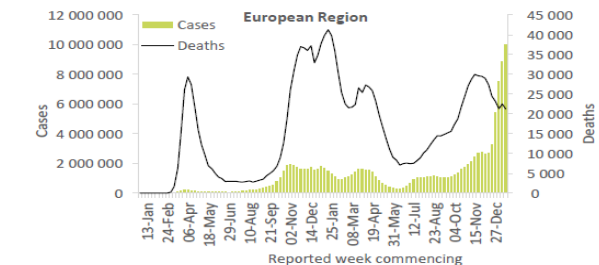
The number of new deaths in the Region increased by 44% as compared to the previous week, with over 3700 new deaths reported. The highest numbers of new deaths were reported from India (3343 new deaths; <1 new death per 100 000; a 47% increase), Thailand (107 new deaths; <1 new death per 100 000; a 7% increase), and Sri Lanka (88 new deaths; <1 new death per 100 000; similar to the previous week's figures).



European Region

Since mid-December 2021, the number of new cases has continued to rise, with the Region reporting over 10 million new cases this week, a 13% increase as compared to the previous week. Thirty-four countries (55%) reported an increase greater than 20%, with the greatest increases reported from Kosovo^[1] (13126 vs 2990 new cases; a 339% increase), the Republic of Moldova (19083 vs 8019 new cases; a 138% increase), and Armenia (4094 vs 1762 new cases; a 132% increase). The highest numbers of new cases were reported from France (2 443 821 new cases; 3757.4 new cases per 100 000; a 21% increase), Italy (1 231 741 new cases; 2065.2 new cases per 100 000; similar to the previous week's figures), and Germany (715 470 new cases; 860.3 new cases per 100 000; a 57% increase).

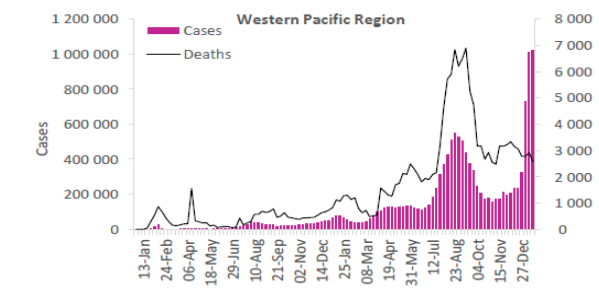
The number of weekly deaths in the Region decrease by 5%, with over 21 000 reported. The highest numbers of new deaths were reported from the Russian Federation (4792 new deaths; 3.3 new deaths per 100 000; a 7% decrease), Italy (2440 new deaths; 4.1 new deaths per 100 000; a 24% increase), and the United Kingdom (1888 new deaths; 2.8 new deaths per 100 000; similar to the previous week's figures).



Western Pacific Region

The number of new cases in Western Pacific Region has stabilized, with over one million new cases reported, similar to the previous week's figures. However, ten countries in the Region (36%) reported increases of over 20% in new cases, with the highest proportional increases reported from Palau (319 vs 46 new cases; a 593% increase), New Caledonia (1659 vs 518 new cases; a 220% increase) and Singapore (19290 vs 6184, a 211% increase). The highest numbers of new cases were reported from Australia (302 608 new cases; 1186.7 new cases per 100 000; a 36% decrease), Japan (268 284 new cases; 212.1 new cases per 100 000; a 181% increase), and the Philippines (219 146 new cases; 200.0 new cases per 100 000; a 5% decrease).

The number of new weekly deaths in the Region declined by 12% as compared with the previous week, with over 2500 new deaths reported. The highest numbers of new deaths were reported from Viet Nam (1116 new deaths; <1 new death per 100 000; an 18% decrease), the Philippines (548 new deaths; <1 new death per 100 000; a 24% decrease), and Australia (430 new deaths; 1.7 new deaths per 100 000; a 49% increase).



Global Situation



Overview of COVID-19 in India

Disease Activity – Since the end of December, marking the start of the third wave, disease activity has been rapidly increasing with a 36-fold **increase in weekly new cases** from December 29 to January 19. As of January 20, **the incidence rate per 100,000 people over the past 7 days increased to 139 cases** from 88 cases the previous week of January 13. While the Delta and Omicron variants are present in India, the latter has become increasingly dominant in multiple states in the recent weeks. **The 14-day average test positivity rate has increased from 1.6% on January 5, to 10.8% as of January 19.** Notably, a change in testing strategy occurred within the same timeframe. According to the Ministry of Health, 7-day average test positivity rate is 16.06% as of January 20.^{1, 2}

Test eligibility – As of January 10, changes to testing guidelines by the Indian Council of Medical Research included only **symptomatic individuals or contacts of a positive case with high-risk factors being able to get tested.** Asymptomatic or on-demand testing will not be available. Consequently, a few key states are reporting a continual decline in the number of tests performed since the change, and cases have appeared to stagnate. According to media sources, the volume of samples collected in Delhi has been reduced by almost two-thirds of the volume prior to the changes. For that reason, the Health Ministry is suggesting that testing be increased strategically in high-risk and vulnerable populations.^{3, 4}

Hospital Occupancy – The second wave, primarily driven by the Delta variant, immensely strained the healthcare system. Fortunately, hospitalizations have yet to reach levels observed during the second wave. According to media sources, approximately **85.7% of hospital beds are available** as of January 19 which includes a tally of hospital bed occupancy of 14 regions, many of which were labelled regions of concern. The previous wave observed hospitalization rates of over 20%, whereas currently **5-10% of cases require hospitalization.** The number of **patients hospitalized due to COVID-19, however, is slightly increasing** across multiple states and territories. This includes Kerala, where 1,139 new patients were hospitalized on January 21 for COVID-19, 919 patients were in the ICU, and 210 patients required ventilator support (compared to January 13: 461 new hospitalizations, 545 patients in ICU, and 151 patients requiring ventilation support). Hospitals in regions such as Delhi have already increased bed capacity in anticipation of higher hospitalization rates and are better equipped when compared to the previous wave.^{5, 6, 7, 8, 9}

Public Measures – COVID-19 restrictions differ state-by-state but may share mandates including limited mass gatherings, capacities for public events and transportation, use of facemasks and adequate hygiene measures. In addition, many states are enforcing nightly curfews to limit mobility. **Restrictions on international travel** require all travellers to complete a self-declaration form including proof of negative PCR test taken 72 hours before arrival, and to quarantine at home for seven days followed by an additional PCR test on the eighth day. Individuals travelling from a country specified as higher risk will also be tested on arrival at the airport. International flights from countries not included in an “air bubble agreement” with India continue to be suspended until February 28.^{10, 11, 12}

Vaccination Coverage – As of January 20, **94%** (880 million) of India’s total population **over 18 years of age**, have received their **first dose of a COVID-19 vaccine**, **72%** (670 million) have received **two doses**, while **52%** (38 million) of India’s **15-to-18-year population**, who were recently made eligible, have received their **first dose.** The same vaccine from the primary regimen will be used for additional doses as India’s government is **not recommending a heterologous strategy.** Third doses are currently only available to health-care workers and individuals 60 years and older. Seven COVID-19 vaccines are approved for use with individuals over 18 years; Covaxin (Bharat Biotech), Covishield (AstraZeneca), Sputnik-V (Gamaleya Research Institute), Novavax/Covavax (Medicago), Corbevax (Biological-E), ZyCoV-D (Zydus Cadila), Spikevax (Moderna), and Janssen (Johnson & Johnson). Notably, Covaxin is the only COVID-19 vaccine being administered to adolescents 15-to-18-year of age at this time.^{13, 14}

Overview of COVID-19 in Mexico

Disease activity – Since the end of December, disease activity has increased substantially with the seven-day rolling **average number of daily new cases increasing more than 16-fold** from 2,467 as of December 24 to **40,345 as of January 24.** However, the true number of COVID-19 infections in the country is expected to be much higher than officially reported case counts due to the **low level of testing** in the country which has contributed to **high test positivity rates.** Between December 24 and January 24, the 14-day test positivity rate has increased from 17.3% to 65.6%. Officials have urged residents to not seek out testing for COVID-19 but to instead isolate at home if symptoms occur and assume that they have the disease.^{1, 2} The Omicron variant is present within Mexico and is reportedly hitting hardest in the center of the country, particularly in **Mexico City**, the nation’s most populous city and where the highest number of tests are conducted. Additionally, this latest spike in disease activity is also being felt in **Morelos, Chihuahua, Nuevo León, and Jalisco.**³

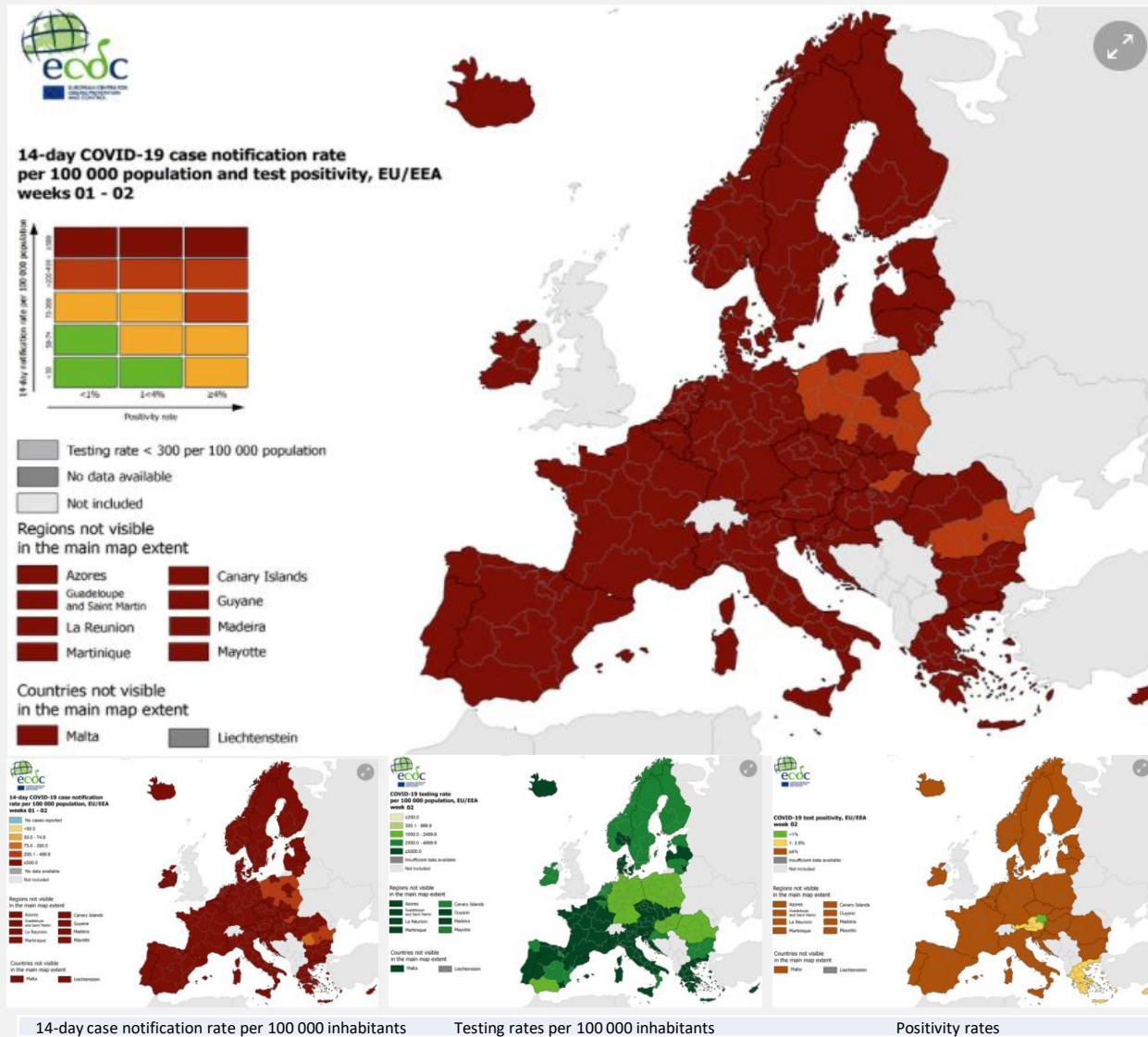
Hospital occupancy – Hospital occupancy rates began increasing in early January with disparity reported between federal and local figures. As of January 17, **nationwide**, hospital occupancy was reportedly **31% for general bed occupancy and 17% for beds with ventilators.** However, in **Mexico City**, media sources reported that hospital occupancy rates doubled from 27% on January 3 to **58% on January 17.** In Mexico City, a total of 1,441 people were hospitalized as of January 17 which was a nearly **four-fold increase** from 383 patients in public and private hospitals at the beginning of the month. Additionally, in Baja California Sur, occupancy is reportedly **76%**, much higher than the federal estimate of 31%.⁴ Furthermore, according to media sources from January 17, in Mexico City, **81%** of patients in hospital have **not received two doses** of a COVID-19 vaccination.⁵

Public measures – Mexico employs a nationwide epidemiological stoplight system, which designates each state, as well as Mexico City, with one of four colour-coded levels based on local COVID-19 transmission, with restrictions being imposed accordingly. As of January 24, slightly over **one-third of Mexico’s states are at the green level** (the lowest level of restrictions) with the remainder designated with a higher tier. **Aguascalientes** is the only state currently at the **red level** (the highest level) with **Baja California Sur, Chihuahua, and Tamaulipas** at the **orange level** (second highest). In general, restrictions in regions assigned higher than green (the lowest level) include capacity limits for businesses and social activities, the use of facemasks, and adequate hygiene measures.⁶ Mexico has remained one of the countries worldwide with the least restrictive COVID-19 travel policies throughout the pandemic and as of January 2022, international travellers are permitted to enter the country **without requiring proof of vaccination or negative COVID-19 test results.** However, as of January 16, some states including Jalisco and Tlaxcala, will begin requiring proof of vaccination or a negative PCR test taken within the past 48 hours to enter certain establishments.^{7, 8}

Vaccination coverage – According to the BlueDot COVID-19 Data Suite, as of January 24, of the country’s more than 127 million population, **65.3%** (83,323,226) have received at least one dose of a COVID-19 vaccine while **60.0%** (76,519,923) have received two doses. According to media reports, **Mexico City** has the **highest vaccination rate** in the country with about **95% of adults fully vaccinated** and **91% of adolescents** aged 15 and older having received **at least one dose.** In addition, **51% of senior citizens** in Mexico City and **38% of health care workers** have received **booster shots.**⁴ Vaccines available in Mexico including Comirnaty (Pfizer/BioNTech), Convidecia (CanSino), Vaxzevria (AstraZeneca), Sputnik-V (Gamaleya Research Institute), CoronaVac (Sinovac), Janssen (Johnson & Johnson), and Spikevax (Moderna). The Comirnaty vaccine is also approved for adolescents aged 12-17 years old.⁹

European Situation

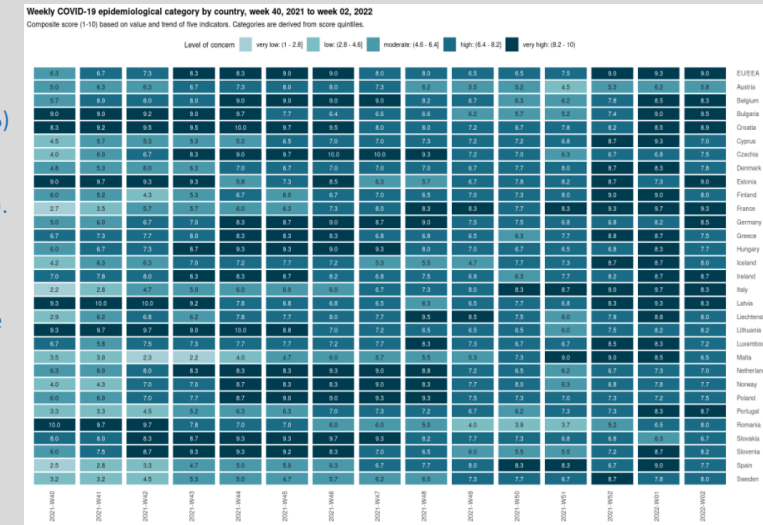
Maps in support of the Council Recommendation on a coordinated approach to the restriction of free movement in response to the COVID-19 pandemic in the EU, as of 20 January 2022

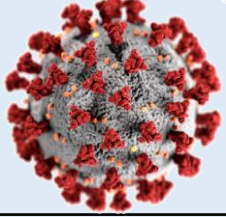


ECDC COVID-19 country overviews report Week 02, as of 20 January 2022

At the end of week 2 (week ending Sunday 16 January 2022), the overall epidemiological situation in the EU/EEA was characterised by a high overall case notification rate that has increased rapidly in the past four weeks, and an elevated but stable death rate. 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. The rapid spread of the Omicron variant of concern (VOC) continues, while both the Delta VOC and Omicron VOC are still co-circulating in some countries. Omicron cases still occur more commonly in younger people, but increasing case notification rates are also observed in those aged 65 years and older. As countries currently adopt heterogeneous testing strategies and face varying constraints on their ability to test, underestimation of case notification rates should not be excluded. The overall COVID-19 case notification rate for the EU/EEA was 2 621 per 100 000 population (2 157 the previous week). This rate has been increasing for four weeks. The 14-day COVID-19 death rate (48.5 deaths per million population, compared with 50.5 deaths the previous week) has been stable for eight weeks. Of 28 countries with data on hospital or ICU admissions or occupancy up to week 2, 14 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 2, 10 countries (Belgium, Bulgaria, Croatia, Estonia, France, Germany, Ireland, Italy, Latvia, and Portugal) were categorised as of very high concern, 19 countries (Cyprus, Czechia, Denmark, Finland, Greece, Hungary, Iceland, Liechtenstein, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Romania, Slovakia, Slovenia, Spain, and Sweden) as of high concern, and one country (Austria) as of moderate concern. Compared with the previous week, three countries (Estonia, Germany, and Slovakia) moved to a higher category, 11 countries (Cyprus, Denmark, Finland, Greece, Hungary, Iceland, Liechtenstein, Luxembourg, Malta, Slovenia, and Spain) moved to a lower category and 16 countries stayed in the same category. By the end of week 2, the cumulative uptake of full vaccination in the EU/EEA was 80.9% (country range: 33.9–94.3%) among adults aged 18 years and older and 69.4% (country range: 28.4–82.9%) in the total population. Cumulative uptake of an additional dose was 45.8% (country range: 8.6–75.1%) among adults aged 18 years and older and 37.6% (country range: 7.0–59.7%) in the total population. The estimated distribution (median and range of values from 22 countries for weeks 2021-52 to 2022-01, 27 December to 9 January 2022) of variants of concern (VOC) was 69.4% (5.7–99.9%) for B.1.1.529 (Omicron), 23.3% (0.0–93.9%) for B.1.617.2 (Delta), 0.0% (0.0–0.4%) for P.1 (Gamma) and 0.0% (0.0–0.0%) for B.1.351 (Beta). The distribution was 0.0% (0.0–4.9%) 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 15 of the 22 EU/EEA countries with adequate sequencing volume. A description of trends in aggregate detections and of the epidemiology of 155 150 reported Omicron cases is available in the [virus variants summary](#) and [variants](#) sections.





Vaccination News



Ten countries accounted for **64.3%** of cumulative vaccine doses administered globally as of January 20. The top five countries/territories with the highest number of cumulative people fully vaccinated per 100,000 population are **Gibraltar** (119,620), **United Arab Emirates** (92,260), **Brunei Darussalam** (91,130), **Portugal** (90,230), and **Chile** (87,460). Conversely, the five countries with the lowest number of cumulative people fully vaccinated per 100,000 population are **Burundi** (50), the **Democratic Republic of the Congo** (170), **Haiti** (650), **Chad** (710), and **Yemen** (980).

No reduced fertility with COVID vaccines, but infection ups risk in men

A cohort study of more than 2,000 US and Canadian women indicates that COVID-19 vaccination does not impair fertility—but men who become infected with SARS-CoV-2 may experience short-term reduced fertility, according to surveys of the women's partners.

In the study, published yesterday in the *American Journal of Epidemiology*, Boston University (BU) researchers analyzed survey data on COVID-19 vaccination and infection, and fertility, among female and male participants in the Pregnancy Study Online (PRESTO), an ongoing study funded by the National Institutes of Health that enrolls women trying to conceive and follows them from before conception through 6 months after delivery. Participants included 2,126 women in the United States and Canada who provided information on themselves and their male partners from December 2020 to September 2021.

The investigators conducted follow-up through November 2021.

The researchers calculated the per-menstrual cycle probability of conception using self-reported dates of participants' last period, typical menstrual cycle length, and pregnancy status. They found that the fertility rates among female participants who received at least one dose of a COVID vaccine were nearly identical to unvaccinated female participants. Fertility was likewise similar for male partners who had received at least one dose of a COVID vaccine compared with unvaccinated peers.

In contrast, men who tested positive for COVID-19 within 60 days of a given cycle had reduced fertility compared with men who never tested positive or with men who tested positive at least 60 days prior. This finding did not hold true for the women and supports previous research that has linked COVID-19 infection in men with poor sperm quality and other reproductive dysfunction, according to a BU School of Medicine news release.

First author Amelia Wesselink, PhD, MPH, said in the release, "Our study shows for the first time that COVID-19 vaccination in either partner is unrelated to fertility among couples trying to conceive through intercourse. Time-to-pregnancy was very similar regardless of vaccination status."

Senior author Lauren Wise, ScD, said, "The prospective study design, large sample size, and geographically heterogeneous study population are study strengths, as was our control for many variables such as age, socioeconomic status, preexisting health conditions, occupation, and stress levels."

Jan 20 Am J Epidemiol study

Moderna vaccine outperforms Pfizer against Delta breakthrough cases

A study yesterday in *JAMA* shows the Moderna mRNA vaccine was more protective than the Pfizer-BioNTech mRNA vaccine at preventing breakthrough COVID-19 cases during the US Delta surge.

The study was based on electronic health records from 637,000 fully vaccinated patients from 63 healthcare organizations across the United States, dated from July to November 2021. Full vaccination was considered to be 2 or more weeks since a second dose of mRNA vaccine. Patients who were boosted (given a third dose) or who had prior COVID-19 infections were excluded from the study.

Moderna recipients were less likely to be infected with breakthrough cases and less likely to be hospitalized.

There were 2.8 breakthrough cases per 1,000 people in those vaccinated with Pfizer and 1.6 cases per 1,000 with Moderna in November 2021, and the 60-day hospitalization rate was 13.3% for Pfizer recipients and 12.7% for Moderna.

Neither group had high mortality rates: The 60-day mortality was 1.14% (35/3,078) and 1.10% (207/18,737) for Moderna and Pfizer recipients, respectively.

"Although there is a difference in breakthrough infections, both vaccines are highly protective against SARS-CoV2 infection and especially against the most severe consequences of infection," said study coauthor Pamela B. Davis MD, PhD, in a Case Western University press release.

Jan 20 JAMA study

BioNTech: BioNTech and Pfizer have begun their first clinical trial to investigate a corona vaccine specifically tailored to the Omicron variant. The safety, tolerability and efficacy of the vaccine candidate will be tested. The study is expected to include up to 1420 test subjects, who will be divided into three groups.

The first group comprises a good 600 participants who have already received two doses of the previous vaccine between 90 and 180 days before the start of the study and are now expected to receive one or two doses of the Omicron vaccine.

The second, almost equally large group consists of boosted people who receive another dose of the conventional vaccine or a dose of the Omicron vaccine.

The third group with a good 200 subjects consists of unvaccinated people who have not yet contracted COVID-19, who then receive three doses of the Omicron vaccine.

USA: The booster campaign in the US is weakening. Last week, according to figures from the CDC, about 490,000 people in the US getting a booster shot. At the beginning of December, there were up to one million citizens within a week. So far, about 40 percent of those who have been fully vaccinated have received a booster vaccination.

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

1,031,891,830

814,502,122

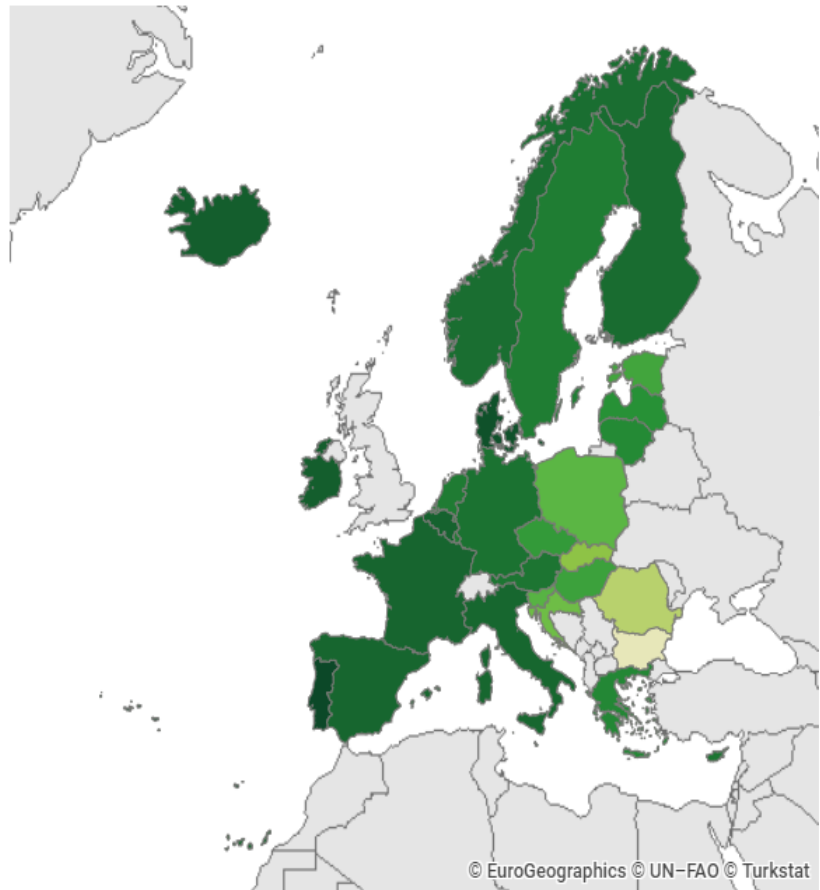
Total doses administered in EU/EEA countries

Indicator: Uptake full vaccination

Cumulative vaccine uptake (%) in the total population in EU/EEA countries as of 2022-01-21

Cumulative uptake (%) of full vaccination by age group in EU/EEA countries as of 2022-01-21

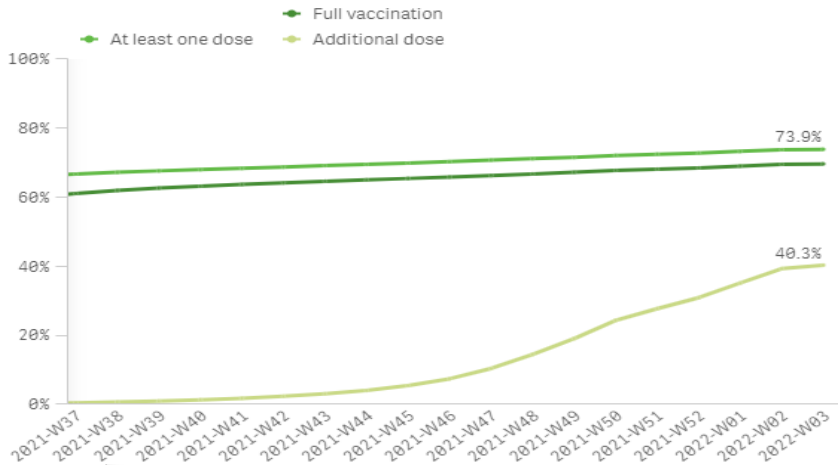
Cumulative uptake (%) of full vaccination in the total population in EU/EEA countries as of 2022-01-21



Uptake full vaccination (%)

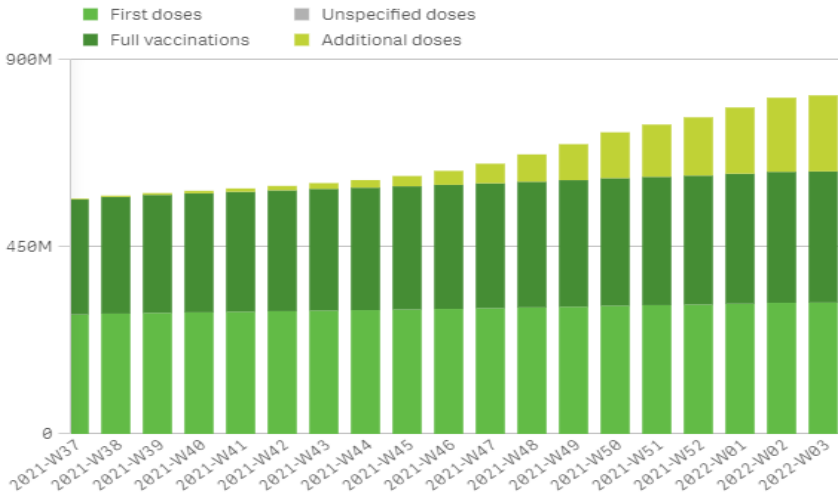


by reporting week (data for the current week are preliminary)



Cumulative number of vaccine doses administered to the total population in EU/EEA countries as of 2022-01-21

by reporting week (data for current week are preliminary)



Country	60+ years	50-59 years	25-49 years	18-24 years	<18 years
Austria	91.9%	81.9%	75.3%	72.8%	26.9%
Belgium	94.1%	91.2%	84.5%	82.1%	29.8%
Bulgaria	36.6%	37.7%	31.5%	26.4%	1.7%
Croatia	76.6%	68.8%	56.5%	42.8%	3.7%
Cyprus	94.1%	87.6%	83.6%	69.3%	15.9%
Czechia	85.6%	77.8%	64.6%	67.6%	17.2%
Denmark	99.6%	94.1%	85.1%	82.2%	39.7%
Estonia	75.6%	73.4%	66.7%	69.3%	17.5%
Finland	93.6%	86.0%	80.1%	74.9%	26.4%
France	91.1%	89.5%	84.7%	86.6%	25.0%
Germany	-	-	-	-	-
Greece	86.4%	81.1%	73.2%	67.8%	15.6%
Hungary	81.4%	74.8%	64.3%	51.8%	20.9%
Iceland	100.0%	92.4%	87.2%	85.9%	27.5%
Ireland	100.0%	99.5%	88.8%	86.4%	25.4%
Italy	90.6%	84.9%	78.7%	84.1%	27.7%
Latvia	75.0%	77.7%	75.7%	77.8%	18.5%
Liechtenstein	-	-	-	-	-
Lithuania	78.2%	78.5%	78.8%	73.8%	15.1%
Luxembourg	90.8%	86.7%	77.1%	71.9%	25.9%
Malta	99.1%	88.5%	92.5%	84.5%	28.8%
Netherlands	-	-	-	-	21.2%
Norway	99.0%	94.9%	85.1%	83.8%	10.0%
Poland	76.0%	67.3%	59.1%	54.3%	17.3%
Portugal	100.0%	94.4%	88.6%	86.6%	30.5%
Romania	45.9%	55.7%	48.8%	48.0%	6.5%
Slovakia	70.9%	60.1%	51.1%	50.2%	8.5%
Slovenia	83.6%	69.5%	56.2%	57.5%	9.9%
Spain	98.4%	90.3%	77.8%	73.1%	27.2%
Sweden	93.9%	89.9%	80.2%	74.8%	11.8%

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

Update on the Omicron VOC

Based on the currently available evidence, the overall risk related to the Omicron variant remains very high. Compared to other variants, Omicron has shown an increased ability to spread within the community, leading to a rapid increase in the numbers of new cases in multiple countries where it has replaced other variants, including Delta. Despite this, there appears to be a lower risk of severe disease and death following Omicron infection as compared to other variants. However, due to the very high numbers of cases, many countries have seen a significant increase in the incidence of hospitalization, putting pressure on healthcare systems.

Transmissibility

The Omicron variant has a significant growth advantage, a higher secondary attack rate and a higher observed reproduction number as compared to the Delta variant, and as a result, it is rapidly replacing the latter globally. It is thought that this transmission advantage is largely due to Omicron's ability to evade immunity following infection and/or vaccination. However, compared to the Delta variant, Omicron is able to more rapidly infect the tissues of upper respiratory tract rather than the lungs, which may also help the spread of this variant. Studies conducted in the United Kingdom and Denmark showed that household contacts of cases with the Omicron variant were more likely to be infected as compared to those who were contacts of cases with the Delta variant: the household secondary attack rate in the study conducted in the United Kingdom was 13.6% for the Omicron as compared to 10.1% for the Delta variant; and for the study conducted in Denmark, 31% for the Omicron as compared to 21% for the Delta variant. Additionally, studies conducted in India and South Africa have reported a higher proportion of asymptomatic infection at the time of testing among individuals infected with Omicron compared to infection with Delta. The higher occurrence of asymptomatic presentation may result in a lower rate of detection, and thus may further contribute to transmission.

Disease severity

Epidemiological trends continue to show a decoupling between case incidence, hospital admissions and deaths in most countries, when compared to epidemic waves due to previous variants. This is likely due to a combination of the lower intrinsic severity of the Omicron variant (including increased likelihood of replication in the upper respiratory tract rather than the lungs), and preservation of protection against severe disease following vaccination. Several studies have evaluated the risk of hospitalization and severe disease with Omicron as compared to Delta. An analysis from the United Kingdom Health Security Agency with the Medical Research Council (MRC) Biostatistics Unit, the University of Cambridge, showed a 47% reduction in the risk of presentation to emergency care or hospital admission with Omicron compared to Delta (Hazard Ratio [HR] 0.53, 95%CI 0.50-0.57) and 66% reduction in the risk of admission from emergency departments (HR 0.33, 95%CI 0.3-0.37). However, uncertainty remains about the severity and the impact on hospitalizations in populations with low vaccination coverage or prior exposure to SARS-CoV-2 infection.

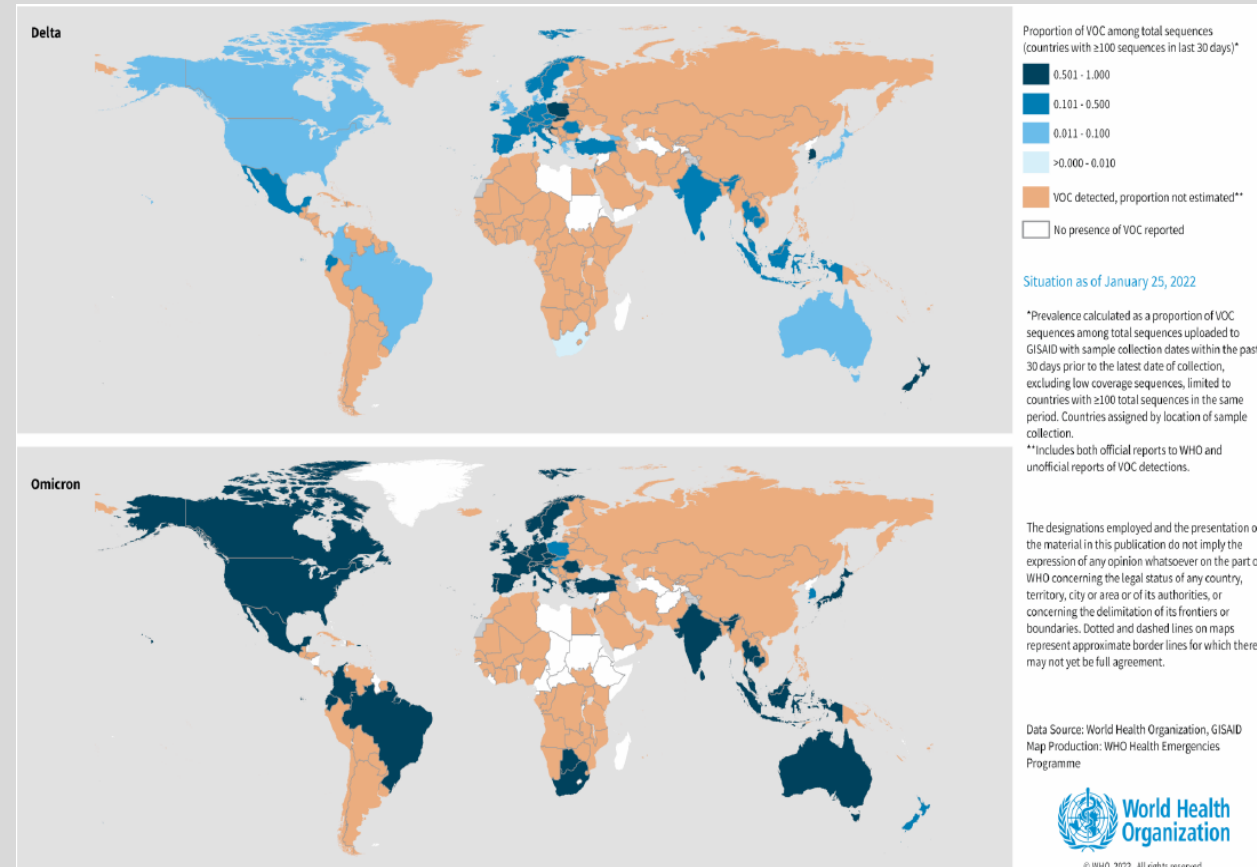
Impact on immunity

The Omicron variant has an increased ability to evade immunity as compared to prior variants, causing re-infections in those who have had a previous infection and in those who have been vaccinated. Here we summarise the risk of re-infection as further details on vaccine effectiveness are given in the section on vaccines below. A study conducted in the United Kingdom found that, when compared to the Delta variant, the risk of reinfection with the Omicron variant was 5.4-fold higher. In those who were unvaccinated, this risk was slightly higher at 6.4-fold and in those who were vaccinated, slightly lower at 5.0-fold. A separate study conducted in the United Kingdom found that those who had a lower viral load (higher Ct value) during their previous infection were at a higher risk of reinfection.

Impact on therapeutics

There is ongoing research to understand the impact of the Omicron variant on therapeutics and treatments. It is expected that corticosteroids and drugs which block the cytokine interleukin (IL-6) will remain effective in those with severe disease. However, preliminary data from non-peer-reviewed publications suggest that some of the monoclonal antibodies may be less effective against the Omicron variant.

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



Source: <https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---25-january-2022>

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



WHO label	Alpha	Beta	Gamma	Delta	Omicron
Transmissibility	Increased transmissibility ⁶	Increased transmissibility ^{7,8}	Increased transmissibility ^{8,9}	Increased transmissibility ^{8,10,11}	Increased transmissibility. ¹²⁻¹⁵
Disease severity	Possible increased risk of hospitalization ^{16,17} , possible increased risk of severe disease and death ^{18,19}	Possible increased risk of hospitalization ¹⁷ , possible increased in-hospital mortality ²⁰	Possible increased risk of hospitalization ¹⁷ , possible increased risk of severe disease ²¹	Possible increased risk of hospitalization ^{22,23}	Reduced risk of hospitalization and severe disease ²⁴⁻²⁷
Risk of reinfection	Neutralizing activity retained ²⁸ , risk of reinfection remains similar ²⁹	Reduction in neutralizing activity reported; T cell response elicited by D614G virus remains effective ³⁰	Moderate reduction in neutralizing activity reported ³¹	Reduction in neutralizing activity reported ³²⁻³⁴	Increased risk of reinfection ^{35,36}
Impacts on diagnostics	Limited impact – S gene target failure (SGTF), no impact on overall result from multiple target RT-PCR; No impact on Ag RDTs observed ³⁷	No impact on RT-PCR or Ag RDTs observed ³⁴	None reported to date	No impact on RT-PCR or Ag RDTs observed ³⁸	PCR continues to detect Omicron. Impact on Ag-RDTs is under investigation: Results are mixed as to whether or not there may be decreased sensitivity to detect Omicron. ^{12,27,39-41}

Omicron VOC

Since the 11 January update, three new studies have provided additional evidence of reduced vaccine effectiveness of mRNA vaccines against infection and symptomatic disease due to the Omicron variant. These studies report decreased VE of two doses of mRNA vaccines against infection and symptomatic disease due to the Omicron variant compared to the Delta variant within the first few months of receipt of the second dose, with VE estimates decreasing more rapidly with increasing time from completion of the primary series.

A peer-reviewed study from the United States of America reported VE estimates against symptomatic disease of approximately 40% and 30% for Moderna-mRNA-1273 and Pfizer BioNTech-Comirnaty, respectively, one month following two doses of vaccination. However, by 6-7 months following the second dose, VE had declined to 0% for both vaccines.

A second study of adults in the United States of America (not yet peer reviewed) provides new evidence of the VE of Pfizer BioNTech-Comirnaty against hospitalization due to the Omicron variant. The vaccine was 70% effective at preventing hospitalization due to Omicron within the first 3 months of the second dose with no decrease in VE found at 6 months. This same study found a third dose of Pfizer BioNTech-Comirnaty increased VE against hospitalization

due to Omicron to 89% (83-92%) which was sustained at 3-5 months. However, a VE against emergency department visits not leading to hospital admission decreased from 78% (95%CI 73-82%) immediately following the third dose to 48% (95%CI 14-69%) at 6 months or more.

In addition to VE against hospitalization, the three studies also showed that a third dose of mRNA vaccine increased VE from 0% to 62-78% for infection and symptomatic disease in the first 3-5 months following a third dose.

<https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---25-january-2022>

Notable Update: Omicron Sub-lineage BA.2 designated a COVID-19 Variant Under Investigation

The Omicron variant sub-lineage referred to as BA.2 has been designated a variant under investigation by the UK Health Security Agency. The original Omicron variant was missing an S-gene target, making it easily identifiable from other variants that have this target gene. However, the new BA.2 sub-lineage is S-gene positive, making it more challenging to identify it as linked to the original Omicron variant. It is not uncommon for viruses to evolve and mutate, and so far, the case rate of this sub-lineage remains relatively low globally. According to [Outbreak.info](https://www.outbreak.info), as of January 20, approximately 8,070 sequences of the BA.2 lineage have been detected in at least 43 countries. In Denmark, it [currently makes up about half of Omicron cases](https://www.berlingske.dk/nyheder/nyhedsbrev/2022/01/20/omikron-variant-ukhxa-12521718). The BA.2 variant has shown no difference in hospitalizations compared to the original Omicron variant, based on initial observations. Investigations are underway to determine this new sub-lineage's transmissibility and its impact on vaccine efficiency.

<https://news.sky.com/story/amp/omicron-sub-lineage-ba-2-designated-as-covid-variant-under-investigation-says-ukhxa-12521718>

<https://outbreak.info/situation-reports?pango=BA.2>

<https://en.ssi.dk/news/news/2022/omicron-variant-ba-2-accounts-for-almost-half-of-all-danish-omicron-cases>

Delta VOC

Five new studies (four pre-prints and on peer-reviewed study) provided further evidence of performance of two doses of vaccine against the Delta variant. The VE of the Pfizer BioNtech-Comirnaty vaccine against infection and symptomatic disease within 1-3 months after receipt of the second dose ranged from 80-91% but decreased with increasing time to a VE of 53-79% at four or more months following the second dose. The VE against hospitalization for Pfizer BioNtech-Comirnaty was high (88-95%) after the second dose. However, one study showed a reduction in the VE against hospitalization to 74% (65-80%) at six or more months following the second dose.

Five new studies (three pre-prints and two peer-reviewed studies) also provide further evidence of the vaccine performance of a third dose against infection, symptomatic disease, and hospitalization when the Delta variant was the predominant circulating variant. The VE of three doses of mRNA vaccines against infection and symptomatic disease ranged from 77-96% across studies. Two studies (both not yet peer-reviewed) evaluated VE of three doses of the Pfizer BioNtech-Comirnaty vaccine against hospitalization. The first study reported a relative VE (as compared to those receiving two doses, five or more months prior) of 89% (95%CI 87-91%).⁴⁸ The second study reported an absolute VE (as compared to those unvaccinated) of 95% (95%CI 91-97%) against hospitalization due to the Delta variant within three months of receipt of the third dose; however, VE at approximately 3-5 months decreased to 65% (16-85%).

<https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---25-january-2022>

Subject in Focus

EMA approved - Nuvaxovid COVID-19 Vaccine

Recently a new COVID-19 vaccine was introduced called Nuvaxovid. After initially having recommended a conditional marketing authorisation by the end of December last year, the European Medicines Agency (EMA) has since then authorised its use in the EU.

Nuvaxovid is the fifth vaccine recommended in the EU for preventing COVID-19. It is a protein-based vaccine and, together with the already authorised vaccines, will support vaccination campaigns in EU Member States during a crucial phase of the pandemic.

After a thorough evaluation, EMA's human medicines committee (CHMP) concluded by consensus that the data on the vaccine were robust and met the EU criteria for efficacy, safety and quality.

Results from two main clinical trials found that Nuvaxovid was effective at preventing COVID-19 in people from 18 years of age. The studies involved over 45,000 people in total. In the first study, around two thirds of participants received the vaccine and the others were given a placebo (dummy) injection; in the other study, participants were equally split between Nuvaxovid and placebo. People did not know if they had been given Nuvaxovid or placebo. The [first study](#), conducted in Mexico and the United States, found a 90.4% reduction in the number of symptomatic COVID-19 cases from 7 days after the second dose in people who received Nuvaxovid (14 cases out of 17,312 people) compared with people given placebo (63 out of 8,140 people). This means that the vaccine had a **90.4% efficacy** in this study.

The [second study](#) conducted in the United Kingdom also showed a similar reduction in the number of symptomatic COVID-19 cases in people who received Nuvaxovid (10 cases out of 7,020 people) compared with people given placebo (96 out of 7,019 people); in this study, the **vaccine efficacy was 89.7%**.

Taken together, the results of the two studies show a vaccine efficacy for Nuvaxovid of around 90%. The original strain of SARS-CoV-2 and some variants of concern such as Alpha and Beta were the most common viral strains circulating when the studies were ongoing. There is currently limited data on the efficacy of Nuvaxovid against other variants of concern, including Omicron.

The side effects observed with Nuvaxovid in the studies were usually mild or moderate and cleared within a couple of days after vaccination. The most common ones were tenderness or pain at the injection site, tiredness, muscle pain, headache, a general feeling of being unwell, joint pain, and nausea or vomiting.

The safety and effectiveness of the vaccine will continue to be monitored as it is used across the EU, through the EU pharmacovigilance system and additional studies by the company and European authorities.

How does Nuvaxovid work

Nuvaxovid works by preparing the body to defend itself against COVID-19. Contrary to recent mRNA vaccines it is a traditional vaccine as it contains a version of the spike protein of the virus that has been produced in the laboratory. It also contains an 'adjuvant', a substance to help strengthen the immune responses to the vaccine. When a person is given the vaccine, their immune system will identify the protein in the vaccine as foreign and produce natural defences — antibodies and T cells — against it.

If, later on, the vaccinated person comes into contact with SARS-CoV-2 virus, the immune system will recognise the spike protein on the virus and be prepared to attack it. The antibodies and immune cells can protect against COVID-19 by working together to kill the virus, prevent its entry into the body's cells and destroy infected cells.

Conclusion:

Nuvaxovid offers a high level of protection against COVID-19 which is a critical need in the current pandemic. The main trials showed that the vaccine has around 90% [efficacy](#). Most side effects are mild to moderate in severity and are gone within a few days.

The Agency therefore decided that Nuvaxovid's benefits are greater than its risks and that it can be recommended for authorisation in the EU.

Since it's a traditional vaccine this might be more acceptable to those that don't want to receive mRNA vaccines. So it could be favourable for the overall acceptance of vaccination policies.

For more information please check the following link:

<https://www.ema.europa.eu/en/medicines/human/EPAR/nuvaxovid#overview-section>

The four main types of Covid-19 vaccines in development

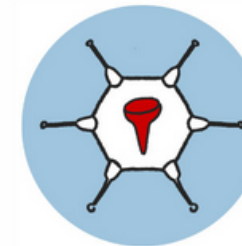
Even before coronavirus broke out in 2020, pharmaceutical companies were working on designs for vaccines they could quickly adapt to a pandemic strain of virus. Their work paid off in some of the new Covid-19 vaccines being tested and prepared for rollout as illustrated below.



mRNA VACCINE

Used by: Pfizer, Moderna
Doses: 2

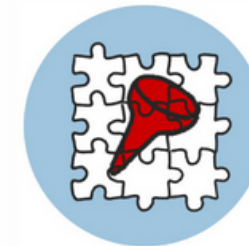
mRNA vaccines are the newest approach. They use genetic material called messenger RNA, a kind of genetic software that instructs cells to make a piece of the coronavirus spike protein. That will get the attention of the immune system. The mRNA is coated in soft fatty lipids to protect it.



VECTOR VACCINES

Used by: AstraZeneca, Janssen, Sputnik
Doses: 1-2

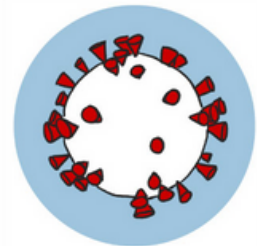
Vector vaccines use another virus to carry in the genetic instructions to make the spike protein. For coronavirus they all use adenoviruses, a type of common cold virus. They attach to cells and inject DNA that tells the cells to make coronavirus spike protein.



PROTEIN SUBUNIT VACCINE

Used by: Novavax, Sanofi
Doses: 1-2

Protein subunit vaccines just get little pieces of the target virus circulating in the system for the immune system to find and recognize. Instead of using the human body as the vaccine factory, genetically engineered insect viruses are used to infect moths, whose cells then produce the pieces of coronavirus spike protein. These are harvested and made into a vaccine.



WHOLE, KILLED VACCINES

Used by: Sinovac
Doses: 1

Whole inactivated virus vaccines take longer to make because batches of the coronavirus must first be grown and then killed using a chemical or heat, and then made into a vaccine that can be injected to elicit an immune response.

Source: <https://edition.cnn.com/2021/04/01/health/novavax-covid-19-vaccine-how-it-works-wellness-explainer/index.html>

High false-negative rate limits value of rapid COVID tests for kids

A meta-analysis published this week in the BMJ shows that COVID-19 rapid antigen tests for children don't meet minimum performance standards set by the World Health Organization (WHO) and the US Food and Drug Administration (FDA). Already shown to be far less sensitive in adults than their manufacturers report, rapid antigen tests, also called lateral flow tests, are widely used in children to screen for COVID-19 in schools, homes, and healthcare settings. Amid scarcity of the over-the-counter tests, US households can now order 4 such tests from a US government website for free.

While experts say these nasal-swab tests -- sold under brand names such as BinaxNOW and BD Veritor -- have some value in disrupting virus transmission, it's important to understand their limitations -- especially amid the current surge of cases caused by the highly transmissible and evasive omicron (B.1.1.529) variant.

"I think an important point to remember is that with rapid antigen tests, positive results are generally meaningful, but negative results have to be taken with a grain of salt," Kelly Wroblewski, director of infectious diseases at the Association of Public Health Laboratories, told CIDRAP News.

Michael Osterholm, director of the Center for Infectious Disease Research and Policy (CIDRAP) at the University of Minnesota, publisher of CIDRAP News, calls interpreting negative test results "a huge challenge". "The average consumer isn't going to know what this means. Many people will get a negative result and go to dinner with Grandma and Grandpa."

Poor sensitivity, acceptable specificity

In the 1st meta-analysis of its kind, a team led by University of Manchester researchers in the United Kingdom evaluated 17 studies involving 6355 children that compared rapid antigen test results with those from the gold-standard: reverse transcription polymerase chain reaction (RT-PCR) test. The studies assessed 8 tests from 6 different brands.

Overall pooled diagnostic **sensitivity and specificity** of the rapid tests were **64.2% and 99.1%**, respectively. In **children with symptoms**, diagnostic sensitivity and specificity were **71.8% and 98.7%**, respectively, and in those **without symptoms**, sensitivity and specificity were **56.2% and 98.6%**, respectively. For reference, WHO and FDA performance standards for rapid antigen tests specify a **minimum sensitivity of 80% and a minimum specificity of 97%**.

Sensitivity is the probability that a test correctly identifies all positive cases; the higher the sensitivity, the lower the likelihood of false-negative results. Specificity, on the other hand, is the ability to identify those who don't have a condition; the higher the specificity, the lower the risk of false-positive results.

Of the 12 peer-reviewed studies in journals and 5 published on preprint servers, only 1 was at low risk of bias. The researchers concluded that the real-world performance of rapid antigen tests in children varied widely, only a few tests had relevant data, and the risk of bias was unclear due to poor reporting.

"Evidence gaps identified in this systematic review demonstrate current research needs to support evidence-based decision making," they wrote. "In particular, evidence is needed on the real-life performance of tests in schools (self-testing performed by children) and kindergarten (sample collection in toddlers by laypersons). ... Moreover, the implementation of routine audits of testing programmes may allow monitoring of test performance in practice outside of studies."

Many questions remain

Rapid antigen tests for COVID-19 first became available in May 2020, when the FDA issued emergency use authorization for Quidel Corporation's Sofia 2 SARS Antigen FIA. Since then, dozens of such tests have been marketed. They are convenient and can generate results in as little as 15 minutes. By comparison -- and depending on demand and availability -- several days may pass before more accurate PCR results are available.

On 28 Dec 2021, the FDA reported on its website that preliminary research on the performance of rapid antigen tests in patients infected with omicron suggests that "antigen tests do detect the omicron variant but may have reduced sensitivity", referring to the potential for false-negative results. The FDA should have released clearer information sooner, Osterholm said, citing cases whereby "an individual is negative for multiple days in a lateral flow test, including on the day a PCR test shows that they are, in fact, positive. We're still trying to clarify what the results tells us about one's infection status and whether it tells us anything about how infectious you are and able to transmit the virus."

Tests don't eliminate risks

The uncertainty about whether negative rapid antigen tests can be trusted -- as well as the similarity of COVID-19 symptoms and those caused by allergies or other common infectious diseases -- has caused confusion for parents trying to make decisions about school and other activities.

Wroblewski recommends that parents of symptomatic children who receive a negative result from a rapid antigen test seek a PCR test for confirmation. If a child tests negative on a rapid test and has no symptoms but was exposed to COVID-19 at school or elsewhere, following up with another rapid test a day or 2 later could be prudent, she said. "I think parents can, to a certain extent, use their judgment," with negative test results, Wroblewski said. "If your kid has the sniffles but no severe symptoms, no fever, you can probably send them to school with a mask. But if they've had an exposure and have a sniffle, maybe just keep them home. Even if it's not COVID, they could have something else that's infectious."

However, if children test positive and have symptoms, they should be considered infected and kept home from school and other activities, Osterholm said. The important thing to understand is that rapid tests are not perfect, Wroblewski said. "If your child is asymptomatic and you're using rapid antigen tests to identify those asymptomatic infections before they go to school, see grandparents, or get on a plane, you're not going to eliminate the risk that someone is actually infected and might move to positive in the next 24 hours," she said. "You're mitigating the risk."

<https://www.cidrap.umn.edu/news-perspective/2022/01/high-false-negative-rate-limits-value-rapid-covid-tests-kids>



Other Infectious Disease Outbreaks / Human Disasters

Avia influenza

Europe – Since October 2020, Europe has experienced the most severe avian influenza epidemic to date. Wild birds appear to be playing an important role in its spread and maintenance. Most wild birds reported infected have been Anseriformes (swan, ducks, geese), followed by birds of prey. Some wild migratory waterbirds contribute to the propagation of HPAI viruses. As of 20 January 22, two outbreaks in Norway, one in Germany and two outbreaks in Latvia have been reported.

Source: <https://promedmail.org/promed-post/?id=20220124.8701054>

Measels

Syria - Clusters of measles outbreaks are being reported in Al-Bab and Afrin, cities in northwestern Syria. Between December 2021 and January 7, 2022, about 30 cases of measles have been reported in Al-Bab, and at least two cases in Afrin, with one, confirmed fatal case of a 12-year old girl in Afrin. Sporadic measles cases are typically recorded each year in Syria, although estimates on suspected cases are much higher. A study conducted in 2019 estimated that there were over 17,000 cases of measles in 2017, primarily in northwestern governorates, due to low vaccination coverage. The recent media report indicates that the Ministry of Health in the Interim Syrian government has contacted vaccination teams to provide measles vaccinations to children. The ministry also indicated that samples of the measles cases are being sequenced to determine if new mutations in the virus are emerging. BlueDot considers this a less likely explanation for the outbreaks and fatal case, whereas low vaccination coverage is more likely the cause. WHO estimates indicate that country-wide measles-containing vaccination coverage of the first dose was approximately 59% in 2020.

Source: ProMed - <https://promedmail.org/promed-post/?id=8701065>

Meningococcal meningitis

United Kingdom – Upward trends of meningococcal meningitis were reported by the United Kingdom Health Security Agency (UKHSA). According to official data, cases mostly among students in England rose sharply and exceeded pre-pandemic levels between September to November 2021. During that period, 41.5% of meningitis cases occurred among 15 to 19 year old group, compared with 11.8% and 14.3% during the same period in 2018 and 2019, respectively. In addition, of the total reported cases, 84.6% were students registered at a higher education institution, and almost all the cases involved Neisseria meningitidis serotype B (also referred to as Meningitis B). The data published by UKHSA also highlighted that students, particularly those living on campuses, have a higher risk of meningococcal disease. Lastly, experts have highlighted that the rise in cases may be attributed to a combination of factors including high levels of transmission in young people, but also changes across the immunity sparked by reduced the opportunities for meningococcal exposure and transmission among adolescents during COVID-19 lockdowns.

Source: NewsMedia - <https://www.theguardian.com/society/2022/jan/19/meningitis-b-cases-rising-students-england-study>

Influenza

Europe - *Week 2/2022 (10 – 16 Januar 2022)*

- Albania, Israel, Kazakhstan, North Macedonia, Norway, Russian Federation, Sweden and Serbia reported widespread influenza activity and/or medium influenza intensity.
- 6% of all sentinel primary care specimens from patients presenting with ILI or ARI symptoms tested positive for influenza virus, a decrease from 13% in week 1/2022.
- Six countries reported seasonal influenza activity at or above 10% positivity in sentinel primary care: Armenia (56%), Serbia (22%), Estonia (15%), France (13%), Georgia (12%) and Russian Federation (10%).
- Hospitalized cases with confirmed influenza virus infection were reported from intensive care units (7 type A viruses and 1 type B), other wards (4 type A viruses) and SARI surveillance (25 type A viruses).
- Both influenza type A and type B viruses were detected with A(H3) viruses being dominant across all monitoring systems.

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

Varicella

Vellore, Tamil Nadu, India - An outbreak of varicella has been confirmed among inmates of the Vellore Central Jail in Vellore, Tamil Nadu, India. Officials have stated that once the infections were confirmed, all the affected inmates were isolated and are being treated separately. The inmates will not be allowed to return to their original rooms until after they have recovered from their illness. This event raises the importance of ensuring that immunizations are up-to-date and raises the concern of vaccine-preventable disease outbreaks due to the disruption of immunization efforts caused by the COVID-19 pandemic.

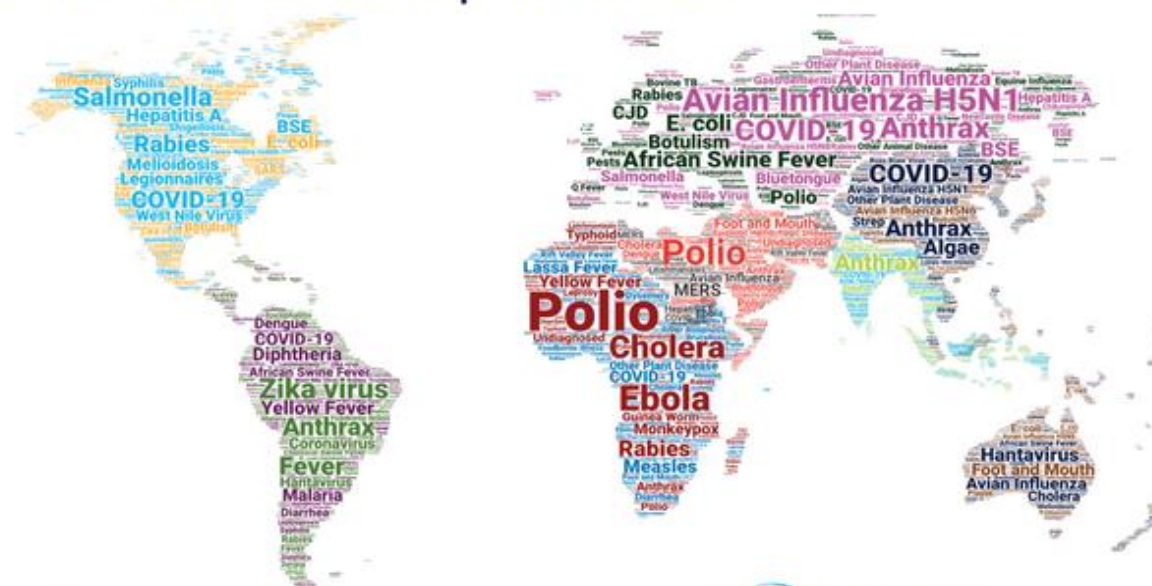
Source: ProMed - <https://promedmail.org/promed-post/?id=8700983>

Malaria

Sudan – Cases of malaria continue to be reported since the beginning of 2022. Health authorities have indicated that Sudan's capital city of Khartoum is experiencing a significant increase in the number of new cases due to a deteriorating health situation. Khartoum has been acutely affected by recent political and economic reforms, as well as the ongoing COVID-19 pandemic. These factors amongst others have created barriers for patients to access healthcare facilities and for healthcare facilities to procure medications for treatment. Health authorities have noted that rapid response teams have been deployed to assist within all localities of the state.

Source: ProMed - <https://english.alaraby.co.uk/features/sudan-doctors-strike-new-blow-health-system-its-knees>

October – December 2021 Reports to ProMED*


















To learn more and view
outbreak reports, visit us at
www.promedmail.org



*Words represent number of reports, but word location does not always correspond to the exact location of disease outbreak report
















Summary of information on the individual national Corona restrictions

The icons are linked to the respective information. Please click on the icons for information.

NATO Member State (click on country for official COVID-19 information)		Approved vaccines											
		Comirnaty	Spikevax	Janssen	Vaxzevria	Nuvaxovid	Sputnik V	CoronaVac	Covishield	Convidecia	Covilo	Turkovac	
	Albania	X			X		X	X					
	Belgium	X	X	X	X	X							
	Bulgaria	X	X	X	X	X							
	Canada	X	X	X	X				X				
	Croatia	X	X	X	X	X							
	Czech Republic	X	X	X	X	X							
	Denmark	X	X	X		X							
	Estonia	X	X	X	X	X							
	France	X	X	X	X	X							
	Germany	X	X	X	X	X							
	Great Britain	X	X	X	X								
	Greece	X	X	X	X	X							
	Hungary	X	X	X	X	X	X		X	X	X		EMA Authorized
	Italy	X	X	X	X	X							
	Iceland	X	X	X	X	X							EMA & FDA Authorized

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NATO Member State (click on country for official COVID-19 information)		Approved vaccines										
		Comirnaty	Spikevax	Janssen	Vaxzevria	Nuvaxovid	Sputnik V	CoronaVac	Covishield	Convidecia	Covilo	Turkovac
	Latvia	X	X	X	X	X						
	Lithuania	X	X	X	X	X						
	Luxembourg	X	X	X	X	X						
	Montenegro				X		X			X		
	Netherlands	X	X	X	X	X						
	North Macedonia	X			X		X			X		
	Norway	X	X	X		X						
	Poland	X	X	X	X	X						
	Portugal	X	X	X	X	X						
	Romania	X	X	X	X	X						
	Slovakia	X	X	X	X	X						
	Slovenia	X	X	X	X	X						
	Spain	X	X	X	X	X						
	Turkey	X					X	X				X
	USA	X	X	X								

EMA
Authorized

EMA & FDA
Authorized

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/>