COVID-19 Weekly Epidemiological Update

Edition 62, published 19 October 2021

In this edition:

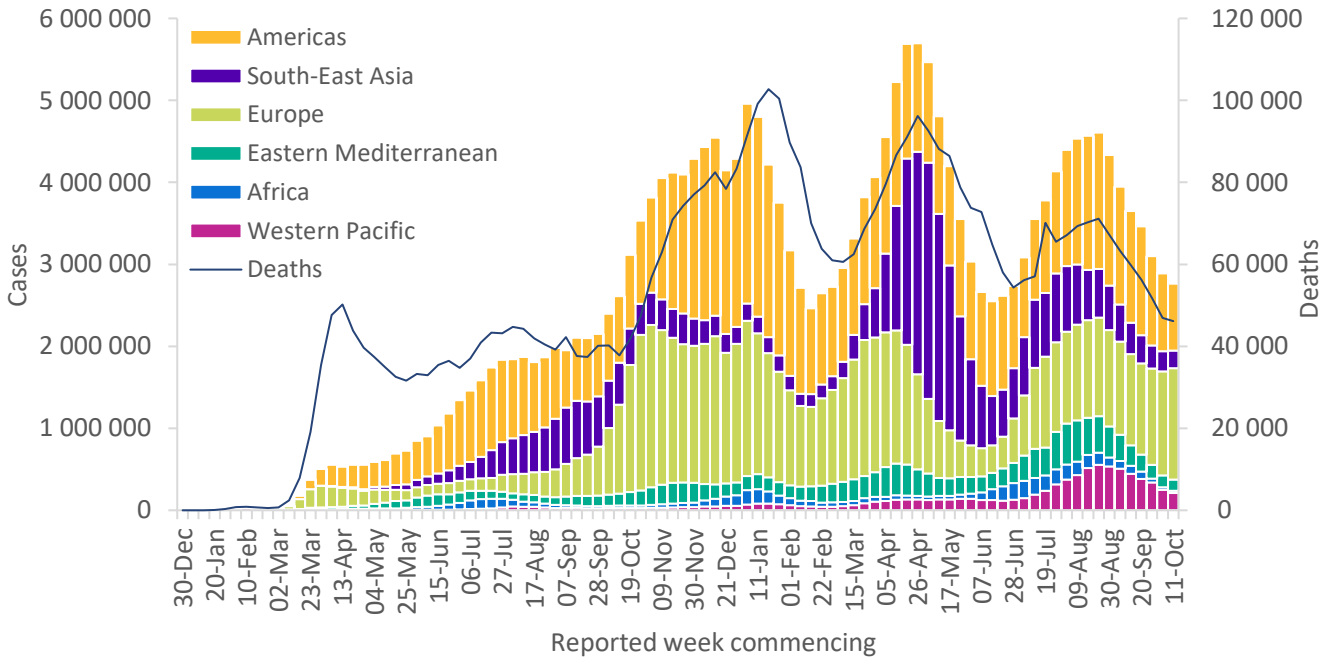
Global overview

Data as of 17 October 2021

With just over 2.7 million new cases and over 46 000 new deaths reported during the week of 11 to 17 October 2021, the global number of new cases and deaths remained similar to that of the previous week (Figure 1). Apart from the European Region, which reported a 7% increase in the number of new weekly cases when as compared to the previous week, all the other regions reported declines in new weekly cases (Table 1). The largest decrease in new weekly cases was reported from the African Region (18%), followed by the Western Pacific Region (16%). The cumulative number of confirmed cases reported globally is now over 240 million and the cumulative number of deaths is just under 4.9 million.

The African Region also reported the largest decline in weekly deaths (25%) followed by the South-East Asia and Eastern Mediterranean Regions with 19% and 8% declines, respectively. All other regions reported new deaths in numbers similar to those of the previous week.

Figure 1. COVID-19 cases reported weekly by WHO Region, and global deaths, as of 17 October 2021**



**See *Annex 3: Data, table and figure notes*

The regions reporting the highest weekly case incidence rates per 100 000 population were the European Region (145.6 new cases per 100 000 population) and the Region of the Americas (79.9 new cases per 100 000 population); the same two regions reported the highest weekly incidence in deaths, of 1.9 and 1.8 per 100 000 population, respectively.

The highest numbers of new cases were reported from the United States of America (582 707 new cases; 11% decrease), the United Kingdom (283 756 new cases; 14% increase), the Russian Federation (217 322 new cases; 15% increase), Turkey (213 981 new cases; similar to the number reported in the previous week) and India (114 244 new cases; 18% decrease).

Globally, three additional countries, territories or areas (hereafter countries) reported cases with VOCs in the past week. As of 19 October, cases of Alpha variant have been reported from 196 countries (one new country added), Beta variant from 145 countries (no new country added), Gamma variant from 99 countries, and Delta variant from 193 countries (two new countries added) across all six WHO regions.

Table 1. Newly reported and cumulative COVID-19 cases and deaths, by WHO Region, as of 17 October 2021**

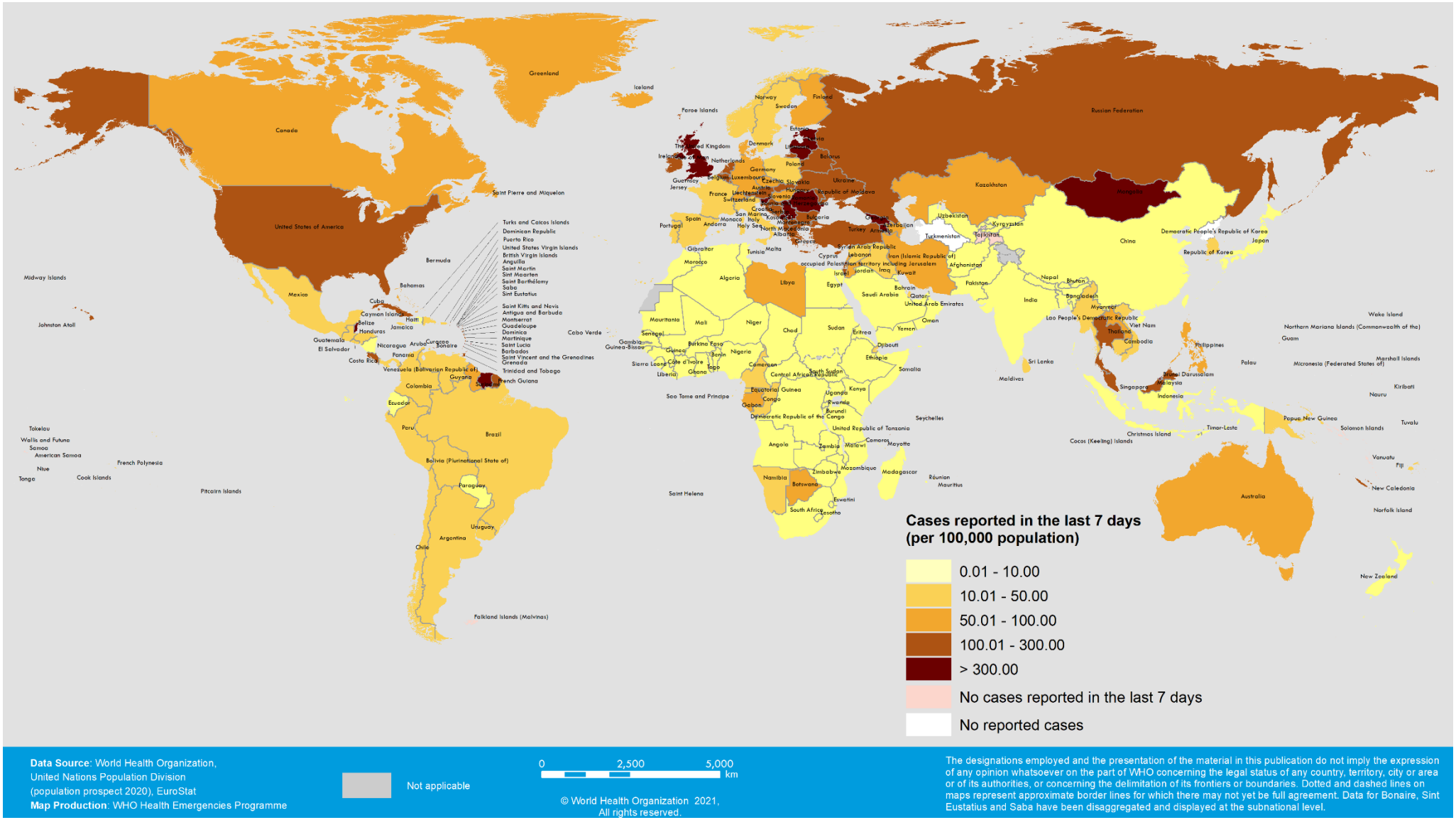
WHO Region	New cases in last 7 days (%)	Change in new cases in last 7 days *	Cumulative cases (%)	New deaths in last 7 days (%)	Change in new deaths in last 7 days *	Cumulative deaths (%)
Africa	27 606 (1%)	-18%	6 109 365 (3%)	940 (2%)	-25%	149 041 (3%)
Americas	816 860 (30%)	-14%	92 142 897 (38%)	18 322 (40%)	-1%	2 260 259 (46%)
Eastern Mediterranean	136 074 (5%)	-6%	16 106 313 (7%)	2 769 (6%)	-8%	296 337 (6%)
Europe	1 358 284 (49%)	7%	73 226 218 (30%)	17 998 (39%)	4%	1 378 412 (28%)
South-East Asia	214 984 (8%)	-13%	43 584 700 (18%)	2 933 (6%)	-19%	684 604 (14%)
Western Pacific	210 149 (8%)	-16%	9 068 961 (4%)	3 178 (7%)	1%	124 024 (3%)
Global	**2 763 957 (100%)**	**-4%**	**240 239 218 (100%)**	**46 140 (100%)**	**-2%**	**4 892 690 (100%)**

**Percent change in the number of newly confirmed cases/deaths in past seven days, compared to seven days prior*
***See Annex 3: Data, table and figure notes*

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

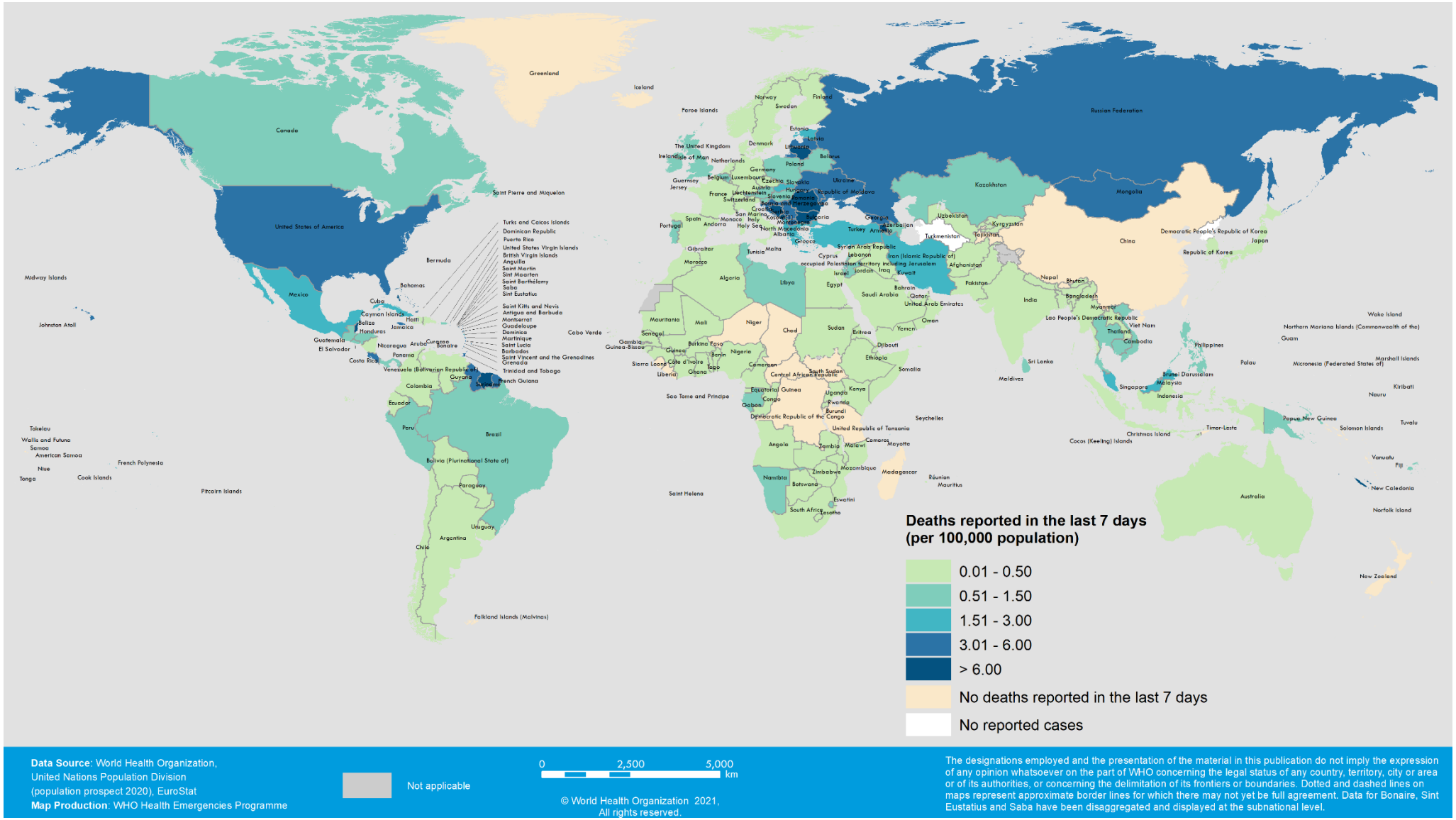
- WHO COVID-19 Dashboard
- WHO COVID-19 Weekly Operational Update and previous editions of the Weekly Epidemiological Update

Figure 2. COVID-19 cases per 100 000 population reported by countries, territories and areas, 11-17 October 2021**



**See *Annex 3: Data, table and figure notes*

Figure 3. COVID-19 deaths per 100 000 population reported by countries, territories and areas, 11-17 October 2021**



**See *Annex 3: 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 effectiveness of vaccines, therapeutics, diagnostics or public health and social measures (PHSM) applied by national authorities to control disease spread. "Signals" of potential Variants of Concern (VOCs) or Variants of Interest (VOIs) are detected and assessed based on the risk posed to global public health. As evidence becomes available, classification for VOIs or VOCs will be revised to reflect the continuous evolution of circulating variants and their changing epidemiology. Criteria for variant classification and the current lists of VOCs, VOIs and other Variants Under Monitoring (VUMs) are available on the WHO Tracking SARS-Cov-2 variants website. National authorities may choose to designate other variants of local interest/concern and are encouraged to investigate and report on impacts of these variants.

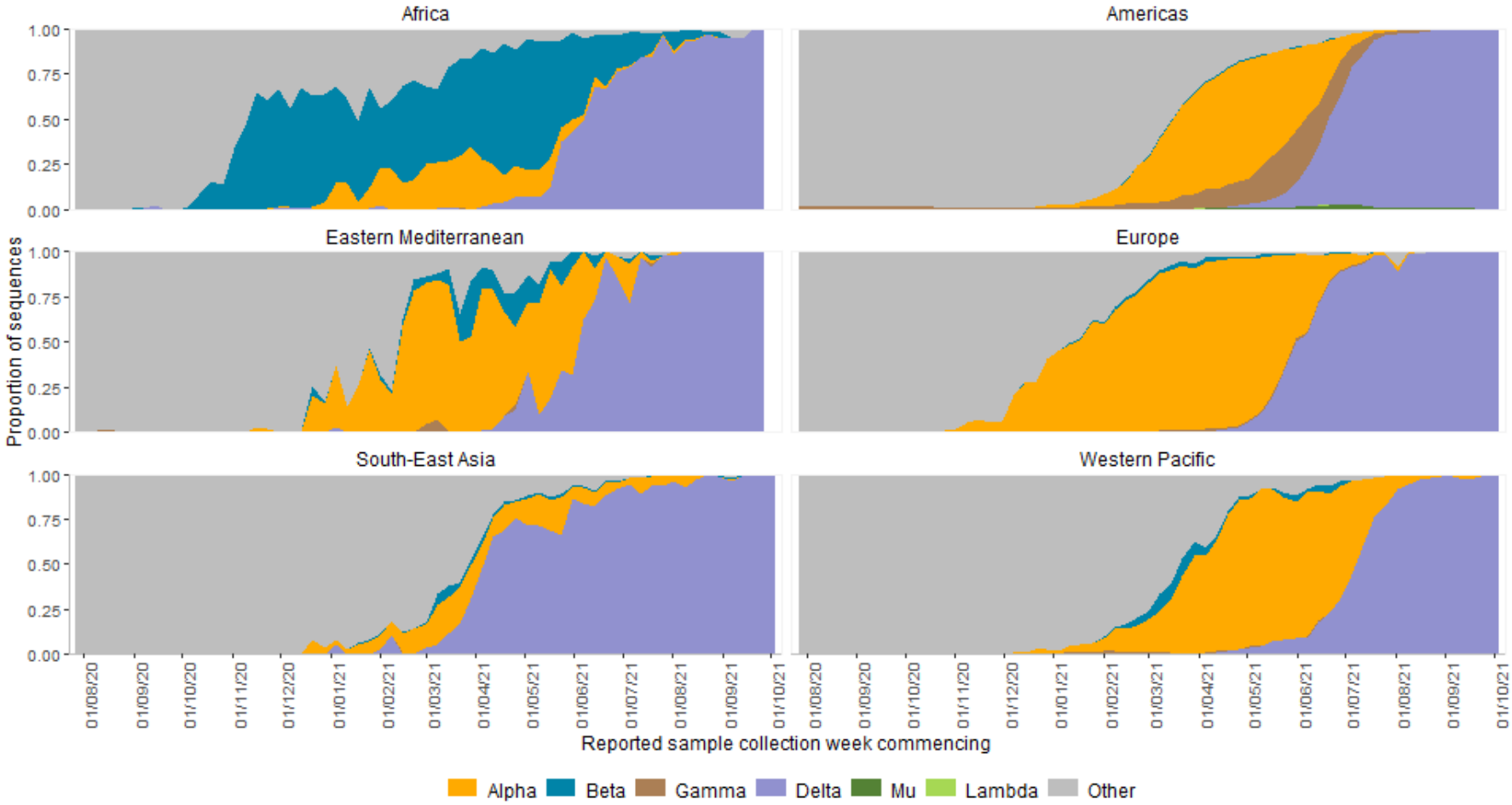
Geographic spread and prevalence of VOCs

The current global genetic epidemiology is characterized by a predominance of Delta variant, with declining prevalence of other variants among SARS-CoV-2 sequences submitted to publicly available datasets (Figure 4). Given its higher transmissibility, Delta has outcompeted other variants, including other VOCs, in many countries. Important sub-regional and country-level variation, nevertheless, continues to be observed; most notably within some South American countries, where the progression of the Delta variant has been more gradual than that observed in other regions, and other variants (e.g. Gamma, Mu) still contribute a large proportion of sequences samples.

To better reflect recent changes and the current geographic distribution of VOCs at a global level, we present here a revised set of global maps overlaying recent estimates of VOC prevalence, with data previously presented on detection of VOC reported officially or unofficially to WHO (Figure 5). Country-specific prevalence estimates were calculated as a proportion of total SARS-CoV-2 sequences uploaded to GISAID with a specimen collection date within the past 60 days, summarised into three groups to illustrate locations where the prevalence of VOCs is currently: dominant (>50% prevalence), moderate (11-50% prevalence) or low (≤10%). To ensure robustness of estimates, proportion estimates were limited to countries with 100 or more sequences uploaded during the reporting period. For countries with fewer than 100 sequences submitted, data on the detection or absence of submitted VOCs sequences, as well as previous reports of VOC detection are shown, and are detailed in Annex 2. Overall, these maps further highlight that in recent months, Delta is the most prevalent variant with widespread global circulation. Other VOCs and other variants are still circulating in some countries, however, largely at low levels.

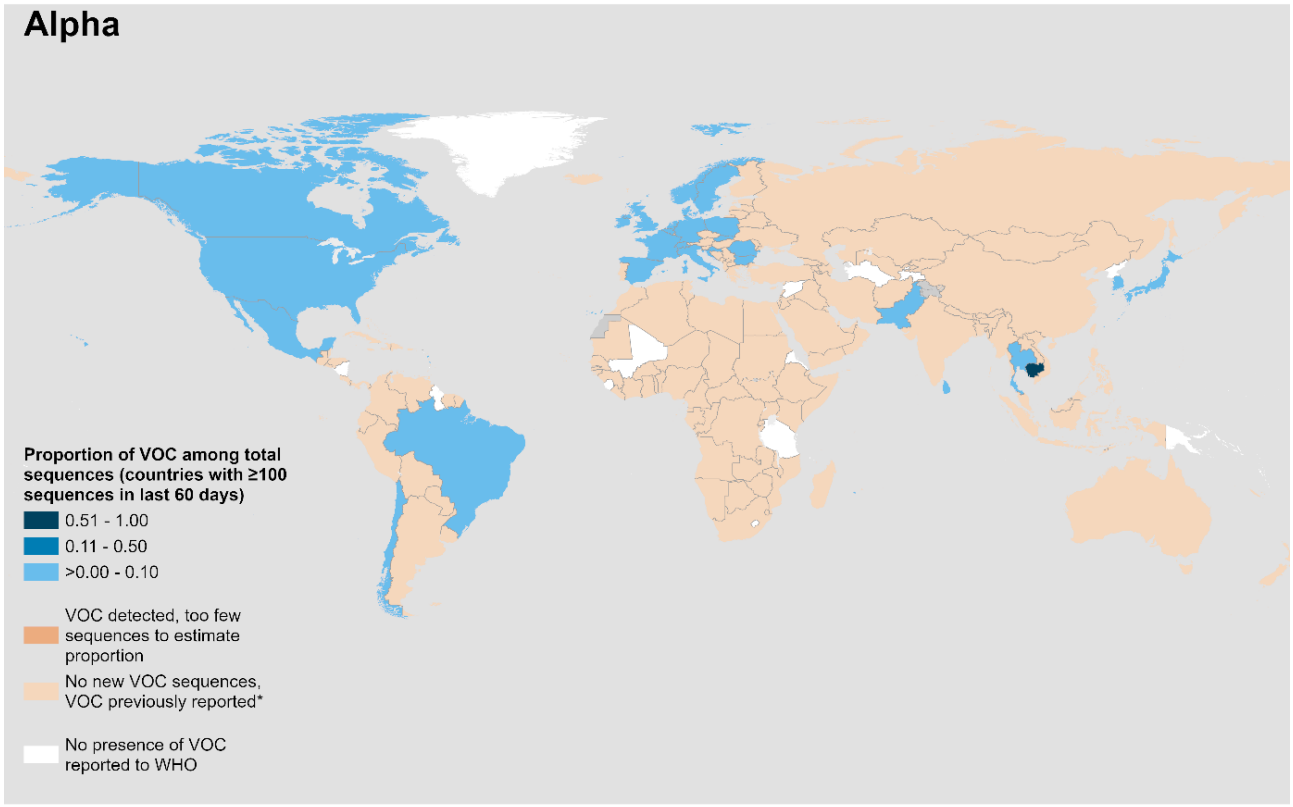
Global VOCs distribution should be interpreted with due consideration of surveillance limitations, including differences in sequencing capacities, sampling strategies between countries and delays in reporting. Current efforts are underway to strengthen genomic surveillance for SARS-CoV-2, including variants, in several regions and countries to enhance coverage of sequencing and detection of variants globally.

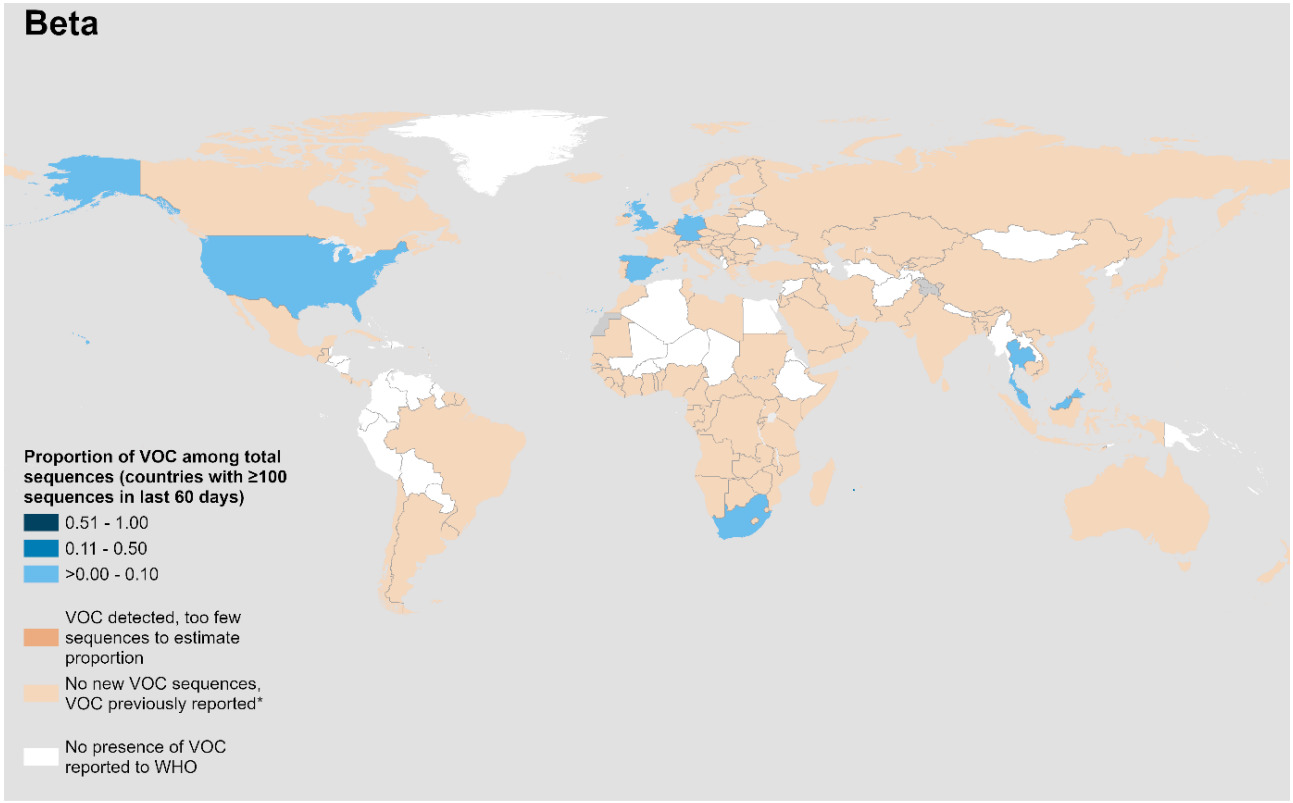
Figure 4: Proportion of current global VOC or VOI sequences reported among total sequences submitted over time by WHO Region, 1 August 2020 – 19 October 2021*



Data source: GISAID Initiative. Partial sequences without lineage classification were excluded.

Figure 5. Countries, territories and areas reporting variants Alpha, Beta, Gamma and Delta and proportions of circulating VOCs, as of 19 October 2021[**]



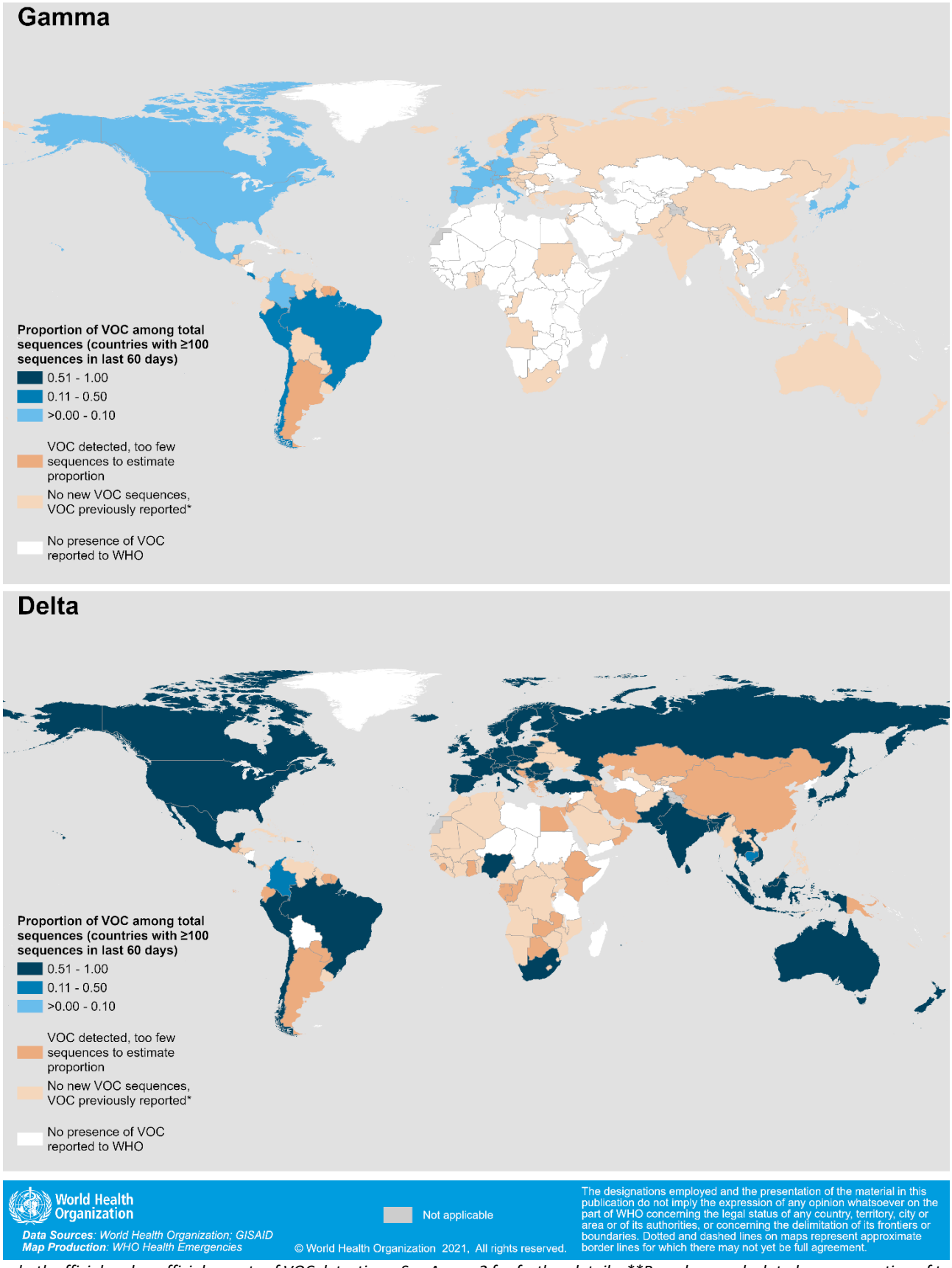


World Health Organization

Not applicable

Data Sources: *World Health Organization; GISAID*
Map Production: *WHO Health Emergencies*

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city 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.



**Includes both official and unofficial reports of VOC detections. See Annex 2 for further details. **Prevalence calculated as a proportion of total sequence uploaded to GISAID with sample collection dates in the last 60 days, limited to countries with ≥100 total sequences in the same period. Sequences assigned based upon reported location of sample collection; sequences from travellers submitted by other countries were not considered.*

Phenotypic characteristics

Available evidence on the phenotypic impacts of VOCs is summarized in Table 2, as well as in previous editions of the COVID-19 Weekly Epidemiological Updates. Since the last detailed update on 5 October, there are several new publications on the phenotypic characteristics of VOCs.

A prospective study, not yet peer reviewed, assessed the illness profiles (symptom prevalence, duration and burden), hospital presentation, and presence of long (≥28 days) illness among 1400 symptomatic school-aged children in two groups (younger children aged 5–11 years and older children aged 12–17 years) who tested positive for SARS-CoV-2. The study was conducted in the United Kingdom at a time when either Alpha (28 December 2020 to 6 May 2021) or Delta (26 May to 8 July 2021) were the predominant circulating SARS-CoV-2 variant.[1] Findings from the study suggested that disease in school-aged children due to Delta variant resembles illness due to the Alpha variant, with short duration and similar symptom burden. Median illness duration was short with either variant: 5 days (IQR 2–9.75) with Alpha, and 5 days (IQR 2-9) with Delta. The median symptom burden (number of symptoms) over the entire period of illness (28 days) was slightly greater among children infected with Delta compared to Alpha infection (in younger children, 3 (IQR 2–5) with Alpha, 4 (IQR 2–7) with Delta; in older children 5 (IQR 3–8) with Alpha and 6 (IQR 3–9) with Delta infection. The seven most prevalent symptoms were common to both variants and included headache, fatigue, fever, dysosmia (disordered smell perception), sneezing, rhinorrhoea, and sore throat; suggesting no meaningful clinical differences in the disease presentation with either variant. Only a small number of children infected with either variant presented to the hospital, and the presence of long (≥28 days) illness was reported to be low.

Findings in another pre-print study conducted in Indonesia[2], among adults, evaluated the impact of Delta variant versus non-Delta variant infections on the outcomes of COVID-19 patients. The study included 69 cases with confirmed isolation of the Delta variant compared with 92 cases of non-Delta variant. Analysis of associated individual variables showed no significant differences in hospitalization or mortality between patients with Delta and non-Delta variant infections (p=0.80 and 0.29, respectively). Additionally, multivariate analysis suggested that age ≥65 years (OR 11.5; 95% CI 1.3-102.6; P=0.028), obesity (OR 16.6; 95% CI 2.5-107.1; p=0.003), diabetes (OR 5.5; 95% CI 1.3-23.7; p=0.021), and hypertension OR 5.8; 95% CI 1.02-32.8; p=0.047), were prognostic factors for mortality in both groups. Conversely, no prognostic factors were found to be associated with the hospitalization of COVID-19 patients.

A peer-reviewed retrospective study[3] conducted in Ireland, analysed the effect of SARS-CoV-2 infection during pregnancy, and the impact of Alpha variant on neonatal clinical outcomes. The study included all liveborn neonates from mothers who tested positive for SAR-CoV-2 at any time during pregnancy and up to 24 hours post-partum. This included 133 neonates who were delivered between 1 March 2020 and 1 March 2021, of which 66 (49.6%) were born following maternal SARS-CoV-2 infection after 1 January 2021, corresponding to a time when Alpha was the dominant variant in circulation in Ireland. The findings suggested no increase in the incidence of preterm birth or neonatal intensive care unit admission when compared with 5-year, pre-pandemic hospital data. Maternal infection before and after Alpha variant circulation or maternal symptom status also did not influence neonatal outcomes. While this is a reassuring initial finding, further studies to evaluate the impact of VOC infections during pregnancy, particularly the Delta variant, are required.

Table 2: Summary of phenotypic impacts* of Variants of Concern

WHO label	Alpha	Beta	Gamma	Delta
Transmissibility	Increased transmissibility[4]	Increased transmissibility[5,6]	Increased transmissibility[6,7]	Increased transmissibility [6,8,9]
Disease severity	Possible increased risk of hospitalization[10,11], possible increased risk of severe disease and death[12,13]	Possible increased risk of hospitalization[11], possible increased in-hospital mortality[14]	Possible increased risk of hospitalization[11], possible increased risk of severe disease[15]	Possible increased risk of hospitalization[16,17]
Risk of reinfection	Neutralizing activity retained[18], risk of reinfection remains similar[19]	Reduction in neutralizing activity reported; T cell response elicited by D614G virus remains effective[20]	Moderate reduction in neutralizing activity reported[21]	Reduction in neutralizing activity reported[22–24]
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[25]	No impact on RT-PCR or Ag RDTs observed[24]	None reported to date	No impact on RT-PCR or Ag RDTs[26] observed

**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.*

Table 3 presents the impact of variants on product specific vaccine efficacy/effectiveness (VE) and quantifies the reduction in VE in the setting of variants compared to VE in non-VOC settings. Of note, reductions in VE do not necessarily mean loss of protection, as indicated by the absolute VE estimate. For example, a 10-percentage point reduction in VE against symptomatic disease for mRNA vaccines would still mean high vaccine effectiveness of ~85%. In addition, vaccines have shown higher VE against severe disease; thus, small reductions in VE against severe disease due to VOCs may still mean substantial protection, as is the case for AstraZeneca-Vaxzevria.

Table 3. Summary of vaccine performance against Variants of Concern

	WHO Emergency Use Listing (EUL) Qualified Vaccines							Vaccines without WHO EUL[+]			
	AstraZeneca-Vaxzevria/SII - Covishield	Beijing CNBG-BBIBP-CorV	Janssen-Ad26.COV 2.S	Moderna-mRNA-1273	Moderna-mRNA-1273 / Pfizer BioN BioNTech-Comirnaty	Pfizer BioNTech-Comirnaty	Sinovac-CoronaVac	Anhui ZL-Recombinant	Bharat-Covaxin	Gamaleya-Sputnik V	Novavax-Covavax
Alpha[27,28]											
Summary of VE*	Protection retained against all outcomes										
- Severe disease	↔$_2$	-	-	↔$_2$	↔$_1$	↔$_5$	-	-	-	-	-
- Symptomatic disease	↔ to ↓$_5$	-	-	↔$_1$	↔$_1$	↔$_4$	-	-	-	-	↓$_1$
- Infection	↔ to ↓$_3$	-		↔$_2$	-	↔$_2$	-	-	-	-	-
Neutralization	↔ to ↓$_7$	↔$_1$	↔$_4$	↔ to ↓$_{12}$	↓$_1$	↔ to ↓$_{39}$	↔ to ↓↓$_6$	↔$_2$	↔$_2$	↔$_3$	↓$_1$
Beta[29–32]											
Summary of VE*	Protection retained against severe disease; reduced protection against symptomatic disease; limited evidence										
- Severe disease	-	-	↔$_1$	↔$_1$	-	↔$_3$	-	-	-	-	-
- Symptomatic disease	↔ to ↓↓↓$_2$	-	↔$_1$	↔$_1$	-	↔$_2$	-	-	-	-	↓↓↓$_1$
- Infection	-	-	-	↔$_1$	-	↓$_1$	-	-	-	-	-
Neutralization	↓ to ↓↓$_7$	↔ to ↓$_2$	↓ to ↓↓$_6$	↓ to ↓↓$_{14}$	↓↓↓$_1$	↓ to ↓↓$_{40}$	↓ to ↓↓↓$_6$	↔ to ↓$_3$	↓$_2$	↓ to ↓↓$_3$	↓↓↓$_1$
Gamma											
Summary of VE*	Unclear impact; very limited evidence										
- Severe disease	↔$_1$	-	-	↔$_1$	-	↔$_1$	-	-	-	-	-
- Symptomatic disease	↔$_1$	-	-	↔$_1$	-	↔$_1$	-	-	-	-	-
- Infection	-	-	-	-	-	-	↔$_1$	-	-	-	-
Neutralization	↔ to ↓$_3$	-	↓$_3$	↓$_7$	-	↔ to ↓$_{23}$	↔ to ↓$_4$	↔$_1$	-	↓$_2$	-
Delta[33]											
Summary of VE*	Protection retained against severe disease; possible reduced protection against symptomatic disease and infection; limited evidence										
- Severe disease	↔$_3$	-	-	↔$_2$	-	↔$_5$	-	-	-	-	-
- Symptomatic disease	↓ to ↓↓$_5$	-	-	↔$_1$	-	↔ to ↓$_4$	-	-	↓$_1$	-	-
- Infection	↔ to ↓$_3$	-	↓↓↓$_1$	↔$_2$	-	↓$_2$	-	-	-	-	-
Neutralization	↓$_7$	-	↔ to ↓↓$_5$	↓$_5$	↓↓$_1$	↔ to ↓$_{17}$	↓ to ↓↓↓$_4$	↔ to ↓$_2$	↔ to ↓$_3$	↓$_2$	-

VE refers to vaccine effectiveness and vaccine efficacy

[+]As of submission of this update

*Summary of VE: indicates the general conclusions but only for the vaccines evaluated against the specific variant

Arrows generalize the magnitude of reduction in VE or neutralization: "↔" <10% reduction in VE, or VE >90% with no comparator, or that there was a <2-fold reduction in neutralization; "↓" 10 to <20% reduction in VE, or 2 to <5-fold reduction in neutralization; "↓↓" 20 to <30% reduction in VE, or 5 to <10-fold reduction in neutralization; "↓↓↓" ≥30% reduction in VE, or ≥10-fold reduction in neutralization. When more than one neutralization study is available, the interquartile range (25th and 75th percentiles) of fold-reductions across all studies for specific vaccine/variant was used.

"Moderna-mRNA-1273/Pfizer BioNTech-Comirnaty" indicates that both vaccines were evaluated together in study.

The number of studies is shown as subscripts: vaccine effectiveness and neutralization studies informing this table can be found on the VIEW-hub Resources page (https://view-hub.org/resources). For individual vaccine effectiveness studies, see 'COVID-19 Vaccine Effectiveness Results Summary', reference numbers noted with a '#'. For a list of all neutralization studies, see 'COVID-19 Vaccine Neutralization Studies Table'.

References indicated by superscripts next to VOC name in column 1 are vaccine efficacy results from randomized controlled trials informing this table and are included in the Annex-1.

Since the 5 October update, four notable new studies have provided evidence of COVID-19 vaccine performance after full vaccination against Variants of Concern.

A test-negative case control study from the United States of America (not yet peer reviewed) evaluated the effectiveness of Moderna-mRNA-1273 against SARS-CoV-2 infection among members (4.6 million) of a large healthcare system in Southern California aged 18 years and older[34]. A total of 8, 153 cases were included in the study and 5 controls were matched to each case. Vaccination with Moderna-mRNA-1273 was found to be highly effective at preventing SARS-CoV-2 infection due to Delta 14-60 days post second dose (VE: 94.1%, 95% CI: 60.5-96.3), but declined to 80.0% (95% CI: 70.2-86.6%) at 151-180 days post second dose. VE against infection due to non-Delta variants showed a similar pattern with a VE against infection 14-60 days post second dose of 98.6% (97.3-99.3%) which reduced to 88.7% (73.2-95.2%) at 121-150 days .[34] VE against hospitalization due to Delta over the entire study period (≥ 14 days post second dose) was 97.6% (92.8-99.2%). VE estimates against infection over the entire study period (≥ 14 days post second dose) were 98.4% (96.9-99.1%), 95.5% (90.9-97.8%), and 90.4% (73.9-96.5%) for Alpha, Gamma, and Mu variants, respectively.

A second study from Canada (not yet peer-reviewed) provided updated results from a previous version of the pre-print.[35] The study evaluated VE of Pfizer BioNTech-Comirnaty, Moderna-mRNA-1273, and AstraZeneca-Vaxzevria vaccines against symptomatic disease and against hospitalization or death due to Alpha, Beta, Gamma, and Delta VOCs. All vaccines were highly effective at preventing both symptomatic disease as well as hospitalization or death 14 or more days post final vaccination (two doses). VE against symptomatic disease was ≥ 86% for each vaccine and against each VOC. VE against hospitalization or death was ≥ 92% for each vaccine against each VOC. These estimates include a follow-up time post full vaccination of up to 28 weeks, 25 weeks, and 3 weeks for Pfizer BioNTech-Comirnaty, Moderna-mRNA-1273, and AstraZeneca-Vaxzevria vaccines, respectively. Of note, VE of AstraZeneca-Vaxzevria against hospitalization or death due to Beta was not reported; several VE estimates were approximated to be 100% but could not be reliably assessed due to no cases in the vaccinated group.

A third peer-reviewed study from Spain, assessed the effectiveness of Pfizer BioNTech-Comirnaty, Moderna-mRNA-1273, AstraZeneca-Vaxzevria and Janssen-Ad26.COV 2.S vaccines in preventing SARS-CoV-2 infection due to Alpha and Delta variants based on the vaccine status of close contacts of index cases[36]. Moderna-mRNA-1273, Janssen-Ad26.COV 2.S Pfizer BioNTech-Comirnaty, and AstraZeneca-Vaxzevria were found to be 86% (56-95%), 77% (27-93%), 71% (61-78%), and 38% (-42-73%) effective at preventing infection among close contacts due to Alpha 14 or more days post final dose, respectively, with follow-up time since complete vaccination up to 28, 23, 31 and 16 weeks for each of the vaccines, respectively. VE against infection due to Delta was similar to Alpha for the mRNA vaccines [67% (59-74%) for Pfizer BioNTech-Comirnaty, 77% (63-85%) for Moderna-mRNA-1273]. However, VE against Delta infection was lower for Janssen-Ad26.COV2.S at 42% (18-59%) than that against Alpha, although with very wide confidence intervals for both VE estimates. The VE of AstraZeneca-Vaxzevria against Delta was 55% (39-67%); comparison to that of Alpha is hindered due to the very small numbers with Alpha infection. This study also evaluated the VE of one dose of AstraZeneca-Vaxzevria followed by a second dose of Pfizer BioNTech-Comirnaty vaccine against infection due to Delta. VE of this heterologous regimen against Delta infection 14 or more days post second dose was 86% (45-97%), with a follow-up time up to 21 weeks post full vaccination. The lower VE estimates from this study compared to estimates from other studies can possibly be explained by the fact that close contacts of index cases face frequent exposure and are, therefore, at higher risk of becoming infected even if vaccinated.

A fourth study from Israel (not yet peer reviewed) evaluated the effectiveness of a booster dose of Pfizer BioNTech-Comirnaty at preventing infection, severe disease, and death compared to two doses of the same vaccine during a time when Delta was the predominant variant[37]. Confirmed infection was lower among individuals receiving a booster dose relative to those who received two doses of the vaccines five or more months prior by a factor of 8.8-17.6 depending on age group. The rate of severe disease among individuals 60 years and older was 18.7-fold (95% CI 15.7-22.4) lower in the group who received a booster dose, as compared to the group who did not receive a booster dose, and among individuals 40-59 years old, was 22-fold (95% CI 10.3-47) lower. Among persons 60 years and older, the rate of death was lower in the group who received a booster dose by a factor of 14.7 (95% CI 9.4-23.1) compared to the group who did not receive a booster dose. Follow up time post-booster ranged from 3.5 weeks for individuals 16-29 years to 8 weeks for persons 60 years and older.

WHO, with support of the Strategic Advisory Group of Experts (SAGE) on Immunization and its COVID-19 Vaccines Working Group, continues to review the emerging evidence on the need for and timing of a booster dose for the currently available COVID-19 vaccines which have received Emergency Use Listing (EUL). As concluded in the Interim Statement released 4 October 2021, introducing booster doses should be firmly evidence-driven and targeted to the population groups in greatest need. The rationale for implementing booster doses should be guided by evidence on waning vaccine effectiveness, in particular a decline in protection against severe disease in the general population and in high-risk populations, or due to a circulating VOC. To date, the evidence remains limited and still inconclusive on any widespread need for booster doses following a primary vaccination series. In the context of ongoing global vaccine supply constraints, broad-based administration of booster doses risks exacerbating inequities in vaccine access by driving up demand and diverting supply while priority populations in some countries, or in subnational settings, have not yet received a primary vaccination series. Focus remains on urgently increasing global vaccination coverage with the primary series driven by the objective to protect against severe disease.

Additional resources

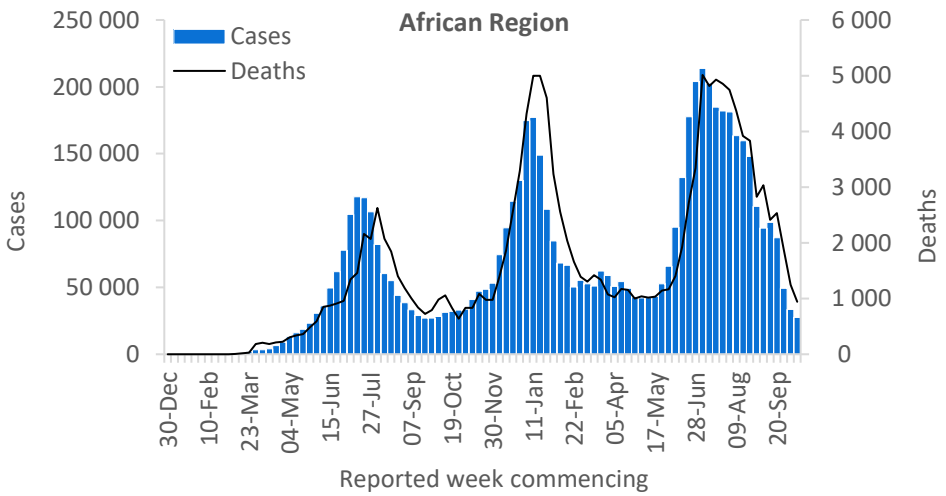
- Tracking SARS-CoV-2 Variants
- COVID-19 new variants: Knowledge gaps and research
- Genomic sequencing of SARS-CoV-2: a guide to implementation for maximum impact on public health
- Considerations for implementing and adjusting public health and social measures in the context of COVID-19

WHO regional overviews Epidemiological week 11-17 October 2021

African Region

The declining trend observed in the African Region since mid-July continued this week with over 27 000 new cases and over 900 new deaths reported, decreases of an 18% and a 25% decrease respectively as compared to the previous week. While this is reassuring, 13/49 countries (28%) in the Region reported increases of over 15% in the number of reported cases the past week. One third of the new weekly cases in the Region was reported by two countries: Ethiopia and South Africa. The highest numbers of new cases were reported from Ethiopia (4706 new cases; 4.1 new cases per 100 000 population; a 22% decrease), South Africa (4682 new cases; 7.9 new cases per 100 000; a 20% decrease), and Cameroon (3003 new cases; 11.3 new cases per 100 000; similar to previous week).

The highest numbers of new deaths were reported from South Africa (295 new deaths; <1 new death per 100 000 population; a 45% decrease), Ethiopia (247 new deaths; <1 new death per 100 000; a 10% decrease), and Nigeria (59 new deaths; <1 new death per 100 000; a 181% increase).

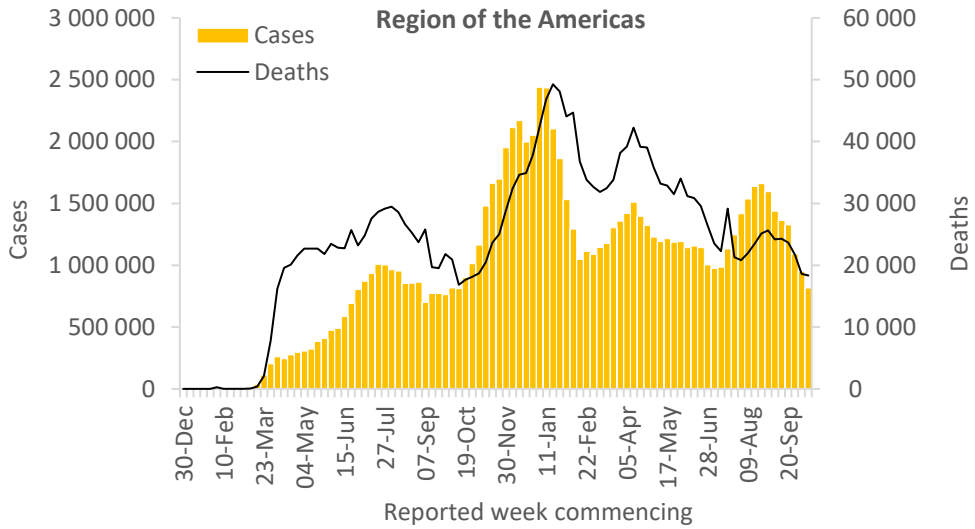


Updates from the African Region

Region of the Americas

The Region of the Americas reported over 816 000 new cases this week a 14% decline as compared to the previous week and a continuation of the declining trend in the region witnessed since the end of August. A small proportion (9/56; 16%) of the countries in the Region of the Americas reported increases in new cases in the past week. Just over 18 000 new deaths were reported this week, a similar incidence as compared to the previous week. The highest numbers of new cases were reported from the United States of America (582 707 new cases; 176.0 new cases per 100 000; an 11% decrease), Brazil (76 746 new cases; 36.1 new cases per 100 000; a 27% decrease), and Mexico (35 468 new cases; 27.5 new cases per 100 000; a 17% decrease).

The highest numbers of new deaths were reported from the United States of America (11 158 new deaths; 3.4 new deaths per 100 000; a 23% increase), Mexico (2398 new deaths; 1.9 new deaths per 100 000; a 34% decrease), and Brazil (2244 new deaths; 1.1 new deaths per 100 000; a 30% decrease).

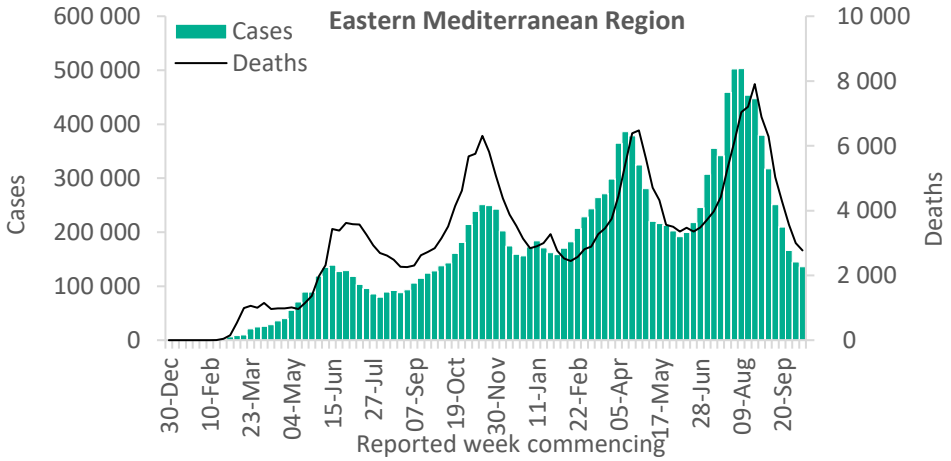


Updates from the Region of the Americas

Eastern Mediterranean Region

The Eastern Mediterranean Region reported over 136 000 new cases and over 2700 new deaths, a 6% and an 8% decrease respectively as compared to the previous week. This follows the decline observed since mid-August 2021. While most of the countries (15/22; 68%) reported a decrease in new weekly cases, Sudan and Afghanistan reported the largest increase as compared to the previous week (22% and 34%, respectively). The highest numbers of new cases were reported from the Islamic Republic of Iran (81 785 new cases; 97.4 new cases per 100 000; similar numbers as those reported last week), Iraq (11 628 new cases; 28.9 new cases per 100 000; a 22% decrease), and Jordan (7718 new cases; 75.6 new cases per 100 000; an 8% increase).

The majority (17/22; 77%) of the countries in the Region reported a decline in new weekly deaths last week as compared to the previous week, with the exception of Afghanistan and Libya that reported an increase of 89% and 11%, respectively. The highest numbers of new deaths were reported from the Islamic Republic of Iran (1506 new deaths; 1.8 new deaths per 100 000; similar numbers as those reported last week), Egypt (268 new deaths; <1 new death per 100 000; similar numbers as those reported last week), and Iraq (201 new deaths; <1 new death per 100 000; similar numbers as those reported last week's).

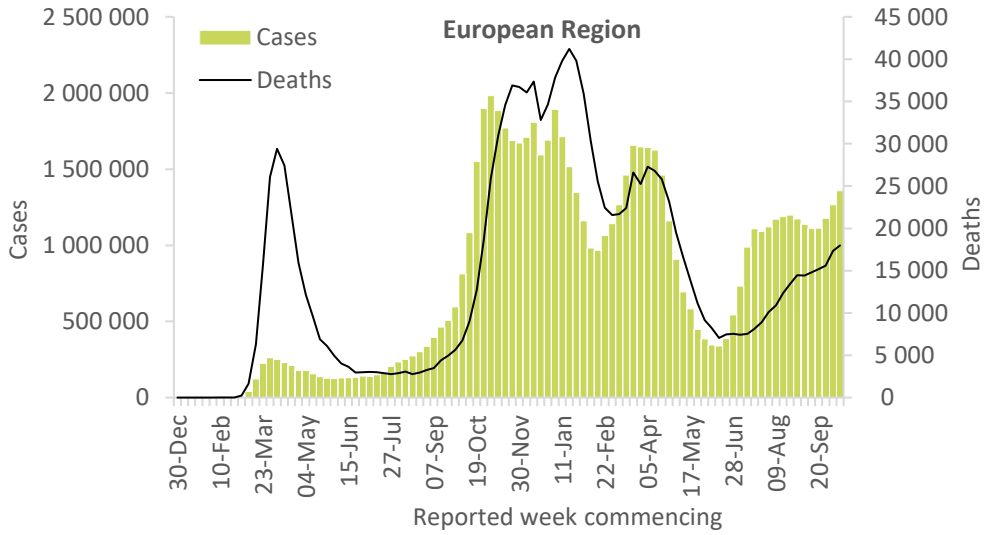


Updates from the Eastern Mediterranean Region

European Region

For the third consecutive week the European Region has shown an increase in new weekly COVID-19 cases, with over 1.3 million new cases reported during this week, a 7% increase as compared with the previous week. Over half of the countries in the Region (35/61; 57%) showed an increase in the number of new weekly cases. The highest numbers of new cases were reported from the United Kingdom (283 756 new cases; 418.0 new cases per 100 000; a 14% increase), the Russian Federation (217 322 new cases; 148.9 new cases per 100 000; a 15% increase), and Turkey (213 981 new cases; 253.7 new cases per 100 000; similar to last week's figures).

Over 18 000 new deaths have been reported in the Region; a similar rate to that of the previous week (4%). The largest increase in deaths has been observed in Luxembourg (200%), Denmark (83%) and Slovakia (82%). The highest numbers of new deaths were reported from the Russian Federation (6897 new deaths; 4.7 new deaths per 100 000; a 6% increase), Romania (2360 new deaths; 12.2 new deaths per 100 000; a 27% increase), and Ukraine (2140 new deaths; 4.9 new deaths per 100 000; a 25% increase).

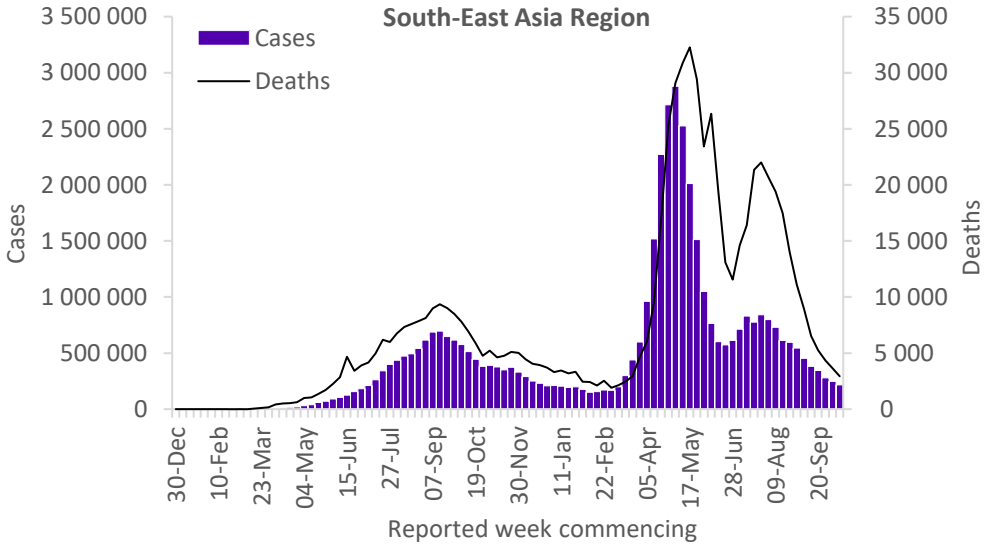


Updates from the European Region

South-East Asia Region

Declining trends continued in the South-East Asia Region, with just under 215 000 new cases and over 2900 new deaths reported, decreases of 13% and 19% respectively as compared to the previous week. All countries in the Region reported a decline in new cases and deaths this week, apart from Thailand that reported a similar number of cases as compared to the previous week. The highest numbers of new cases were reported from India (114 244 new cases; 8.3 new cases per 100 000; an 18% decrease), Thailand (72 817 new cases; 104.3 new cases per 100 000; a similar number as those reported last week), and Myanmar (9202 new cases; 16.9 new cases per 100 000; a 10% decrease).

The highest numbers of new deaths were reported from India (1535 new deaths; <1 new death per 100 000; a 13% decrease), Thailand (582 new deaths; <1 new death per 100 000; a 14% decrease), and Indonesia (301 new deaths; <1 new death per 100 000; a 37% decrease).

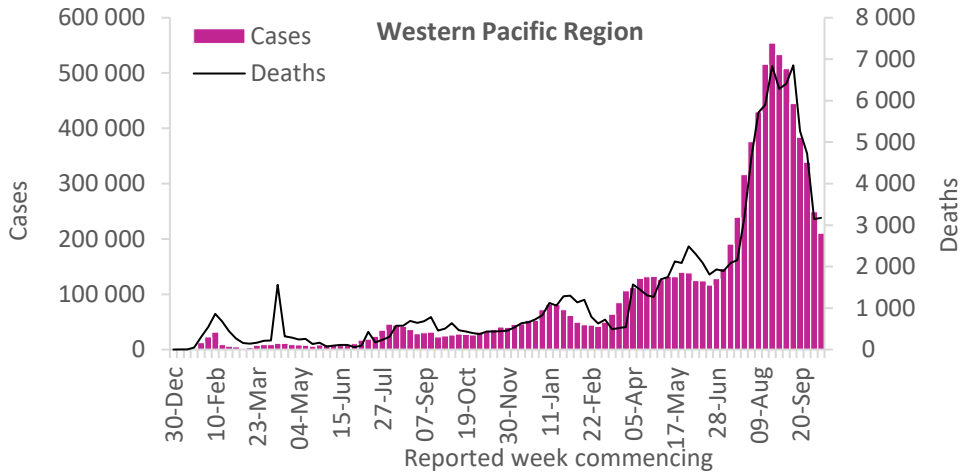


Updates from the South-East Asia Region

Western Pacific Region

Declining trends continued in the Western Pacific Region, with over 201 000 new cases reported this week, a 16% decrease as compared to the previous week. Most of the countries (19/26; 73%) reported a decrease in new weekly cases this week. The highest numbers of new cases were reported from the Philippines (59 052 new cases; 53.9 new cases per 100 000; a 20% decrease), Malaysia (52 321 new cases; 161.7 new cases per 100 000; an 18% decrease), and Viet Nam (24 726 new cases; 25.4 new cases per 100 000; a 25% decrease).

The weekly number of deaths also continue to decline, with over 3100 new deaths reported this week, a 16% decrease as compared to the previous week. Nevertheless, 13% (8/26 countries) reported an increase in new deaths this week as compared to the previous week, with Papua New Guinea reporting a 481% increase. The highest numbers of new deaths were reported from the Philippines (1075 new deaths; 1.0 new deaths per 100 000; a 27% increase), Viet Nam (689 new deaths; <1 new death per 100 000; an 18% decrease), and Malaysia (593 new deaths; 1.8 new deaths per 100 000; a 15% decrease).



Updates from the Western Pacific Region

Summary of the COVID-19 Weekly Operational Update

The Weekly Operational Update is a report provided by the COVID-19 Strategic Preparedness and Response Plan (SPRP) Monitoring and Evaluation team, which aims to update on the ongoing global progress against the COVID-19 SPRP 2021 framework, and to highlight country-level actions and WHO support to countries. In this week's edition published on 18 October, highlights include:

- Ongoing COVID-19 vaccine rollout in Ghana
- COVID-19 response at mental health care facilities in Azerbaijan
- Two-day vaccination campaign to boost coverage in Samoa
- IT equipment and supplies for vaccine safety surveillance in Belize
- A review of the COVID-19 response in Somalia
- Six in seven COVID-19 infections go undetected in Africa: initiative to enhance community screening
- Progress on a subset of indicators from the SPRP 2021 Monitoring and Evaluation Framework
- Updates on WHO's financing to support countries in SPRP 2021 implementation and provision of critical supplies.

Annex

Annex 1. Additional notes on VOC impacts on vaccines

- Studies reporting VOC-specific vaccine efficacy or effectiveness (VE) estimates for full vaccination (≥ 7 days post final dose) are assessed against a comparator VE estimate for that vaccine product to determine level of reduction in VE. For symptomatic disease, VOC VE is compared against phase 3 randomised RCT results from non-VOC settings. For severe disease and infection, due to instability or lack of phase 3 RCT estimates for these outcomes, VOC VE is compared to non-VOC VE estimates from the same study when available (or to Alpha VE from same study when assessing Beta, Gamma, or Delta); with an exception for AstraZeneca Vaxzevria for infection (when a phase 3 estimate of VE against infection due to non-VOC is available and used as comparator). In some instances, a study may be included for severe disease or infection outcome even without a comparator if a very high VE estimate is reported against a VOC (i.e., >90%).
- It is also important to note that studies vary in population, outcome definitions, study design and other methodological considerations, which may in part explain differences when comparing VE estimates for a product between different studies. In addition, the reductions summarized in the table represent VE point estimates and do not represent the uncertainty intervals around these estimates which vary substantially across studies. The reductions in VE noted should be interpreted with these limitations in mind.
- Table 3 summarizes the impact of VOCs on COVID-19 vaccine performance in the absence of waning, and, therefore, does not include studies that only assess VE greater than 4 months post final dose

Annex 2. List of countries/territories/areas reporting variants of concern as of 19 Oct 2021

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Unspecified B.1.617
Afghanistan	●	-	-	●	-
Albania	●	-	-	○	-
Algeria	●	-	-	●	-
Andorra	○	○	-	○	-
Angola	●	●	●	●	-
Anguilla	●	-	-	●	-
Antigua and Barbuda	●	●	●	●	-
Argentina	●	●	●	●	-
Armenia	●	-	-	●	-
Aruba	●	●	●	●	-
Australia	●	●	●	●	-
Austria	●	●	●	●	-
Azerbaijan	●	-	-	○	-
Bahamas	●	-	●	●	-
Bahrain	●	●	●	●	-
Bangladesh	●	●	○	●	-
Barbados	●	-	●	●	-
Belarus	●	-	-	○	-
Belgium	●	●	●	●	-
Belize	●	-	●	●	-
Benin	●	●	●	●	-
Bermuda	●	●	-	●	-
Bhutan	●	●	-	●	-
Bolivia (Plurinational State of)	●	-	●	-	-
Bonaire	●	-	●	●	-
Bosnia and Herzegovina	●	●	●	○	-
Botswana	○	●	-	●	-
Brazil	●	●	●	●	-
British Virgin Islands	●	-	●	●	-
Brunei Darussalam	●	●	-	●	-
Bulgaria	●	●	-	●	-
Burkina Faso	●	-	-	●	-
Burundi	●	●	-	●	-
Cabo Verde	●	-	-	●	-
Cambodia	●	●	-	●	-
Cameroon	●	●	-	●	-
Canada	●	●	●	●	-
Cayman Islands	●	●	●	●	-
Central African Republic	●	●	-	●	-
Chad	●	-	-	-	-
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	●	-	-	●	-
El Salvador	●	-	●	●	-
Equatorial Guinea	●	●	-	○*	-
Estonia	●	●	○	○	-
Eswatini	○	●	-	●	-
Ethiopia	●	-	-	●	-
Falkland Islands (Malvinas)	●	●	-	-	-
Faroe Islands	●	-	●	-	-
Fiji	○*	-	-	●	-
Finland	●	●	●	●	-
France	●	●	●	●	-
French Guiana	●	●	●	●	-
French Polynesia	●	●	●	●	-
Gabon	●	●	-	●	-
Gambia	●	-	-	●	-
Georgia	●	○	-	●	-
Germany	●	●	●	●	-
Ghana	●	●	●	●	-
Gibraltar	●	-	-	○	-
Greece	●	●	●	●	-
Grenada	●	-	-	●	-
Guadeloupe	●	●	●	●	-
Guam	●	●	●	●	-
Guatemala	●	●	●	●	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Unspecified B.1.617
Guinea	●	●	-	●	-
Guinea-Bissau	●	●	-	●	-
Guyana	-	-	●	●	-
Haiti	●	-	●	●	-
Honduras	●	-	●	●	-
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	●	●	-	-	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Unspecified B.1.617
Liechtenstein	●	-	-	○	-
Lithuania	●	●	●	○	-
Luxembourg	●	●	●	●	-
Madagascar	●	●	-	-	-
Malawi	●	●	-	●	-
Malaysia	●	●	-	●	-
Maldives	●	-	-	●	-
Mali	-	-	-	●	-
Malta	●	○	●	○	-
Martinique	●	●	●	●	-
Mauritania	●	●	-	●	-
Mauritius	●	●	-	●	-
Mayotte	●	●	-	○*	-
Mexico	●	●	●	●	-
Monaco	●	●	-	●	-
Mongolia	●	-	-	●	-
Montenegro	●	-	○	○	-
Montserrat	●	-	●	●	-
Morocco	●	●	-	●	-
Mozambique	●	●	-	●	-
Myanmar	●	-	-	●	-
Namibia	●	●	-	●	-
Nepal	●	-	-	●	-
Netherlands	●	●	●	●	-
New Caledonia	●	-	-	●	-
New Zealand	●	●	○	○	-
Niger	●	-	-	-	-
Nigeria	●	●	-	●	-
North Macedonia	●	●	-	○	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Unspecified B.1.617
Northern Mariana Islands (Commonwealth of the)	○	-	-	●	-
Norway	●	●	●	●	-
Occupied Palestinian Territory	●	●	-	●	-
Oman	●	●	-	●	-
Pakistan	●	●	●	●	-
Panama	●	●	●	●	●
Papua New Guinea	-	-	-	●	-
Paraguay	●	-	●	●	-
Peru	●	-	●	●	-
Philippines	●	●	●	●	-
Poland	●	○	●	●	-
Portugal	●	●	●	●	-
Puerto Rico	●	●	●	●	-
Qatar	●	●	-	●	-
Republic of Korea	●	●	●	●	-
Republic of Moldova	●	-	-	●	-
Romania	●	●	●	●	-
Russian Federation	●	●	○	●	-
Rwanda	●	●	-	●	-
Réunion	●	●	●	○	-
Saba	-	-	-	●	-
Saint Barthélemy	●	-	-	●	-
Saint Kitts and Nevis	-	-	-	●	-
Saint Lucia	●	-	-	●	-
Saint Martin	●	●	-	●	-
Saint Pierre and Miquelon	-	-	-	●	-
Saint Vincent and the Grenadines	-	-	●	●	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Unspecified B.1.617
Sao Tome and Principe	●	-	-	○	-
Saudi Arabia	●	●	-	●	-
Senegal	●	●	-	●	-
Serbia	●	-	-	●	-
Seychelles	●	●	-	●	-
Sierra Leone	-	●	-	●	-
Singapore	●	●	●	●	-
Sint Maarten	●	●	●	●	-
Slovakia	●	●	-	●	-
Slovenia	●	●	●	●	-
Somalia	●	●	-	-	-
South Africa	●	●	○	●	-
South Sudan	●	●	-	●	-
Spain	●	●	●	●	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Unspecified B.1.617
Sri Lanka	●	●	-	●	-
Sudan	●	●	●	-	-
Suriname	●	●	●	●	-
Sweden	●	●	●	●	-
Switzerland	●	●	●	●	-
Thailand	●	●	●	●	-
Timor-Leste	●	-	-	●	-
Togo	●	●	●	●	-
Trinidad and Tobago	●	-	●	●	-
Tunisia	●	●	-	●	-
Turkey	●	●	●	●	-
Turks and Caicos Islands	●	-	●	●	-
Uganda	●	●	-	●	-
Ukraine	●	○	-	○	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Unspecified B.1.617
United Arab Emirates	●	●	●	●	-
United Kingdom	●	●	●	●	-
United Republic of Tanzania	-	●	-	-	-
United States Virgin Islands	●	●	-	●	-
United States of America	●	●	●	●	-
Uruguay	●	●	●	●	-
Uzbekistan	●	●	-	○	-
Venezuela (Bolivarian Republic of)	●	-	●	●	-
Viet Nam	●	●	-	●	-
Wallis and Futuna	●	-	-	-	-
Yemen	●	●	-	-	-
Zambia	●	●	-	●	-
Zimbabwe	●	●	-	●	-

**Newly reported in this update.*
"●" 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.
***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).*
Excludes countries, territories, and areas that have never reported the detection of a variant of concern.
-Kindly note that Delta has been discarded for Syrian Arab Republic upon verification.
See also Annex 3: Data, table and figure notes

Annex 3. 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.

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. 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.

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 except, 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.

Erratum 20 October 2021, maps for COVID-19 cases and deaths per 100 000 population (Figure 2 and 3): COVID-19 cases and deaths reported in the last seven days (11-17 October) for some countries has been corrected in this version of the Weekly Epidemiological Update.

Erratum 21 October 2021: A study on vaccine effectiveness (preprint) from Israel was incorrectly summarised. Text has been corrected here and in the online publication of the Weekly Epidemiological Update.

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

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