Force Health Protection Branch
NATO MilMed COE
Munich

Update 73
COVID-19
Coronavirus Disease
9th of June 2021

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GLOBAL
↘
174 133 062
Confirmed cases
162 700 000 recovered
3 750 222 deaths

USA
(7-days incidence 31,7)
↘
33 242 504
confirmed cases
32 370 000 recovered
595 634 deaths

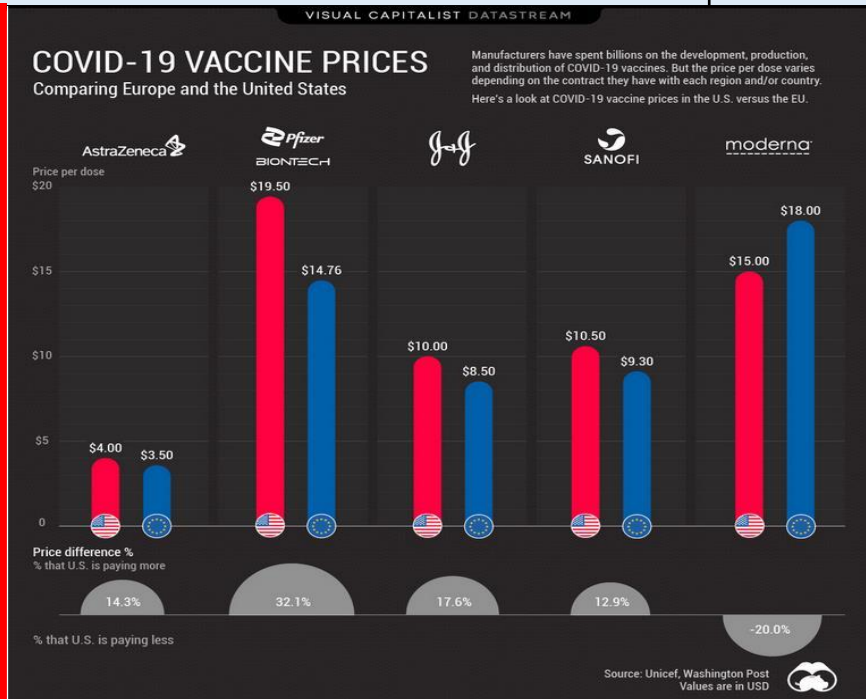
India
(7-days incidence 60,4)
↘
29 089 069
confirmed cases
26 040 000 recovered
353 528 deaths

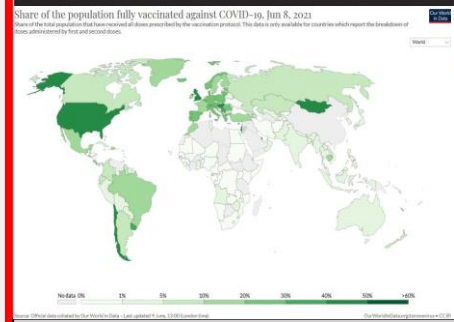
Brazil
(7-days incidence 207, 5)
↗
17 037 129
confirmed cases
15 600 000 recovered
476 792 deaths

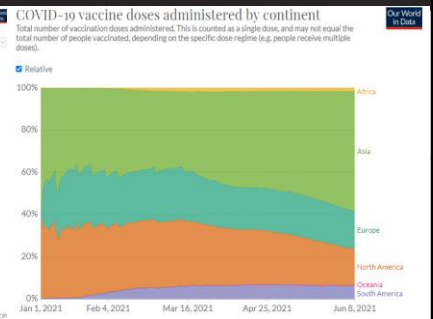
News:

- **In India,** health authorities have recorded 86,498 new infections within 24 hours. This is the lowest level in 66 days, the government said. A total of 29 million cases of infection have been detected so far, which is the second highest value worldwide after the USA. Several major cities have already initiated the first easing after a weeks-long lockdown.
- **GBR**: The so-called delta variant of the coronavirus is 40 percent more contagious than the alpha variant of the COVID-19 pathogen, which was first discovered in the UK, according to the British government. The "growth advantage" of the variant is around 40 percent, according to the findings of an expert committee.
- **47th World Health Assembly**: Decided
- **WHO:** Announced
- **CDC:** Published a report about the decreases in COVID-19 Cases, emergency department visits, hospital admissions, and the deaths among older adults following the introduction of COVID-19 vaccine.
- **UNICEF:** As part of the international Covax initiative, Unicef has distributed more than 80 million COVID-19 vaccine doses to the poorest countries and crisis regions in recent months. Two billion vaccine doses are to be delivered by the end of this year.
- **EU:** More than one million citizens in the European Union already have an EU digital vaccination certificate. The electronic platform for the verification of vaccination certificates is scheduled to be launched on 1 July. In addition to information on vaccinations, it should also contain information about tests or survived coronavirus infections. Member States can already issue certificates now.
- **ECDC:** published a new report on how to reduce COVID 19 transmission and strengthen vaccine uptake among migrant populations in the EU/EEA.
- CDC: reported about how the agency determines the level for COVID-19 travel health notices.

- **Topics:**
- Global situation
- European situation
- Vaccination news
- SARS-CoV-2 VOIs and VOCs
- **Subject in Focus:** Heterologous Vaccination Schedules for COVID-19
- The European Football Championship and COPA America during the COVID-19 Pandemic
- Other Infectious Disease Outbreaks
- **NATO Member State:** Summary of information on the individual national Corona restrictions
- Travel Recommendations and other Useful Links







EUROPE
↘
52 460 557
confirmed cases
50 390 000 recovered
1 132 163 deaths

France
(7-days incidence 63,8)
↘
5 719 935
confirmed cases
5 481 000 recovered
110 137 deaths

TUR
(7-days incidence 52,6)
↘
5 300 236
confirmed cases
5 136 000 recovered
48 341 deaths

Russia
(7-days incidence 43,3)
↗
5 096 657
confirmed cases
4 822 000 recovered
122 802 deaths

Situation by WHO Region, as of 08th June

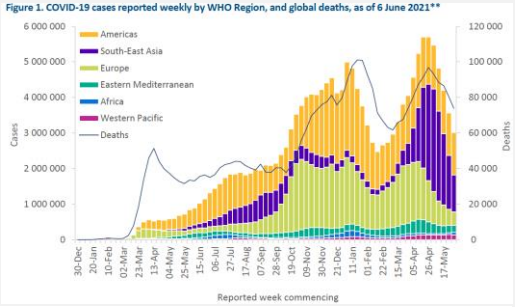
Global epidemiological situation overview; WHO as of 06 June 2021

Global case and death incidences continued to decrease with over 3 million new weekly cases and over 73 000 new deaths, a 15% and an 8% decrease respectively, compared to the previous week (Figure 1). The **European** and **South-East Asia Regions** reported marked declines in the number of new cases in the past week, whereas the **African Region** reported an increase compared to the previous week. The Region of **the Americas** as well as the **Eastern Mediterranean and the Western Pacific Regions** reported similar numbers compared to the previous week. The number of new deaths reported in the past week decreased in **the European and South-East Asia Regions** and increased in the **Western Pacific Region.** Death incidences remained stable in the **Region of the Americas** as well as the **Eastern Mediterranean and African Regions**. Despite the downward trend in global case and death incidences for a sixth and fifth consecutive week respectively, many countries across all six regions have reported rises in the number of cases and deaths.

In the past week, the five countries reporting the highest number of new cases were:

- **India;** reporting 914 539 new cases; 33% decrease ,
- **Brazil;** reporting 449 478 new cases; 7% increase
- **Argentina;** reporting 212 975 new cases; 3% decrease,
- **Colombia;** reporting 175 479 new cases; 17% increase and
- **United States of America;** reporting 99 103 new cases; 35% decrease

Figure 1. COVID-19 cases reported weekly by WHO Region, and global deaths, as of 6 June 2021**

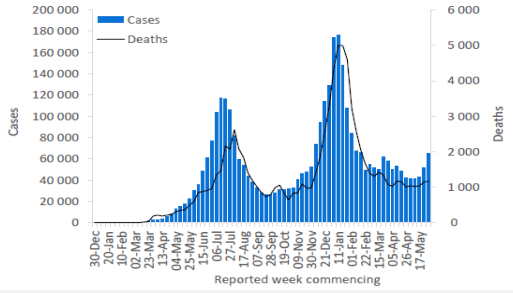


WHO regional overviews

African Region

The African Region reported just under 66 000 new cases, a 25% increase compared to the previous week, and over 1100 new deaths, a number similar to that of the previous week. The region reported an increase in weekly case incidence by over 20% for a second consecutive week, while death incidence increased for a third consecutively, though by a lower rate. The highest numbers of new cases were reported from South Africa (32 421 new cases; 54.7 new cases per 100 000 population; a 22% increase), Uganda (5745 new cases; 12.6 new cases per 100 000; a 137% increase), and Zambia (4789 new cases; 26.0 new cases per 100 000; a 191% increase).

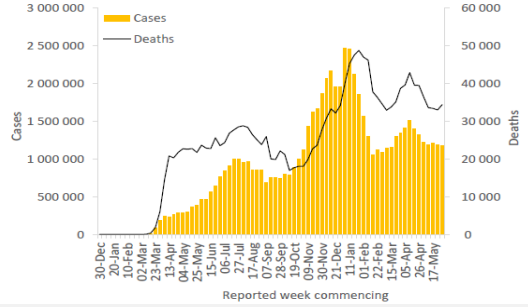
The highest numbers of new deaths were reported from South Africa (566 new deaths; 1.0 new deaths per 100 000 population; a 4% decrease), Kenya (123 new deaths; 0.2 new deaths per 100 000; a 34% increase), and Namibia (87 new deaths; 3.4 new deaths per 100 000; a 58% increase).



Region of the Americas

The Region of the Americas reported just under 1.2 million new cases and over 34 000 new deaths, both figures similar to those of the previous week. Case incidence overall continued to decrease since mid-April 2021; however, high numbers in both cases and deaths continue to be observed in many countries, most notably in parts of South and Central America. The highest numbers of new cases were reported from Brazil (449 478 new cases; 211.5 new cases per 100 000; a 7% increase), Argentina (212 975 new cases; 471.2 new cases per 100 000; a 3% decrease), and Colombia (175 479 new cases; 344.9 new cases per 100 000; a 17% increase).

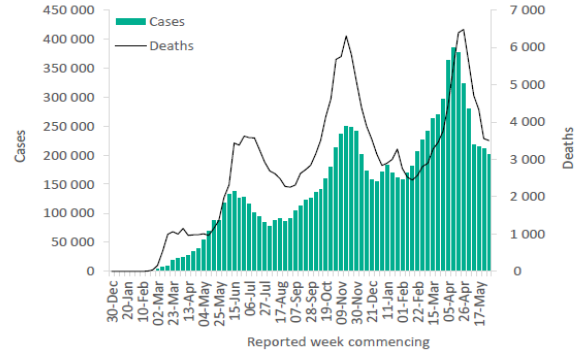
The highest numbers of new deaths were reported from Brazil (11 797 new deaths; 5.5 new deaths per 100 000; a 7% decrease), Mexico (5496 new deaths; 4.3 new deaths per 100 000; a 203% increase), and Argentina (3718 new deaths; 8.2 new deaths per 100 000; a 13% increase).



Eastern Mediterranean Region

The Eastern Mediterranean Region reported over 202 000 new cases and over 3500 new deaths. Overall, weekly case and death incidence has continued a general downward trend; however, surges in transmission have been observed in several countries. The highest numbers of new cases were reported from the Islamic Republic of Iran (67 533 new cases; 80.4 new cases per 100 000; a 3% decrease), Iraq (28 070 new cases; 69.8 new cases per 100 000; a 5% decrease), and Pakistan (14 272 new cases; 6.5 new cases per 100 000; a 24% decrease).

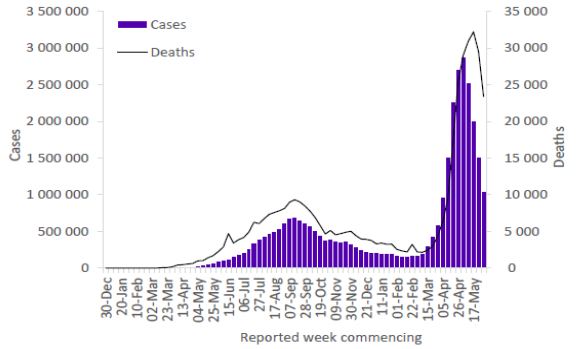
The highest numbers of new deaths were reported from the Islamic Republic of Iran (1200 new deaths; 1.4 new deaths per 100 000; a 12% decrease), Pakistan (509 new deaths; 0.2 new deaths per 100 000; similar to the previous week), and Tunisia (374 new deaths; 3.2 new deaths per 100 000; a 5% decrease).



South-East Asia Region

The South-East Asia Region reported over 1.0 million new cases and over 23 000 new deaths, a 31% and a 21% decrease respectively compared to the previous week. Overall, case and death incidences continued to sharply decline in line with trends in India; however, marked increases have been observed elsewhere in the region. The highest numbers of new cases were reported from India (914 539 new cases; 66.3 new cases per 100 000; a 33% decrease), Indonesia (40 280 new cases; 14.7 new cases per 100 000; similar to the previous week), and Nepal (31 678 new cases; 108.7 new cases per 100 000; a 34% decrease).

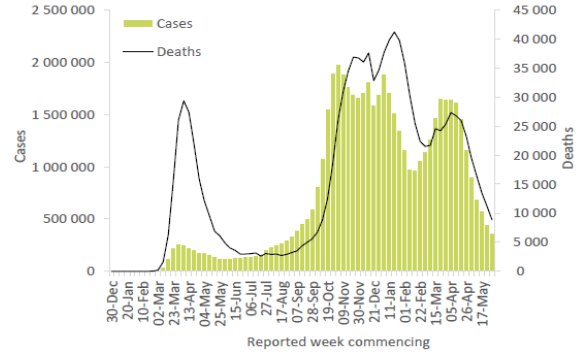
The highest numbers of new deaths were reported from India (20 787 new deaths; 1.5 new deaths per 100 000; a 22% decrease), Indonesia (1187 new deaths; 0.4 new deaths per 100 000; a 12% increase), and Nepal (636 new deaths; 2.2 new deaths per 100 000; a 37% decrease).



European Region

The European Region reported over 368 000 new cases and just under 8900 new deaths, a 17% and a 21% decrease respectively compared to the previous week. Steep declines in both case and death incidences continued for a tenth and eighth consecutive week, respectively. The highest numbers of new cases were reported from the Russian Federation (62 995 new cases; 43.2 new cases per 100 000; a 2% increase), France (47 528 new cases; 73.1 new cases per 100 000; a 22% decrease), and Turkey (46 616 new cases; 55.3 new cases per 100 000; a 19% decrease).

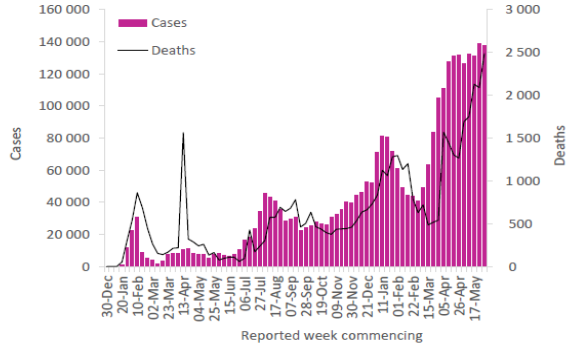
The highest numbers of new deaths were reported from the Russian Federation (2625 new deaths; 1.8 new deaths per 100 000; a number similar to that of the previous week), Germany (816 new deaths; 1.0 new deaths per 100 000; a 20% decrease), and Turkey (797 new deaths; 0.9 new deaths per 100 000; a 34% decrease).



Western Pacific Region

The Western Pacific Region reported over 138 000 new cases, a number similar to that of the previous week, and over 2400 new deaths, a 19% increase compared to the previous week. During the past week, the region recorded its highest incidence of deaths and second highest cases incidence to date. The highest numbers of new cases were reported from Malaysia (52 040 new cases; 160.8 new cases per 100 000; a 3% decrease), the Philippines (45 681 new cases; 41.7 new cases per 100 000; a 19% increase), and Japan (18 649 new cases; 14.7 new cases per 100 000; a 32% decrease).

The highest numbers of new deaths were reported from the Philippines (1010 new deaths; 0.9 new deaths per 100 000; a 30% increase), Malaysia (641 new deaths; 2.0 new deaths per 100 000; a 42% increase), and Japan (603 new deaths; 0.5 new deaths per 100 000; a 12% decrease).



Source: https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---8-june-2021

Global Situation

World-Bank: Driven by the ongoing vaccination campaign, especially in the industrialised countries, the World Bank has revised its economic forecast for the current year upwards. The global economy is expected to grow by 5.6 percent in 2021, the World Bank predicted. That is 1.5 points more than estimated in January. For the US, the World Bank predicted growth of 6.8 percent, for China an increase of 8.5 percent. These countries recovered comparatively quickly from the coronavirus pandemic and are looking forward to successes in vaccinating their populations. India's economy is expected to grow by 8.3 percent, according to experts. At the same time, the World Bank warned that many countries, especially poor countries, are falling significantly behind and may still need years to recover from the coronavirus pandemic. Therefore, a "globally coordinated effort" is needed to provide low-income countries with vaccines and ease their debts.

EU: On more than 400 mink farms in countries of the European Union, corona outbreaks have become known, according to animal rights activists. According to the German Animal Welfare Association, millions of animals were affected in ten EU states by mid-May. According to a list by the organisation, Sars-CoV-2 was detected on 290 mink farms in Denmark, 69 in the Netherlands and 13 in Sweden. In Greece, 22 out of 91 mink farms have tested positive. According to the Animal Welfare Association, there was further evidence in Italy, Lithuania, Poland, Spain, France and Latvia. The animal welfare organization called for a ban on the breeding and keeping of fur-bearing animals.

OECD: Psychological problems have increased massively in many industrialized countries during the corona crisis. As a study of the organization now shows. In some countries, anxiety disorders and depression have even doubled. According to the organization, this was the case in countries severely affected by the pandemic, such as the USA, Great Britain, France or Belgium. In the US, for example, more than 30 percent of people complained of anxiety and more than 23 percent of depression last year. In France, around 27 percent suffered from anxiety and 20 percent from depression.

EuroCup 21: In the teams of Sweden and Spain, two players each tested positive for coronavirus. Thus, the execution of the opening game on Monday is uncertain.

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UEFA: For the attendance of matches of the European Football Championship in London's Wembley Stadium Corona proofs are necessary. Viewers must show a corona test from the age of eleven, which is not older than 48 hours. Alternatively, a certificate of a complete corona vaccination is allowed as proof. The second syringe, considered necessary for full protection, must be at least 14 days ago.

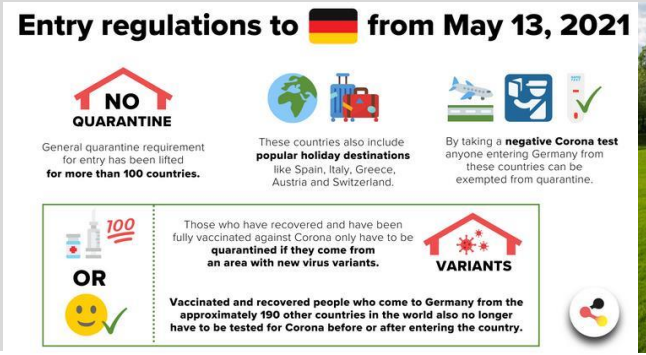
CHN: In the Chinese megacity of Guangzhou, the lockdown is being tightened again after dozens of corona cases. Among other things, cinemas, theatres, nightclubs and other venues would have to close their interiors, the authorities said. Some quarters of the city in the south of China have already been completely sealed off, leaving the rest of Guangzhou and the surrounding province of Guangdong is only possible in exceptional cases. Since May 21, more than 100 coronavirus infections have been reported in Guangzhou, with another eight on Wednesday.

JAP: The Olympic host wants to further reduce the number of foreign participants - such as officials, employees and journalists - less than two months before the start of the Games. The initial number of participants of around 180,000 people had already been halved. There is still widespread opposition among its own people.

AFG: On Sunday, more corona deaths were recorded within a day than at any time since the pandemic began. Authorities reported 50 deaths since the previous day related to a coronavirus infection. The actual number is probably much higher, as the majority of patients do not die in hospitals, but at home. The number of new infections reported daily in Afghanistan has also recently risen massively: from less than 200 cases at the beginning of May to more than 1300 for several days in a row. The driver of the third wave is the highly contagious Delta variant, which was first discovered in India.

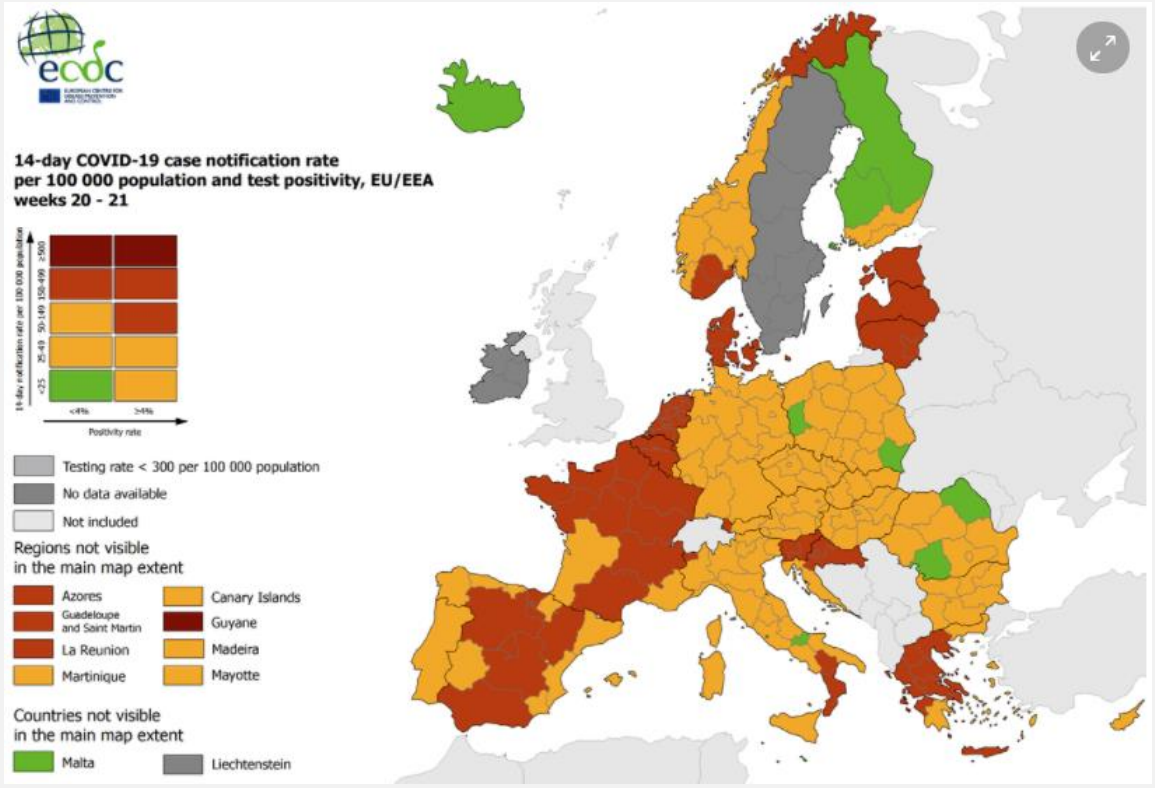
MEX: A million of the corona vaccine doses donated by the United States are planed to vaccinate people along the northern border with the U.S. This should contribute to efforts to fully open the border crossings. Currently, the border passages are limited to absolutely necessary journeys. Doses from the pharmaceutical company Johnson & Johnson, which requires the administration of a dose, are to be used.

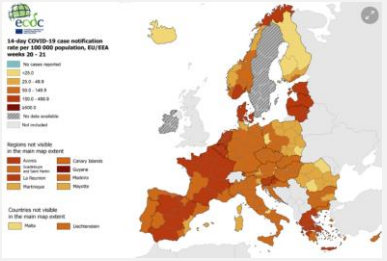
AUS: After two weeks, the corona lockdown in Melbourne is scheduled to end on Friday. Since Tuesday, only one new corona case has been discovered. However, there will still be a number of restrictions, such as indoor meetings or the occupancy rate of offices and shops. There is still a travel ban. Last week, Melbourne's fourth lockdown since the pandemic began was extended by another week, while the rest of Victoria was already being eased. A total of 68 coronavirus infections have been reported in the latest cluster.

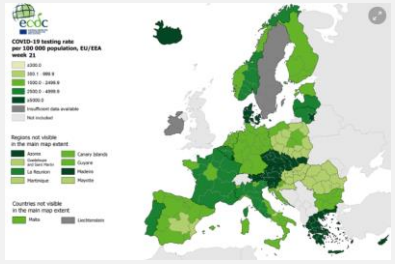


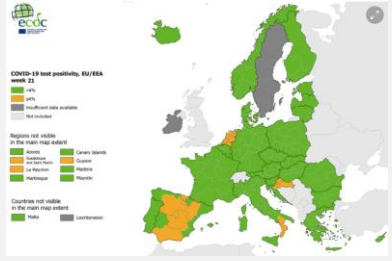
European Situation

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 03 June 2021









14-day case notification rate per 100 000 inhabitants | Testing rates per 100 000 inhabitants | Positivity rates

ECDC COVID-19 surveillance report Week 21, as of 04 June 2021

Weekly surveillance summary

Overall situation

At the end of week 21 (week ending Sunday 30 May 2021), two countries in the European Union/European Economic Area (EU/EEA) reported increasing case notification rates and/or test positivity. Case rates in older age groups did not increase in any countries and no countries reported increasing death rates. Absolute values of several indicators, including hospital and ICU occupancy, remained high, but trends for a number of indicators were stable or decreasing in several countries. Moreover, the median cumulative uptake of at least one vaccine dose among adults aged 18 years and above in the EU/EEA is 45.6% for at least one vaccine dose and 22.5% for full vaccination, as reported in the COVID-19 Vaccine rollout overview.

Recent changes to the report

Country-level figures showing age-specific vaccine uptake aligned with key epidemiological indicators (age-specific case and death rates, hospital/ICU occupancy and admissions due to COVID-19) in Section 5.

Trends in reported cases and testing

- By the end of week 21, the 14-day case notification rate for the EU/EEA, based on data collected by ECDC from official national sources in 28 countries, was 111 (country range: 10–312) per 100 000 population. The rate has been decreasing for eight weeks.
- Among the 21 countries with high case notification rates (at least 60 per 100 000 population), increases were observed in two countries (Ireland and Portugal). Stable or decreasing trends in case rates of 1–13 weeks' duration were observed in 19 countries (Austria, Belgium, Croatia, Cyprus, Czechia, Denmark, Estonia, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Slovakia, Slovenia and Spain).
- Based on data reported to The European Surveillance System (TESSy) from 23 countries for people over 65 years old, high levels (at least 60 per 100 000 population) or increases in the 14-day COVID-19 case notification rates compared with last week were observed in eight countries (Belgium, Cyprus, Estonia, Greece, Latvia, Lithuania, the Netherlands and Slovenia).
- Notification rates are dependent on several factors, one of which is the testing rate. Weekly testing rates for week 21, available for 28 countries, varied from 828 to 67 789 tests per 100 000 population. Denmark had the highest testing rate, followed by Austria, Greece, Cyprus and Czechia.
- Among the five countries in which weekly test positivity was high (at least 3%), no countries had observed an increase in test positivity compared with the previous week. Test positivity remained stable, or had decreased, in five countries (Belgium, Croatia, Estonia, the Netherlands and Spain).

Hospitalisation and ICU

- Pooled data from 21 countries for week 21 show that there were 16.0 patients per 100 000 population in hospital due to COVID-19. According to weekly hospital admissions data pooled from 17 countries, new admissions were 2.8 per 100 000 population.
- Pooled data from 17 countries for week 21 show that there were 3.1 patients per 100 000 population in ICU due to COVID-19. Pooled weekly ICU admissions based on data from 12 countries show that there were 0.9 new admissions per 100 000 population.
- Hospital and/or ICU occupancy and/or new admissions due to COVID-19 were high (at least 25% of the peak level during the pandemic) or had increased compared with the previous week in 19 countries (Austria, Belgium, Bulgaria, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Romania, Slovenia and Sweden). However, in 20 countries, there were decreases in these indicators compared with the previous week.

Mortality

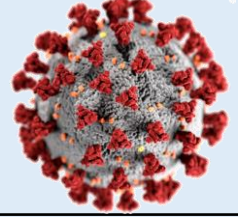
- The 14-day COVID-19 death rate for the EU/EEA, based on data collected by ECDC from official national sources for 28 countries, was 28.2 (country range: 0.0–71.0) per million population. The rate has been decreasing for five weeks.
- Among the 19 countries with high 14-day COVID-19 death rates (at least 10 per million), none had increasing trends. Stable or decreasing trends in death rates of 1–10 weeks' duration were observed in 19 countries (Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Estonia, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Poland, Romania, Slovakia, Slovenia and Spain).

Variants of concern (VOC) and variants of interest (VOI)

- Sequencing capacity varies greatly across the EU/EEA; 12 EU/EEA countries (Belgium, Denmark, Estonia, France, Germany, Hungary, Iceland, Italy, Luxembourg, Malta, Norway and Poland) met the recommended level of 10% or 500 sequences of SARS-CoV-2-positive cases sequenced and reported to the GISAID EpiCoV database by 1 June 2021, or to TESSy by 30 May 2021 (data referring to the period 10 May to 23 May 2021). During the same period, nine countries sequenced and reported between 60 and 499 samples, while nine countries sequenced and reported <60 samples or did not report data.
- Among the 12 countries with the recommended level of 10% or 500 sequences reported per week in the period from 10 May to 23 May 2021, 10 had a valid denominator. The median (range) of the VOC reported in all samples sequenced in the period in these 10 countries was 91.6% (70.2–97.1%) for B.1.1.7, 0.5% (0.0–7.2%) for B.1.351, 0.3% (0.0–5.3%) for B.1.617, 0.2% (0.0–10.1%) for P.1 and 0.0% (0.0–1.6%) for B.1.1.7+E484K.
- The median (range) of the VOI reported in all samples sequenced in the period for these 10 countries was 0.0% (0.0–3.1%) for B.1.525, 0.0% (0.0–0.1%) for B.1.620 and 0.0% (0.0–0.0%) for B.1.621. A list of current variants of concern and variants of interest for the EU/EEA is published on ECDC's website.

Long-term care facilities (LTCFs)

- Based on data reported to TESSy from six countries (Belgium, France, Lithuania, Luxembourg, the Netherlands and Slovenia), in week 21, the pooled incidence of COVID-19 cases among LTCF residents was 49.1 per 100 000 LTCF beds, the pooled incidence of fatal COVID-19 cases was 6 per 100 000 LTCF beds, and 3.6% of participating LTCFs reported one or more new COVID-19 cases among their residents.



Vacination news

As of June 3, a total of 10 countries accounted for 76% of all vaccinations administered globally. The top five countries/territories with the highest number of cumulative people vaccinated with at least one dose per 100,000 population are Gibraltar (116,050), Palau (76,520), Falkland Islands (75,570), Malta (72,380), and the Isle of Man (72,110).

BioNTech/Pfizer: Testing for the corona vaccine will be extended to children under the age of twelve. After an initial study in which a small number of minors receive different dosages of the vaccine, around 4500 young people are to be won over for a further study in more than 90 facilities in the USA, Finland, Poland and Spain. This week, a study began on five- to eleven-year-olds.

CureVac: The approval of the vaccine is delayed and is therefore postponed from July to August.

Sinovac: The Sinovac corona vaccine was the first vaccine worldwide to be approved for young children. According to company companies, the vaccine received emergency approval for children from the age of three. However, it is unclear when vaccinations in children in the People's Republic will actually begin. This is for the National Health Commission to decide. The study is to be published in "the Lancet" in the coming weeks.

Moderna: After BioNTech the company has applied to the European Medicines Agency for the approval of its corona vaccine for children and adolescents aged twelve and over in the EU. According to the group, its own vaccine achieved one hundred percent effectiveness in a study in the USA with 2500 test persons between the age of twelve and 18.

Mastercard Foundation: As one of the largest foundations in the world, the Foundation is investing $1.3 billion (€1.1 billion) in corona vaccine supply to people in Africa. For this sum, it will buy and deliver Corona vaccines to more than 50 million people on the continent over the next three years. The foundation will purchase the Johnson & Johnson vaccine at a special price negotiated by the African Union. The doses should be available from August. In Africa, around 31 million of the 1.3 billion inhabitants have been vaccinated so far. However, only seven million have received two doses.

GBR: In the north-west of England, an offensive has been launched against the further spread of the delta variant of the coronavirus discovered in India with mass tests and vaccinations. As before in the corona hotspot Bolton, the government is using the military to systematically test citizens in the particularly affected areas such as Greater Manchester or the county of Lancashire for the virus. In Manchester and other municipalities, all over-18s have already been called upon to book vaccination appointments - although only people aged 25 and over are actually eligible for vaccination throughout England. The increasing spread of the probably very contagious Delta variant causes the number of cases in Great Britain to rise rapidly. After a long time, the seven-day incidence was only just over 20, it is currently back at around 46 new infections per 100,000 inhabitants within a week.

THA: The country is now starting mass vaccinations. In the vaccination centres in Bangkok, up to 70,000 people are to be vaccinated every day. This month, up to six million doses of vaccination are to be administered in Thailand.

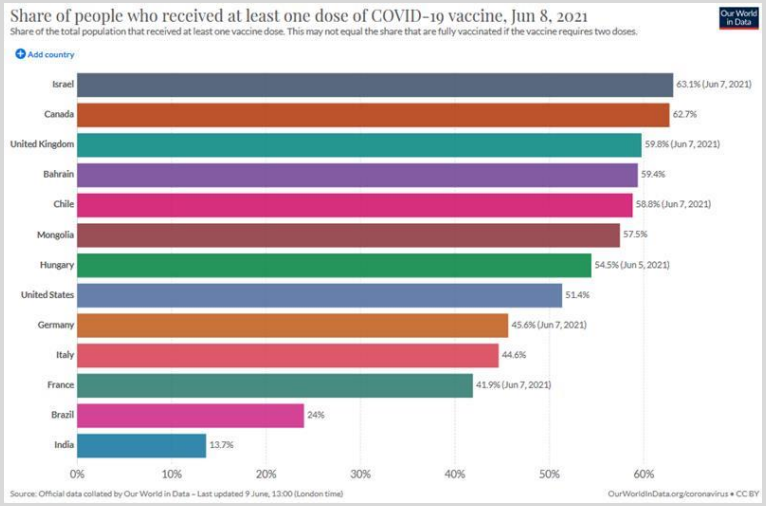
TWN: The US wants to deliver hundreds of thousands of vaccines to Taiwan, which is struggling with a corona wave. A total of 750,000 cans are to be donated. So far, only about three percent of the 23.5 million inhabitants have been vaccinated, with most of them receiving only the first of two required vaccinations. Previously, Japan had already delivered 1.24 million doses of AstraZeneca's vaccine free of charge to Taiwan.

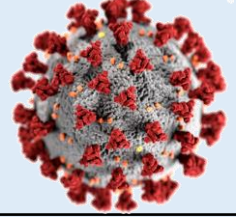
IND: So far, the vaccination campaign has made only sluggish progress: just 3.5 percent of the population has been fully immunized so far. One of the reasons for this is that until now vaccination doses had only been provided for adults aged 45 and over. For younger residents, the states or private clinics had to procure the vaccine themselves. And if you wanted to be vaccinated, you usually had to pay for it yourself. The government now wants to change this: from 21 June, adults in India will be able to be vaccinated against the coronavirus free of charge.

VNM: In the fight against a new wave of coronavirus infections, the Vietnamese government has called on the population to donate to the procurement of vaccines. The cost of the vaccination campaign is estimated at about 1.1 billion US dollars (about 900 million euros). However, the budget only provides for 630 million dollars. According to the Treasury Department, 181 million US dollars in individual donations have been collected so far, and another 140 million US dollars have been pledged by companies.

ARG: In the future, the Russian corona vaccine Sputnik V is to be produced in the country. A private laboratory is commissioned with the production of the vaccine. The capacity initially amounts to one million doses per month and is to be increased within a year.

BRA: The Brazilian health authority Anvisa gives the green light for the import of the Russian vaccine Sputnik V. The Board of Anvisa voted after a seven-hour deliberation in favour of granting the permit - but under special conditions.





Global Updates on COVID-19 Vaccine Administration

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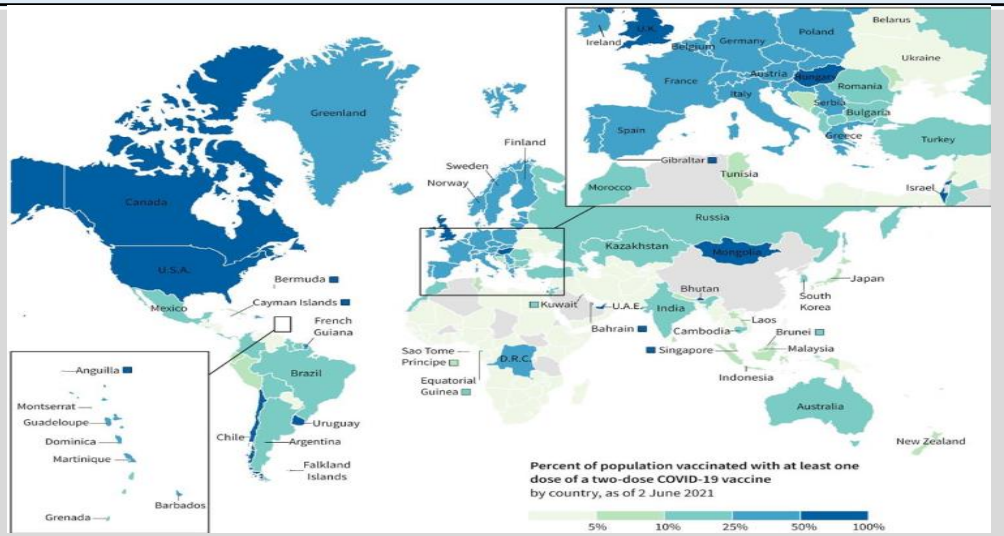
Vaccine Administration

More than 1.94 billion COVID-19 vaccine doses have been administered in 176 countries. As of May 18, the WHO's COVAX program has shipped 77 million doses to127 eligible countries. As of June 2, the top 10 countries/territories that have vaccinated at least half of their population over the age of 18 with at least one dose of a two-dose vaccine include Gibraltar (100%), Falkland Islands (99%), Bhutan (93%), Isle of Man (72%), Seychelles (72%), Anguilla (67%), Cayman Islands (67%), Malta (65%), Jersey (65%), San Marino (63%), Israel (61%), and Maldives (60%).

In terms of total number of vaccine doses administered, the United States continues to lead the world, followed by China. To date, more than 135million people in the U.S., or roughly 41% of the adult population, have been fully vaccinated against COVID-19.

Despite many countries having a large proportion of its population vaccinated, at least a dozen countries are still waiting to receive their first supply of vaccines, while at least two countries (i.e., Madagascar and Tanzania) have openly rejected initiating any vaccination program. The majority of countries without vaccine access are in Africa, which include Chad, Burkina Faso, Burundi, and Eritrea. Other nations that have also not yet received any vaccines include Haiti and Nicaragua. While the total of confirmed COVID-19 cases among these countries is relatively low compared with the world's hot spots, officially-reported cases are likely an undercount due to their fragile healthcare systems along with stretched resources for laboratory testing, and limited capacity for genome sequencing to detect emerging variants. The gaps in both detection of cases and vaccine access in these countries highlight future risks of sustained community spread over a prolonged period and locations where greater opportunities for emerging variants may exist. **Source: Our World in Data via Bluedot**



Spotlight on Vaccine Effectiveness on Immunocompromised Individuals

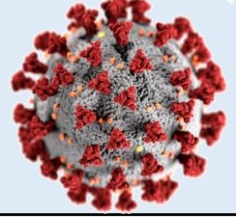
COVID-19 vaccine clinical trials have excluded immunocompromised individuals, which account for approximately 3-4% of the population in the U.S. According toa preprint study that explored immune responses among 67 patients with hematologic malignancies who received two doses of either the Pfizer/BioNTech or Moderna vaccines, reduced protection was observed for approximately 50% of patients with blood cancers and other immune disease conditions. The weakened immune responses were also seen in people with blood cancers and transplant recipients. Another study published in the Journal of the American Medical Association on May 5, 2021 found that 46% of 658 transplant patients did not establish an antibody response after two doses of the Pfizer/BioNTech or Moderna vaccines. Researchers stated that the lowered immune responses are likely related to certain immunosuppressive drugs and a commonly prescribed steroid (i.e. Prednisolone) in these individuals.

A number of studies4, 5, 6have reported that individuals with immune disorders have active SARS-CoV-2 infections for many months and even reinfections due to the individual's inability to generate antibodies after prior recovery. This has raised concerns about whether these individuals may act as incubators for virus mutations, which could lead to new variants. On May 17, the U.S. National Institute of Health initiated a study to evaluate the immune response and any vaccine-associated adverse events among individuals with different immune disorders who receive the Pfizer/BioNTech or Moderna vaccine. This study aims to inform an effective vaccine strategy both for the immunocompromised and the entire global population.

What could be doen to boost immunity in these individuals?

- **Provide more booster doses** – To boost higher level of antibodies, an immunocompromised person might need to receive three doses of the Pfizer/BioNTech or Moderna vaccines, rather than the two-dose regimen.
- **Provide preventive doses of monoclonal antibodies (lab-produced antibody proteins)** – To date, SARS-CoV-2 monoclonal antibodies have primarily been used as a treatment for COVID-19 patients. The monoclonal antibodies mimic a normal immune system's ability to defend against the virus.

Sources: https://academic.oup.com/ofid/article/3/suppl_1/1439/26357792; https://www.medrxiv.org/content/10.1101/2021.04.06.21254949v1; https://jamanetwork.com/journals/jama/fullarticle/2779852; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7860947/; https://www.nature.com/articles/s41375-021-01175-8 https://ancavasculitisnews.com/2021/02/24/covid-19-reinfection-possible-immunosuppressants-treat-aav-case-report/



Vaccine Research Updates

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What does current research indicate for vaccine effectiveness against the Delta variant, B.1.617.2 (first found in India)?

A preprint study conducted by Public Health England evaluated the effectiveness of Pfizer/BioNTech and AstraZeneca vaccine against the B.1617.2 variant, compared to the predominant circulating virus (Alpha variant, B.1.1.7, first found in the U.K.). Researchers compared the proportion of cases infected with the B.1.617.2 variant relative to the B.1.1.7 variant by vaccination status, under the assumption that if the vaccine is equally effective against each variant, a similar proportion of cases with either variant would be expected in unvaccinated compared to vaccinated individuals. However, if the vaccine is less effective against B.1.617.2 variant, the variant would be expected to make up a higher proportion of cases more than three weeks after vaccination, when compared to unvaccinated individuals.

Results showed that **the effectiveness of both Pfizer/BioNTech and AstraZeneca's vaccines were significantly lower after one dose of vaccine against B.1.617.2 variant compared to B.1.1.7 cases**, with an effectiveness of 33.5% (95% CI: 20.6 - 44.3) and 51.1% (95% CI: 47.3 - 54.7), respectively. However, notably, an **improvement in effectiveness against the B.1.617.2 variant was seen after two-dose vaccination of both vaccines**. The effectiveness of Pfizer's vaccine against the B.1.617.2 variant increased to 87.9% (95%CI: 78.2 to 93.2) while the effectiveness against the B.1.1.7 variant increased to 93.4% (95% CI: 90.4 -95.5). Similarly, AstraZeneca's vaccine showed an improved effectiveness of 59.8% (95% CI: 28.9 -77.3) against B.1.617.2 variant and 66.1% against the B.1.1.7 variant after two-dose vaccination.

Findings from this study highlight that the absolute difference in vaccine effectiveness against the B.1.617 variant compared to the B.1.1.7 variant were more marked with only one dose of vaccination. **After two doses of either Pfizer/BioNTech or AstraZeneca's vaccine, differences in vaccine effectiveness, although lower for those who received AstraZeneca, were not significantly different for the two variants.** Results support the importance of maximizing vaccine uptake with two doses among vulnerable groups.

https://www.medrxiv.org/content/10.1101/2021.05.22.21257658v1.full.pdf

Updates for vaccine candidates in phase 3 or Phase 2/3 trials

Company	Vaccine Candidate	Updates
Johnson & Johnson	JNJ-78436725	• On May 28, the U.K. medicines regulator approved the domestic use of the J&J vaccine, making it the fourth COVID-19 vaccine available in the U.K.
Moderna/National Institute of Health	mRNA-1273	• Moderna officials announced that TeenCOVE, the trial of mRNA1273 use in adolescents aged 12-18, has reached its primary endpoint. No cases were recorded in vaccine recipients 14-days following administration of the candidate (100% efficacy), compared to a 93% efficacy rate after one dose. • Data is expected to be sent to U.S. regulators in June. Approval of the vaccine candidate would make it the second COVID-19 vaccine approved for use in adolescents in the U.S., following Pfizer/BioNTech.
Novavax	NVX-CoV2373	• On May 21, Novavax released complete results of its Phase 3 trial conducted amongst 15,000 adults in the U.K. The vaccine candidate NVX-CoV2373 demonstrated 89.7% efficacy in preventing COVID-19, with no hospitalizations or deaths reported. • Novavax is likely to apply for emergency authorization in the US in the coming weeks. Up to 100 million doses are slated to reach the U.S. market in 2021, and an additional 1.1 billion doses have been committed for the COVAX program for low- and middle-income countries. • NVX-CoV2373 will also participate in "Cov-Boost", a world-first study led in the U.K. which seeks to evaluate the efficacy of a third dose of vaccine as a booster shot. The trial will involve seven vaccine candidates as potential boosters, each administered at least 10-12 weeks after a second dose as part of the U.K. immunization campaign. Initial findings are expected for September.
Pfizer/BioNTech/Fosun Pharma	BNT162	• On May 28, the European Medicines Agency approved Pfizer/BioNTech's vaccine for use in children between the age of 12 to 15. The vaccine has previously been approved for use in adults and adolescents aged above 16.
Shenzhen Kangtai Biological Products	No name announced	• On May 14, China's drug authority granted emergency use approval to the vaccine candidate developed by Shenzhen Kangtai Biological Products. The candidate was approved the same month it entered Phase 3 trials. • It is the sixth domestically-produced vaccine approved for use in China.
Sanofi-Pasteur/GlaxoSmithKline	VAT00008	• On May 27, the companies launched a Phase 3 trial for their two-dose vaccine and have started enrolling participants in sites across the U.S., Asia, Africa, and Latin America.
Sinopharm/ Wuhan Institute of Biological Products	Inactivated (Vero Cells) (designated WIV04)	• Interim Phase 3 trial results were released for two COVID-19 vaccines developed by Sinopharm. Over 40,000 individuals participated in trials which spanned Bahrain, the UAE, Egypt, and Jordan. • The WHO-authorized vaccine BBIBP-CorV (designated HB02) demonstrated a 78.1% efficacy against symptomatic COVID-19 at least 14 days after administration of the second dose, while the other vaccine (designated WIV04) had 72.8% efficacy. • Efficacy against asymptomatic infection was not evaluated, and results were not powered to support inferences against severe disease. • The results mark the first Phase 3 trial data in the world on the efficacy of inactivated vaccines against SARS-CoV-2 (vaccines currently available on the market use mRNA or viral vector platforms).
Sinopharm/ Beijing Institute of Biological Products	BBIBP-CorV (designated HB02)	
Sinovac Biotech	CoronaVac	• On June 1, WHO approved Sinovac's vaccine for emergency use around the world for those aged above 16. • Other vaccine manufacturers to earn the designation include Pfizer/BioNTech, Moderna, Johnson & Johnson, AstraZeneca, and Sinopharm.
CanSino Biologics/Beijing Institute of Biotechnology	Ad5-nCoV	• On June 1, Pakistan approved its locally-made PakVac vaccine with the help from CanSino Biologics. • The PakVac vaccine was originally developed by CanSino and has been brought to Pakistan in a concentrated form, where it is packaged at the National Institute of Health (NIH) in Islamabad, Pakistan. • PakVac would be available for Pakistan citizens by around the end of June.

Vacination news

Suspected adverse reactions to COVID-19 vaccination and the safety of substances of human origin, ECDC as of 3 June 2021

The purpose of the document is to address the safety of donors and products involving Substances of Human Origin (SoHO) and the potential risk of thrombosis with thrombocytopenia adverse events following COVID-19 vaccination of a donor. The document also supplements previous information provided on COVID-19 vaccination and supply of SoHO in ECDC technical report 'Coronavirus disease 2019 (COVID-19) and supply of substances of human origin in the EU/EEA - second update'. ECDC will update the document and reassess the risk after consultation with relevant experts as soon as new information becomes available.

Executive summary

Key facts

- Reports of thrombosis with thrombocytopenia syndrome (TTS) within two-to-three weeks of COVID-19 vaccination have raised questions regarding the safety of SoHO donors and recipients. The pathogenesis of TTS has not yet been determined, although laboratory analyses indicate the presence of anti-PF4-polyanion auto-antibodies.
- Evidence and data currently available indicate a low likelihood of whole blood and plasma donation by asymptomatic individuals in the early phase of TTS, suggesting that the risk of venipuncture bleeding or post-transfusion thrombocytopenia with passive platelet antibody transfer is very low. Therefore, no additional blood and plasma safety measures are recommended in relation to the occurrence of suspected adverse reactions to COVID-19 vaccines.
- A routine blood count check during the selection procedure for living donors of organs, cells and tissues donated by invasive procedure will detect thrombocytopenia. Individuals with a low platelet count would not be eligible for donation of organs, cells and tissues.
- Until more information is available on the risk of TTS transfer via passenger lymphocytes, the decision to accept a deceased donor vaccinated with non-replicating viral vector COVID-19 vaccines two-to- three weeks before donation should be taken with caution.

Thrombotic and thromboembolic events after vaccination

- Thrombotic and thromboembolic events, including TTS, have been reported following the administration of non-replicating viral vector COVID-19 vaccines. Adverse events of this type after vaccination with **Vaxzevria** triggered a suspension of some batches, and even use of the vaccine in several EU/EEA countries. As of 12 May 2021, some countries have resumed vaccination with Vaxzevria with age restrictions (reserved for those over 55 or 60 years old), while others have discontinued its use (Denmark, Norway).
- Cases of TTS after vaccination with COVID-19 Vaccine **Janssen** have been reported in the US. Following a thorough safety review of rare and severe cases of blood clots after receiving the Janssen COVID-19 Vaccine, the US Food & Drug Administration (FDA) lifted the recommended pause on vaccine use. The FDA also amended the emergency use authorisation for COVID-19 Vaccine Janssen to include information about possible very rare and serious blood clots in people who receive the vaccine.
- Thrombocytopenic events without thrombosis presented with petechiae, bruising or mucosal bleeding (gingival, vaginal, epistaxis) and onset of symptoms between 1–23 days (median fivedays) following **Comirnaty** and **Moderna** vaccines have also been reported to the US Vaccine Adverse Event Reporting System (VAERS). VAERS is not designed to determine if a vaccine caused or contributed to an adverse event. A report to VAERS does not mean the vaccine caused the even

Suspected adverse reactions to COVID-19 vaccines and SoHO donations

Most COVID-19 side effects reported to date have been general events, such as 'flu -like' conditions and application site pain. These events occur within seven days of vaccination and are not associated with serious illness. A donor with this type of side effect will be detected during the donor selection process. Blood and plasma donors will be rejected, while living organ, tissue and cell donors will undergo individual risk assessments.

Table 1. Number of administered doses of COVID-19 vaccines and selected suspected adverse reactions* by reaction type in EU/EEA, as of 28 April 2021 [15,16]

Vaccine	ADM (doses)	Adverse events (% of ADM)	Coagulopathy (% of ADM)		DIC (% of ADM)		ITP (% of ADM)		TP (% of ADM)	
			Total	Deaths	Total	Deaths	Total	Deaths	Total	Deaths
COVID-19 Vaccine Moderna	9691295	17625 (0.181864)	5 (0.000052)	1 (0.000010)	5 (0.000052)	1 (0.000010)	39 (0.000402)	2 (0.000021)	55 (0.000568)	6 (0.000062)
Comirnaty	96519666	151306 (0.156762)	44 (0.000046)	7 (0.000007)	7 (0.000007)	4 (0.000004)	85 (0.000088)	0 (0)	178 (0.000184)	15 (0.000016)
Vaxzevria	27430533	184833 (0.673822)	79 (0.000288)	2 (0.000007)	33 (0.000120)	11 (0.000040)	167 (0.000609)	6 (0.000022)	605 (0.002206)	45 (0.000164)
COVID-19 Vaccine Jansen	98139	413 (0.420832)	0 (0)	0 (0)	2 (0.002038)	0 (0)	0 (0)	0 (0)	7 (0.007133)	0 (0)
Total	133739633	354177 (0.264826)	128 (0.000096)	10 (0.000007)	47 (0.000035)	16 (0.000012)	291 (0.000218)	8 (0.000006)	845 (0.000632)	66 (0.000049)

ADM – Administered; DIC-Disseminated Intravascular Coagulation; ITP – Immune Thrombocytopenia; TP – Thrombocytopenia
** The causality between the suspected adverse reactions/adverse events and vaccines has not been assessed.*

Table 2. Waiting period for blood donation following COVID-19 vaccination and deferral period after suspected adverse reaction in EU by country (30 April 2021)

Country	Waiting period following COVID-19 vaccination	Deferral period after suspected adverse reaction
Austria	48 hours	7 days
Belgium	48 hours	7 days
Bulgaria	28 days	-
Croatia	48 hours (Co,Mo,Cv) or 28 days (Va)	7 days
Czechia	48 hours (Co,Mo,) or 28 days (Va)	-
Cyprus	48 hours (Co,Mo,) or 28 days (Va,JJ)	-
Denmark	No waiting period	14 days after fever
Estonia	No waiting period (Co,Mo) or 28 days (Va)	-
Finland	No waiting period	-
France	No waiting period	-
Germany	No waiting period	-
Greece	No waiting period	7 days
Hungary	No waiting period	A few days
Ireland	7 days	-
Italy	48 hours	7 days
Latvia	7days	-
Lithuania	No waiting period	Symptom-free
Luxembourg*	7 days	7 to 14 days after fever
Malta	7 days	7 days
Netherland	7 days	-
Portugal	48 hours	7 days
Poland	48 hours (Co,Mo) or 14 days (Va,JJ)	7 days
Romania	7 days (Co,Mo) or 28 days (Va,JJ)	-
Slovakia	14 days (Co,Mo) or 28 days (Va,JJ)	-
Slovenia	24 hours	7 days
Spain	48 hours	7 days or 14 days after fever
Sweden	7 days	14 days

*Co – Comirnaty vaccine; Mo – COVID-19 Moderna vaccine; Cv – CuraVax vaccine; Va – Vaxzevria vaccine; JJ – COVID-19 Janssen vaccine, * personal communication.*

Conclusion:

The evidence and data currently available indicate that it is unlikely that asymptomatic individuals in the early phase of TTS will donate whole blood and plasma, suggesting that the risk of venipuncture bleeding or post-transfusion thrombocytopenia with passive platelet antibody transfer is very low. Therefore, no additional blood and plasma safety measures are recommended in relation to the occurrence of suspected adverse reactions to COVID-19 vaccines.

Until more information is available on the risk of TTS transfer via passenger lymphocytes, the decision to accept a deceased donor, vaccinated with non-replicating viral vector COVID-19 vaccines two to three weeks before donation, should be taken with caution.

https://www.ecdc.europa.eu/sites/default/files/documents/Suspected-adverse-reactions-to-COVID-19-vaccination-and-safety-of-SoHO.pdf

European Situation on Vaccination

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

Total doses distributed to EU/EEA countries	323,630,683	275,047,993

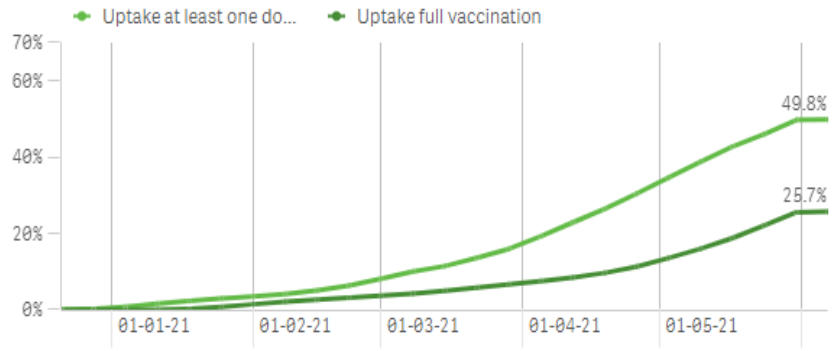
Select View : Uptake full vaccination

Select Country : All EU/EEA countries

Cumulative uptake (%) of full vaccination among adults (18+) in EU/EEA countries as of 2021-06-09

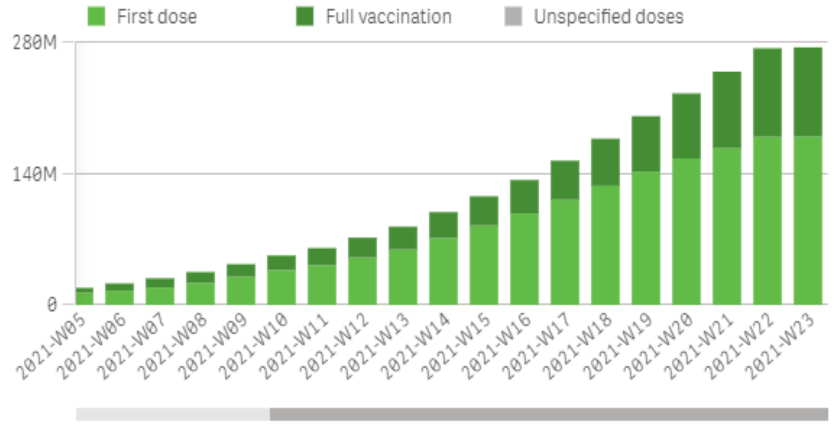
Cumulative uptake (%) of at least one vaccine dose and full vaccination among adults (18+) in EU/EEA countries as of 2021-06-09

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



Cumulative number of doses administered to adults (18+) in EU/EEA countries as of 2021-06-09

by reporting week (data for current week are preliminary)



Cumulative uptake (%) of at least one vaccine dose among people aged 80 years and above in EU/EEA countries as of 2021-06-09

Country	Uptake at least one dose (%) - 80 years old and above
Austria	82.6%
Belgium	88.6%
Bulgaria	14.6%
Croatia	50.6%
Cyprus	88.3%
Czechia	79.1%
Denmark	100.0%
Estonia	64.2%
Finland	93.5%
France	77.3%
Germany	-
Greece	67.6%
Hungary	71.4%
Iceland	99.5%
Ireland	100.0%
Italy	91.7%
Latvia	30.1%
Liechtenstein	-
Lithuania	51.5%
Luxembourg	79.7%
Malta	99.5%
Netherlands	-
Norway	81.6%
Poland	60.0%
Portugal	97.1%
Romania	18.1%
Slovakia	-
Slovenia	66.1%
Spain	100.0%
Sweden	94.0%

Update on SARS-CoV-2 Variants Of Concern (VOC)

Source: https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---8-june-2021

WHO, in collaboration with national authorities, institutions and researchers, routinely assesses if variants of SARS-CoV-2 result in changes in transmissibility, clinical presentation and severity, or if they result in changes in public health and social measures (PHSM) implementation by national health authorities. Globally, systems have been established and are being strengthened to detect "signals" of potential Variants of Interest (VOIs) or Variants of Concern (VOCs) and assess these based on the risk posed to global public health.

As surveillance activities to detect SARS-CoV-2 variant cases are strengthened at local and national levels, including systematic genomic sequencing, the number of countries reporting VOCs has continued to increase. This information should be interpreted with due consideration of surveillance limitations, including but not limited to differences between countries in sequencing capacity and prioritization of samples for sequencing.

VOC impacts on vaccines

Two studies have provided further evidence of the effectiveness of Pfizer BioNTech-Comirnaty vaccine against VOCs. A study from Canada found two doses of the vaccine to be 90% (95% CI: 85-94%) and 88% (95% CI: 61-96%) effective against symptomatic disease ≥7 days post second dose caused by variants Alpha and Beta/Gamma, respectively, among adults 16 years and older. Vaccine effectiveness (VE) against hospitalization/death ≥0 days post second dose was 94% (95%CI: 55-99%) for Alpha and 100% (95% CI not available) for Beta/Gamma. VE of a single dose of Pfizer BioNTech-Comirnaty against symptomatic disease (≥14 days after immunization) was 61% (95% CI: 59-66%), 43% (95% CI: 22-59%), and 61% (95% CI: 53-67%) for Alpha, Beta, and for Gamma, respectively, underscoring the importance of two doses of vaccine in preventing symptomatic disease.

A previously highlighted study from Qatar found two doses of Pfizer BioNTech-Comirnaty to be highly effective against Alpha infection (VE 89.5%) and severe disease (VE 100%); the vaccine was also highly effective against severe disease caused by Beta with a VE of 100% but somewhat reduced against infection (VE 75%) due to this variant. A follow-up analysis (not yet peer-reviewed) to this study evaluated the effectiveness of one dose of Pfizer BioNTech-Comirnaty against infection and severe disease caused by Alpha and Beta variants. At 1-7 days and 8-14 days post vaccination, low to no effectiveness against infection and severe disease was observed for disease events caused by these variants. At 15-21 days post vaccination, VE estimates against infection and severe disease due to Alpha were 65.5% (95% CI: 58.2-71.5%) and 72.0% (95% CI: 32.0-90.0%), respectively. VE estimates against infection and severe disease due to Beta were 46.5% (95% CI: 38.7-53.3%) and 56.5% (95% CI: 0.0-82.8%), respectively. These findings underscore the importance of two doses in preventing infection and severe disease caused by Alpha and Beta. Of note, infections that were not due to Alpha were assumed to be caused by Beta variant as national surveillance did not detect any other strains circulating during much of the study period.

Two recent studies provide evidence of reduced neutralization capacity of COVID-19 vaccines against variant Delta. One study found a 5.8-fold reduction in neutralization against Delta compared to a reference strain in 159 samples from individuals who received two doses of Pfizer BioNTech-Comirnaty [median time after second dose: 28 days (IQR: 21-37)]; 2.6- and 4.9-fold reductions were observed against Alpha and Beta variants, respectively, relative to the reference strain. Findings from a second study (not yet peer-reviewed) 8 show a 3-fold reduction in neutralization capacity against Delta relative to Alpha among sera collected from 16 individuals five weeks after receipt of second dose of Pfizer BioNTech-Comirnaty; a 16-fold reduction was observed against Beta relative to Alpha. Most samples (81-100%) were able to neutralize Alpha, Beta and Delta five weeks after receipt of the second dose; findings remained consistent at 13 weeks after second dose with the exception of the Beta strain whereby only 46% of samples were able to neutralize the variant. Authors also found that a single dose of AstraZeneca-Vaxzevria, while able to neutralize Alpha, was less effective at neutralizing Beta or Delta.

Summary of phenotypic impacts of Variants of Concern (VOCs)

WHO label	Alpha	Beta	Gamma	Delta
Transmissibility	Increased transmissibility and secondary attack rate[1]	Increased transmissibility[2]	Increased transmissibility[1]	Increased transmissibility and secondary attack rate[3,4,5]
Disease severity	Not confirmed, possible increased risk of hospitalization[6], severity and mortality[7]	Not confirmed, possible increased risk of in-hospital mortality[8,9]	Not confirmed, possible increased risk of hospitalization[10]	Not confirmed, possible increased risk of hospitalization[5]
Risk of reinfection	Neutralizing activity retained,[11] risk of reinfection remain similar[12,13]	Reduction in neutralizing activity reported; T cell response elicited by D614G virus remains effective[14–17]	Moderate reduction in neutralizing activity reported[18,19]	Reduction in neutralizing activity reported[20]
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[21]	No impact on RT-PCR or Ag RDTs observed[16]	None reported to date	None reported to date
Impacts on vaccine efficacy/effectiveness	Protection retained against disease • Severe disease: No/minimal loss: Pfizer BioNTech-Comirnaty[22–27] • Symptomatic disease: No/minimal loss: AstraZeneca-Vaxzevria, Novavax-Covavax, PfizerBioNTech-Comirnaty[23,24,27–30] • Infection: No/minimal loss: Pfizer BioNTech-Comirnaty[31] • Asymptomatic infection: No/minimal loss: Pfizer BioNTech-Comirnaty.[23,32] Inconclusive/moderate-substantial loss, limited sample size: AstraZeneca-Vaxzevria[29]	Reduced protection against disease; limited evidence • Severe disease: No/minimal loss: Janssen Ad26.COV 2.5, PfizerBioNTech-Comirnaty[24,33] • Mild-moderate disease: No/minimal loss: Janssen-Ad26. COV 2.5.[33] Moderate loss: Novavax-Covavax.[34] Inconclusive/ substantial loss, limited sample size: AstraZeneca-Vaxzevria[35] • Infection: Moderate loss: PfizerBioNTech-Comirnaty[24] • Asymptomatic infection: No evidence	Protection likely against disease; very limited evidence, on only one vaccine • Symptomatic Disease: No/minimal loss: Sinovac-CoronaVac[36,37] • Infection: No/minimal loss: Sinovac-CoronaVac[37]	Protection likely against disease; very limited evidence on only two vaccines • Symptomatic Disease: No/minimal loss: Pfizer BioNTech-Comirnaty, AstraZeneca- Vaxzevria.[38] Minimal/modest loss: *single dose* of PfizerBioNTech-Comirnaty, AstraZeneca-Vaxzevria[38]
Impacts on neutralization by vaccine	• No/minimal loss: Bharat-Covaxin, Gamaleya-Sputnik V, Moderna-mRNA-1273, Novavax-Covavax, Pfizer BioNTech-Comirnaty, BeijingCNBG-BBIBP-CorV, Sinovac-CoronaVac[17,38–63] • Minimal/moderate loss: AstraZeneca-Vaxzevria[29,53]	• Minimal/modest loss: Beijing CNBG-BBIBP-CorV, Sinovac-CoronaVac, Anhui ZL - Recombinant[64–66] • Minimal to substantial loss: Moderna-mRNA-1273, Pfizer BioNTech-Comirnaty[17,40,44,46–48,50,52–54,60,62,63,67–73] • Moderate to substantial loss: AstraZeneca-Vaxzevria, Gamaleya- Sputnik V, Janssen-Ad26.COV 2.5, Novavax-Covavax[46,55,70,70,74]	• No/minimal loss:AstraZeneca-Vaxzevria,Sinovac-CoronaVac[53,75] • Minimal/moderate loss: Moderna-mRNA-1273, Pfizer BioNTech-Comirnaty[17,40,41,50,52,53,59,62,76,77]	• Modest/moderate loss: Pfizer BioNTech Comirnaty, Bharat-Covaxin[60,78,79] (Note: sublineage of B.1.617 not specified in Bharat-Covaxin study) • Substantial loss: *single dose* of AstraZeneca-Vaxzevria[78]

Phenotypic characteristics

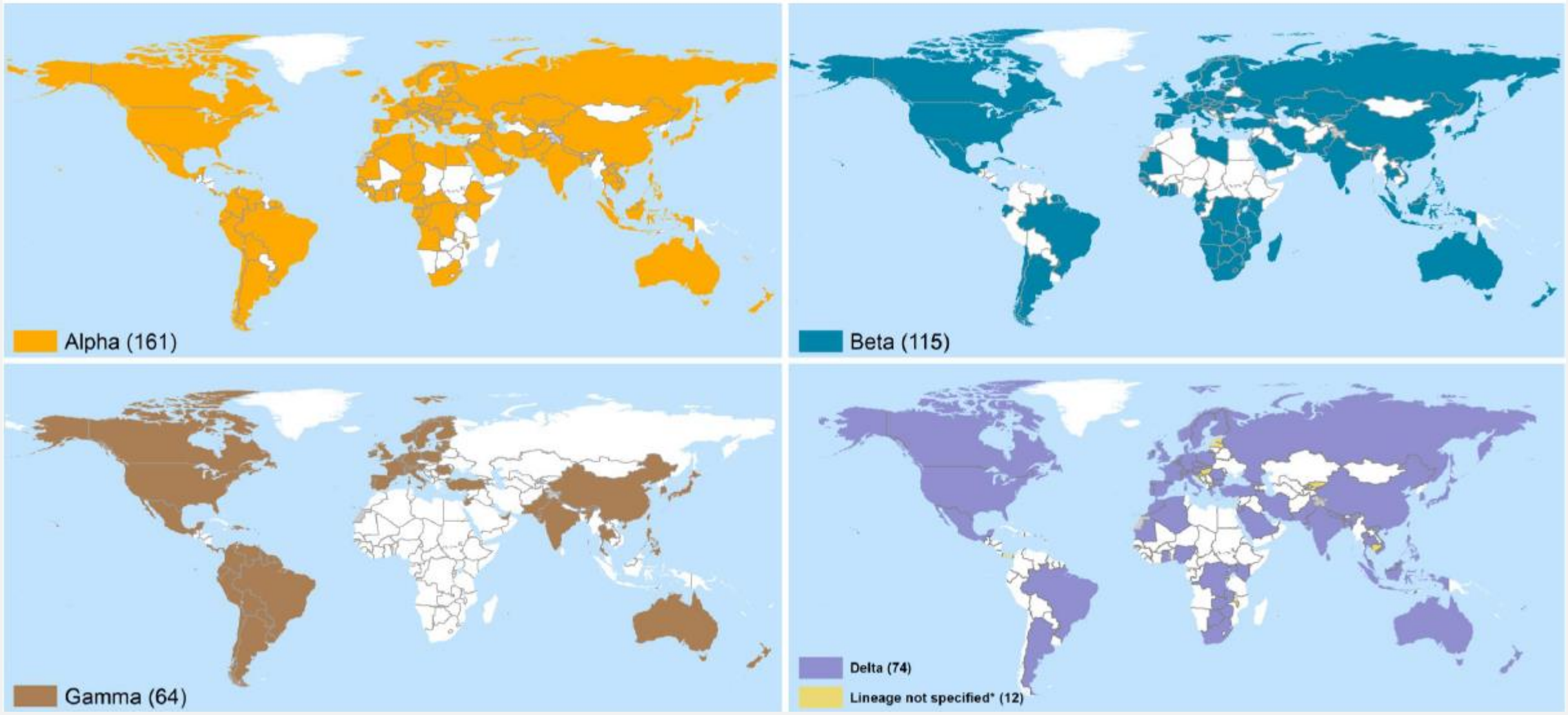
Recent studies of the Delta variant in the United Kingdom of Great Britain and Northern Ireland suggest a possible increased risk of severe disease, and support previous observations of increased transmissibility.5 An analysis comparing Delta and Alpha variant confirmed cases in the United Kingdom from 29 March to 20 May 2021 showed the Delta variant was associated with a possible increased risk of hospitalization (hazard ratio 2.61, 95%CI 1.56-4.36), and an increased risk of emergency care attendance or hospitalization (hazard ratio 1.67, 1.25-2.23) within 14 days of specimen collection, as compared to the Alpha variant. A second analysis based on cases reported in the United Kingdom from 29 March to 11 May 2021 (variant data as of 25 May 2021) found that the secondary attack rate was higher among contacts of Delta cases compared to contacts of Alpha cases (2.6% vs. 1.6% among contacts of cases that have travelled; 8.2% vs. 12.4% among contacts of cases that have not travelled). Further analyses are required to better understand and confirm these findings.

SARS-CoV-2 VOCs and VOIs, as of 08 June 2021

WHO label	Pango lineage	GISAID clade	Nextstrain clade	Earliest documented samples	Date of designation
Variants of Concern (VOCs)					
Alpha	B.1.1.7	GRY (formerly GR/501Y.V1)	20I/501Y.V1	United Kingdom, Sep-2020	18-Dec-2020
Beta	B.1.351	GH/501Y.V2	20H/501Y.V2	South Africa, May-2020	18-Dec-2020
Gamma	P.1	GR/501Y.V3	20J/501Y.V3	Brazil, Nov-2020	11-Jan-2021
Delta	B.1.617.2	G/452R.V3	21A/S:478K	India, Oct-2020	VOI: 4-Apr-2021 VOC: 11-May-2021
Variants of Interest (VOIs)					
Epsilon	B.1.427/ B.1.429	GH/452R.V1	20C/S.452R	United States of America, Mar-2020	5-Mar-2021
Zeta	P.2	GR	20B/S.484K	Brazil, Apr-2020	17-Mar-2021
Eta	B.1.525	G/484K.V3	20A/S484K	Multiple countries, Dec-2020	17-Mar-2021
Theta	P.3	GR	20B/S:265C	Philippines, Jan-2021	24-Mar-2021
Iota	B.1.526	GH	20C/S:484K	United States of America, Nov-2020	24-Mar-2021
Kappa	B.1.617.1	G/452R.V3	21A/S:154K	India, Oct-2020	4-Apr-2021

Update on SARS-CoV-2 Variants Of Concern (VOC)

4. Countries, territories and areas reporting variants Alpha (B.1.1.7), Beta (B.1.351), Gamma (P.1) and Delta (B.1.617.2), as of 8 June 2021



Subject in Focus

Heterologous Vaccination Schedules for COVID-19

Introduction

The governments of Bahrain and the United Arab Emirates recently announced that they would offer Sinopharm vaccine to individuals who had received Pfizer-BioNTech as their first dose. The use of mixed (or 'heterologous') vaccination schedules has generated a lot of interest, particularly with limited availability of vaccine. This Subject in Focus explores the evidence of effectiveness of heterologous vaccination schedules for COVID-19.

What is a heterologous vaccination schedule?

A heterologous vaccination schedule is where a different vaccine is used to boost an initial dose. It is important to recognise that this is different from 'heterologous vaccines' where a specific pathogen (e.g. cowpox) is used to generate an immune response against a different pathogen (e.g. smallpox).

Studies

A UK-based multi-centre, participant-masked, randomised heterologous prime-boost COVID-19 vaccination study called Com-CoV has recruited participants over the last few months. The study aimed to explore the immunogenicity of different combinations of the Pfizer/BioNTech (BNT) and Astra-Zeneca (ChAd) vaccines and compare these to standard dosing of the same type of vaccine.

Whilst initial results on immunogenicity are awaited, early published findings suggested that individuals receiving the heterogenous vaccination schedule were more likely to experience reactogenicity symptoms (see Figure) with "*feverishness reported by 37 (34%) of 110 recipients of ChAd for prime and BNT for boost compared with 11 (10%) of 112 recipients of ChAd for both prime and boost (difference 24%, 95% CI 13-35%). Feverishness was reported by 47 (41%) of 114 recipients of BNT for prime and ChAd for boost, compared with 24 (21%) of 112 recipients of BNT for both prime and boost (difference 21%, 95% CI 8-33%).*" It should be noted that all symptoms were reported as mild.

A second study from the same research group called Com-CoV2 has begun and expanded the vaccines being reviewed to include Novavax and Moderna.

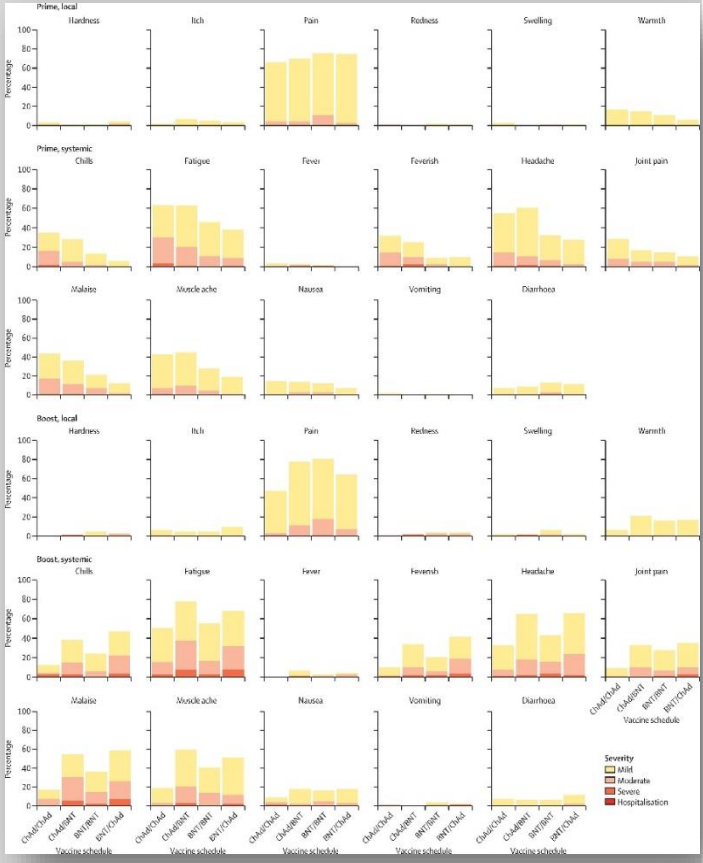
One of the earliest studies to explore heterologous vaccination schedules for COVID-19 was published by a research team in China in Dec 2020. This used a mouse model to test different combinations of vaccines developed in China (adenovirus vectored and mRNA vaccines). It suggested that the combination improved the immune response. It is not clear whether the research group has progressed to human trials. A similar result was reported from a UK based team where a mouse model was vaccinated with a self-amplifying RNA vaccine followed by an adenoviral vectored vaccine. The study stated '*Neutralising titres after heterologous prime-boost were at least comparable or higher than the titres measured after homologous prime boost vaccination with viral vectors. Importantly, the cellular immune response after a heterologous regimen is dominated by cytotoxic T cells and Th1⁺ CD4 T cells, which is superior to the response induced in homologous vaccination regimens in mice.*'

A research team from Spain has also been exploring heterologous vaccination regimens. The group announced preliminary results having enrolled over 600 patients in the trial. The study explored the immune response after initial dosing with ChAd followed by BNT at 8 weeks. The initial press release suggested that a robust immune response was generated and that this might be better than the immune response generated by two doses of ChAd. However, the results have not been published or peer reviewed.

Summary

There are several on-going studies exploring heterologous vaccine schedules. Animal models and early reports from human trials suggest that there may be utility in mixing types of vaccine however this may generate an increased rate of side effects in recipients of mixed doses. It is clear that this is an emerging field of research with important implications particularly as vaccine supplies are variable and the ability to mix types of vaccine provides governments with options to use limited supplies more efficiently. However, further work is required to explore the impact of this approach to ensure that it is safe and effective.

Figure: Severity of solicited local and systemic reactions in days 0-7 after vaccination with ChAdOx1 nCoV-19 (ChAd) or BNT162b2 (BNT), by prime and boost vaccination and by vaccination group, as self-reported in participant electronic diaries



Sources:

UAE, Bahrain Make Pfizer/BioNTech Shot Available to Those Who Got Sinopharm Vaccine (medscape.com)

https://geneonline.news/en/is-heterologous-prime-boost-of-covid-19-vaccines-the-way-to-go/

Home | Com-CoV (comcovstudy.org.uk)

Heterologous prime-boost COVID-19 vaccination: initial reactogenicity data - The Lancet

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8009122/

https://www.nature.com/articles/s41467-021-23173-1#Abs1

https://www.isciii.es/Noticias/Noticias/Paginas/Noticias/Presentaci%c3%b3n-resultados-preliminares-CombivacS.aspx

In cooperation with Bundeswehr HQ of Military Medicine

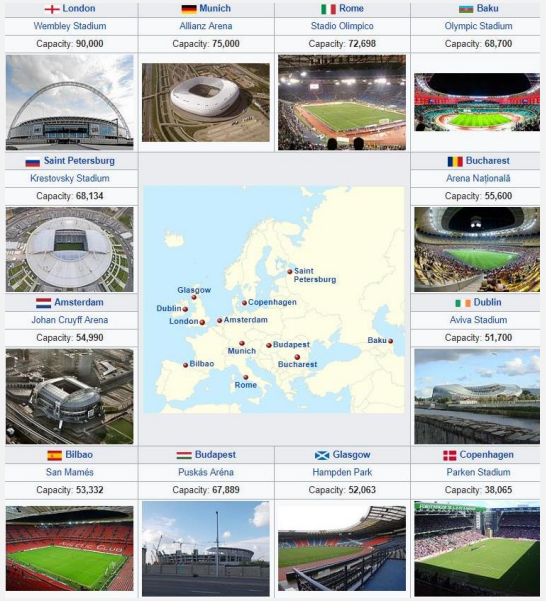
The European Football Championship and COPA America during the COVID-19 Pandemic

The 2021 European Football Championship - a mass event in times of a global pandemic The 2021 European Football Championship was supposed to take place last year hence the title "UEFA EURO 2020" for this event - but was postponed until this summer due to the pandemic. The last tournament took place in FRA in 2016, when the PRT team became European champions.

In 2014, 12 venues in Europe and one in Asia (BAKU) were officially named. However, on March 17, 2021, UEFA announced that games would only take place in those cities where spectators are allowed to enter the stadium despite the COVID-19 pandemic. For this reason, BILBAO and DUBLIN were deleted as venues and replaced by SEVILLA (for BILBAO) and ST. PETERSBURG and LONDON (for DUBLIN).

Visitor regulations in football stadiums - The opening game will now kick off on June 11, 2021 at 9 p.m. in the Olympic Stadium in ROM between ITA and the TUR, the kick-off for the final is then planned for July 11, 2021 at 9 p.m. at Wembley Stadium in LONDON. There will be a total of 51 games in these four weeks. But how can an event of this size - especially if spectators are allowed to be admitted - be carried out safely during a pandemic? In order to create at least a certain amount of atmosphere in the stadiums through the presence of spectators during the matches, UEFA has presented a comprehensive hygiene concept for the venues. According to this, digital (so-called mobile) tickets are primarily used, on which a 30-minute time window is noted, at which the stadium must be entered - this should help to reduce the usual queues at the entrance. All spectators must also present a negative COVID-19 rapid test and must wear a face mask in the stadium. There will also be temperature measurements at the entrances and an average of 800 disinfectant dispensers will be set up in each stadium. In addition, floor markings should prevent the spectators from breaking the required minimum distance of 1.50 m. The most effective element of the hygiene concept is likely to be reduced capacity at the venues: In the sole venue in DEU, the Allianz Arena in MUNICH, for example, only around 20% of the stadium's actual capacity of 75,000 seats will be used.

Criticism and Epidemiological Relevance - As expected, the "UEFA EURO 2020" event has sparked a lot of criticism, from many different directions. When selecting the venues, UEFA has been accused of exerting considerable pressure (Karl Lauterbrach: "form of blackmail") to allow as many spectators as possible. From an epidemiological point of view, such a pan-European event with the accompanying travel movements of tens of thousands of fans naturally makes little sense, especially since UEFA's hygiene concept only extends to the length of time spent in the stadium. However, an important effect of the European Championship itself is likely to be of far greater epidemiological relevance: Due to the understandable cancellation of public viewing events on streets, squares and in pubs, a large number of fans will very likely meet in private rooms to watch the tournament. Checking compliance with the regulations or enforcing negative tests is not possible in that context and there is a risk of widespread transmission.



https://de.wikipedia.org/wiki/Fu%C3%9Fball-Europameisterschaft_2021
https://de.uefa.com/uefaeuro-2020/
https://www.spiegel.de/politik/deutschland/fussball-em-markus-soeder-laesst-14-000-zuschauer-in-muenchens-stadion-a-fd0edcda-7c0e-4a30-b366-5c0816128dc7
https://11freunde.de/artikel/baku-und-der-verschwundene-sponsor/3915916
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Brazil: COVID-19 incidence remains high, but the Copa América is still likely to go ahead. In parallel with Euro2020, the Copa America, the soccer tournament of the South American soccer association CONMEBOL, is to be played in Brazil. The original plan was that the Copa America would take place in Colombia and Argentina; Argentina withdrew its commitment due to the COVID-19 situation and Colombia also withdrew due to the COVID-19 situation, but also due to the tense domestic political situation and social unrest.

Brazil has now stepped in and intends to start the tournament on June 13, 2021 as originally planned with stadiums in Brasilia, Cuiaba, Goiania and Rio de Janeiro as venues. The 7-day incidence is still very high (202.4 / 100,000 inhabitants (as of June 2nd, 2021)), albeit lower than in Argentina (> 500 / 100,000) or Colombia (> 300 / 100,000). Regardless, more than 16.6 million COVID-19 cases and more than 465,000 deaths have been recorded in Brazil. In addition, Brazil currently still counts as a so-called virus variant area.

The vaccination campaign in Brazil is progressing, but the proportion of people with at least one primary vaccination is currently just over 21%, and fully vaccinated at just over 10% and thus still far from "herd immunity". Nevertheless, there was good news recently. In a mass vaccination experiment, most of the adult residents of the city of Serrana (in the southeast of the country, 45,000 inhabitants) were vaccinated with the Chinese vaccine Sinovac. The rate of hospitalizations due to COVID-19 then fell by as much as 86%, the rate of deaths by 95% between February (start of the vaccination campaign in the city) and May 2021 - strongly against the national trend. However, overall, the pandemic is still causing significant problems. Against this background, **the decision to host the tournament has not been met with wholesale approval.** According to the FAZ in an online article on the subject, the view from social networks, media and wider society is predominantly negative. "Receiving delegations from other countries, including from countries where other variations are in circulation, is very problematic," epidemiologist Dr. Ethel Maciel from the University of Espírito Santo (UFES) told Deutsche Welle (DW). The South American football association CONMEBOL is also facing criticism for not having developed a solution for the impending cancellations from Argentina and Colombia earlier. The players' union Fifpro - according to an article on sportschau.de - recently expressed "serious concerns". The decision is not "only short-term, but the alternative host is dealing with an alarming number of Covid-19 cases. Holding a tournament under these circumstances requires very good preparation. Therefore, this decision could have serious health effects the professional footballers, the staff and the public have. "In addition, the players' union also demands that the footballers concerned may decide for themselves without the risk of sanctions whether they should prioritize their health and thus if necessary refrain from participating in the tournament.

At least the games should now be take place without spectators. I**t is still conceivable that public pressure and resistance could ultimately prevent the tournament** from being held in Brazil. It is reported that there were initial concerns in the Brazilian government too; they backed off a little and stated that they were only in negotiations with CONMEBOL. But this seems to have only been a short lived, because now the tournament seems to be back on. One reason for this could simply be financial, because the TV rights alone are about 100 million US dollars, and are shared among the national associations.

https://www.faz.net/aktuell/sport/fussball/copa-america-in-brasilien-bolsonaro-hat-sich-verschaetzt-17369223.html
https://www.corona-in-zahlen.de/weltweit/brasilien/ https://www.sportschau.de/fussball/copa-america-brasilien-108.html https://edition.cnn.com/2021/06/01/americas/brazil-bolsonaro-copa-america-intl-latam/index.html https://www.wsj.com/articles/brazils-experiment-to-vaccinate-town-with-chinese-coronavac-reduced-covid-19-deaths-by-95-11622479864
https://ourworldindata.org/covid-vaccinations https://www.worldometers.info/coronavirus/country/brazil/

Other Infectious Disease Outbreaks

bluedot

First ever human case of avian H10N3 influenza virus

China: According to media sources, the first-ever human case from H10N3, an avian-origin influenza virus, has been confirmed in China. Per these sources, the affected individual is a 41-year-old from China's eastern province of Jiangsu, and required hospitalization at a local hospital in Zhenjiang city after developing pneumonia on April 28. On May 28, as part of extended genome sequencing, the H10N3 avian influenza virus strain was confirmed by the National Health Commission of the People's Republic of China (NHC). No information is available on the individual's occupation or whether they worked on a farm. As this is the first documented human case, there is still limited information about the clinical impact and the potential for human-to-human transmission; however, the NHC has reported that no further human cases have been found among close contacts. H10N3 is a low pathogenicity strain of the avian influenza virus known to affect poultry. This is a noteworthy event because newly emerging animal influenza viruses that cross over into humans could catalyze epidemics or pandemics if the animal influenza virus becomes capable of efficiently spreading between humans.

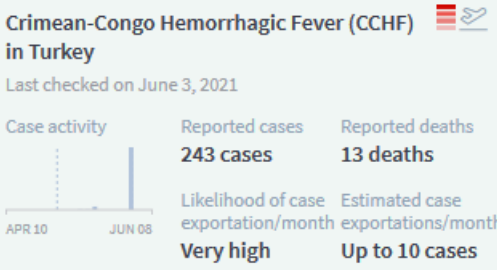
Source: https://www.watoday.com.au/world/asia/first-human-case-of-h10n3-bird-flu-in-china-20210601-p57x5o.html

Plague

Bule, Ituri, Democratic Republic of the Congo

In a follow-up on a suspected plague outbreak affecting two health areas (Bu-Kachele and Bule) of the Fataki health zone, in Ituri province in northeast Democratic Republic of the Congo (DRC), recent media reports indicate that health officials are raising concerns that the ongoing outbreak is largely the pneumonic plague type. A clinical team continues to investigate while laboratory samples have been shipped to the Institut National de Recherche Biomédicale (INRB) in Kinshasa for confirmatory testing. This event is noteworthy, as pneumonic plague is the most severe and virulent form of plague (compared to bubonic or septicemic plague forms) as it can be transmitted from person to person through respiratory droplets or through contact with respiratory fluids. The pneumonic plague disease type has the highest mortality rate when compared to the bubonic plague type but is similar to the septicemic form of the disease.

Source: http://outbreaknewstoday.com/plague-update-suspected-pneumonic-plague-cases-recorded-in-drc-67226/



Crimean-Congo Hemorrhagic Fever (CCHF)

Bitlis, Turkey: There is limited information about the total number of cases of Crimean-Congo hemorrhagic fever (CCHF) in Bitlis, a city in eastern Turkey and the capital of Bitlis province. Media reports indicate that an unspecified number of individuals have presented to a local hospital with symptoms resembling CCHF, most of whom have a recent history of tick bite exposure in the rural areas of Central Anatolia and Eastern Anatolia regions. Suspected cases of CCHF and at least one associated death have been reported in Hafik, a town and a district of Sivas province, eastern Turkey, and in Adıyaman city, in south eastern Turkey, since the beginning of May 2021. Cases of CCHF have been reported in Turkey since 2002 and more than 9,700 cases have been confirmed since then with an overall mortality rate of 5%. In Turkey, peak transmission of CCHF typically occurs in the early summer months. Public health officials and physicians are advising the public to take precautions against tick bites.

Source: https://www.iha.com.tr/haber-bitliste-kkka-hastaligi-endisesi-934665/, https://haberflash.com/2021/05/26/ozel-bitliste-kkka-hastaligi-endisesi/

Lassa Fever

Nigeria: Lassa fever cases and related deaths continue to be reported in Nigeria. As of February 14, disease activity has been detected across 27 local administrative regions in eight states. However, there is a 90% decrease in the number of cases when compared to the same period in 2020. The most affected states are Ondo, Edo, Taraba, and Bauchi. Despite the efforts made to prevent infections, Lassa fever is an ongoing public health threat in Nigeria. In 2020, the NCDC indicated that a large epidemiological study is being conducted in Nigeria and other West African countries to inform Lassa fever vaccine development.

Source: https://promedmail.org/promed-post/?id=8208915

Guinea: In a follow-up to the confirmed case of Lassa hemorrhagic fever at the Yomou prefecture hospital, media reports indicate that the individual had also tested positive for COVID-19 and has died. As of May 26, no new suspected cases of Lassa hemorrhagic fever have been reported. However, the prefectures of Bheeta, Yomou-Centre, Péla, Yomou, and Bignamou are on epidemiological alert as the disease is endemic and further cases could be confirmed.

Source: http://outbreaknewstoday.com/guinea-ebola-and-lassa-fever-updates-79720/

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	Health information	Vaccination news	Governmental information	NATO Member State	Health information	Vaccination news	Governmental information
Albania				Latvia			
Belgium				Lithuania			
Bulgaria				Luxembourg			
Canada				Montenegro			
Croatia				Netherland			
Czech Republic				North Macedonia			
Denmark				Norway			
Estonia				Poland			
France				Portugal			
Germany				Rumania			
Great Britain				Slovakia			
Greece				Slovenia			
Hungary				Spain			
Italy				Turkey			
Iceland				USA			

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-air-travellers
- https://www.cdc.gov/coronavirus/2019-ncov/travelers/testing-air-travel.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
- 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

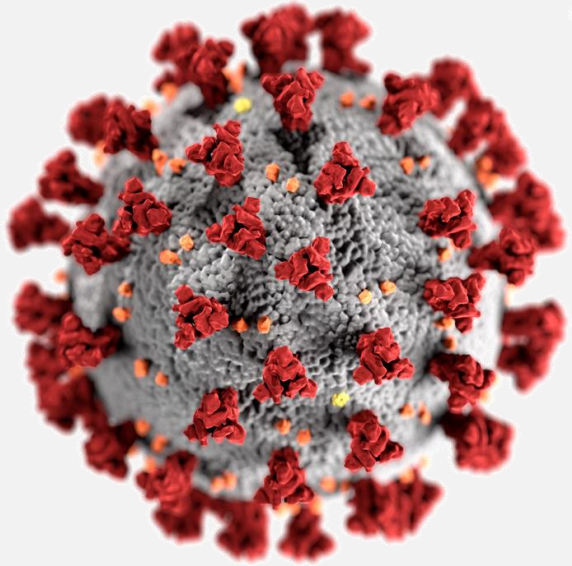
References:

- European Centre for Disease Prevention and Control www.ecdc.europe.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/

Upcoming Events FHPB

We are happy to announce the;

Force Health Protection Event:
COVID-19; A retrospective look at a turbulent time



When:	3rd to 4th November 2021
Location:	virtual event via Microsoft Office Teams platform
Registration:	open 3rd May 2021
Call for papers:	3rd May to 25th June 2021
Link:	Registration/Submission page