# COVID-19 Weekly Epidemiological Update

**Edition 45, published 22 June 2021**

In this edition:

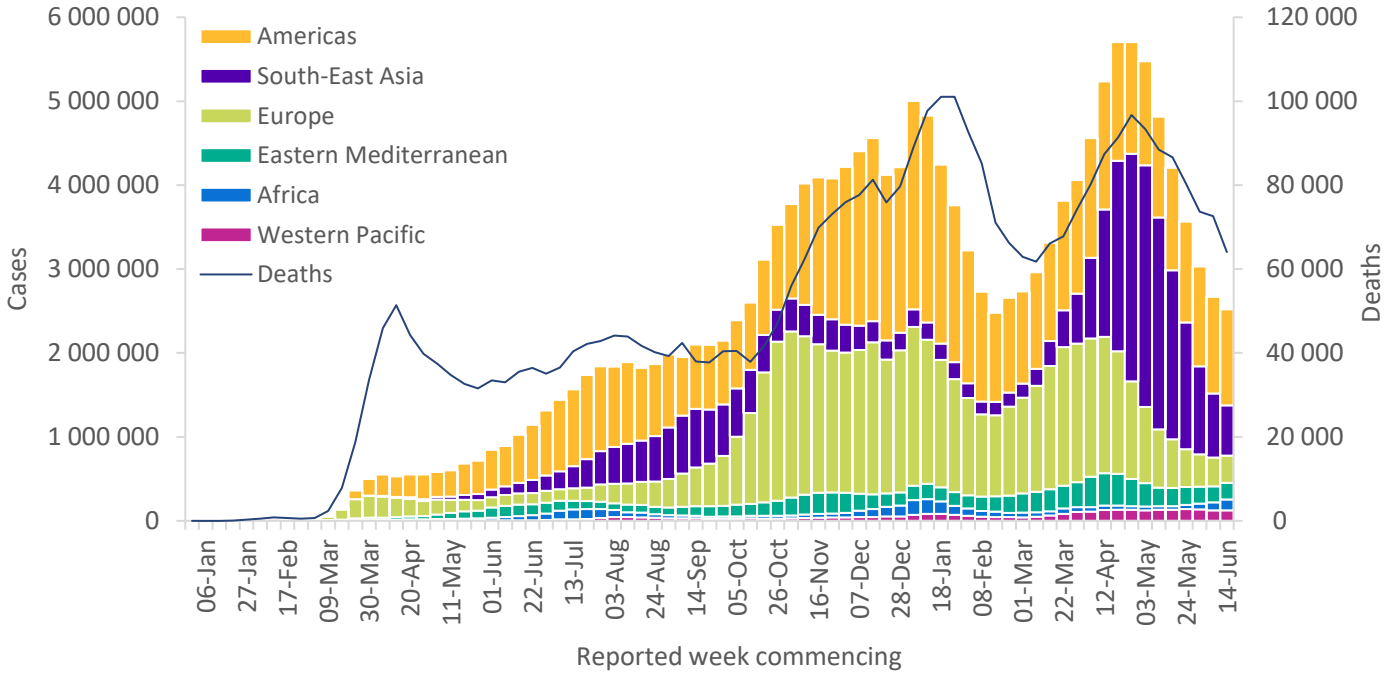


## Global overview

**Data as of 20 June 2021**

Global numbers of cases and deaths continued to decrease over the past week (14-20 June 2021) with over 2.5 million new weekly cases and over 64 000 deaths, a 6% and a 12% decrease respectively, compared to the previous week (Figure 1). While the number of cases reported globally now exceeds 177 million, last week saw the lowest weekly case incidence since February 2021. This week, the Americas and Western Pacific Regions reported numbers of new weekly cases similar to the previous week, while the South-East Asia and the European Regions reported a decline in the number of new cases. The African Region recorded a marked increase in the number of weekly cases as compared to the previous week (Table 1). Globally, mortality remains high with more than 9000 deaths reported each day over the past week, however, the number of new deaths reported in the past week decreased across all Regions except for the Eastern Mediterranean and the African Regions.

**Figure 1. COVID-19 cases reported weekly by WHO Region, and global deaths, as of 20 June 2021****




**See *Annex 2: Data, table and figure notes*

The highest numbers of new cases were reported from Brazil (505 344 new cases; 11% increase), India (441 976 new cases; 30% decrease), Colombia (193 907 new cases; 10% increase), Argentina (149 673 new cases; 16% decrease), and the Russian Federation (108 139 new cases; 31% increase).

Globally, variant Alpha has been reported in 170 countries, territories or areas (hereafter countries; seven new countries in the past week), Beta in 119 countries (four new countries), Gamma in 71 countries (three new countries) and Delta in 85 countries (six new countries).

**Table 1. Newly reported and cumulative COVID-19 cases and deaths, by WHO Region, as of 20 June 2021****

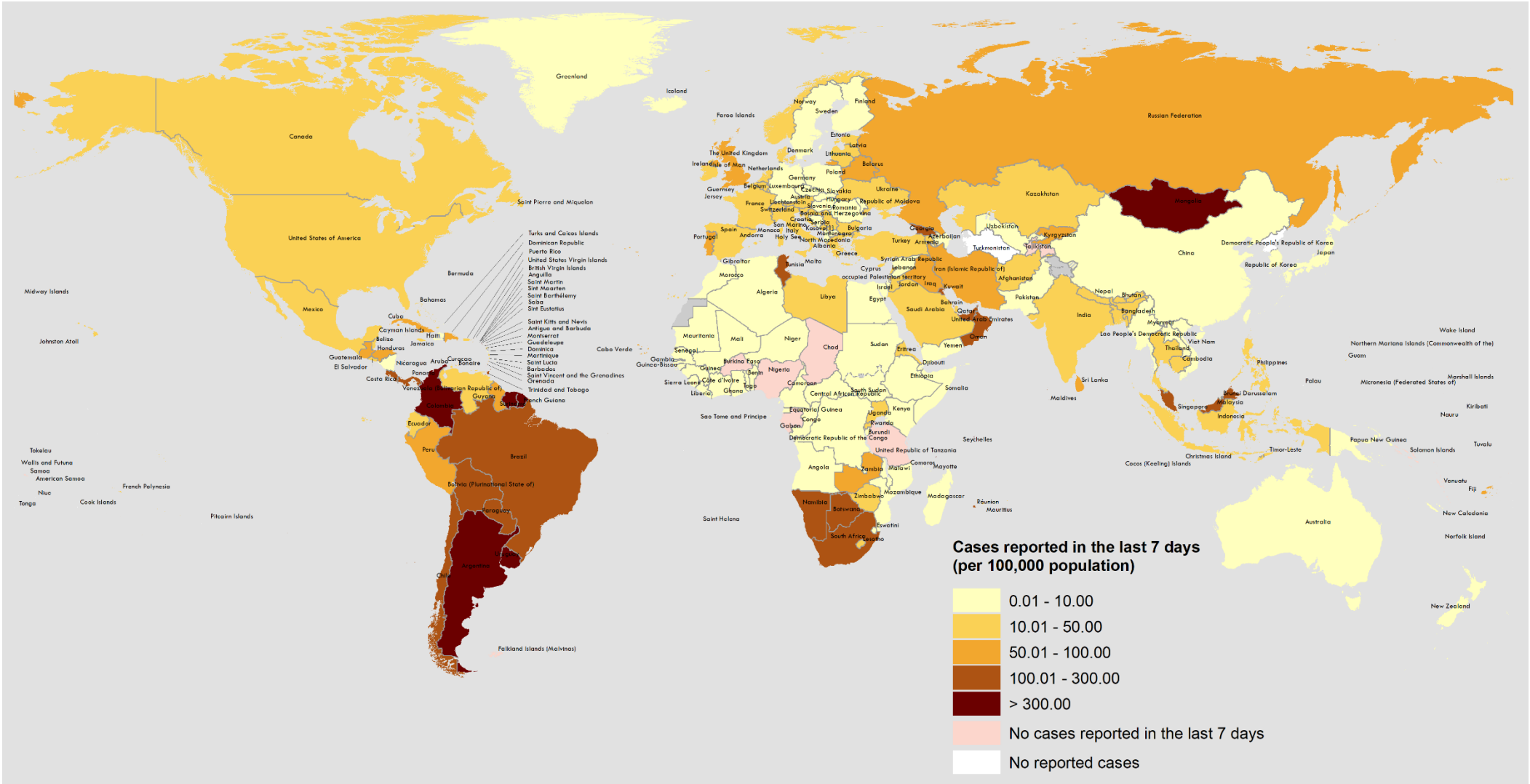
| WHO Region | New cases in last 7 days (%) | Change in new cases in last 7 days * | Cumulative cases (%) | New deaths in last 7 days (%) | Change in new deaths in last 7 days * | Cumulative deaths (%) |
|---|---|---|---|---|---|---|
| Americas | 1 143 672 (45%) | 0% | 70 663 034 (40%) | 30 748 (48%) | -4% | 1 857 523 (48%) |
| South-East Asia | 600 677 (24%) | -21% | 34 032 967 (19%) | 19 452 (30%) | -26% | 471 290 (12%) |
| Europe | 324 829 (13%) | -6% | 55 325 145 (31%) | 6 452 (10%) | -12% | 1 173 618 (30%) |
| Eastern Mediterranean | 195 464 (8%) | 2% | 10 666 162 (6%) | 3 413 (5%) | 2% | 211 911 (5%) |
| Africa | 132 078 (5%) | 39% | 3 791 054 (2%) | 1 925 (3%) | 38% | 91 599 (2%) |
| Western Pacific | 123 964 (5%) | 0% | 3 387 034 (2%) | 2 085 (3%) | -9% | 52 020 (1%) |
| **Global** | **2 520 684 (100%)** | **-6%** | **177 866 160 (100%)** | **64 075 (100%)** | **-12%** | **3 857 974 (100%)** |

**Percent change in the number of newly confirmed cases/deaths in past seven days, compared to seven days prior*
**See *Annex 2: Data, table and figure notes*

For the latest data and other updates on COVID-19, please see:

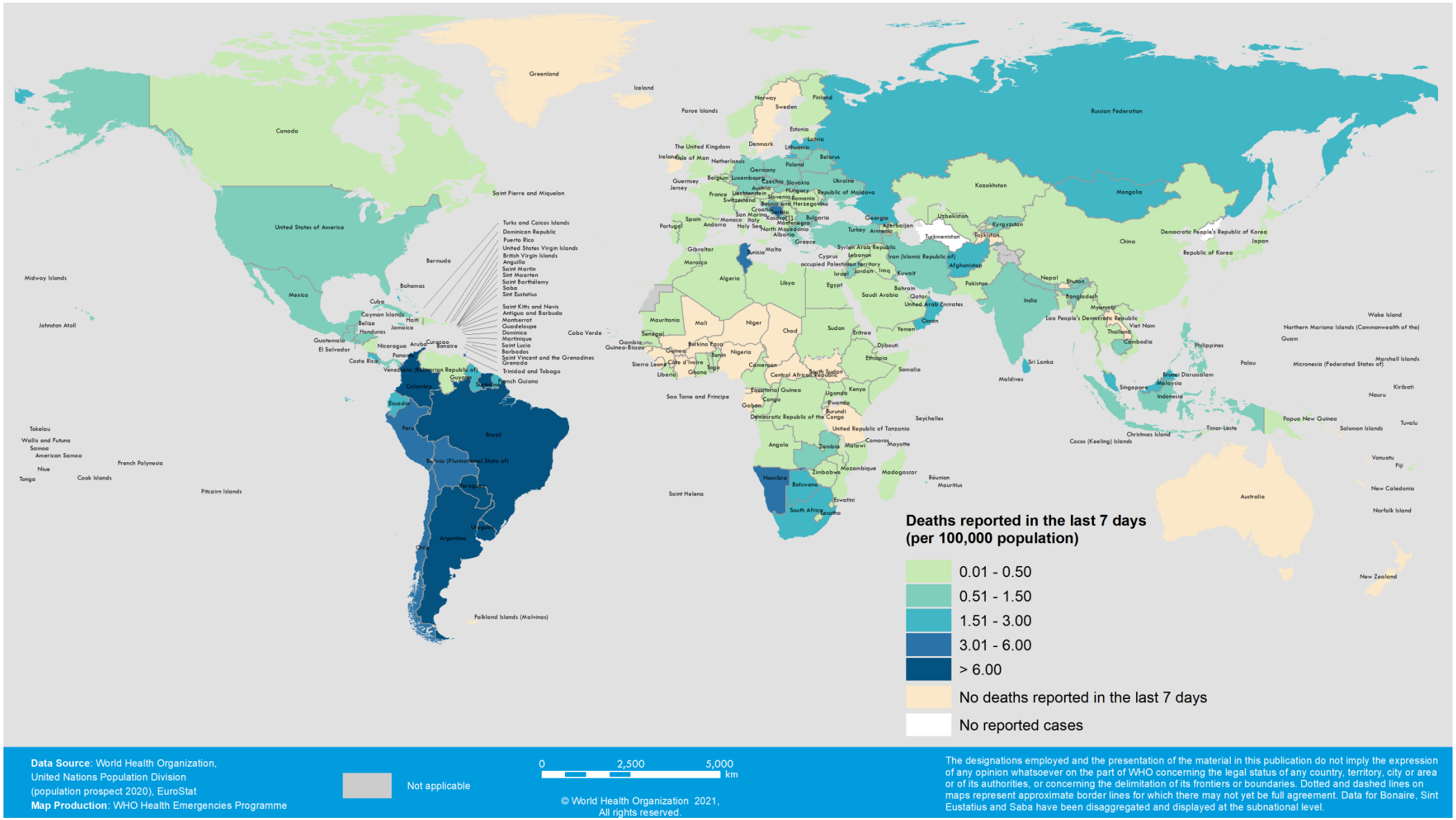
- WHO COVID-19 Dashboard
- WHO COVID-19 Weekly Operational Update and previous editions of the Weekly Epidemiological Update

## Figure 2. COVID-19 cases per 100 000 population reported by countries, territories and areas, 14 – 20 June 2021**




**See *Annex 2: Data, table and figure notes*

## Figure 3. COVID-19 deaths per 100 000 population reported by countries, territories and areas, 14 – 20 June 2021**




**See *Annex 2: Data, table and figure notes*

## Special Focus: Update on SARS-CoV-2 Variants of Interest and Variants of Concern

WHO, in collaboration with national authorities, institutions and researchers, routinely assesses if variants of SARS-CoV-2 alter transmission or disease characteristics, or impact vaccine, therapeutics, diagnostics or public health and social measures (PHSM) applied by national authorities to control disease spread. Systems have been established to detect signals of potential Variants of Concern (VOCs) or Variants of Interest (VOIs) and assess these based on the risk posed to global public health. As these risks evolve, WHO updates the list of global VOIs and VOCs (Table 2) to support setting priorities for surveillance and research, and ultimately guide response strategies. National authorities may choose to designate other variants of local interest/concern, and are encouraged to investigate and report on the impact of these variants. Here we provide updates on globally characterized VOCs and VOIs, as well as the updated countries/territories/areas reporting the detection of VOCs. No new VOCs or VOIs have been added to or removed from the list last week.

### Table 2: SARS-CoV-2 Variants of Concern (VOCs) and Variants of Interest (VOIs), as of 22 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 (V1) | United Kingdom, Sep-2020 | 18-Dec-2020 |
| Beta | B.1.351 | GH/501Y.V2 | 20H (V2) | South Africa, May-2020 | 18-Dec-2020 |
| Gamma | P.1 | GR/501Y.V3 | 20J (V3) | Brazil, Nov-2020 | 11-Jan-2021 |
| Delta | B.1.617.2 | G/478K.V1 | 21A | India, Oct-2020 | VOI: 4-Apr-2021<br>VOC: 11-May-2021 |
| **Variants of Interest (VOIs):** | | | | | |
| Epsilon | B.1.427/ B.1.429 | GH/452R.V1 | 21C | United States of America, Mar-2020 | 5-Mar-2021 |
| Zeta | P.2 | GR/484K.V2 | 20B | Brazil, Apr-2020 | 17-Mar-2021 |
| Eta | B.1.525 | G/484K.V3 | 21D | Multiple countries, Dec-2020 | 17-Mar-2021 |
| Theta | P.3 | GR/1092K.V1 | 21E | Philippines, Jan-2021 | 24-Mar-2021 |
| Iota | B.1.526 | GH/253G.V1 | 21F | United States of America, Nov-2020 | 24-Mar-2021 |
| Kappa | B.1.617.1 | G/452R.V3 | 21B | India, Oct-2020 | 4-Apr-2021 |
| Lambda | C.37 | GR/452Q.V1 | 20D | Peru, Aug-2020 | 14-Jun-2021 |

## Table 3: 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[3] | Increased transmissibility and secondary attack rate[4,5,] |
| **Disease severity** | Increased risk of hospitalization[6], possible increased risk of 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[11] |
| **Risk of reinfection** | Neutralizing activity retained,[12] risk of reinfection remains similar[13,14] | Reduction in neutralizing activity reported; T cell response elicited by D614G virus remains effective[15–18] | Moderate reduction in neutralizing activity reported[19,20] | Reduction in neutralizing activity reported[21] |
| **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[22] | 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<br>• Severe disease: No/minimal loss: Pfizer BioNTech-Comirnaty[23–28]<br>• Symptomatic Disease: No/minimal loss: AstraZeneca- Vaxzevria, Novavax-Covavax, PfizerBioNTech-Comirnaty[24,25,28–31]<br>• Infection: No/minimal loss: PfizerBioNTech-Comirnaty[32]<br>• Asymptomatic infection: No/minimal loss: Pfizer BioNTech-Comirnaty[24,33]; inconclusive/Moderate-substantial loss, limited sample size:AstraZeneca-Vaxzevria[30] | Reduced protection against disease; limited evidence<br>• Severe disease: No/minimal loss: Janssen Ad26.COV 2.5, Pfizer BioNTech-Comirnaty[25,34]<br>• Mild-moderate disease: No/minimal loss: Janssen-Ad26. COV 2.5[34]; Moderate loss: Novavax-Covavax[35]; Inconclusive/substantial loss, limited sample size: AstraZeneca-Vaxzevria[36]<br>• Infection: Moderate loss: Pfizer BioNTech-Comirnaty[25]<br>• Asymptomatic infection: no evidence | Protection likely against disease; very limited evidence on three vaccines<br>• Symptomatic disease: No/minimal loss: Sinovac-CoronaVac, [37,38]; no/minimal to modest loss: *single dose* of Moderna- mRNA-1273 or PfizerBioNTech-Comirnaty[39]*<br>• Infection: No/minimal loss: Sinovac-CoronaVac[38] | Protection retained against severe disease; possible reduced protection against disease and infection; limited evidence on only two vaccines<br>• Severe disease: No/minimal loss: PfizerBioNTech-Comirnaty, AstraZeneca-Vaxzevria[31,40]<br>• Symptomatic disease: No/minimal to modest loss: PfizerBioNTech-Comirnaty[41,42]; no/minimal to moderate loss: AstraZeneca-Vaxzevria[41,42]<br>• Infection: No/minimal to moderate loss: AstraZeneca-Vaxzevria, PfizerBioNTech-Comirnaty[42]; |
| **Impacts on neutralization (full vaccination) by vaccine** | • No/minimal loss: Bharat-Covaxin, Gamaleya-Sputnik V, Moderna- mRNA-1273, Novavax-Covavax, Pfizer BioNTech-Comirnaty, BeijingCNBG-BBIBP-CorV, Sinovac-CoronaVac[18,41,43–67]<br>• Minimal/moderate loss: AstraZeneca-Vaxzevria[30,57] | • Minimal/modest loss: Bharat-Covaxin, Beijing CNBG-BBIBP-CorV, Sinovac-CoronaVac, Anhui ZL - Recombinant[68–71]<br>• Minimal to substantial loss: Moderna-mRNA-1273, Pfizer BioNTech-Comirnaty[18,44,48,50–52,54,56–58,64,66,67,72–78]<br>• Moderate to substantial loss: AstraZeneca-Vaxzevria, Gamaleya- Sputnik V, Janssen-Ad26.COV 2.5, Novavax-Covavax[50,59,75,75,79–81] | • No/minimal loss: AstraZeneca-Vaxzevria, Sinovac-CoronaVac [57,82]<br>• Minimal to moderate loss: Moderna-mRNA-1273, Pfizer BioNTech-Comirnaty[18,44,45,54,56,57,63,66,83,84]<br>• Modest loss: Janssen-Ad26.COV 2.5[81] | • No/minimal loss: Bharat-Covaxin[71]<br>• No/Minimal to moderate loss: Pfizer BioNTech Comirnaty, Bharat-Covaxin[64,85,86]<br>• Substantial loss: *single dose* of AstraZeneca-Vaxzevria[85] |

**Generalized findings as compared to previously/co-circulating variants. Based on emerging evidence, including non-peer-reviewed preprint articles and reports, all subject to ongoing investigation and revision.*

**Phenotypic characteristics**

Available evidence on phenotypic impacts of VOCs and vaccine performance against VOCs are summarised in Table 3, as well as in previous editions of the WEU.

Since the last detailed update on 8 June, new evidence has been published on the phenotypic characteristics of the Delta variant. A study from Singapore showed that infection with Delta variant was associated with higher odds of oxygen requirement, intensive care unit (ICU) admission, or death [adjusted odds ratio (aOR) 4·90, 95% CI 1.43-30.78]. Additionally, the aOR for pneumonia was 1.88 times higher (95% CI 0·95-3·76) for those infected with Delta compared to infection with non-VOC SARS-CoV-2 lineages. Additionally, the Delta variant was associated with significantly lower PCR cycle threshold (Ct) values - the lower the Ct level the greater the amount of viral RNA in a sample. Findings from this study also showed that there was a longer duration of sustained low Ct values (≤30) in Delta (median duration of 18 days) compared to non-VOC lineages of SARS-CoV-2 (13 days).[87]

A study in Japan estimating the relative instantaneous reproductive number (a measure of transmission at a specific point in time) showed that the Delta variant was associated with greater transmissibility when compared to the Alpha variant. When compared with the variants circulating in Japan before December 2020, the relative instantaneous reproduction number for Alpha was estimated to be at 1.56 and for Delta 1.78. Overall, this study showed Delta was associated with 1.23 times higher transmissibility than Alpha.[88] This is consistent with the summary of Rt of Alpha, Beta, Gamma and Delta variants published by WHO in previous issues of the Weekly Epidemiological Update on COVID-19 and in Eurosurveillance this past week[89].

Findings from a recently published retrospective cohort analysis involving nearly 840 000 participants with laboratory confirmed SARS-CoV-2 in England between 23 November 2020 and 31 January 2021 suggested that the Alpha variant, as compared to non-VOC SARS CoV-2 lineages, was associated with an increased risk of hospitalization between one and fourteen days after the first positive SARS-CoV-2 test (adjusted hazard ratio of hospital admission 1.52, 95% CI 1.47 - 1.57). When looking at these results by age, they showed a higher risk of hospitalization among those aged ≥30 years as compared to younger participants.[90] Another study comparing the secondary attack rates in households among Alpha index cases versus non-VOC index cases in Ontario, Canada found that the secondary attack rate for Alpha index cases was 1.31 times (31%) higher than non-VOC index cases (RR=1.31, 95%CI 1.14-1.49). When these analyses were further grouped into Alpha and non-Alpha index cases, there was evidence to suggest increased transmission among both asymptomatic (RR=1.91, 95% CI 0.96-3.80) and pre-symptomatic (RR=3.41, 95%CI 1.13-10.26) index cases.[1]

A study conducted to examine diagnostic accuracy of three SARS-CoV-2 antigen detecting rapid tests (Ag-RDT) in Germany between 20 January to 15 April 2021 showed comparable sensitivities in the performance of Ag-RDTs for Alpha, Beta and wild-type variants, irrespective of the infecting variant.[91] This finding is consistent with a previously published evaluation by Public Health England which found no major changes in the diagnostic accuracy of six widely available Ag-RDTs for Alpha, despite a limited number of amino acid changes from the original viral sequence in the target antigen for most commercially available Ag-RDTs.[22]

A recent study using a transmission model based on clinical and epidemiological data from almost 1000 individuals from South Africa and Switzerland, estimated that the Alpha variant was associated with either

a 37% (95% compatibility interval, CI: 25–63%) increase in transmissibility or a 51% (95% CI: 32-80%) increase of the infectious duration or a combination of the two mechanisms. It was also estimated that the Beta variant was associated with a 23% (95% CI: 10-37%) increase in transmissibility or a 38% (95% CI: 15-78%) increase of the infectious duration. The authors concluded that Beta might be expected to outgrow Alpha in regions where the level of naturally acquired immunity against previously circulating variants exceeds 20% to 40%.[92] The study also measured viral load in 950 individuals and found that infections with variant Alpha exhibited a higher viral load and longer viral shedding compared to non-VOCs. Findings from another study showed that the receptor binding domain (RBD) of the Alpha and Beta variants bound ACE2 with 1.98- and 4.62 times greater affinity than non-VOCs, respectively. This enhanced affinity likely mediates increased infectivity by lowering the effective concentration of virions required for cell entry.[93]

In a rapid scoping review examining the impacts of VOCs on health systems, authors of a recently published study suggested that a combination of public health and social measures (e.g., masking, physical distancing, lockdowns, testing) should be implemented alongside a vaccine strategy to improve population and health system outcomes.[94]

**VOC impacts on vaccines**

Since the 8 June update, two studies have provided evidence of the effectiveness of Pfizer BioNTech-Comirnaty and AstraZeneca-Vaxzevria vaccines against the Delta variant. The first is a follow-up to a United Kingdom study published last month by Lopez Bernal et al., which reported on vaccine effectiveness (VE) of full courses of both Pfizer BioNTech-Comirnaty and AstraZeneca-Vaxzevria vaccines against symptomatic disease due to the Delta variant; VE against Delta, while slightly reduced, was maintained for both vaccines (88% for Pfizer BioNTech-Comirnaty and 67% for AstraZeneca-Vaxzevria).[41] In the follow-up study, Stowe et al. report on the effectiveness of these vaccines against severe disease (hospitalization) due to Delta among persons ≥ 16 years in the United Kingdom. The authors combined odds ratios for symptomatic COVID-19 disease from a test-negative case-control analysis with hazard ratios for hospitalization among symptomatic cases to estimate overall VE against hospitalization. VE estimates against hospitalization due to Delta and Alpha variants ≥ 14 days post second dose was estimated to be 96% (95% CI: 86-89%) and 95% (95% CI: 78-99%) respectively, for Pfizer BioNTech-Comirnaty and 92% (85% CI: 75-97%) and 86% (95% CI: 53-96%) respectively, for AstraZeneca-Vaxzevria. Single dose effectiveness against hospitalization ≥ 21 days after immunization remained high for Pfizer BioNTech-Comirnaty at 94% (95% CI: 46-99%) against Delta and 83% (95% CI: 62-93%) against Alpha. Effectiveness of one dose of AstraZeneca-Vaxzevria against hospitalization was similar for Delta and Alpha variants, but reduced relative to two doses at 71% (95% CI: 51-83%) and 76% (95% CI: 61-85%), respectively.[40]

A second study from Scotland by Sheikh et al. applied a test negative case-control design to a large COVID-19 surveillance platform and found that two doses of Pfizer BioNTech-Comirnaty were 83% (95% CI: 78-87) and 79% (95% CI: 75-82%) effective against symptomatic disease and infection due to Delta, respectively, ≥ 14 days after receipt of second dose in persons 15 years and older. These estimates were somewhat reduced compared to VE estimates against Alpha: 92% (95% CI: 88-94%) and 92% (90-93%) for symptomatic disease and infection, respectively. The study also showed reduced effectiveness of two doses of AstraZeneca-Vaxzevria against Delta compared to Alpha with VE estimates of 61% (95% CI: 51-70%) and 60% (95% CI: 53-66%) against symptomatic disease and infection ≥ 14 days after second dose,

respectively, compared to corresponding estimates of 81% (95% CI: 72-87%) and 73% (95% CI: 66-78%) against Alpha. Single dose effectiveness against Delta was similar to that of Alpha with low VE for both vaccines and for both symptomatic disease and infection ≥28 days after immunization with VE estimates ranging from 18% to 39%. In a separate cohort analysis, single dose effectiveness against hospitalization ≥28 days after immunization among SARS-CoV-2 positive individuals was estimated for Pfizer BioNTech-Comirnaty and AstraZeneca-Vaxzevria vaccines combined; VE was estimated to be 62% (95% CI: 42-76%) and 72% (95% CI: 57-82%) against Delta and Alpha, respectively, demonstrating lower protection against Delta compared to Alpha (though confidence intervals overlap, indicating no statistical significance).[42]

Together, these studies suggest moderately reduced VE at preventing symptomatic disease and infection due to the Delta variant as compared to Alpha. While the Scotland study suggests there could be reduced effectiveness of vaccines against hospitalization due to Delta as compared to Alpha, confidence levels overlap and VE for individual vaccines was not estimated. No such reduction in VE was observed for hospitalization in the United Kingdom study for either Pfizer BioNTech-Comirnaty or AstraZeneca-Vaxzevria vaccines. The studies also provide further evidence of the importance of two doses of both Pfizer BioNTech-Comirnaty and AstraZeneca-Vaxzevria in preventing hospitalization, symptomatic disease and infection due to both Delta and Alpha variants.

A third study by Skowronski et al. evaluated the effectiveness of a single dose of Pfizer BioNTech-Comirnaty or Moderna-mRNA-1273 against infection with SARS-CoV-2 Alpha and Gamma variants among older adults in Canada using a test-negative case-control design; 85% of participants had received Pfizer BioNTech-Comirnaty and 15% had received Moderna-mRNA-1273 vaccine. VE against Alpha and Gamma variants ≥21 days after the first dose were 67% (95% CI: 57-75%) and 61% (95% CI: 45-72%), respectively, compared to 72% (95% CI: 58-81) against non-VOC SARS-CoV-2 viruses.[39] While the VE point estimate against Gamma was somewhat lower compared to Alpha and non-VOCs, all confidence intervals were overlapping, indicating no statistical significance.

**Geographic distribution**

As surveillance activities to detect SARS-CoV-2 variants are strengthened at local and national levels, including by strategic genomic sequencing and sharing of sequences and supporting meta-data, the number of countries/areas/territories (hereafter countries) reporting VOCs has continued to increase (Figure 4, Annex 1). In the past two weeks, Alpha continued to be reported in new countries, including smaller island nations in the Americas and Southeast Asia Regions. Delta, now reported in 85 countries globally, continues to be reported in new countries across all WHO Regions, 11 of which were newly reported in the past two weeks. This distribution should be interpreted with due consideration of surveillance limitations, including differences in sequencing capacities and sampling strategies between countries.

**WHO recommendations**

Virus evolution continues to be expected, and the more SARS-CoV-2 circulates, the more opportunities it has to evolve. Reducing transmission through established and proven disease control methods such as those outlined in the COVID-19 Strategic Preparedness and Response Plan, as well as avoiding introductions into animal populations, are fundamental to and crucial aspects of the global strategy to reduce the occurrence of mutations that have negative public health implications. PHSM remain critical to curb the spread of SARS-CoV-2, including all variants that evolve.

Evidence from multiple countries with extensive transmission of VOCs has indicated that PHSM, including infection prevention and control (IPC) measures in health facilities, have been effective in reducing COVID-19 case incidence, which has led to a reduction in hospitalizations and deaths among COVID-19 patients. National and local authorities are encouraged to continue strengthening existing PHSM, IPC and disease control activities. Authorities are also encouraged to strengthen surveillance and sequencing capacities and apply a systematic approach to provide a representative indication of the extent of transmission of SARS-CoV-2 variants based on the local context, and to detect unusual events.

## Additional resources

- Tracking SARS-CoV-2 variants
- COVID-19 new variants: Knowledge gaps and research
- Genomic sequencing of SARS-CoV-2: a guide to implementation for maximum impact on public health
- Considerations for implementing and adjusting PHSM in the context of COVID-19
- COVID-19 Situation Reports from WHO Regional Offices and partners: AFRO, AMRO/PAHO, EMRO, EURO/ECDC, SEARO, WPRO

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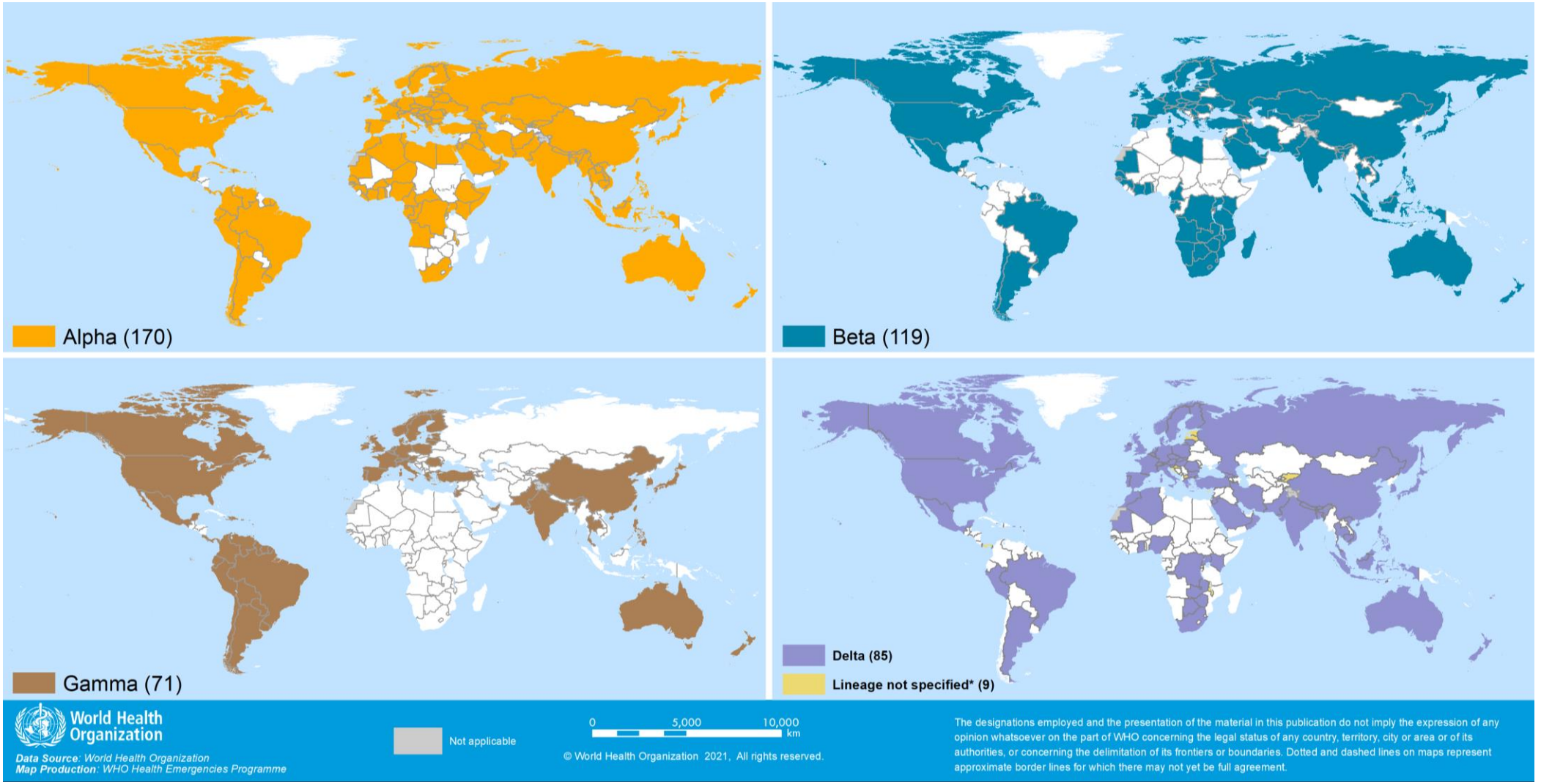
**Figure 4. Countries, territories and areas reporting variants Alpha, Beta, Gamma and Delta, as of 22 June 2021****




**Includes countries/territories/areas reporting the detection of B.1.617 without further specification of lineage at this time. These will be reallocated as further details become available.*
***Countries/territories/areas highlighted include both official and unofficial reports of VOC detections, and do not presently differentiate between detections among travellers (e.g., at Points of Entry) or local community cases. Please see Annex 2 for further details.*

## Special focus: Global Consultation on SARS-CoV-2 Variants of Concern and their Impact on Public Health Interventions

On 10 June 2021, WHO convened a second Global Consultation on SARS-CoV-2 Variants of Concern (VOCs) and their Impact on Public Health Interventions, as part of its efforts to coordinate the global response to SARS-CoV-2. Global stakeholders came together to present the existing evidence on VOCs, review information needs and decision-making processes, and outline potential decision-making processes for modifying COVID-19 vaccine composition.

According to experts, continued SARS-CoV-2 evolution is expected and requires strengthening epidemiological and genomic surveillance. In response, the WHO SARS-CoV-2 Virus Evolution Working Group (VEWG), which is in the process of being formalized as the Technical Advisory Group on SARS-CoV-2 Virus Evolution (TAG-VE), was established to monitor new mutations and variants, assess their potential public health impact, and rapidly identify and coordinate the filling of research gaps related to transmissibility, severity and neutralization of specific mutations and variants. Available evidence on variants are shared, discussed and used to characterize as VOCs or Variants of Interest (VOIs) by WHO in consultation with this group. The four current VOCs being monitored closely – Alpha, Beta, Gamma and Delta - are widespread (Table 2) and have been detection in all WHO regions. The Delta variant is significantly more transmissible than Alpha variant, and is expected to become a dominant lineage if current trends continue.[89]

In addition to increased transmissibility, SARS-CoV-2 evolution may result in changes that allow for increased disease severity, escape from immune responses, decreased effectiveness of antiviral treatment or infection in a new animal host. While current VOCs show antigenic distance from vaccine immunogens (the part of the virus gene that the vaccines targets), the current vaccines are still effective at protecting against severe disease and hospitalization. Experience from multiple countries with extensive transmission of the four VOCs has demonstrated that proven public health and social measures (PHSM), including infection prevention and control (IPC) measures in health facilities, remain effective in controlling VOCs and VOIs.

As several vaccines are in use and under development, coordinated decision-making on vaccine modification and administration is required. A newly-formed Technical Advisory Group on vaccine composition (TAG-CO-VAC) will review available evidence and provide recommendations on vaccine modifications if needed; specific considerations include appropriate antigen selection for broad protection, using broadly protective variant-specific vaccines in non-immune individuals, and balanced timing of booster vaccinations to ensure continued efficacy while avoiding extra vaccination if previous vaccination is still protective. Preliminary results from an ongoing systematic review of randomized studies suggest that current COVID-19 vaccines provide moderate protection against current VOCs, though the results should be interpreted with caution due to low-powered analyses with incomplete data. Pre-clinical and clinical assessments suggest that protection against SARS-CoV-2 variants can be expected among the diverse array of vaccines both currently available and in development. Moving forward, evidence for vaccine modification decision-making should include stronger epidemiological and genomic surveillance data, especially from low- and middle-income countries, information on breakthrough infections (infections of individuals who have been fully vaccinated for ≥14 days), and a better understanding of protective immunity at the individual and population levels in the context of circulating variants. Importantly, a clearing house documenting the most current evidence on variants would enable informed decision-making.

From the perspective of vaccine regulators and 11 vaccine developers that shared their plans during the consultation, there is ongoing work to assess the need to boost current vaccines. If/when this becomes necessary, it will be important that the regulatory community continues to work collaboratively. Moreover, whichever strategy is used (a booster dose of prototype vaccines or a variant-specific vaccine), should induce broad protection. Given the differential prevalence of variants, vaccine availability and vaccination rates, implementation of a 'mix and match' vaccination approach may be necessary. Country and global-level decision-makers echoed the call for better integrated genomic and epidemiological surveillance, including at the sub-national level, and the human resources to carry out the collection and rapid sharing of data and

analyses on variants. More complete evidence on variants and their impact on public health interventions is required for evidence-based recommendations, which could include modelling-based analyses. Additionally, the rapid sharing of data will support vaccine developers to develop new variant vaccines, if this becomes necessary.

In summary, this consultation provided a global forum to share the latest information and evidence regarding SARS-CoV-2 variants and their impact on public health interventions. The key messages from this consultation are:

- The public health interventions in place for COVID-19, including public health and social measures and vaccines, are still effective against the current VOCs (Alpha, Beta, Gamma and Delta variants);
- Variants will continue to emerge over time, and this is expected. While not all will be of concern, continuous monitoring and assessment is necessary. WHO's TAG-VE will continue to advise WHO on the characterization of VOIs and VOCs. Because more variants will likely emerge, there is also a critical need to continue assessing the available evidence on impacts on therapeutics, diagnostics and the impact on current and future COVID-19 vaccines. WHO is establishing the TAG-CO-VAC to interpret available evidence and provide recommendations for adapting COVID-19 vaccine composition, if needed;
- WHO remains committed to coordinating the response against SARS-CoV-2 variants by supporting its Member States and collaborating with stakeholders.

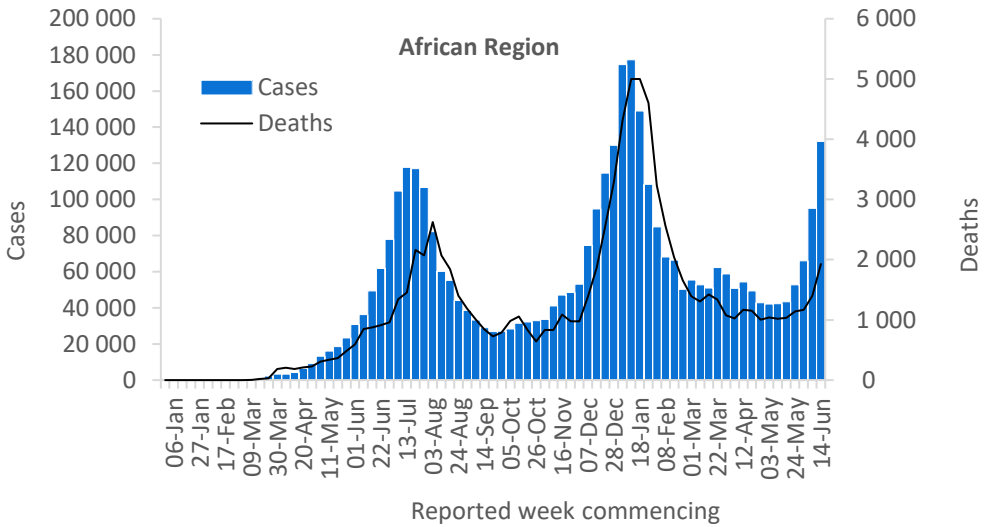
The recording from the consultation can be found here (passcode: m#t9b!Tl).

# WHO regional overviews - Epidemiological week 14-20 June 2021

## African Region

The African Region reported over 132 000 new cases and over 1900 new deaths, a 39% and a 38% increase respectively compared to the previous week, the highest percentage increase reported globally. The region reported a marked increase in weekly case incidence for the past month, with the largest increases in countries in the Southern and Eastern parts of Africa. The highest numbers of new cases were reported from South Africa (70 739 new cases; 119.3 new cases per 100 000 population; a 48% increase), Zambia (16 641 new cases; 90.5 new cases per 100 000; a 54% increase), and Uganda (9926 new cases; 21.7 new cases per 100 000; a 16% increase).

The highest numbers of new deaths were reported from South Africa (937 new deaths; 1.6 new deaths per 100 000 population; a 29% increase), Zambia (230 new deaths; 1.3 new deaths per 100 000; a 271% increase), and Uganda (203 new deaths; 0.4 new deaths per 100 000; a 314% increase).

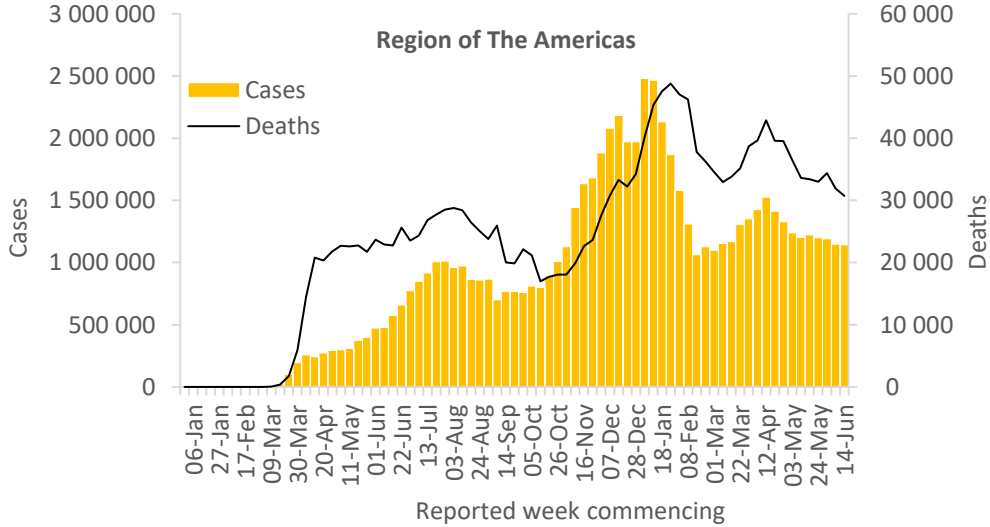



Updates from African Region

## Region of the Americas

The Region of the Americas reported over 1.1 million new cases and over 30 000 new deaths, a similar number of cases and a 4% decrease in deaths compared to the previous week. Despite this, high levels of transmission and mortality are still being recorded in many countries in South and Central America as well as in the Caribbean. The highest numbers of new cases were reported from Brazil (505 344 new cases; 237.7 new cases per 100 000; an 11% increase), Colombia (193 907 new cases; 381.1 new cases per 100 000; a 10% increase), and Argentina (149 673 new cases; 331.2 new cases per 100 000; a 16% decrease).

The highest numbers of new deaths were reported from Brazil (14 264 new deaths; 6.7 new deaths per 100 000; a 7% increase), Colombia (4131 new deaths; 8.1 new deaths per 100 000; an 11% increase), and Argentina (3619 new deaths; 8.0 new deaths per 100 000; a 14% decrease).

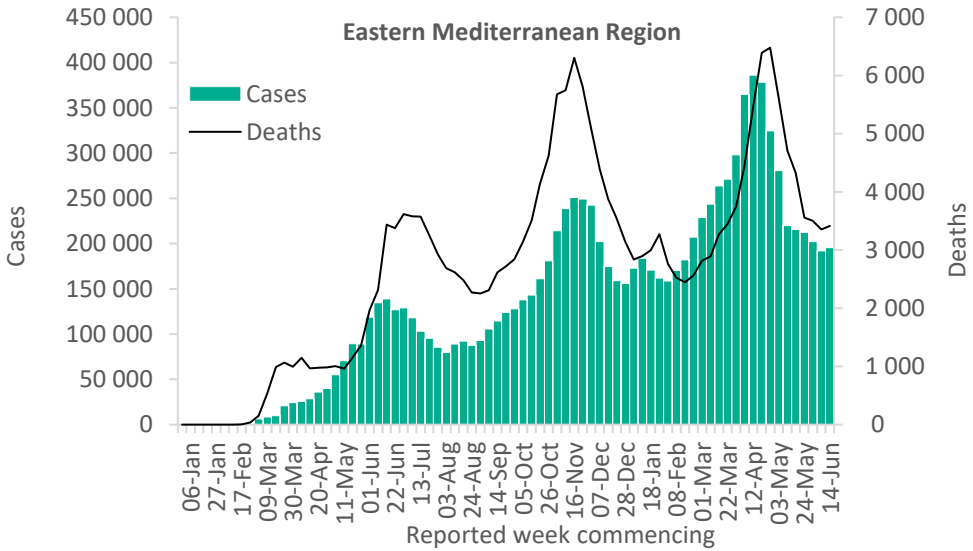



Updates from Region of the Americas

## Eastern Mediterranean Region

Following two months of decline in the weekly case incidence, the Eastern Mediterranean Region reported over 195 000 new cases and over 3400 new deaths, similar numbers as compared to the previous week. Nearly half of countries across the region are starting to report increasing case and death incidence, including Afghanistan, Kuwait, Somalia and Syrian Arab Republic. The highest numbers of new cases were reported from the Islamic Republic of Iran (66 452 new cases; 79.1 new cases per 100 000; an 11% increase), Iraq (32 614 new cases; 81.1 new cases per 100 000; a 12% increase), and the United Arab Emirates (14 162 new cases; 143.2 new cases per 100 000; a 4% decrease).

The highest numbers of new deaths were reported from the Islamic Republic of Iran (943 new deaths; 1.1 new deaths per 100 000; a 3% decrease), Afghanistan (595 new deaths; 1.5 new deaths per 100 000; a 56% increase), and Tunisia (524 new deaths; 4.4 new deaths per 100 000; a 7% increase).

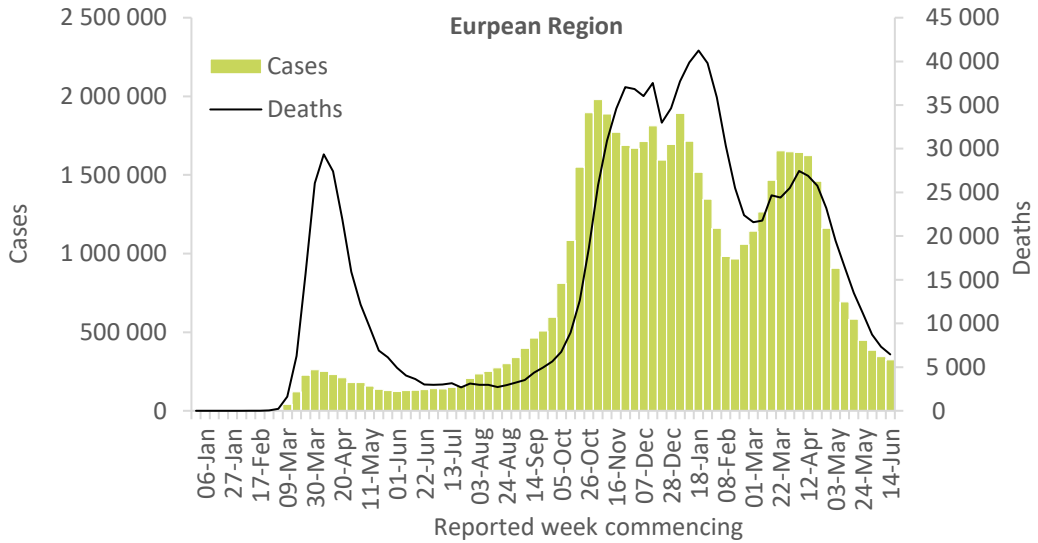



Updates from Eastern Mediterranean Region

## European Region

The European Region reported over 324 000 new cases and over 6400 new deaths, a 6% and a 12% decrease respectively compared to the previous week. While most countries across the Region continue to see decreasing or stabilizing trends, some countries, including Greenland, Israel, Kyrgyzstan, Portugal, the Russian Federation and Slovakia have reported increases in the number of cases and deaths this week compared to the previous week. The highest numbers of new cases were reported from the Russian Federation (108 139 new cases; 74.1 new cases per 100 000; a 31% increase), the United Kingdom (62 474 new cases; 92.0 new cases per 100 000; a 33% increase), and Turkey (39 773 new cases; 47.2 new cases per 100 000; a 7% decrease).

The highest numbers of new deaths were reported from Russian Federation (2931 new deaths; 2.0 new deaths per 100 000; an 11% increase), Germany (551 new deaths; 0.7 new deaths per 100 000; a 10% decrease), and Turkey (454 new deaths; 0.5 new deaths per 100 000; a 24% decrease).



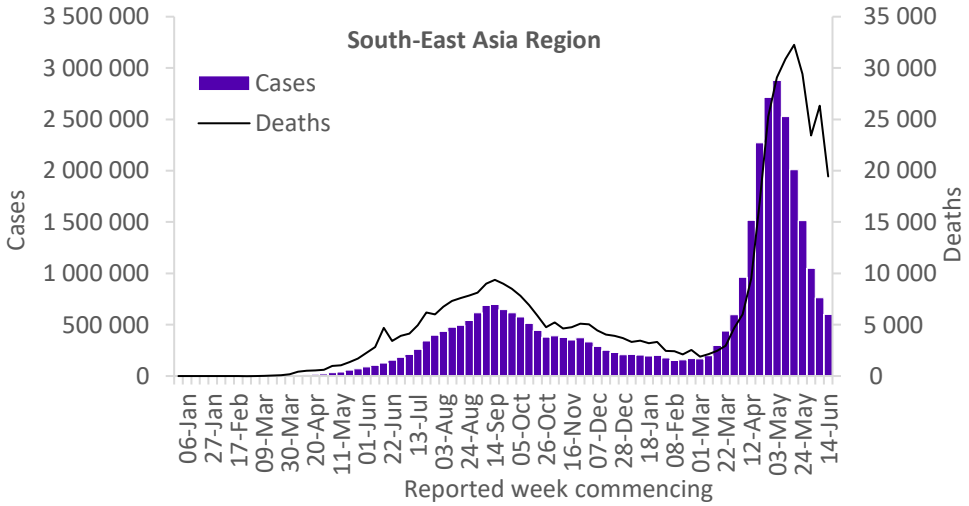

Updates from European Region

## South-East Asia Region

The South-East Asia Region reported over 600 000 new cases and over 19 000 new deaths, a 21% and a 26% decrease respectively compared to the previous week. Decreasing trends in weekly case and death incidence in the Region are predominantly associated with decreases reported in India. Other countries, including Myanmar, Bangladesh and Indonesia, reported increasing case and death incidence this week when compared to the previous week.

The highest numbers of new cases were reported from India (441 976 new cases; 32.0 new cases per 100 000; a 30% decrease), Indonesia (78 551 new cases; 28.7 new cases per 100 000; a 42% increase), and Bangladesh (24 746 new cases; 15.0 new cases per 100 000; a 55% increase).

The highest numbers of new deaths were reported from India (16 329 new deaths; 1.2 new deaths per 100 000; a 31% decrease), Indonesia (1783 new deaths; 0.7 new deaths per 100 000; a 41% increase), and Bangladesh (430 new deaths; 0.3 new deaths per 100 000; a 54% increase).



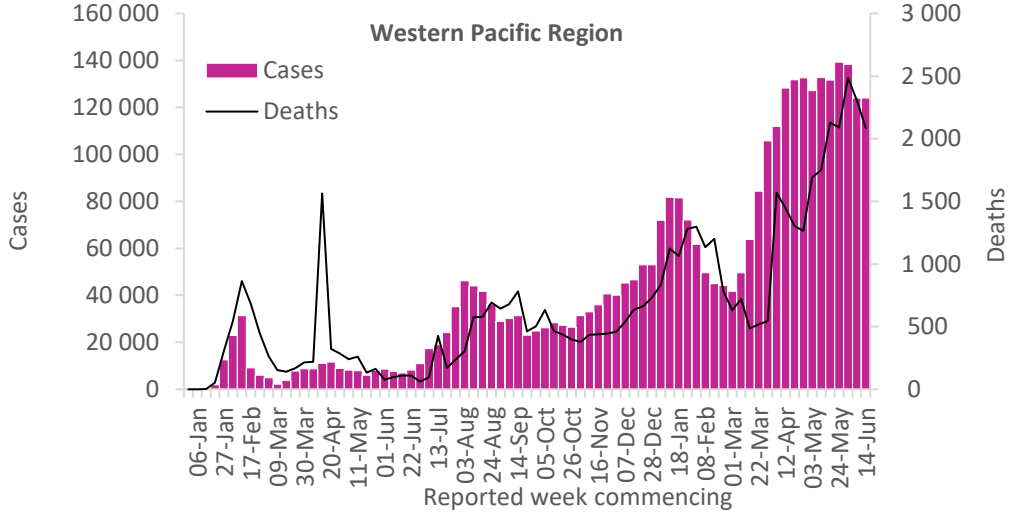

Updates from South-East Asia Region

## Western Pacific Region

The Western Pacific Region reported just under 124 000 new cases, a similar number to the previous week, and just over 2000 new deaths, a 9% increase compared to the previous week. While the Region reported a decreasing trend in the last couple of weeks, some countries, including Fiji, Mongolia and Singapore recorded increases in the numbers of cases this week compared to the previous week.

The highest numbers of new cases were reported from the Philippines (44 875 new cases; 41.0 new cases per 100 000; a 3% decrease), Malaysia (38 911 new cases; 120.2 new cases per 100 000; a 7% decrease), and Mongolia (17 255 new cases; 526.3 new cases per 100 000; a 74% increase).

The highest numbers of new deaths were reported from the Philippines (886 new deaths; 0.8 new deaths per 100 000; a 4% decrease), Malaysia (504 new deaths; 1.6 new deaths per 100 000; a 9% decrease), and Japan (367 new deaths; 0.3 new deaths per 100 000; a 28% decrease).




Updates from Western Pacific Region

# Key weekly updates

**WHO Director-General's key messages**

- In his opening remarks at the media briefing on COVID-19 – 21 June 2021, the Director-General highlighted how the COVID-19 pandemic has shown that relying on a few companies to supply global public goods is limiting, and dangerous. To boost manufacturing, WHO has continued to call for the sharing of know-how, technology and licenses, and the waiving of intellectual property rights.
- He announced that WHO is in discussions with a consortium of companies and institutions to establish a technology transfer hub in South Africa for COVID-19 mRNA vaccines. Tech-transfer hubs are training facilities where manufacturers from low- and lower-middle income countries can receive training in how to produce certain vaccines, and the relevant licenses to do so.
- In his opening remarks at World Local Production Forum: Enhancing access to medicines and other health technologies - 21 June 2021, the Director-General emphasized that WHO is fully committed to supporting a landmark resolution, which was adopted by the World Health Assembly just a few weeks ago and co-sponsored by over 100 countries, on strengthening local production of medicines and other health technologies to improve access – specifically to strengthen production capacity where it exists, and to build it where it is lacking.

**Updates and publications**

- Considerations for implementing and adjusting public health and social measures in the context of COVID-19 – 14 June 2021
- Interim recommendations for use of the Moderna mRNA-1273 vaccine against COVID-19 – Interim guidance – 15 June 2021 (update)
- Interim recommendations for the use of the Janssen Ad26.COV2.S (COVID-19) vaccine – Interim guidance – 15 June 2021 (update)
- Interim recommendations for use of the Pfizer–BioNTech COVID-19 vaccine, BNT162b2, under Emergency Use Listing – Interim guidance – 15 June 2021 (update)
- IPA-UNICEF Scientific Brief: Do no harm – Maternal, Newborn and Infant Care during COVID-19
- A family toolbox for managing health and happiness during COVID-19
- Managing family risk: A facilitator's toolbox for empowering families to manage risks during COVID-19
- Hypertension and COVID-19
- WHO carries on supporting the COVID-19 response in countries around the world
- Preparing and responding to COVID-19 surges: Communication and engagement resources

# Annex

COVID-19 confirmed cases and deaths reported in the last seven days by countries, territories and areas, and WHO Region (reported in previous issues) are now available at: https://covid19.who.int/table

## Annex 1. List of countries/territories/areas reporting Variants of Concern as of 22 June 2021**

| Country/Territory/Area | Alpha | Beta | Gamma | Delta | Delta+ |
|---|---|---|---|---|---|
| Afghanistan | ● | - | - | - | - |
| Albania | ● | - | - | - | - |
| Algeria | ● | - | - | ● | - |
| Angola | ● | ● | - | - | - |
| Argentina | ● | ● | ● | ●* | - |
| Armenia | ○ | - | - | - | - |
| Aruba | ● | ● | ● | ● | - |
| Australia | ● | ● | ● | ● | - |
| Austria | ● | ● | ● | ● | - |
| Azerbaijan | ● | - | - | - | - |
| Bahrain | ● | ● | - | ● | - |
| Bangladesh | ● | ● | - | ● | - |
| Barbados | ● | - | ●* | ●* | - |
| Belarus | ● | - | - | - | - |
| Belgium | ● | ● | ● | ● | - |
| Belize | ● | - | - | - | - |
| Bermuda | ●* | ●* | - | - | - |
| Bhutan | ●* | ●* | - | ●* | - |
| Bolivia (Plurinational State of) | ● | - | ● | - | - |
| Bonaire | ● | - | - | - | - |
| Bosnia and Herzegovina | ○ | - | - | - | - |
| Botswana | - | ● | - | ● | - |
| Brazil | ● | ● | ● | ● | - |
| British Virgin Islands | ● | - | ● | - | - |
| Brunei Darussalam | ● | ● | - | - | - |
| Bulgaria | ● | - | - | ● | - |
| Burkina Faso | ● | - | - | - | - |
| Cabo Verde | ● | - | - | - | - |
| Cambodia | ● | - | - | ● | - |
| Cameroon | ● | ● | - | - | - |
| Canada | ● | ● | ● | ● | - |
| Cayman Islands | ● | - | - | - | - |
| Central African Republic | ● | - | - | - | - |
| Chile | ● | ● | ● | - | - |
| China | ● | ● | ● | ○ | - |
| Colombia | ● | - | ● | - | - |
| Comoros | ● | ● | - | - | - |
| Congo | ● | - | - | - | - |
| Costa Rica | ● | ● | ● | - | - |
| Croatia | ● | ● | - | - | ○ |
| Cuba | ● | ● | - | - | - |
| Curaçao | ● | - | ● | - | ● |
| Cyprus | ● | ● | - | - | ● |
| Czechia | ● | ● | - | ● | - |
| Côte d'Ivoire | ● | ● | - | - | - |
| Democratic Republic of the Congo | ● | ● | - | ● | - |
| Denmark | ● | ● | ● | ● | - |
| Djibouti | ●* | ●* | - | - | - |
| Dominica | ● | - | - | - | - |
| Dominican Republic | ● | - | ● | - | - |
| Ecuador | ● | - | ● | - | - |
| Egypt | ● | - | - | - | - |
| Equatorial Guinea | ● | ● | - | - | - |
| Estonia | ● | ● | ○ | - | ○ |
| Eswatini | - | ● | - | - | - |
| Ethiopia | ○ | - | - | - | - |
| Faroe Islands | ● | - | ● | - | - |
| Fiji | - | - | - | ● | - |
| Finland | ● | ● | ● | ● | - |
| France | ● | ● | ● | ● | - |
| French Guiana | ● | ● | ● | - | - |
| French Polynesia | ● | ●* | ● | ●* | - |
| Gabon | ● | ○ | - | - | - |
| Gambia | ● | - | - | ● | - |
| Georgia | ● | ○ | - | ● | - |
| Germany | ● | ● | ● | ● | - |
| Ghana | ● | ● | - | ● | - |
| Gibraltar | ● | - | - | - | - |
| Greece | ● | ● | ● | ● | - |
| Grenada | ● | - | - | - | - |
| Guadeloupe | ● | ● | ● | ●* | - |
| Guam | ● | - | ●* | ● | - |
| Guatemala | ●* | - | - | - | - |
| Guinea | ● | ● | - | - | - |

| Country/Territory/Area | Alpha | Beta | Gamma | Delta | Delta+ |
|---|---|---|---|---|---|
| Guinea-Bissau | ● | ● | - | - | - |
| Guyana | - | - | ● | - | - |
| Haiti | ● | - | ● | - | - |
| Hungary | ● | ○ | - | ○* | - |
| Iceland | ● | - | - | - | - |
| India | ● | ● | ● | ● | - |
| Indonesia | ● | ● | - | ● | - |
| Iran (Islamic Republic of) | ● | ● | - | ● | - |
| Iraq | ● | ● | - | - | - |
| Ireland | ● | ● | ● | ● | - |
| Israel | ● | ● | ● | ● | - |
| Italy | ● | ● | ● | ● | - |
| Jamaica | ● | - | - | - | - |
| Japan | ● | ● | ● | ● | - |
| Jordan | ● | ● | ● | ● | - |
| Kazakhstan | ○ | ○ | - | - | - |
| Kenya | ● | ● | - | ● | - |
| Kosovo[1] | ● | ○ | - | - | - |
| Kuwait | ● | - | - | ● | - |
| Kyrgyzstan | ● | ● | - | - | ● |
| Lao People's Democratic Republic | ● | - | - | - | - |
| Latvia | ● | ● | ● | - | ○ |
| Lebanon | ● | - | - | - | - |
| Lesotho | - | ● | - | - | - |
| Liberia | ● | - | - | - | - |
| Libya | ● | ● | - | - | - |
| Liechtenstein | ● | - | - | - | - |
| Lithuania | ● | ● | ● | ○* | - |
| Luxembourg | ● | ● | ● | ● | - |
| Madagascar | - | ● | - | - | - |
| Malawi | ● | ● | - | - | ● |

| Country/Territory/Area | Alpha | Beta | Gamma | Delta | Delta+ |
|---|---|---|---|---|---|
| Malaysia | ● | ● | - | ● | - |
| Maldives | ● | - | - | ● | - |
| Malta | ● | ○ | ● | ○ | - |
| Martinique | ● | ● | ● | - | - |
| Mauritania | ● | ● | - | ● | - |
| Mauritius | ○ | ● | - | - | - |
| Mayotte | ● | ● | - | - | - |
| Mexico | ● | ● | ● | ● | - |
| Monaco | ● | ○ | - | - | - |
| Montenegro | ● | - | - | - | - |
| Montserrat | ●* | - | - | - | - |
| Morocco | ● | - | - | ● | - |
| Mozambique | - | ● | - | - | - |
| Myanmar | ●* | - | - | - | - |
| Namibia | - | ● | - | - | - |
| Nepal | ● | - | - | ● | - |
| Netherlands | ● | ● | ● | ● | - |
| New Caledonia | ● | - | - | - | - |
| New Zealand | ● | ● | ○ | ○ | - |
| Niger | ● | - | - | - | - |
| Nigeria | ● | - | - | ● | - |
| North Macedonia | ● | ● | - | - | ● |
| Norway | ● | ● | ● | ● | - |
| Occupied Palestinian Territory | ● | ● | - | - | - |
| Oman | ● | - | - | ○ | - |
| Pakistan | ● | ● | ● | ● | - |
| Panama | ● | ● | ● | - | ● |
| Paraguay | - | - | ● | - | - |
| Peru | ● | - | ● | ● | - |
| Philippines | ● | ● | ● | ● | - |
| Poland | ● | ○ | ● | ● | - |
| Portugal | ● | ● | ● | ○ | - |

| Country/Territory/Area | Alpha | Beta | Gamma | Delta | Delta+ |
|---|---|---|---|---|---|
| Puerto Rico | ● | ● | ● | ● | - |
| Qatar | ● | ● | - | ● | - |
| Republic of Korea | ● | ● | ● | ● | - |
| Republic of Moldova | ○ | - | - | - | - |
| Romania | ● | ● | ● | ● | - |
| Russian Federation | ● | ● | - | ● | - |
| Rwanda | ● | ○ | - | - | - |
| Réunion | ● | ● | ● | ○ | - |
| Saba | - | - | - | ● | - |
| Saint Barthélemy | ● | - | - | - | - |
| Saint Lucia | ● | - | - | - | - |
| Saint Martin | ● | ● | - | - | - |
| Sao Tome and Principe | ● | - | - | - | - |
| Saudi Arabia | ● | ● | - | ● | - |
| Senegal | ● | ● | - | - | - |
| Serbia | ● | - | - | - | - |
| Seychelles | - | ● | - | - | - |
| Singapore | ● | ● | ● | ● | - |
| Sint Maarten | ● | ● | - | ● | - |
| Slovakia | ● | ● | - | ● | - |
| Slovenia | ● | ● | ● | ● | - |
| Somalia | ●* | - | - | - | - |
| South Africa | ● | ● | - | ● | - |
| Spain | ● | ● | ● | ● | - |
| Sri Lanka | ● | ● | - | ● | - |
| Suriname | ● | ● | ● | - | - |
| Sweden | ● | ● | ● | ● | - |
| Switzerland | ● | ● | ○ | ● | - |
| Thailand | ● | ● | ● | ● | - |
| Timor-Leste | ● | - | - | - | - |
| Togo | ● | ● | - | - | - |
| Trinidad and Tobago | ● | - | ● | - | - |

| Country/Territory/Area | Alpha | Beta | Gamma | Delta | Delta+ |
|---|---|---|---|---|---|
| Tunisia | ● | ● | - | - | - |
| Turkey | ● | ● | ● | ● | - |
| Turks and Caicos Islands | ● | - | ●* | - | - |
| Uganda | ● | ● | - | ● | - |
| Ukraine | ● | ○ | - | - | - |
| United Arab Emirates | ● | ● | ● | - | - |

| Country/Territory/Area | Alpha | Beta | Gamma | Delta | Delta+ |
|---|---|---|---|---|---|
| United Kingdom | ● | ● | ● | ● | - |
| United Republic of Tanzania | - | ● | - | - | - |
| United States of America | ● | ● | ● | ● | - |
| Uruguay | ● | - | ● | - | - |
| Uzbekistan | ● | ● | - | - | - |

| Country/Territory/Area | Alpha | Beta | Gamma | Delta | Delta+ |
|---|---|---|---|---|---|
| Venezuela (Bolivarian Republic of) | ● | - | ● | - | - |
| Viet Nam | ● | ● | - | ● | - |
| Wallis and Futuna | ● | - | - | - | - |
| Zambia | - | ● | - | ● | - |
| Zimbabwe | - | ○ | - | ● | - |

**Newly reported in this update.*
*"Delta+" reflects countries/territories/areas reporting detection of B.1.617 without further specification of lineage at this time. These will be reallocated as further details become available.*
*"●" indicates that information for this variant was received by WHO from official sources.*
*"○" indicates that information for this variant was received by WHO from unofficial sources and will be reviewed as more information become available.*
***Variant Alpha for Comoros and Delta for Afghanistan were excluded this week based on further information received.*
****Includes countries/territories/areas reporting the detection of VOCs among travelers (e.g., imported cases detected at points of entry), or local cases (detected in the community). Efforts are ongoing to differentiate these in future reports. Excludes countries, territories, and areas that have never reported the detection of a variant of concern.*
*See also Annex 2: Data, table and figure notes.*

## Annex 2. Data, table and figure notes

Data presented are based on official laboratory-confirmed COVID-19 case and deaths reported to WHO by country/territories/areas, largely based upon WHO case definitions and surveillance guidance. While steps are taken to ensure accuracy and reliability, all data are subject to continuous verification and change, and caution must be taken when interpreting these data as several factors influence the counts presented, with variable underestimation of true case and death incidence, and variable delays to reflecting these data at global level. Case detection, inclusion criteria, testing strategies, reporting practices, and data cut-off and lag times differ between countries/territories/areas. A small number of countries/territories/areas report combined probable and laboratory-confirmed cases. Differences are to be expected between information products published by WHO, national public health authorities, and other sources. Due to public health authorities conducting data reconciliation exercises which remove large numbers of cases or deaths from their total counts, negative numbers may be displayed in the new cases/deaths columns as appropriate. When additional details become available that allow the subtractions to be suitably apportioned to previous days, graphics will be updated accordingly.

A record of historic data adjustment made is available upon request by emailing epi-data-support@who.int. Please specify the country(ies) of interest, time period(s), and purpose of the request/intended usage. Prior situation reports will not be edited; see covid19.who.int for the most up-to-date data.

The designations employed, and the presentation of these materials do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement. Countries, territories and areas are arranged under the administering WHO region. The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

[1] All references to Kosovo should be understood to be in the context of the United Nations Security Council resolution 1244 (1999). In the map, number of cases of Serbia and Kosovo (UNSCR 1244, 1999) have been aggregated for visualization purposes.

### Technical guidance and other resources

- WHO technical guidance
- WHO COVID-19 Dashboard
- WHO Weekly Operational Updates on COVID-19
- WHO COVID-19 case definitions
- COVID-19 Supply Chain Inter-Agency Coordination Cell Weekly Situational Update
- Research and Development
- OpenWHO courses on COVID-19 in official UN languages and in additional national languages
- WHO Academy COVID-19 mobile learning app
- The Strategic Preparedness and Response Plan (SPRP) outlining the support the international community can provide to all countries to prepare and respond to the virus
- Recommendations and advice for the public:
  - Protect yourself
  - Questions and answers
  - Travel advice
- EPI-WIN: tailored information for individuals, organizations and communities