COVID-19 Weekly Epidemiological Update

Edition 43, published 8 June 2021

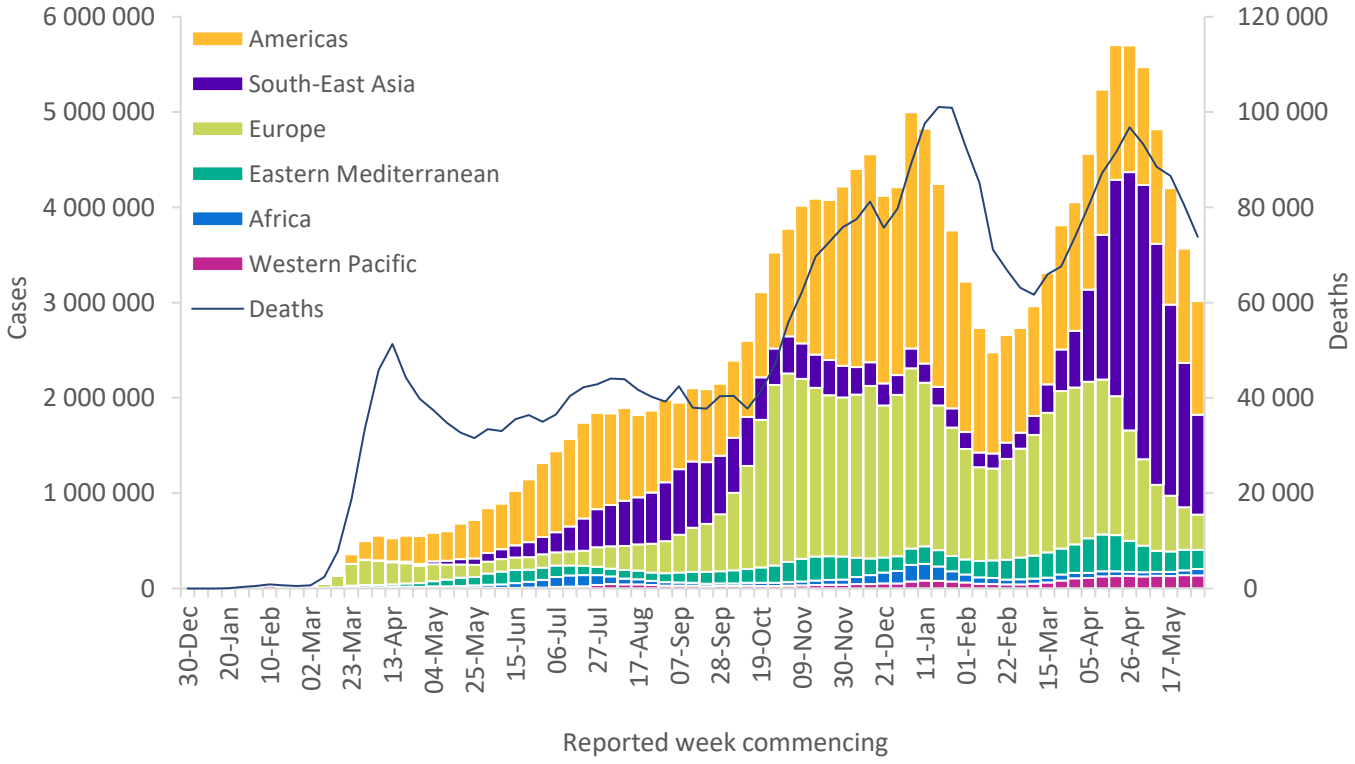
In this edition:

Global overview

Data as of 6 June 2021

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

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



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

The highest numbers of new cases were reported from India (914 539 new cases; 33% decrease), Brazil (449 478 new cases; 7% increase), Argentina (212 975 new cases; 3% decrease), Colombia (175 479 new cases; 17% increase), and the United States of America (99 103 new cases; 35% decrease).

Table 1. Newly reported and cumulative COVID-19 cases and deaths, by WHO Region, as of 6 June 2021**

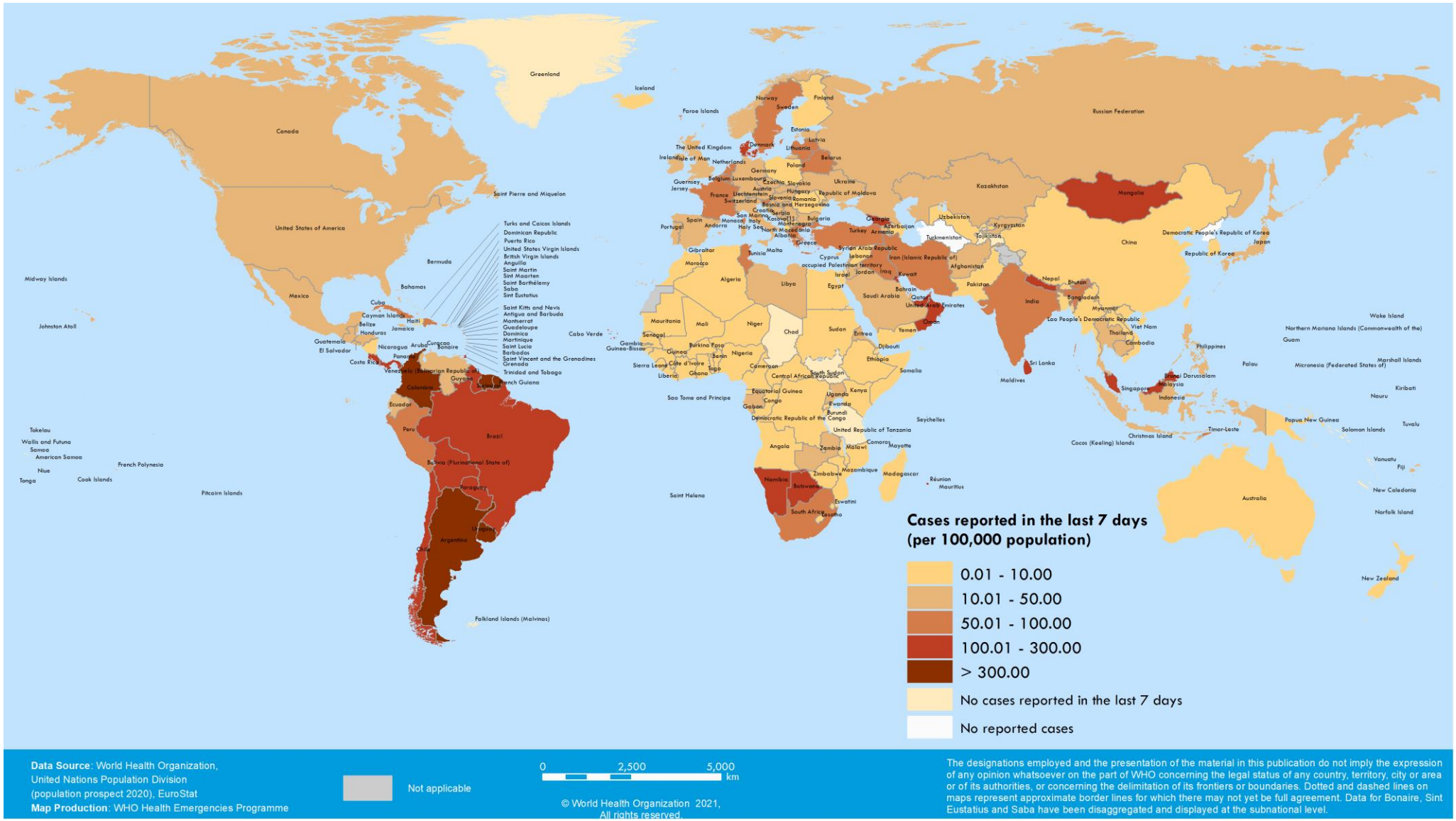
WHO Region	New cases in last 7 days (%)	Change in new cases in last 7 days *	Cumulative cases (%)	New deaths in last 7 days (%)	Change in new deaths in last 7 days *	Cumulative deaths (%)
Americas	1 191 047 (39%)	-1%	68 370 018 (40%)	34 392 (47%)	4%	1 794 865 (48%)
Europe	368 874 (12%)	-17%	54 629 665 (32%)	8 890 (12%)	-21%	1 157 890 (31%)
South-East Asia	1 049 694 (35%)	-31%	32 654 915 (19%)	23 369 (32%)	-21%	425 123 (11%)
Eastern Mediterranean	202 208 (7%)	-5%	10 278 904 (6%)	3 503 (5%)	-1%	205 145 (6%)
Africa	65 943 (2%)	25%	3 563 825 (2%)	1 167 (2%)	2%	88 274 (2%)
Western Pacific	138 239 (5%)	-1%	3 139 006 (2%)	2 486 (3%)	19%	47 634 (1%)
Global	**3 016 005 (100%)**	**-15%**	**172 637 097 (100%)**	**73 807 (100%)**	**-8%**	**3 718 944 (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, 31 May – 6 June 2021**



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

Special Focus: Update on SARS-CoV-2 Variants of Interest (VOIs) and Variants of Concern (VOCs)

WHO, in collaboration with national authorities, institutions and researchers, routinely assesses if variants of SARS-CoV-2 result in changes in transmissibility, clinical presentation and severity, or if they result in changes in the implementation of public health and social measures (PHSM) by national health authorities. 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. Table 2 lists currently designated global VOIs and VOCs. National authorities may choose to designate other variants of local interest/concern. Here we provide an update on emerging evidence surrounding phenotypic characteristics and the geographical distribution of designated VOCs.

On 31 May 2021, WHO announced new easy-to-say/easy-to-remember VOI and VOC labels to facilitate public communication about SARS-CoV-2 variants and the 1 June 2021 edition of the WEU outlined the changes in labelling of the VOCs and VOIs, as well as updates to the classifications of variants B.1.617.1, B.1.617.3 and B.1.616.

Table 2: SARS-CoV-2 Variants of Concern (VOCs) and Variants of Interest (VOIs), as of 8 June 2021

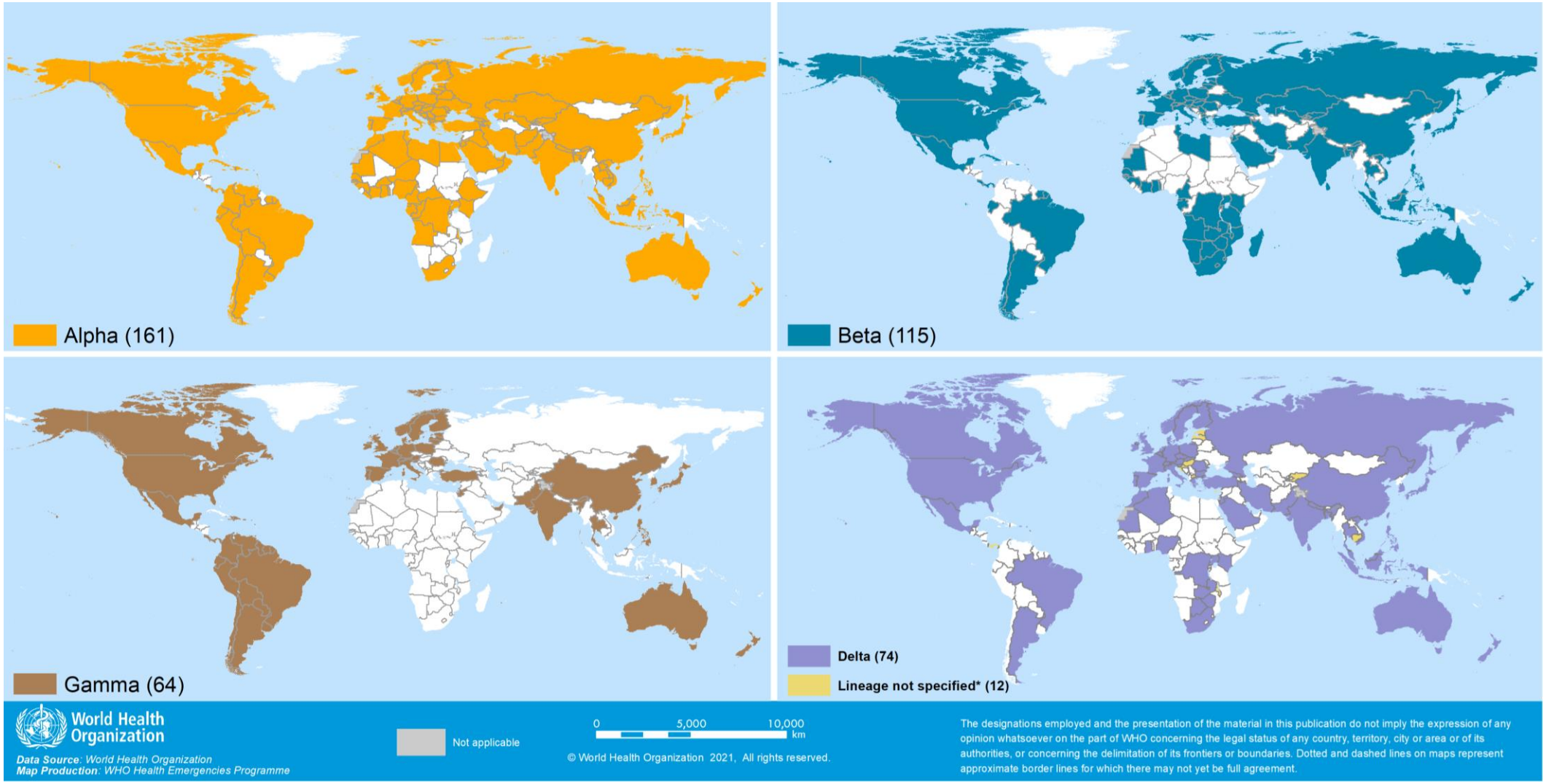
WHO label	Pango lineage	GISAID clade	Nextstrain clade	Earliest documented samples	Date of designation
Variants of Concern (VOCs)					
Alpha	B.1.1.7	GRY (formerly GR/501Y.V1)	20I/501Y.V1	United Kingdom, Sep-2020	18-Dec-2020
Beta	B.1.351	GH/501Y.V2	20H/501Y.V2	South Africa, May-2020	18-Dec-2020
Gamma	P.1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

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

**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.*

Figure 3. Countries, territories and areas reporting variants Alpha (B.1.1.7), Beta (B.1.351), Gamma (P.1) and Delta (B.1.617.2), as of 8 June 2021**



**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.*

Phenotypic characteristics

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

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

VOC impacts on vaccines

Since the update on VOC impacts on vaccines on 25 May, two studies have provided further evidence of the effectiveness of Pfizer BioNTech-Comirnaty vaccine against VOCs. A study from Canada found two doses of the vaccine to be 90% (95% CI: 85-94%) and 88% (95% CI: 61-96%) effective against symptomatic disease ≥7 days post second dose caused by variants Alpha and Beta/Gamma, respectively, among adults 16 years and older. Vaccine effectiveness (VE) against hospitalization/death ≥0 days post second dose was 94% (95%CI: 55-99%) for Alpha and 100% (95% CI not available) for Beta/Gamma. VE of a single dose of Pfizer BioNTech-Comirnaty against symptomatic disease (≥14 days after immunization) was 61% (95% CI: 59-66%), 43% (95% CI: 22-59%), and 61% (95% CI: 53-67%) for Alpha, Beta, and for Gamma, respectively, underscoring the importance of two doses of vaccine in preventing symptomatic disease. Samples bearing the 501Y mutation without the E484K mutation were assumed to be Alpha while samples bearing the 501Y mutation with the E484K mutation were assumed to be either Beta or Gamma.[27] Samples bearing the 501Y mutation without the E484K mutation were assumed to be Alpha while samples bearing the 501Y mutation with the E484K mutation were assumed to be either Beta or Gamma.[27] Samples bearing the 501Y mutation without the E484K mutation were assumed to be Alpha while samples bearing the 501Y mutation with the E484K mutation were assumed to be either Beta or Gamma.[27]

A previously highlighted study from Qatar found two doses of Pfizer BioNTech-Comirnaty to be highly effective against Alpha infection (VE 89.5%) and severe disease (VE 100%); the vaccine was also highly effective against severe disease caused by Beta with a VE of 100% but somewhat reduced against infection (VE 75%) due to this variant.[24] A follow-up analysis (not yet peer-reviewed) to this study evaluated the effectiveness of one dose of Pfizer BioNTech-Comirnaty against infection and severe disease caused by Alpha and Beta variants. At 1-7 days and 8-14 days post vaccination, low to no effectiveness against infection and severe disease was observed for disease events caused by these variants. At 15-21 days post vaccination, VE estimates against infection and severe disease due to Alpha were 65.5% (95% CI: 58.2-71.5%) and 72.0% (95% CI: 32.0-90.0%), respectively. VE estimates against infection and severe disease due to Beta were 46.5% (95% CI: 38.7-53.3%) and 56.5% (95% CI: 0.0-82.8%), respectively. These findings underscore the importance of two doses in preventing infection and severe disease caused by Alpha and Beta. Of note, infections that were not due to Alpha were assumed to be caused by Beta variant as national surveillance did not detect any other strains circulating during much of the study period.[80]

Two recent studies provide evidence of reduced neutralization capacity of COVID-19 vaccines against variant Delta. One study found a 5.8-fold reduction in neutralization against Delta compared to a reference strain in 159 samples from individuals who received two doses of Pfizer BioNTech-Comirnaty [median time after second dose: 28 days (IQR: 21-37)]; 2.6- and 4.9-fold reductions were observed against Alpha and Beta variants, respectively, relative to the reference strain.[60] Findings from a second study (not yet peer-reviewed)

show a 3-fold reduction in neutralization capacity against Delta relative to Alpha among sera collected from 16 individuals five weeks after receipt of second dose of Pfizer BioNTech-Comirnaty; a 16-fold reduction was observed against Beta relative to Alpha. Most samples (81-100%) were able to neutralize Alpha, Beta and Delta five weeks after receipt of the second dose; findings remained consistent at 13 weeks after second dose with the exception of the Beta strain whereby only 46% of samples were able to neutralize the variant. Authors also found that a single dose of AstraZeneca-Vaxzevria, while able to neutralize Alpha, was less effective at neutralizing Beta or Delta.[78]

Two recent studies (not yet peer reviewed) provide evidence of the impact of heterologous vaccination on neutralization capacity against variants. In both studies, individuals received AstraZeneca-Vaxzevria as a first dose followed by a Pfizer BioNTech-Comirnaty booster. The first of these studies compared 26 individuals receiving heterologous vaccination to 14 individuals receiving two doses of Pfizer BioNTech-Comirnaty. Overall, authors report a strong neutralization response in heterologous vaccinated individuals against Alpha, Beta and B.1.617 (lineage not specified) exceeding neutralization titers of the homologous vaccination group, though the difference for B.1.617 was not statistically significant. Results also show that, among the heterologous group, a two-fold reduction in neutralization capacity was observed against Beta relative to Alpha, though neutralization was still achieved; no such reduction was observed for B.1.617. In addition, CD4+ or CD8+ T cells were detected two weeks after heterologous vaccination, with results similar to those from studies evaluating a single dose of AstraZeneca-Vaxzevria and homologous Pfizer BioNTech-Comirnaty vaccination.[81] The second study compared the AstraZeneca-Vaxzevria/Pfizer BioNTech-Comirnaty heterologous group to a homologous group receiving two doses of AstraZeneca-Vaxzevria and found higher neutralization against Alpha, Beta and Gamma in the heterologous group. Increased CD4+ and CD8+ T cell reactivity was also observed in the heterologous group.[82] Together, these studies provide evidence that a heterologous vaccination regimen is at least as protective as homologous vaccinations.

Geographic distribution

As surveillance activities to detect SARS-CoV-2 variants are strengthened at local and national levels, including by strategic genomic sequencing, the number of countries/areas/territories (hereafter countries) reporting VOCs has continued to increase (Figure 3, Annex 2). This distribution should be interpreted with due consideration of surveillance limitations, including differences in sequencing capacities and sampling strategies between countries

Public health authorities are encouraged to continue 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 in the investigation of unusual epidemiological events. Environmental surveillance has the potential to support other early warning surveillance systems for monitoring the spread of SARS-CoV-2 infections, including variants. A recent study in the United Kingdom demonstrated the ability to detect co-circulating SARS-CoV-2 variants and identify changes in viral RNA sequences in wastewater.[83] In Spain, weekly wastewater estimates of the proportion of variant Alpha in 32 different locations reflected the trends in reported sequenced clinical cases in most regions. Moreover, wastewater surveillance allowed the identification of variant Alpha circulation in new areas within Spain before detection by the public health authorities using clinical specimens.[84]

WHO recommendations

Virus evolution is 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 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 and its variants. 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
- ACT accelerator diagnostic pillar, FIND test directory

References

1. Curran J, Dol J, Boulos L, et al. Transmission characteristics of SARS-CoV-2 variants of concern Rapid Scoping Review. medRxiv. Published online January 1, 2021:2021.04.23.21255515. doi:10.1101/2021.04.23.21255515
2. Tegally H, Wilkinson E, Giovanetti M, et al. Emergence of a SARS-CoV-2 variant of concern with mutations in spike glycoprotein. Nature. Published online 2021. https://doi.org/10.1038/s41586-021-03402-9
3. Cherian S, Potdar V, Jadhav S, et al. Convergent evolution of SARS-CoV-2 spike mutations, L452R, E484Q and P681R, in the second wave of COVID-19 in Maharashtra, India. bioRxiv. Published online January 1, 2021:2021.04.22.440932. doi:10.1101/2021.04.22.440932
4. Public Health England. SARS-CoV-2 Variants of Concern and Variants under Investigation in England. Technical Briefing 10. Public Health England; 2021. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/984274/Variants_of_Concern_VOC_Technical_Briefing_10_England.pdf
5. Public Health England. SARS-CoV-2 Variants of Concern and Variants under Investigation in England Technical Briefing 14.; 2021. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/991343/Variants_of_Concern_VOC_Technical_Briefing_14.pdf
6. Bager P, Wohlfahrt J, Fonager J, Albertsen. Increased Risk of Hospitalisation Associated with Infection with SARS-CoV-2 Lineage B.1.1.7 in Denmark. doi:Bager, Peter and Wohlfahrt, Jan and Fonager, Jannik and Albertsen, Mads and Yssing Michaelsen, Thomas and Holten Møller, Camilla and Ethelberg, Steen and Legarth, Rebecca and Fischer Button, Mia Sara and Gubbels, Sophie Madeleine and Voldstedlund, Marianne and Mølbak, Kåre and Skov, Robert Leo and Fomsgaard, Anders and Grove Krause, Tyra, Increased Risk of Hospitalisation Associated with Infection with SARS-CoV-2 Lineage B.1.1.7 in Denmark. Available at SSRN: https://ssrn.com/abstract=3792894 or http://dx.doi.org/10.2139/ssrn.3792894
7. NERVTAG paper on COVID-19 variant of concern B.1.1.7. GOVUK. Published online 2021. https://www.gov.uk/government/publications/nervtag-paper-on-covid-19-variant-of-concern-b117, http://files/64/nervtag-paper-on-covid-19-variant-of-concern-b117.html %[2021/02/08/18:37:19
8. Pearson CA, Eggo. Estimates of severity and transmissibility of novel South Africa SARS-CoV-2 variant 501Y.V2. https://cmmid.github.io/topics/covid19/reports/sa-novel-variant/2021_01_11_Transmissibility_and_severity_of_501Y_V2_in_SA.pdf
9. Jassat W MC. Increased Mortality among Individuals Hospitalised with COVID-19 during the Second Wave in South Africa.; 2021. https://www.medrxiv.org/content/10.1101/2021.03.09.21253184v1
10. Funk T, Pharris A, Spiteri G, et al. Characteristics of SARS-CoV-2 variants of concern B.1.1.7, B.1.351 or P.1: data from seven EU/EEA countries, weeks 38/2020 to 10/2021. Eurosurveillance. 2021;26(16). doi:https://doi.org/10.2807/1560-7917.ES.2021.26.16.2100348
11. Muik A, Wallisch A-K, Sänger B, et al. Neutralization of SARS-CoV-2 lineage B.1.1.7 pseudovirus by BNT162b2 vaccine–elicited human sera. Science. Published online 2021:eabg6105. https://science.sciencemag.org/content/sci/early/2021/01/28/science.abg6105.full.pdf
12. Gallais F, Gantner P, Bruel T, et al. Anti-SARS-CoV-2 Antibodies Persist for up to 13 Months and Reduce Risk of Reinfection. medRxiv. Published online January 1, 2021:2021.05.07.21256823. doi:10.1101/2021.05.07.21256823
13. Graham MS, Sudre CH, May A, et al. Changes in symptomatology, reinfection, and transmissibility associated with the SARS-CoV-2 variant B.1.1.7: an ecological study. Lancet Public Health. 2021;6(5):e335-e345. doi:10.1016/S2468-2667(21)00055-4
14. Wibmer CK, Ayres F, Hermanus T, et al. SARS-CoV-2 501Y.V2 escapes neutralization by South African COVID-19 donor plasma. Nat Med. Published online March 2021. https://www.ncbi.nlm.nih.gov/pubmed/33654292
15. Li R, Ma X, Deng J, et al. Differential efficiencies to neutralize the novel mutants B.1.1.7 and 501Y.V2 by collected sera from convalescent COVID-19 patients and RBD nanoparticle-vaccinated rhesus macaques. Cell Mol Immunol. Published online February 2021. https://www.ncbi.nlm.nih.gov/pubmed/33580167
16. Cele S, Gazy I, Jackson L, et al. Escape of SARS-CoV-2 501Y.V2 variants from neutralization by convalescent plasma. :19. https://www.medrxiv.org/content/10.1101/2021.01.26.21250224v1
17. Caniels TG, Bontjer I, Straten K van der, et al. Emerging SARS-CoV-2 variants of concern evade humoral immune responses from infection and vaccination. medRxiv. Published online June 1, 2021:2021.05.26.21257441. doi:10.1101/2021.05.26.21257441
18. Sabino EC, Buss LF, Carvalho MPS, et al. Resurgence of COVID-19 in Manaus, Brazil, despite high seroprevalence. The Lancet. 2021;397(10273):452-455. https://linkinghub.elsevier.com/retrieve/pii/S0140673621001835
19. Naveca F, Nasciment V, Souza V, et al. Phylogenetic relationship of SARS-CoV-2 sequences from Amazonas with emerging Brazilian variants harboring mutations E484K and N501Y in the Spike protein. Virological. Published online 2021. https://virological.org/t/phylogenetic-relationship-of-sars-cov-2-sequences-from-amazonas-with-emerging-brazilian-variants-harboring-mutations-e484k-and-n501y-in-the-spike-protein/585
20. Planas D, Veyer D, Baidaliuk A, et al. Reduced Sensitivity of Infectious SARS-CoV-2 Variant B.1.617.2 to Monoclonal Antibodies and Sera from Convalescent and Vaccinated Individuals. Microbiology; 2021. doi:10.1101/2021.05.26.445838
21. SARS-CoV-2 lateral flow antigen tests: evaluation of VUI-202012/01. GOVUK. https://www.gov.uk/government/publications/sars-cov-2-lateral-flow-antigen-tests-evaluation-of-vui-20201201/sars-cov-2-lateral-flow-antigen-tests-evaluation-of-vui-20201201, http://files/62/sars-cov-2-lateral-flow-antigen-tests-evaluation-of-vui-20201201.html %[2021/02/08/16:54:26

22. Goldberg Y, Mandel M, Woodbridge Y, et al. Protection of previous SARS-CoV-2 infection is similar to that of BNT162b2 vaccine protection: A three-month nationwide experience from Israel. medRxiv. Published online April 2021:2021.04.20.21255670-2021.04.20.21255670. doi:10.1101/2021.04.20.21255670
23. Haas EJ, Angulo FJ, McLaughlin JM, et al. Impact and effectiveness of mRNA BNT162b2 vaccine against SARS-CoV-2 infections and COVID-19 cases, hospitalisations, and deaths following a nationwide vaccination campaign in Israel: an observational study using national surveillance data. The Lancet. 2021;0(0). doi:10.1016/S0140-6736(21)00947-8
24. Abu-Raddad LJ, Chemaitelly H, Butt AA, National Study Group for COVID-19 Vaccination. Effectiveness of the BNT162b2 Covid-19 Vaccine against the B.1.1.7 and B.1.351 Variants. The New England journal of medicine. Published online May 2021. doi:10.1056/NEJMc2104974
25. Lopez Bernal J, Andrews N, Gower C, et al. Effectiveness of BNT162b2 MRNA Vaccine and ChAdOx1 Adenovirus Vector Vaccine on Mortality Following COVID-19. https://khub.net/documents/135939561/430986542/Effectiveness+of+BNT162b2+mRNA+vaccine+and+ChAdOx1+adenovirus+vector+vaccine+on+mortality+following+COVID-19.pdf/9884d371-8cc8-913c-211c-c2d7ce4dd1c3
26. Ismail SA, Vilaplana TG, Elgohari S, et al. Effectiveness of BNT162b2 mRNA and ChAdOx1 adenovirus vector COVID-19 vaccines on risk of hospitalisation among older adults in England: an observational study using surveillance data. :18.
27. Chung H, He S, Nasreen S, et al. Effectiveness of BNT162b2 and mRNA-1273 COVID-19 vaccines against symptomatic SARS-CoV-2 infection and severe COVID-19 outcomes in Ontario, Canada. Published online 2021:30.
28. Heath PT, Eva Galiza FP, David Neil Baxter M, et al. Efficacy of the NVX-CoV2373 Covid-19 Vaccine Against the B.1.1.7 Variant. medRxiv. Published online May 2021:2021.05.13.21256639-2021.05.13.21256639. doi:10.1101/2021.05.13.21256639
29. Emary KRW, Golubchik T, Aley PK, et al. Efficacy of ChAdOx1 nCoV-19 (AZD1222) vaccine against SARS-CoV-2 variant of concern 202012/01 (B.1.1.7): an exploratory analysis of a randomised controlled trial. The Lancet. 2021;397(10282):1351-1362. doi:10.1016/S0140-6736(21)00628-0
30. Lopez Bernal J, Andrews N, Gower C, et al. Effectiveness of the Pfizer-BioNTech and Oxford-AstraZeneca vaccines on covid-19 related symptoms, hospital admissions, and mortality in older adults in England: test negative case-control study. BMJ (Clinical research ed). 2021;373:n1088-n1088. doi:10.1136/bmj.n1088
31. Pritchard E, Matthews PC, Stoesser N, et al. Impact of vaccination on SARS-CoV-2 cases in the community: a population-based study using the UK's COVID-19 Infection Survey. medRxiv. Published online April 2021:2021.04.22.21255913-2021.04.22.21255913. doi:10.1101/2021.04.22.21255913
32. Jones NK, Rivett L, Seaman S, et al. Single-dose BNT162b2 vaccine protects against asymptomatic SARS-CoV-2 infection. eLife. 2021;10. doi:10.7554/elife.68808
33. Sadoff J, Gray G, Vandebosch A, et al. Safety and Efficacy of Single-Dose Ad26.COV2.S Vaccine against Covid-19. New England Journal of Medicine. Published online April 2021:NEJMoa2101544-NEJMoa2101544. doi:10.1056/NEJMoa2101544
34. Shinde V, Bhikha S, Hoosain Z, et al. Efficacy of NVX-CoV2373 Covid-19 Vaccine against the B.1.351 Variant. New England Journal of Medicine. Published online May 2021:NEJMoa2103055-NEJMoa2103055. doi:10.1056/NEJMoa2103055
35. Madhi SA, Baillie V, Cutland CL, et al. Efficacy of the ChAdOx1 nCoV-19 Covid-19 Vaccine against the B.1.351 Variant. New England Journal of Medicine. Published online March 2021:NEJMoa2102214-NEJMoa2102214. doi:10.1056/NEJMoa2102214
36. Hitchings MD, Ranzani OT, Sergio Scaramuzzini Torres M, et al. Effectiveness of CoronaVac in the setting of high SARS-CoV-2 P.1 variant transmission in Brazil: A test-negative case-control study. medRxiv. Published online April 2021:2021.04.07.21255081-2021.04.07.21255081. doi:10.1101/2021.04.07.21255081
37. Ranzani OT, Hitchings M, Neto MD, et al. Effectiveness of the CoronaVac vaccine in the elderly population during a P.1 variant-associated epidemic of COVID-19 in Brazil: A test-negative case-control study. medRxiv. Published online May 21, 2021:2021.05.19.21257472. doi:10.1101/2021.05.19.21257472
38. Lopez Bernal J, Andrews N, Gower C, et al. Effectiveness of COVID-19 vaccines against the B.1.617.2 variant. doi:https://doi.org/10.1101/2021.05.22.21257658
39. Edara VV, Floyd K, Lai L, et al. Infection and mRNA-1273 vaccine antibodies neutralize SARS-CoV-2 UK variant. medRxiv : the preprint server for health sciences. Published online February 2021:2021.02.02.21250799-2021.02.02.21250799. doi:10.1101/2021.02.02.21250799
40. Garcia-Beltran WF, Lam EC, St. Denis K, et al. Multiple SARS-CoV-2 variants escape neutralization by vaccine-induced humoral immunity. Cell. 2021;0(0). doi:10.1016/j.cell.2021.03.013
41. Liu Y, Liu J, Xia H, et al. Neutralizing Activity of BNT162b2-Elicited Serum. New England Journal of Medicine. 2021;384(15):1466-1468. doi:10.1056/nejmc2102017
42. Muik A, Wallisch A-K, Sänger B, et al. Neutralization of SARS-CoV-2 lineage B.1.1.7 pseudovirus by BNT162b2 vaccine–elicited human sera. Science. 2021;371(6534):1152-1153. doi:10.1126/science.abg6105
43. Trinité B, Pradenas E, Marfil S, et al. Previous SARS-CoV-2 infection increases B.1.1.7 cross-neutralization by vaccinated individuals. Equal contribution. bioRxiv. Published online March 2021:2021.03.05.433800-2021.03.05.433800. doi:10.1101/2021.03.05.433800
44. Wang Z, Schmidt F, Weisblum Y, et al. mRNA vaccine-elicited antibodies to SARS-CoV-2 and circulating variants. Nature. 2021;592(7855):616-616. doi:10.1038/s41586-021-03324-6
45. Wang P, Nair MS, Liu L, et al. Antibody Resistance of SARS-CoV-2 Variants B.1.351 and B.1.1.7. Nature. Published online March 2021:1-6. doi:10.1038/s41586-021-03398-2
46. Shen X, Tang H, Pajon R, et al. Neutralization of SARS-CoV-2 Variants B.1.429 and B.1.351. New England Journal of Medicine. Published online April 2021:NEJMc2103740-NEJMc2103740. doi:10.1056/nejmc2103740
47. Wu K, Werner AP, Moliva JI, et al. mRNA-1273 vaccine induces neutralizing antibodies against spike mutants from global SARS-CoV-2 variants. bioRxiv : the preprint server for biology. Published online January 2021:2021.01.25.427948-2021.01.25.427948. doi:10.1101/2021.01.25.427948
48. Planas D, Bruel T, Grzelak L, et al. Sensitivity of infectious SARS-CoV-2 B.1.1.7 and B.1.351 variants to neutralizing antibodies. Nature Medicine. Published online March 2021:1-8. doi:10.1038/s41591-021-01318-5
49. Becker M, Dulovic A, Junker D, et al. Immune response to SARS-CoV-2 variants of concern in vaccinated individuals. Nat Commun. 2021;12(1):3109. doi:10.1038/s41467-021-23473-6
50. McCallum M, Bassi J, De Marco A, et al. SARS-CoV-2 immune evasion by variant B.1.427/B.1.429. bioRxiv. Published online April 2021:2021.03.31.437925-2021.03.31.437925. doi:10.1101/2021.03.31.437925
51. Skelly DT, Harding Sir William AC, Gilbert-Jaramillo Sir William J, et al. Vaccine-induced immunity provides more robust heterotypic immunity than natural infection to emerging SARS-CoV-2 variants of concern. Published online February 2021. doi:10.21203/rs.3.rs-226857/v1
52. Hoffmann M, Arora P, Groß R, et al. SARS-CoV-2 variants B.1.351 and P.1 escape from neutralizing antibodies. Cell. 2021;184(9):2384-2393.e12. doi:10.1016/j.cell.2021.03.036
53. Dejnirattisai W, Zhou D, Supasa P, et al. Antibody evasion by the P.1 strain of SARS-CoV-2. Cell. 2021;0(0). doi:10.1016/j.cell.2021.03.055
54. Kuzmina A, Khalaila Y, Voloshin O, et al. SARS-CoV-2 spike variants exhibit differential infectivity and neutralization resistance to convalescent or post-vaccination sera. Cell Host and Microbe. 2021;29(4):522-528.e2. doi:10.1016/j.chom.2021.03.008
55. Ikegame S, A Siddiquey MN, Hung C-T, et al. Qualitatively distinct modes of Sputnik V vaccine-neutralization escape by SARS-CoV-2 Spike variants. medRxiv. Published online April 2021:2021.03.31.21254660-2021.03.31.21254660. doi:10.1101/2021.03.31.21254660

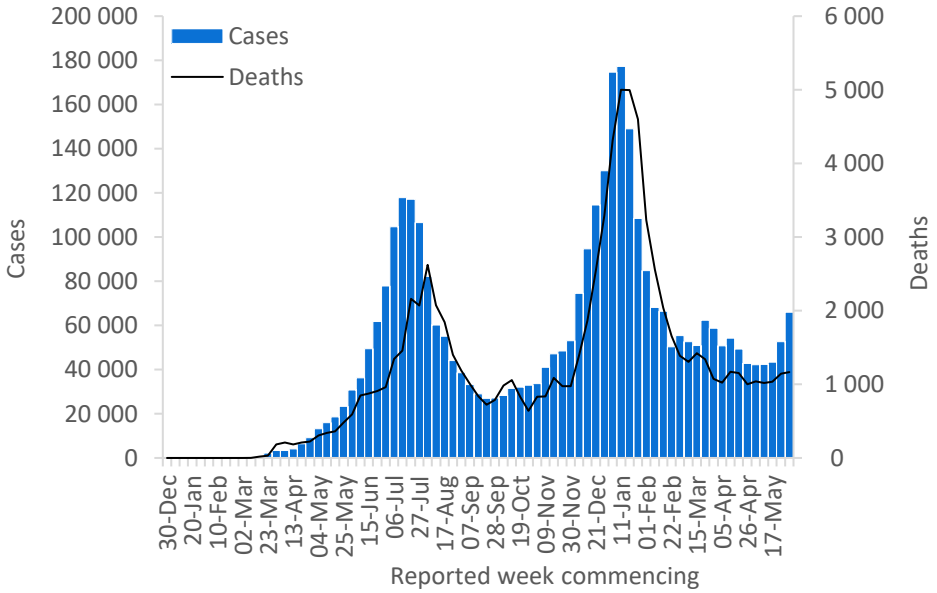
56. Gonzalez C, Saade C, Bal A, et al. Live virus neutralisation testing in convalescent patients and subjects vaccinated 1 against 19A, 20B, 20I/501Y.V1 and 20H/501Y.V2 isolates of SARS-CoV-2 2 3. medRxiv. Published online May 2021:2021.05.11.21256578-2021.05.11.21256578. doi:10.1101/2021.05.11.21256578
57. Liu Y, Liu J, Xia H, et al. BNT162b2-Elicited Neutralization against New SARS-CoV-2 Spike Variants. New England Journal of Medicine. Published online May 2021:NEJMc2106083-NEJMc2106083. doi:10.1056/NEJMc2106083
58. Collier AY, McMahan K, Yu J, et al. Immunogenicity of COVID-19 mRNA Vaccines in Pregnant and Lactating Women. Published online 2021. doi:10.1001/jama.2021.7563
59. Pegu A, O'Connell S, Schmidt SD, et al. Durability of mRNA-1273-induced antibodies against SARS-CoV-2 variants. bioRxiv. Published online May 2021:2021.05.13.444010-2021.05.13.444010. doi:10.1101/2021.05.13.444010
60. Wall EC, Wu M, Harvey R, et al. Neutralising antibody activity against SARS-CoV-2 VOCs B.1.617.2 and B.1.351 by BNT162b2 vaccination. The Lancet. 2021;0(0). doi:10.1016/S0140-6736(21)01290-3
61. Liu J, Bodnar BH, Wang X, et al. Correlation of vaccine-elicited antibody levels and neutralizing activities against SARS-CoV-2 and its variants. bioRxiv. Published online May 31, 2021:2021.05.31.445871. doi:10.1101/2021.05.31.445871
62. Anichini G, Terrosi C, Gori Savellini G, Gandolfo C, Franchi F, Cusi MG. Neutralizing Antibody Response of Vaccinees to SARS-CoV-2 Variants. Vaccines. 2021;9(5):517. doi:10.3390/vaccines9050517
63. Tada T, Dcosta BM, Samanovic MI, et al. Convalescent-Phase Sera and Vaccine-Elicited Antibodies Largely Maintain Neutralizing Titer against Global SARS-CoV-2 Variant Spikes. mBio. Published online June 1, 2021:e0069621. doi:10.1128/mBio.00696-21
64. Huang B, Dai L, Wang H, et al. Neutralization of SARS-CoV-2 VOC 501Y.V2 by human antisera elicited by both 1 inactivated BBIBP-CorV and recombinant dimeric RBD ZF2001 vaccines 2 3 Authors. bioRxiv. Published online February 2021:2021.02.01.429069-2021.02.01.429069. doi:10.1101/2021.02.01.429069
65. Wang G-L, Wang Z-Y, Duan L-J, et al. Susceptibility of Circulating SARS-CoV-2 Variants to Neutralization. New England Journal of Medicine. Published online April 2021:NEJMc2103022-NEJMc2103022. doi:10.1056/nejmc2103022
66. Cao Y, Yisimayi A, Bai Y, et al. Humoral immune response to circulating SARS-CoV-2 variants elicited by inactivated and RBD-subunit vaccines. Cell Research. Published online May 21, 2021:1-10. doi:10.1038/s41422-021-00514-9
67. Becker M, Dulovic A, Junker D, et al. Immune response to SARS-CoV-2 variants of concern in vaccinated individuals. medRxiv. Published online March 2021:2021.03.08.21252958-2021.03.08.21252958. doi:10.1101/2021.03.08.21252958
68. Bates TA, Leier HC, Lyski ZL, et al. Neutralization of SARS-CoV-2 variants by convalescent and vaccinated serum. medRxiv. Published online April 2021:2021.04.04.21254881-2021.04.04.21254881. doi:10.1101/2021.04.04.21254881
69. Stamatatos L, Czartoski J, Wan Y-H, et al. mRNA vaccination boosts cross-variant neutralizing antibodies elicited by SARS-CoV-2 infection. Science. Published online March 2021:eabg9175-eabg9175. doi:10.1126/science.abg9175
70. Zhou D, Dejnirattisai W, Supasa P, et al. Evidence of escape of SARS-CoV-2 variant B.1.351 from natural and vaccine-induced sera. Cell. 2021;189(0):1-14. doi:10.1016/j.cell.2021.02.037
71. Chang X, Sousa Augusto G, Liu X, et al. BNT162b2 mRNA COVID-19 vaccine induces antibodies of broader cross-reactivity than natural infection but recognition of mutant viruses is up to 10-fold reduced. bioRxiv. Published online March 2021:2021.03.13.435222-2021.03.13.435222. doi:10.1101/2021.03.13.435222
72. Edara VV, Norwood C, Floyd K, et al. Infection- and vaccine-induced antibody binding and neutralization of the B.1.351 SARS-CoV-2 variant. Cell Host and Microbe. 2021;29(4):516-521.e3. doi:10.1016/j.chom.2021.03.009
73. Ferreira I, Datir R, Papa G, et al. SARS-CoV-2 B.1.617 emergence and sensitivity to vaccine-elicited antibodies. bioRxiv. Published online May 2021:2021.05.08.443253-2021.05.08.443253. doi:10.1101/2021.05.08.443253
74. COVID-19 vaccinesWHO Meeting on correlates of protection. Accessed June 4, 2021. https://www.who.int/news-room/events/detail/2021/06/01/default-calendar/covid-19-vaccineswho-meeting-on-correlates-of-protection
75. Palacios R, Batista AP, Albuquerque CSN, et al. Efficacy and Safety of a COVID-19 Inactivated Vaccine in Healthcare Professionals in Brazil: The PROFISCOV Study. SSRN Electronic Journal. Published online April 2021. doi:10.2139/ssrn.3822780
76. Wu K, Werner AP, Koch M, et al. Serum Neutralizing Activity Elicited by mRNA-1273 Vaccine. New England Journal of Medicine. 2021;384(15):1468-1470. doi:10.1056/NEJMc2102179
77. Wang P, Casner RG, Nair MS, et al. Increased Resistance of SARS-CoV-2 Variant P.1 to Antibody Neutralization. bioRxiv. Published online April 9, 2021:2021.03.01.433466. doi:10.1101/2021.03.01.433466
78. Planas D, Veyer D, Baidaliuk A, et al. Reduced sensitivity of infectious SARS-CoV-2 variant B.1.617.2 to monoclonal antibodies and sera from convalescent and vaccinated individuals. bioRxiv. Published online May 27, 2021:2021.05.26.445838. doi:10.1101/2021.05.26.445838
79. Yadav P, Sapkal GN, Abraham P, et al. Neutralization of variant under investigation B.1.617 with sera of BBV152 vaccinees. bioRxiv. Published online April 2021:2021.04.23.441101-2021.04.23.441101. doi:10.1101/2021.04.23.441101
80. Abu-Raddad LJ, Chemaitelly H, Yassine HM, et al. Pfizer-BioNTech mRNA BNT162b2 Covid-19 vaccine protection against variants of concern after one versus two doses. J Travel Med. Published online May 28, 2021. doi:10.1093/jtm/taab083
81. Groß R, Zanoni M, Seidel A, et al. Heterologous ChAdOx1 NCoV-19 and BNT162b2 Prime-Boost Vaccination Elicits Potent Neutralizing Antibody Responses and T Cell Reactivity. Infectious Diseases (except HIV/AIDS); 2021. doi:10.1101/2021.05.30.21257971
82. Barros-Martins J, Hammerschmidt S, Cossmann A, et al. Humoral and cellular immune response against SARS-CoV-2 variants following heterologous and homologous ChAdOx1 nCoV-19/BNT162b2 vaccination. medRxiv. Published online June 3, 2021:2021.06.01.21258172. doi:10.1101/2021.06.01.21258172
83. Martin J, Klapsa D, Wilton T, et al. Tracking SARS-CoV-2 in Sewage: Evidence of Changes in Virus Variant Predominance during COVID-19 Pandemic. Viruses. 2020;12(10):1144. doi:10.3390/v12101144
84. Carcereny A, Martínez-Velázquez A, Bosch A, et al. Monitoring emergence of SARS-CoV-2 B.1.1.7 Variant through the Spanish National SARS-CoV-2 Wastewater Surveillance System (VATar COVID-19) from December 2020 to March 2021. medRxiv. Published online January 1, 2021:2021.05.27.21257918. doi:10.1101/2021.05.27.21257918

WHO regional overviews

African Region

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

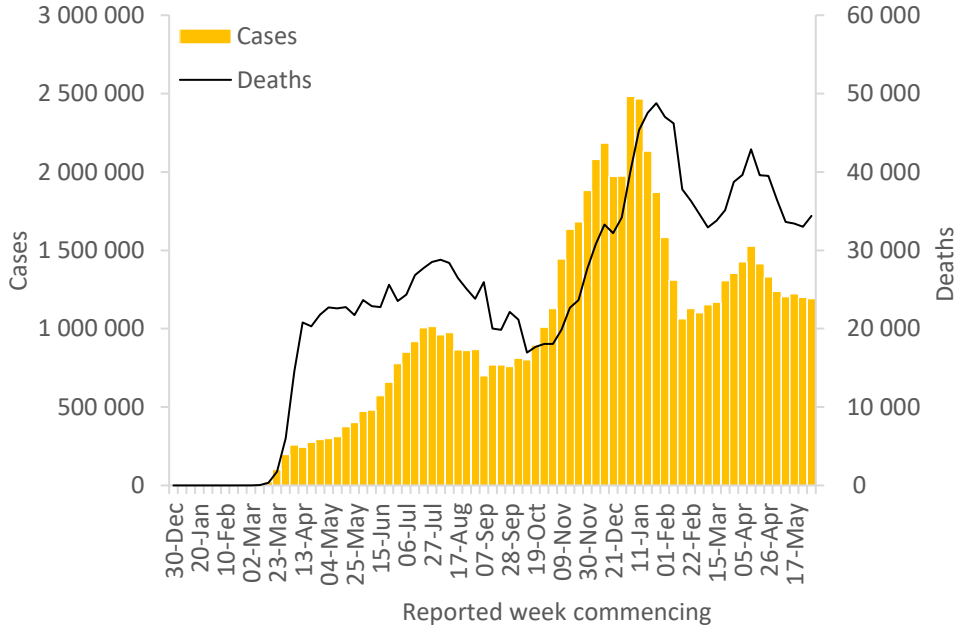
The highest numbers of new deaths were reported from South Africa (566 new deaths; 1.0 new deaths per 100 000 population; a 4% decrease), Kenya (123 new deaths; 0.2 new deaths per 100 000; a 34% increase), and Namibia (87 new deaths; 3.4 new deaths per 100 000; a 58% increase).



Region of the Americas

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

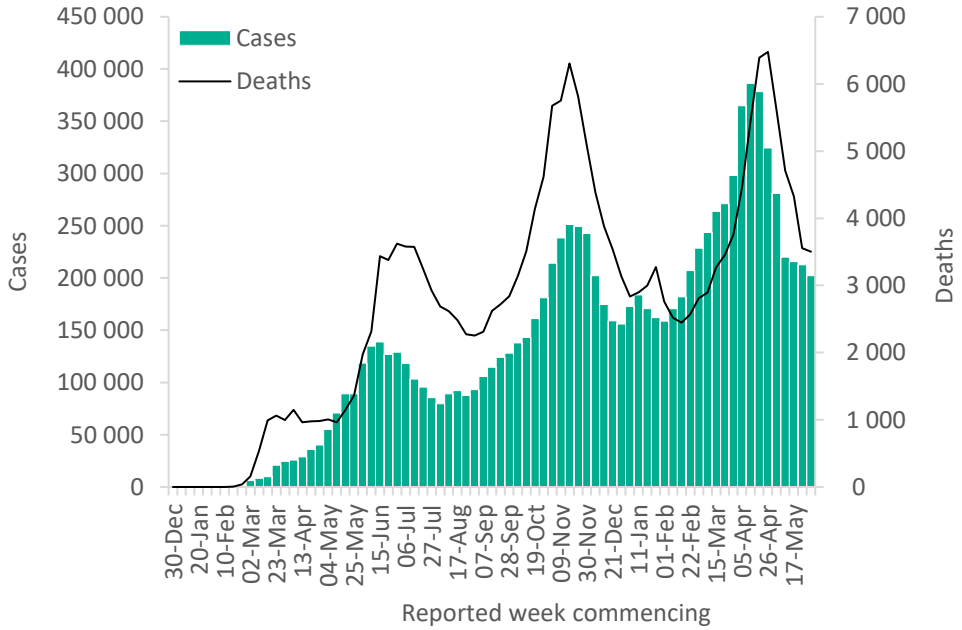
The highest numbers of new deaths were reported from Brazil (11 797 new deaths; 5.5 new deaths per 100 000; a 7% decrease), Mexico (5496 new deaths; 4.3 new deaths per 100 000; a 203% increase), and Argentina (3718 new deaths; 8.2 new deaths per 100 000; a 13% increase).



Eastern Mediterranean Region

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

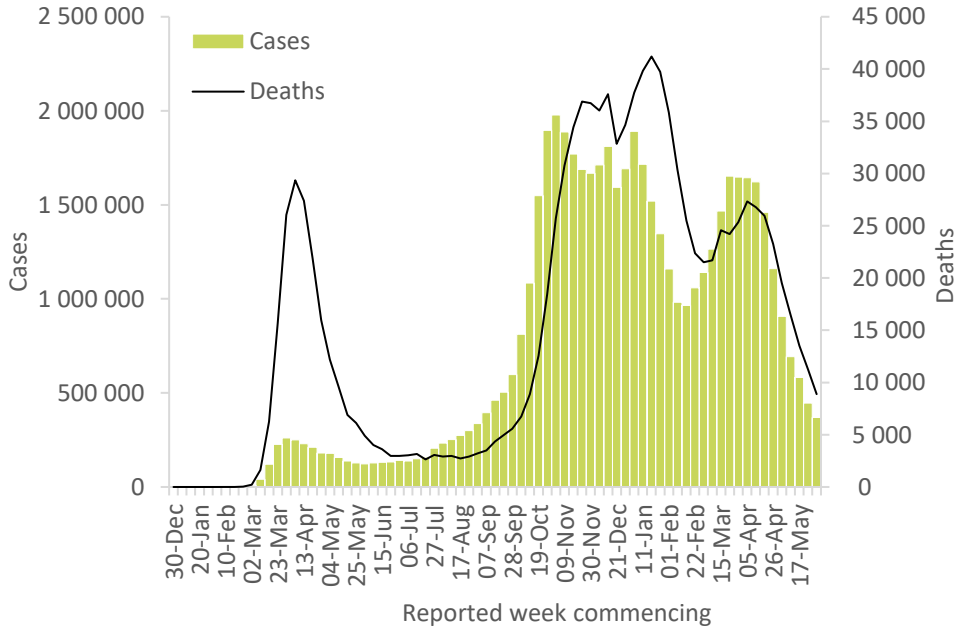
The highest numbers of new deaths were reported from the Islamic Republic of Iran (1200 new deaths; 1.4 new deaths per 100 000; a 12% decrease), Pakistan (509 new deaths; 0.2 new deaths per 100 000; similar to the previous week), and Tunisia (374 new deaths; 3.2 new deaths per 100 000; a 5% decrease).



European Region

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

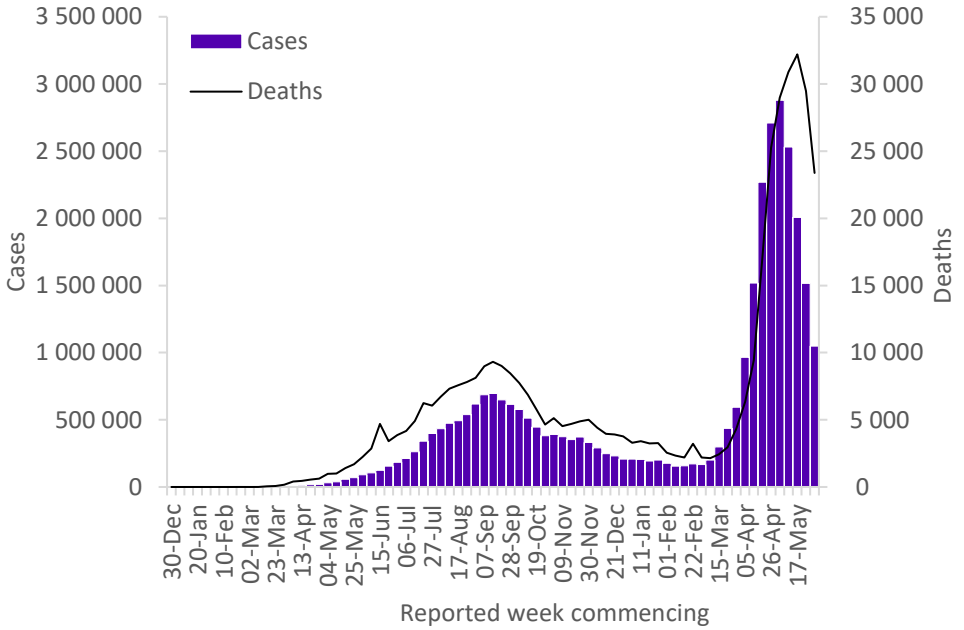
The highest numbers of new deaths were reported from the Russian Federation (2625 new deaths; 1.8 new deaths per 100 000; a number similar to that of the previous week), Germany (816 new deaths; 1.0 new deaths per 100 000; a 20% decrease), and Turkey (797 new deaths; 0.9 new deaths per 100 000; a 34%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



South-East Asia Region

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

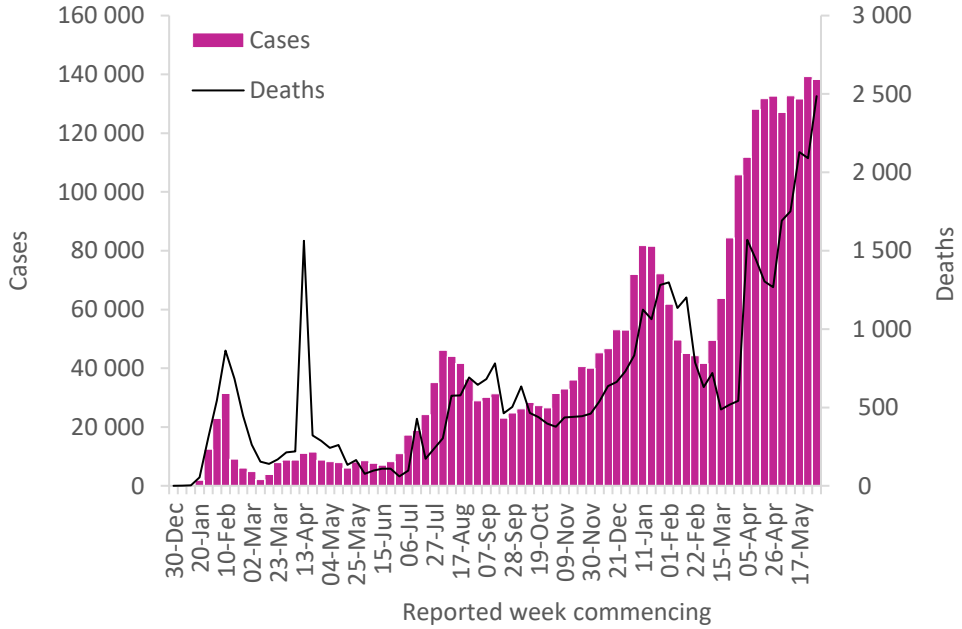
The highest numbers of new deaths were reported from India (20 787 new deaths; 1.5 new deaths per 100 000; a 22% decrease), Indonesia (1187 new deaths; 0.4 new deaths per 100 000; a 12% increase), and Nepal (636 new deaths; 2.2 new deaths per 100 000; a 37% decrease).



Western Pacific Region

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

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



Key weekly updates

WHO Director-General's key messages

- In his opening remarks at the media briefing on COVID-19 – 7 June 2021, the Director-General reminded us that although the number of cases and deaths have been decreasing for over a month, we are increasingly seeing a two-track pandemic: where many countries still face an extremely dangerous situation, while some of those with the highest vaccination rates are starting to talk about ending restrictions.
- On 12 June, leaders of G7 countries will meet for their annual summit. The Director-General urges the G7 not just to commit to sharing doses, but to commit to sharing them in June and July. The inequitable distribution of vaccines has allowed the virus to continue spreading, increasing the chances of a variant emerging that renders vaccines less effective and the biggest barrier to ending the pandemic remains sharing: of doses, of resources, of technology.

Upcoming meetings

- 10 June 2021, 1pm CEST: Global Consultation on SARS-CoV-2 Variants of Concern and their Impact on Public Health Interventions – register here.

Updates and publications

- The Sinovac COVID-19 vaccine: What you need to know
- Background document on the inactivated vaccine Sinovac-CoronaVac against COVID-19
- Interim recommendations for use of the inactivated COVID-19 vaccine, CoronaVac, developed by Sinovac
- Guidance on developing a national deployment and vaccination plan for COVID-19 vaccines
- Use of medical and non-medical/fabric masks for community outreach activities during the COVID-19 pandemic
- How to manage COVID-19 vaccines without Vaccine Viral Monitors (VVM) at vaccination service points?
- Revised scope and direction for the Smart Vaccination Certificate and WHO's role in the Global Health Trust Framework
- Statement on protection of health care in complex humanitarian emergencies
- Developing guidelines for fighting COVID-19: Fascinating to merge local and global expertise

Technical guidance and other resources

- Technical guidance
- WHO Coronavirus Disease (COVID-19) Dashboard
- Weekly COVID-19 Operational Updates
- WHO COVID-19 case definitions
- COVID-19 Supply Chain Inter-Agency Coordination Cell Weekly Situational Update
- Research and Development
- Online courses on COVID-19 in official UN languages and in additional national languages
- 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
- Updates from WHO regions:
  - African Region
  - Region of the Americas
  - Eastern Mediterranean Region
  - South-East Asia Region
  - European Region
  - Western Pacific Region
- Recommendations and advice for the public:
  - Protect yourself
  - Questions and answers
  - Travel advice
- EPI-WIN: tailored information for individuals, organizations and communities
- WHO Academy COVID-19 mobile learning app

Annex

Annex 1. COVID-19 confirmed cases and deaths reported in the last seven days by countries, territories and areas, and WHO Region, as of 6 June 2021**

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Africa	**65 943**	**3 563 825**	**317.7**	**1 167**	**88 274**	**7.9**	
South Africa	32 421	1 691 491	2 852.0	566	56 929	96.0	Community transmission
Uganda	5 745	51 676	113.0	12	374	0.8	Community transmission
Zambia	4 789	99 540	541.5	27	1 303	7.1	Community transmission
Namibia	3 398	58 057	2 284.9	87	905	35.6	Community transmission
Botswana	2 451	58 764	2 498.9	35	866	36.8	Community transmission
Algeria	2 225	130 681	298.0	50	3 510	8.0	Community transmission
Kenya	1 840	172 325	320.5	123	3 264	6.1	Community transmission
Ethiopia	1 605	272 805	237.3	58	4 201	3.7	Community transmission
Angola	1 414	35 594	108.3	37	794	2.4	Community transmission
Democratic Republic of the Congo	1 380	32 796	36.6	15	797	0.9	Community transmission
Cameroon	947	78 929	297.3	5	1 275	4.8	Community transmission
Seychelles	865	12 238	12 443.7	2	42	42.7	Community transmission
Cabo Verde	730	31 003	5 576.2	4	267	48.0	Community transmission
Nigeria	471	166 756	80.9	46	2 117	1.0	Community transmission
Ghana	413	94 188	303.1	2	786	2.5	Community transmission
Eritrea	400	4 461	125.8	0	14	0.4	Community transmission
Madagascar	397	41 631	150.3	30	859	3.1	Community transmission
Rwanda	382	27 162	209.7	10	359	2.8	Community transmission
Mozambique	358	71 082	227.4	1	837	2.7	Community transmission
Mauritania	322	19 785	425.5	3	466	10.0	Community transmission
Senegal	300	41 631	248.6	7	1 145	6.8	Community transmission
Côte d'Ivoire	281	47 476	180.0	5	306	1.2	Community transmission
Congo	262	11 920	216.0	2	155	2.8	Community transmission

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Zimbabwe	235	39 168	263.5	11	1 605	10.8	Community transmission
Gabon	226	24 591	1 104.8	4	154	6.9	Community transmission
Burundi	151	4 905	41.3	2	8	0.1	Community transmission
Togo	101	13 533	163.5	0	125	1.5	Community transmission
Equatorial Guinea	97	8 626	614.8	0	118	8.4	Community transmission
Guinea	83	23 255	177.1	1	162	1.2	Community transmission
Liberia	72	2 251	44.5	0	86	1.7	Community transmission
Mauritius	65	1 458	114.6	1	18	1.4	Clusters of cases
Malawi	55	34 384	179.7	2	1 156	6.0	Community transmission
Eswatini	47	18 636	1 606.3	1	673	58.0	Community transmission
Mali	31	14 296	70.6	1	518	2.6	Community transmission
Niger	28	5 438	22.5	0	192	0.8	Community transmission
Sierra Leone	28	4 168	52.3	0	79	1.0	Community transmission
Guinea-Bissau	26	3 787	192.4	0	68	3.5	Community transmission
Benin	24	8 082	66.7	1	102	0.8	Community transmission
Burkina Faso	22	13 452	64.4	1	167	0.8	Community transmission
Central African Republic	16	7 101	147.0	0	98	2.0	Community transmission
Lesotho	12	10 837	505.9	0	326	15.2	Community transmission
Chad	11	4 939	30.1	1	174	1.1	Community transmission
Sao Tome and Principe	8	2 353	1 073.6	0	37	16.9	Community transmission
Comoros	7	3 956	454.9	0	146	16.8	Community transmission
Gambia	6	5 999	248.2	0	179	7.4	Community transmission
South Sudan	0	10 688	95.5	0	115	1.0	Community transmission
United Republic of Tanzania	0	509	0.9	0	21	0.0	Pending
Territories[iii]							
Réunion	1 174	26 075	2 912.4	14	203	22.7	Community transmission
Mayotte	22	19 347	7 091.6	0	173	63.4	Community transmission

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Americas	**1 191 047**	**68 370 018**	**6 684.8**	**34 392**	**1 794 865**	**175.5**	
Brazil	449 478	16 841 408	7 923.2	11 797	470 842	221.5	Community transmission
Argentina	212 975	3 915 397	8 663.2	3 718	80 411	177.9	Community transmission
Colombia	175 479	3 518 046	6 914.0	3 683	90 890	178.6	Community transmission
United States of America	99 103	33 015 604	9 974.4	2 984	591 276	178.6	Community transmission
Chile	50 510	1 420 266	7 429.6	769	29 816	156.0	Community transmission
Peru	28 611	1 976 166	5 993.5	2 770	185 813	563.6	Community transmission
Uruguay	26 292	308 490	8 880.7	398	4 516	130.0	Community transmission
Mexico	20 853	2 429 631	1 884.4	5 496	228 568	177.3	Community transmission
Paraguay	19 999	368 183	5 162.0	717	9 609	134.7	Community transmission
Bolivia (Plurinational State of)	18 887	383 457	3 285.0	523	14 900	127.6	Community transmission
Canada	15 233	1 389 508	3 681.6	239	25 679	68.0	Community transmission
Costa Rica	13 877	327 979	6 438.4	191	4 153	81.5	Community transmission
Dominican Republic	9 155	299 681	2 762.6	24	3 652	33.7	Community transmission
Venezuela (Bolivarian Republic of)	9 105	239 252	841.4	103	2 698	9.5	Community transmission
Cuba	7 744	147 831	1 305.2	60	1 003	8.9	Community transmission
Guatemala	7 555	261 392	1 459.0	159	8 280	46.2	Community transmission
Ecuador	6 688	431 429	2 445.3	288	20 773	117.7	Community transmission
Honduras	4 588	241 039	2 433.6	170	6 454	65.2	Community transmission
Panama	4 268	381 122	8 833.0	24	6 389	148.1	Community transmission
Trinidad and Tobago	3 181	25 801	1 843.6	98	556	39.7	Community transmission
Suriname	1 704	16 009	2 729.0	50	332	56.6	Community transmission
Haiti	1 024	15 282	134.0	16	323	2.8	Community transmission
El Salvador	895	74 141	1 143.1	25	2 266	34.9	Community transmission
Guyana	735	17 459	2 219.7	23	403	51.2	Community transmission
Jamaica	527	48 901	1 651.4	22	964	32.6	Community transmission
Bahamas	170	11 930	3 033.7	2	232	59.0	Clusters of cases

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Nicaragua	116	5 949	89.8	1	187	2.8	Community transmission
Saint Lucia	73	5 108	2 781.7	3	80	43.6	Community transmission
Belize	70	12 861	3 234.4	1	325	81.7	Community transmission
Saint Vincent and the Grenadines	41	2 068	1 864.1	0	12	10.8	Community transmission
Barbados	20	4 029	1 402.0	0	47	16.4	Community transmission
Saint Kitts and Nevis	10	78	146.6	0	0	0.0	Clusters of cases
Antigua and Barbuda	4	1 263	1 289.7	0	42	42.9	Clusters of cases
Dominica	0	188	261.1	0	0	0.0	Clusters of cases
Grenada	0	161	143.1	0	1	0.9	Sporadic cases
Territories[iii]							
French Guiana	962	24 725	8 278.0	5	121	40.5	Community transmission
Puerto Rico	464	138 949	4 856.9	17	2 516	87.9	Community transmission
Guadeloupe	234	17 108	4 275.7	5	260	65.0	Community transmission
Saint Martin	104	2 113	5 465.7	7	22	56.9	Community transmission
United States Virgin Islands	95	3 560	3 409.1	1	28	26.8	Community transmission
Martinique	81	12 060	3 213.7	2	97	25.8	Community transmission
Aruba	61	11 018	10 319.8	0	107	100.2	Community transmission
Sint Maarten	44	2 448	5 708.7	0	28	65.3	Community transmission
Turks and Caicos Islands	8	2 420	6 250.3	0	17	43.9	Clusters of cases
Cayman Islands	6	587	893.2	0	2	3.0	Sporadic cases
Saint Barthélemy	6	1 029	10 409.7	0	1	10.1	Clusters of cases
Curaçao	5	12 276	7 481.1	0	122	74.3	Community transmission
Bonaire	4	1 589	7 597.4	0	17	81.3	Community transmission
Bermuda	3	2 494	4 004.9	1	33	53.0	Community transmission
Anguilla	0	109	726.6	0	0	0.0	Clusters of cases
British Virgin Islands	0	289	955.8	0	1	3.3	Clusters of cases
Falkland Islands (Malvinas)	0	63	1 808.8	0	0	0.0	Sporadic cases

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Montserrat	0	20	400.1	0	1	20.0	No cases
Saba	0	7	362.1	0	0	0.0	Sporadic cases
Saint Pierre and Miquelon	0	25	431.4	0	0	0.0	No cases
Sint Eustatius	0	20	637.1	0	0	0.0	No cases
Eastern Mediterranean	**202 208**	**10 278 904**	**1 406.5**	**3 503**	**205 145**	**28.1**	
Iran (Islamic Republic of)	67 533	2 960 751	3 525.0	1 200	80 941	96.4	Community transmission
Iraq	28 070	1 221 678	3 037.3	184	16 518	41.1	Community transmission
Pakistan	14 272	930 511	421.3	509	21 189	9.6	Community transmission
United Arab Emirates	13 934	581 197	5 876.4	23	1 696	17.1	Community transmission
Bahrain	13 883	249 582	14 667.7	152	1 091	64.1	Community transmission
Tunisia	10 408	353 782	2 993.4	374	12 948	109.6	Community transmission
Kuwait	9 183	315 900	7 397.1	30	1 794	42.0	Community transmission
Afghanistan	8 463	79 224	203.5	226	3 145	8.1	Community transmission
Saudi Arabia	8 278	456 562	1 311.4	106	7 440	21.4	Community transmission
Oman	7 433	222 799	4 362.9	80	2 401	47.0	Community transmission
Egypt	6 512	267 171	261.1	308	15 309	15.0	Clusters of cases
Jordan	4 180	739 319	7 246.0	73	9 516	93.3	Community transmission
Morocco	2 327	521 195	1 412.0	35	9 173	24.9	Community transmission
Libya	2 138	186 953	2 720.8	21	3 137	45.7	Community transmission
Qatar	1 414	218 455	7 582.5	12	566	19.6	Community transmission
Lebanon	1 291	541 423	7 932.4	40	7 758	113.7	Community transmission
Sudan	525	36 004	82.1	69	2 697	6.2	Clusters of cases
Syrian Arab Republic	199	24 639	140.8	27	1 790	10.2	Community transmission
Somalia	76	14 729	92.7	5	773	4.9	Community transmission
Yemen	45	6 780	22.7	5	1 325	4.4	Community transmission
Djibouti	29	11 556	1 169.6	0	154	15.6	Clusters of cases
Territories[iii]							

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
occupied Palestinian territory	2 015	338 694	6 639.2	24	3 784	74.2	Community transmission
Europe	**368 874**	**54 629 665**	**5 854.8**	**8 890**	**1 157 890**	**124.1**	
Kosovo [1]	104	107 443		1	2 234		Community transmission
Russian Federation	62 995	5 126 437	3 512.8	2 625	123 787	84.8	Clusters of cases
France	47 528	5 605 201	8 618.2	553	109 096	167.7	Community transmission
Turkey	46 616	5 282 594	6 263.5	797	48 068	57.0	Community transmission
The United Kingdom	30 724	4 511 673	6 646.0	61	127 836	188.3	Community transmission
Germany	21 219	3 700 367	4 449.3	816	89 222	107.3	Community transmission
Italy	17 098	4 230 153	7 092.6	470	126 472	212.1	Clusters of cases
Netherlands	17 048	1 661 454	9 544.4	60	17 675	101.5	Community transmission
Spain	16 219	3 693 012	7 802.3	68	80 099	169.2	Community transmission
Ukraine	13 045	2 214 517	5 063.6	710	51 182	117.0	Community transmission
Sweden	9 355	1 078 062	10 438.7	8	14 523	140.6	Community transmission
Kazakhstan	9 067	450 868	2 401.2	144	7 465	39.8	Clusters of cases
Belgium	8 899	1 070 801	9 293.2	95	25 033	217.3	Community transmission
Greece	8 394	408 789	3 813.8	229	12 253	114.3	Community transmission
Belarus	7 272	398 909	4 221.6	79	2 900	30.7	Community transmission
Denmark	6 202	285 636	4 905.5	2	2 518	43.2	Community transmission
Georgia	5 495	349 098	8 751.1	153	4 910	123.1	Community transmission
Portugal	3 821	852 034	8 275.5	9	17 032	165.4	Clusters of cases
Poland	3 186	2 875 136	7 574.5	414	74 152	195.4	Community transmission
Switzerland	2 699	694 181	8 020.9	4	10 215	118.0	Community transmission
Ireland	2 532	263 689	5 311.6	0	4 941	99.5	Community transmission
Kyrgyzstan	2 418	106 973	1 639.6	44	1 847	28.3	Clusters of cases
Czechia	2 358	1 663 517	15 555.7	55	30 159	282.0	Community transmission
Austria	2 267	642 429	7 217.4	39	10 373	116.5	Community transmission
Lithuania	2 254	276 453	9 894.2	50	4 307	154.1	Community transmission

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Norway	2 140	126 169	2 350.6	2	785	14.6	Clusters of cases
Hungary	1 976	806 008	8 250.2	146	29 770	304.7	Community transmission
Latvia	1 759	134 677	7 059.7	37	2 407	126.2	Community transmission
Slovenia	1 721	255 218	12 177.2	9	4 707	224.6	Clusters of cases
Uzbekistan	1 598	101 722	303.9	6	696	2.1	Clusters of cases
Serbia	1 516	713 562	10 301.6	65	6 909	99.7	Community transmission
Croatia	1 424	357 565	8 811.0	72	8 086	199.3	Community transmission
Romania	1 316	1 078 742	5 581.0	478	30 725	159.0	Community transmission
Bulgaria	1 205	419 426	6 033.6	156	17 813	256.2	Clusters of cases
Azerbaijan	924	334 647	3 300.5	33	4 936	48.7	Clusters of cases
Slovakia	746	390 436	7 153.6	65	12 404	227.3	Clusters of cases
Estonia	633	130 119	9 790.9	12	1 263	95.0	Clusters of cases
Armenia	544	223 180	7 531.6	26	4 458	150.4	Community transmission
Bosnia and Herzegovina	422	204 360	6 228.9	173	9 395	286.4	Community transmission
Finland	401	92 770	1 679.0	11	959	17.4	Community transmission
Cyprus	387	72 750	8 192.5	3	363	40.9	Clusters of cases
Republic of Moldova	327	255 432	6 332.0	32	6 132	152.0	Community transmission
Luxembourg	293	70 182	11 209.2	4	818	130.6	Community transmission
Montenegro	188	99 804	15 890.8	8	1 591	253.3	Clusters of cases
North Macedonia	161	155 407	7 459.4	50	5 448	261.5	Clusters of cases
Israel	112	839 566	9 699.8	10	6 418	74.1	Community transmission
Albania	77	132 374	4 599.8	2	2 451	85.2	Clusters of cases
Andorra	65	13 758	17 806.3	0	127	164.4	Community transmission
Malta	39	30 568	5 940.6	0	419	81.4	Clusters of cases
Iceland	28	6 604	1 813.6	0	30	8.2	Community transmission
Liechtenstein	10	3 111	8 029.0	0	57	147.1	Sporadic cases
Monaco	5	2 508	6 390.8	1	33	84.1	Sporadic cases

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Holy See	0	26	3 213.8	0	0	0.0	Sporadic cases
San Marino	0	5 090	14 997.9	0	90	265.2	Community transmission
Tajikistan	0	13 714	143.8	0	91	1.0	Pending
Territories[iii]							
Faroe Islands	29	741	1 516.4	0	1	2.0	Sporadic cases
Gibraltar	7	4 300	12 763.1	0	94	279.0	Clusters of cases
Isle of Man	5	1 597	1 878.1	0	29	34.1	No cases
Guernsey	1	823	1 276.6	3	17	26.4	Community transmission
Greenland	0	40	70.5	0	0	0.0	No cases
Jersey	0	3 243	3 008.5	0	69	64.0	Community transmission
South-East Asia	**1 049 694**	**32 654 915**	**1 615.5**	**23 369**	**425 123**	**21.0**	
India	914 539	28 809 339	2 087.6	20 787	346 759	25.1	Clusters of cases
Indonesia	40 280	1 850 206	676.4	1 187	51 449	18.8	Community transmission
Nepal	31 678	585 100	2 008.1	636	7 799	26.8	Community transmission
Thailand	23 160	177 467	254.3	224	1 236	1.8	Clusters of cases
Sri Lanka	21 764	202 357	945.0	251	1 656	7.7	Clusters of cases
Bangladesh	11 928	809 314	491.4	252	12 801	7.8	Community transmission
Maldives	4 632	67 538	12 494.5	24	182	33.7	Clusters of cases
Timor-Leste	907	7 659	580.9	1	17	1.3	Community transmission
Myanmar	727	144 253	265.1	7	3 223	5.9	Clusters of cases
Bhutan	79	1 682	218.0	0	1	0.1	Clusters of cases
Western Pacific	**138 239**	**3 139 006**	**159.8**	**2 486**	**47 634**	**2.4**	
Malaysia	52 040	610 574	1 886.5	641	3 291	10.2	Community transmission
Philippines	45 681	1 262 250	1 151.9	1 010	21 732	19.8	Community transmission
Japan	18 649	760 323	601.2	603	13 523	10.7	Clusters of cases
Mongolia	7 357	63 978	1 951.6	39	307	9.4	Clusters of cases
Republic of Korea	4 242	144 152	281.2	16	1 973	3.8	Clusters of cases

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Cambodia	4 209	33 613	201.0	43	252	1.5	Sporadic cases
China	3 341	114 105	7.8	125	5 070	0.3	Clusters of cases
Viet Nam	1 672	8 580	8.8	6	53	0.1	Clusters of cases
Papua New Guinea	426	16 327	182.5	2	164	1.8	Community transmission
Fiji	244	604	67.4	0	4	0.4	Sporadic cases
Singapore	173	62 176	1 062.8	1	33	0.6	Sporadic cases
Australia	75	30 158	118.3	0	910	3.6	Clusters of cases
Lao People's Democratic Republic	49	1 957	26.9	0	3	0.0	Sporadic cases
New Zealand	10	2 326	48.2	0	26	0.5	Sporadic cases
Brunei Darussalam	3	244	55.8	0	3	0.7	Sporadic cases
Solomon Islands	0	20	2.9	0	0	0.0	No cases
Territories[iii]							
Guam	39	7 957	4 714.6	0	139	82.4	Clusters of cases
French Polynesia	29	18 889	6 724.3	0	142	50.6	Sporadic cases
Marshall Islands	0	4	6.8	0	0	0.0	No cases
New Caledonia	0	128	44.8	0	0	0.0	Sporadic cases
Northern Mariana Islands (Commonwealth of the)	0	183	317.9	0	2	3.5	Pending
Samoa	0	1	0.5	0	0	0.0	No cases
Vanuatu	0	3	1.0	0	0	0.0	No cases
Wallis and Futuna	0	454	4 037.0	0	7	62.2	Sporadic cases
Global	**3 016 005**	**172 637 097**		**73 807**	**3 718 944**		

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

Annex 2. List of countries/territories/areas reporting Variants of Concern as of 8 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	●	-	-	-	-
Bolivia (Plurinational State of)	●	-	●	-	-
Bonaire	●	-	-	-	-
Bosnia and Herzegovina	○	-	-	-	-
Botswana	-	●	-	●	-
Brazil	●	●	●	●	-
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	●	●	●	●	-
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	●	-	-	●*	-
Guinea	●	●	-	-	-
Guinea-Bissau	●	●	-	-	-
Guyana	-	-	●	-	-
Haiti	●	-	●	-	-
Hungary	●	○	-	-	○
Iceland	●	-	-	-	-
India	●	●	●	●	-
Indonesia	●	●	-	●	-
Iran (Islamic Republic of)	●	●	-	●*	-
Iraq	●	-	-	-	-
Ireland	●	●	●	●	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Delta+
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	●	●	-	-	●*
Malaysia	●	●	-	●	-
Malta	●	○	●	○*	-
Martinique	●	●	-	-	-
Mauritania	●	●	-	●	-
Mauritius	○	●	-	-	-
Mayotte	●	●	-	-	-
Mexico	●	●	●	●	-
Monaco	●	○	-	-	-
Montenegro	●	-	-	-	-
Morocco	●	-	-	●*	-
Mozambique	-	●	-	-	-
Namibia	-	●	-	-	-
Nepal	●	-	-	●	-
Netherlands	●	●	●	●	-
New Caledonia	●	-	-	-	-
New Zealand	●	●	○	○	-
Niger	●	-	-	-	-
Nigeria	●	-	-	●	-
North Macedonia	●	●	-	-	●*
Norway	●	●	●	●	-
Occupied Palestinian Territory	●	●	-	-	-
Oman	●	-	-	-	-
Pakistan	●	●	●	●*	-
Panama	●	●	●	-	●
Paraguay	-	-	●	-	-
Peru	●	-	●	-	-
Philippines	●	●	●	●	-
Poland	●	○	●	●	-
Portugal	●	●	●	○	-
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	●	●	●	●	-
South Africa	●	●	-	●	-
Spain	●	●	●	●	-
Sri Lanka	●	●	-	○	-
Suriname	●	●	●	-	-
Sweden	●	●	●	●	-
Switzerland	●	●	○	●	-
Thailand	●	●	●	●	-
Togo	●	●	-	-	-
Trinidad and Tobago	●	-	●	-	-
Tunisia	●	●	-	-	-
Turkey	●	●	●	●	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Delta+
Turks and Caicos Islands	●	-	-	-	-
Uganda	●	●	-	●	-
Ukraine	●	○	-	-	-
United Arab Emirates	●	●	●	-	-
United Kingdom	●	●	●	●	-
United Republic of Tanzania	-	●	-	-	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Delta+
United States of America	●	●	●	●	-
Uruguay	●	-	●	-	-
Uzbekistan	●	●	-	-	-
Venezuela (Bolivarian Republic of)	●*	-	●	-	-
Viet Nam	●	●	-	●	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Delta+
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.
***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. 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.

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.

Global totals include 758 cases and 13 deaths reported from international conveyances.

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.

[i] Excludes countries, territories, and areas that have never reported a confirmed COVID-19 case (Annex 1), or the detection of a variant of concern (Annex 2).

[ii] Transmission classification is based on a process of country/territory/area self-reporting. Classifications are reviewed on a weekly basis and may be revised as new information becomes available. Differing degrees of transmission may be present within countries/territories/areas. For further information, please see: Considerations for implementing and adjusting public health and social measures in the context of COVID-19.

[iii] "Territories" include territories, areas, overseas dependencies and other jurisdictions of similar status.

COVID-19 Weekly Epidemiological Update

Edition 44, published 15 June 2021

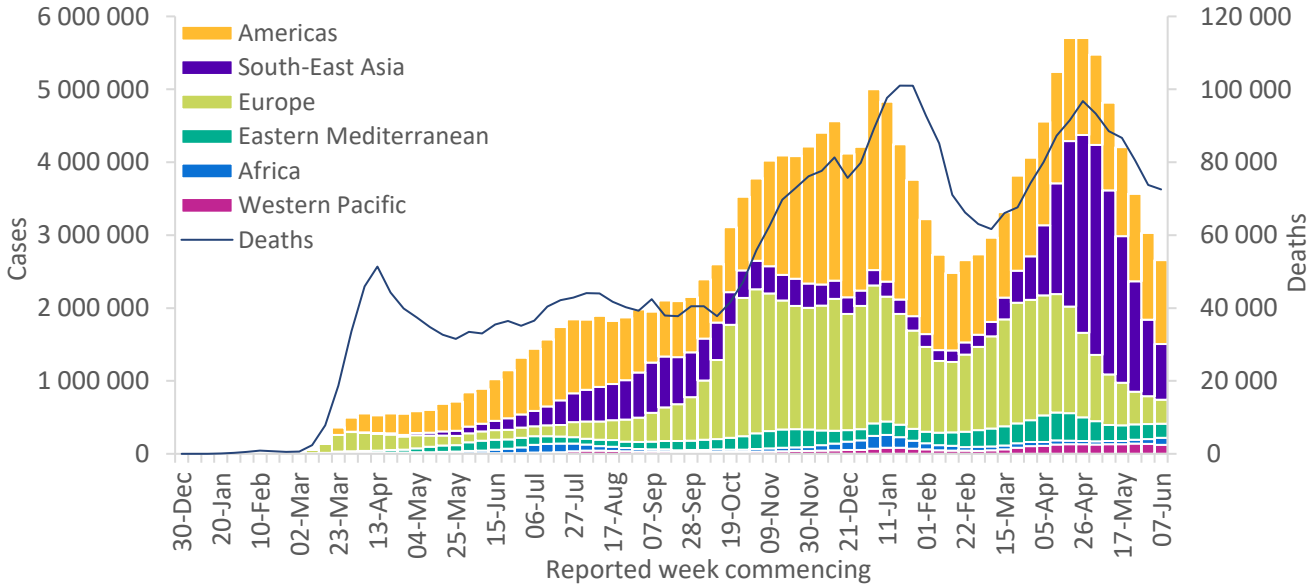
In this edition:

Global overview

Data as of 13 June 2021

Global numbers of cases and deaths continued to decrease over the past week (7-13 June 2021) with over 2.6 million new weekly cases and over 72 000 deaths, a 12% and a 2% decrease respectively, compared to the previous week (Figure 1). While the number of cases reported globally now exceeds 175 million, last week saw the lowest weekly case incidence since February 2021. Declines in the number of new weekly cases were reported across all Regions except for the African Region. The South-East Asia, European and Western Pacific Regions reported marked declines in the number of new cases in the past week, whereas the Region of the Americas and the Eastern Mediterranean Region reported similar numbers as compared to the previous week (Table 1). While the number of new deaths reported in the past week decreased across all Regions except for the African and the South-East Asia Regions, globally mortality remains high with more than 10 000 deaths reported each day. While the epidemics in some of the most affected countries have started to show signs of slowing down, and the global weekly mortality rate continues to decline for a sixth consecutive week, many countries across all WHO Regions continue to struggle with access to vaccines, the spread of emerging SARS-CoV-2 variants, and overburdened healthcare systems.

Figure 1. COVID-19 cases reported weekly by WHO Region, and global deaths, as of 13 June 2021**



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

The highest numbers of new cases were reported from India (630 650 new cases; 31% decrease), Brazil (454 710 new cases; similar to the previous week), Argentina (177 693 new cases; 17% decrease), Colombia (176 661 new cases; similar to the previous week) and the United States of America (105 019 new cases; 6% increase).

Table 1. Newly reported and cumulative COVID-19 cases and deaths, by WHO Region, as of 13 June 2021**

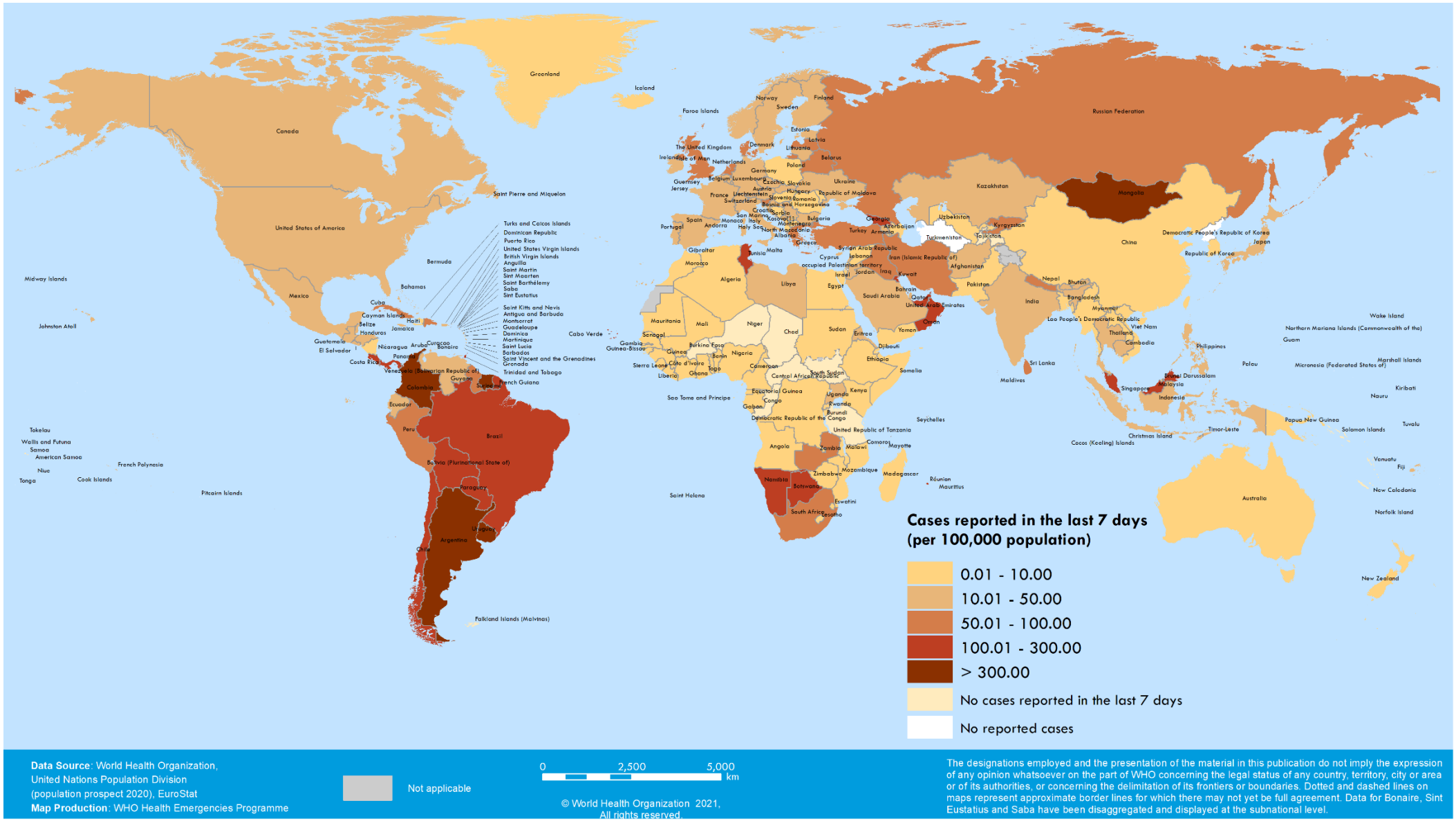
WHO Region	New cases in last 7 days (%)	Change in new cases in last 7 days *	Cumulative cases (%)	New deaths in last 7 days (%)	Change in new deaths in last 7 days *	Cumulative deaths (%)
Americas	1 148 857 (43%)	-4%	69 519 254 (40%)	31 902 (44%)	-7%	1 826 772 (48%)
Europe	332 656 (13%)	-13%	54 988 102 (31%)	7 248 (10%)	-17%	1 166 500 (31%)
South-East Asia	763 305 (29%)	-27%	33 432 290 (19%)	26 324 (36%)	12%	451 838 (12%)
Eastern Mediterranean	191 794 (7%)	-5%	10 470 698 (6%)	3 353 (5%)	-4%	208 498 (5%)
Africa	95 151 (4%)	44%	3 658 976 (2%)	1 400 (2%)	20%	89 674 (2%)
Western Pacific	124 019 (5%)	-10%	3 263 070 (2%)	2 301 (3%)	-7%	49 935 (1%)
Global	**2 655 782 (100%)**	**-12%**	**175 333 154 (100%)**	**72 528 (100%)**	**-2%**	**3 793 230 (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, 7 – 13 June 2021**



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

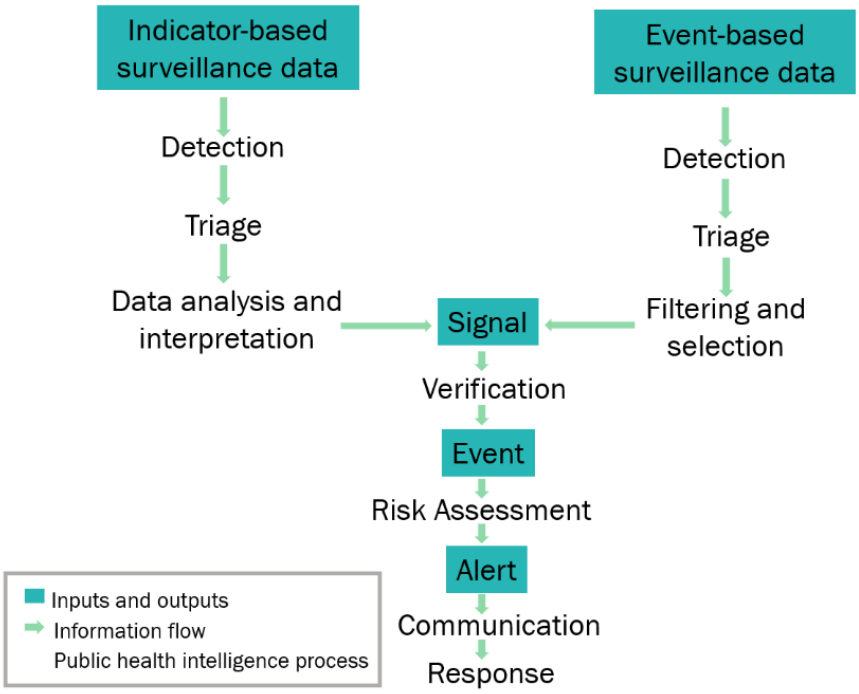
Special focus: Strengthening public health intelligence through event-based surveillance – learning from the COVID-19 pandemic

Public health intelligence and event-based surveillance

Public health intelligence (PHI) is a conceptual framework that encompasses all activities that relate to the detection, verification, assessment, investigation and communication of information on events that pose a potential risk to human health (e.g., disease, natural disaster, chemical exposure). PHI serves as an early warning and response system, which is informed by indicator-based surveillance (IBS), which uses structured data from formal sources, and event-based surveillance (EBS) which uses informal sources such as media articles, hotlines and community reports, in order to detect acute public health events and/or risks.

EBS aims to rapidly collect, monitor, assess and interpret information in an organized manner and complement information derived from IBS. EBS involves the detection, triaging (filtering and selection) and verification of new public health threats as well as relevant changes in ongoing events. It also triggers risk assessments that may consequently lead to a response (Figure 3). Successful EBS depends on efficient networks, timely information sharing, diverse sources, collaboration and buy-in of stakeholders. A signal is information that is collected and triaged as a potential public health risk and can include changes in an ongoing event. Signals are rapidly detected from media and community sources to complement IBS data, demonstrating the importance of systematic integration of EBS in PHI. EBS can more readily be established in limited-resource settings compared to IBS, where surveillance structures may be limited or absent.

Figure 3. Processes and information flow for public health intelligence



Modified from Early detection, assessment and response to acute public health events: Implementation of Early Warning and Response with a focus on Event-Based Surveillance Epidemic Intelligence process.

EBS informs the COVID-19 response

In the context of COVID-19, EBS has informed WHO's COVID-19 response by providing important contextualization of epidemiological data in a timely manner. Media monitoring in multiple languages has been the main method for EBS. Signals of interest from around the world are identified, assessed and documented daily based on predefined criteria. These criteria consider changes in epidemiology, virus mutations/variants, testing, impact on vulnerable populations, clusters related to various settings (e.g., workplaces, schools,

prisons and long-term care homes), as well as the implementation of public health and social measures (PHSM), changes in travel patterns and restrictions, social gatherings and events. Criteria are adapted over time depending on emerging knowledge and are tailored to specific needs at global and regional levels. EBS is also used to identify potential areas of concern, by monitoring reports of health system capacity, and to inform estimates of disease dynamics in areas where surveillance or reporting are limited.

The Epidemic Intelligence from Open Sources (EIOS) system is one of the main tools used by WHO to conduct monitoring of publicly available information, including for COVID-19. It is a fit-for-purpose but constantly evolving web-based system designed to augment and accelerate global public health intelligence activities. The core of the EIOS system is developed by the Joint Research Centre of the European Commission based on a long-standing collaboration with WHO. The EIOS system is the technological centerpiece of the broader EIOS initiative, a unique collaboration between various public health stakeholders around the globe. EIOS brings together new and existing initiatives, networks and systems to create a unified all-hazards, One Health approach to early detection, verification, assessment and communication of public health threats using publicly available information.

Evolution of COVID-19 EBS

Since the beginning of the COVID-19 pandemic, the scope and processes for EBS has evolved to reflect the changing response priorities. Early in 2020, during the early weeks and months of the pandemic, EBS media monitoring complemented official reporting of case and death counts through the International Health Regulations (IHR 2005) mechanism. As the pandemic evolved, EBS more regularly identified epidemiological trends in COVID-19 disease patterns, sometimes unusual, that were not readily captured by global indicator-based surveillance. Topics of interest have also evolved over time, such as health systems capacity, the introduction of vaccines, emergence of new variants, unusual clinical presentations and manifestations as well as upsurges in case and deaths in localized areas and among population groups at risk; for example, health care workers, rapid response teams, indigenous populations, children, pregnant women and the elderly.

Consistent and systematic media monitoring, however, has been challenging due to the unprecedentedly high volume of reports and media articles, and the rapid evolution of risks and response needs. In response to these challenges, WHO strengthened the collaboration across all regions throughout 2020 through the shared use of the EIOS system to maximize the use of resources and to jointly address challenges. This collaboration has facilitated information sharing and increased efficiency of work, particularly around detection and assessment of SARS-CoV-2 variants and supported a rapid response.

The COVID-19 pandemic has highlighted an opportunity for new and strengthened collaborations among WHO, Member States and partners, as well as strengthened communication between WHO offices. EBS has provided critical public health intelligence during the COVID-19 pandemic and can continue adapting to align with evolving needs of this pandemic. Sustained, multi-level collaboration is needed to enable continuous adaptation to the changing surveillance landscape and to further improve geographical representativeness of EBS sources. Best practices and lessons learned in EBS during the COVID-19 pandemic can also be applied to strengthen and optimize non-COVID-19 surveillance.

Additional resources

- A Guide to Establishing Event-based Surveillance
- Epidemic Intelligence from Open Sources
- Early detection, assessment and response to acute public health events: Implementation of Early Warning and Response with a focus on Event-Based Surveillance Epidemic Intelligence process

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

WHO, in collaboration with national authorities, institutions and researchers, routinely assess 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. 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 will update lists 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 impacts of these variants. Here we provide updates on classifications of VOCs and VOIs, including a newly designated global VOI – Lambda (lineage C.37) – as well as the updated countries/territories/areas reporting the detection of VOCs.

Table 2: SARS-CoV-2 Variants of Concern (VOCs) and Variants of Interest (VOIs), as of 15 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 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/S.484K	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

VOI Lambda

On 14 June 2021, a variant assigned to Pango lineage C.37, GISAID clade GR/452Q.V1, NextStrain clade 20D, was designated as a global VOI, and assigned the WHO label "Lambda". This variant has been monitored as an alert for an extended period, and upon more information and updated assessments, is now considered as meeting the VOI working definition based upon evidence of continued emergence and suspected phenotypic implications.

Lambda has been associated with substantive rates of community transmission in multiple countries, with rising prevalence over time concurrent with increased COVID-19 incidence. The earliest sequenced samples were reported from Peru in August 2020. As of 15 June 2021, over 1730 sequences have been uploaded to GISAID from 29 countries/territories/areas in five WHO regions.[1] Elevated prevalence has been noted particularly in South America in countries such as Chile (31% overall prevalence among submitted sequences

since first detected in this location to date), Peru (9%), Ecuador (8%), and Argentina (3%).[2] Authorities in Peru reported that 81% of COVID-19 cases sequenced since April 2021 were associated with Lambda.[3] Argentina reported increasing prevalence of Lambda since the third week of February 2021, and between 2 April and 19 May 2021, the variant accounted for 37% of the COVID-19 cases sequenced.[4] In Chile, prevalence of Lambda has increased over time, accounting for 32% of sequenced cases reported in the last 60 days – co-circulating at similar rates to variant Gamma (33%), but outcompeting variant Alpha (4%) over the same period.[5]

Lambda carries a number of mutations with suspected phenotypic implications, such as a potential increased transmissibility or possible increased resistance to neutralizing antibodies.[6] It is characterised by mutations in the spike protein, including G75V, T76I, del247/253, L452Q, F490S, D614G and T859N; however, there is currently limited evidence on the full extent of the impact associated with these genomic changes, and further robust studies into the phenotypic impacts are needed to better understand the impact on countermeasures and to control the spread. Further studies are also required to validate the continued effectiveness of vaccines.

Geographic distribution of VOCs

As surveillance activities to detect SARS-CoV-2 variants are strengthened at local and national levels, including by strategic genomic sequencing and the sharing of sequences and supporting meta-data, the number of countries/areas/territories reporting VOCs has continued to increase (Figure 4). 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.

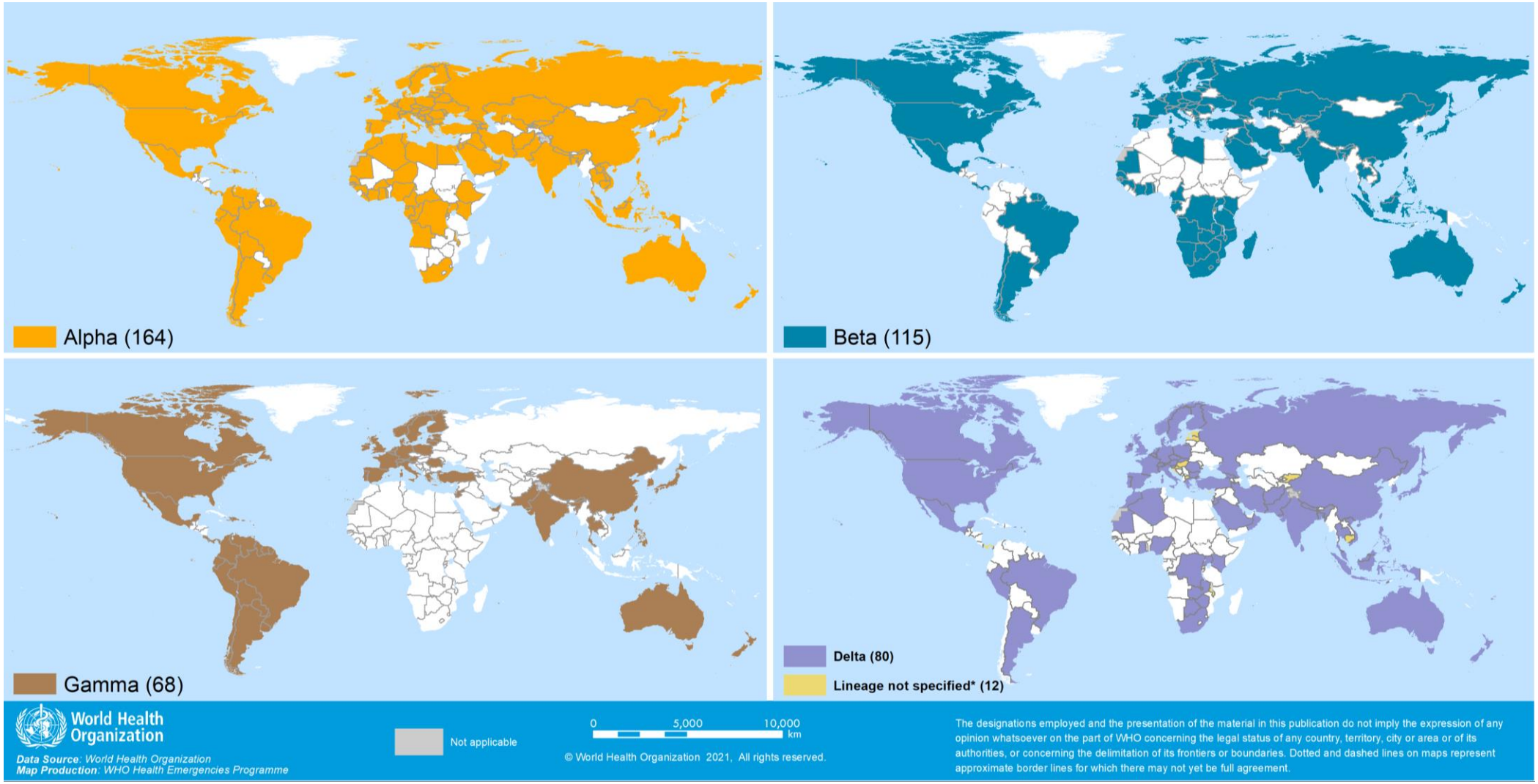
Additional resources

- 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
- ACT accelerator diagnostic pillar, FIND test directory

References

1. GISAID. Tracking of variants. www.gisaid.org/hcov19-variants.
2. Latif AA, et al. C.37 Lineage Report. https://outbreak.info/situation-reports?pango=C.37.
3. Peru Ministerio de Salud: Instituto Nacional de Salud. INS confirma presencia de variante C-37 del coronavirus en Perú, 25 Mayo 2021. https://web.ins.gob.pe/index.php/es/prensa/noticia/minsa-ins-confirma-presencia-de-variante-c-37-del-coronavirus-en-peru.
4. Argentina.gob.ar. Vigilancia de variantes de SARS-CoV-2 en CABA, Provincia de Buenos Aires, Córdoba, Entre Ríos, Neuquén y Santa Fe. https://www.argentina.gob.ar/noticias/vigilancia-de-variantes-de-sars-cov-2-en-caba-provincia-de-buenos-aires-cordoba-entre-rios
5. Latif AA, et al. Chile Mutation Report. https://outbreak.info/location-reports?loc=CHL&pango=C.37.
6. Romero PE. et al. (2021). Novel sublineage within B.1.1.1 currently expanding in Peru and Chile, with a convergent deletion in the ORF1a gene (Δ3675-3677) and a novel deletion in the Spike gene (Δ246-252, G75V, T76I, L452Q, F490S, T859N). Virologica.org, 24 Apr 2021.

Figure 4. Countries, territories and areas reporting variants Alpha, Beta, Gamma and Delta, as of 15 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*

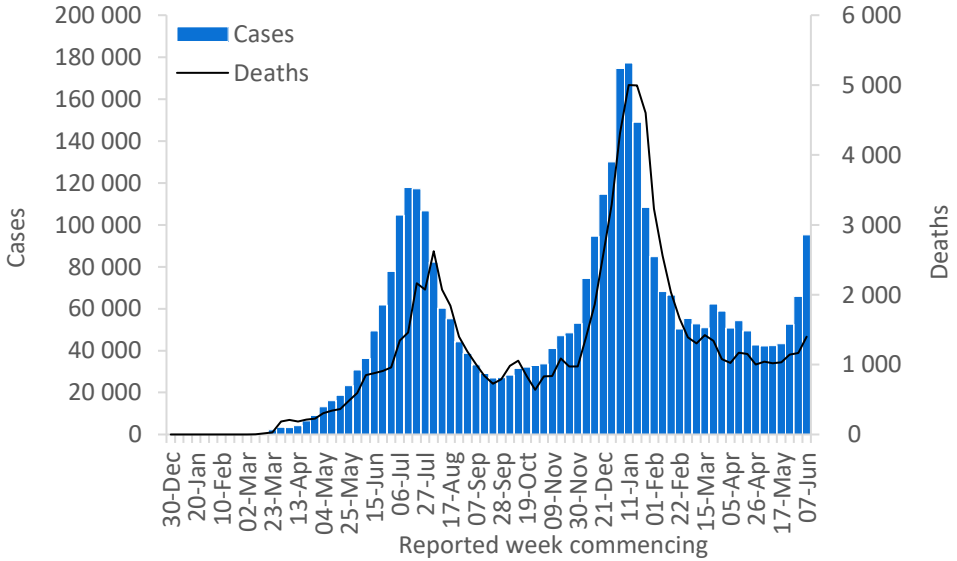
WHO regional overviews

Epidemiological week 7-13 June 2021

African Region

The African Region reported over 95 000 new cases and over 1400 new deaths, a 44% and a 20% increase respectively compared to the previous week. The region reported a marked increase in weekly case incidence for the third consecutive week, with the largest increases in countries in the Southern, Eastern and Northern parts of Africa. The highest numbers of new cases were reported from South Africa (47 934 new cases; 80.8 new cases per 100 000 population; a 48% increase), Zambia (10 792 new cases; 58.7 new cases per 100 000; a 125% increase), and Uganda (8574 new cases; 18.7 new cases per 100 000; a 49% increase).

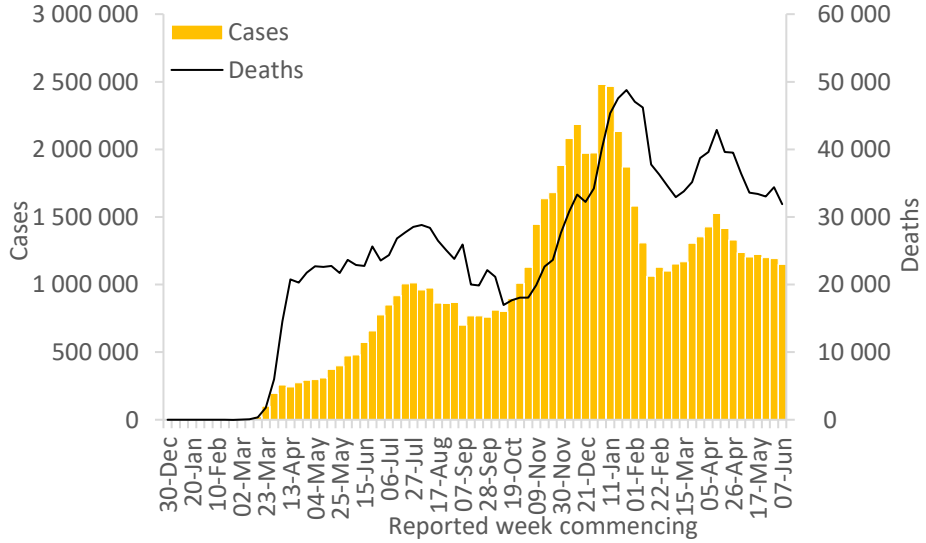
The highest numbers of new deaths were reported from South Africa (724 new deaths; 1.2 new deaths per 100 000 population; a 28% increase), Kenya (132 new deaths; 0.2 new deaths per 100 000; a 7% increase) and Namibia (88 new deaths; 3.5 new deaths per 100 000; a 1% increase).



Region of the Americas

The Region of the Americas reported over 1.1 million new cases, a similar number to the previous week, and just under 32 000 new deaths, a 7% decrease compared to the previous week. Despite this decrease, high levels of transmission and mortality are still being recorded in many countries in South and Central America. The highest numbers of new cases were reported from Brazil (454 710 new cases; 213.9 new cases per 100 000; similar to the previous week), Argentina (177 693 new cases; 393.2 new cases per 100 000; a 17% decrease), and Colombia (176 661 new cases; 347.2 new cases per 100 000; a 1% increase).

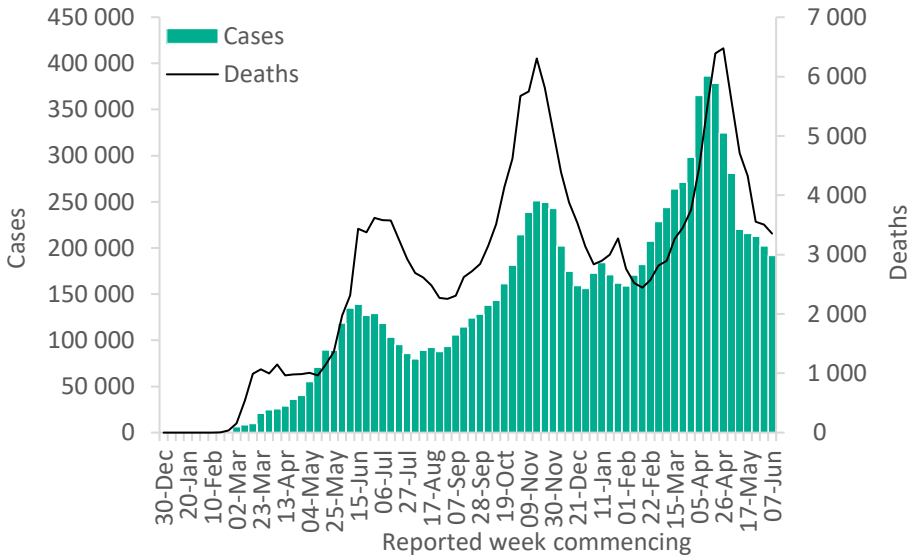
The highest numbers of new deaths were also reported from Brazil (13 393 new deaths; 6.3 new deaths per 100 000; a 14% increase), Argentina (4217 new deaths; 9.3 new deaths per 100 000; a 13% increase), and Colombia (3725 new deaths; 7.3 new deaths per 100 000; similar to the previous week).



Eastern Mediterranean Region

The Eastern Mediterranean Region reported over 191 000 new cases and over 3300 new deaths, a 5% and a 4% decrease respectively compared to the previous week. While declining weekly case incidence trends have been recorded for the eighth consecutive week, a number of countries across the region are starting to report increasing case and death incidence, including Oman, Tunisia and Afghanistan. The highest numbers of new cases were reported from the Islamic Republic of Iran (59 771 new cases; 71.2 new cases per 100 000; an 11% decrease), Iraq (29 013 new cases; 72.1 new cases per 100 000; a 3% increase), and the United Arab Emirates (14 820 new cases; 149.8 new cases per 100 000; a 6% increase).

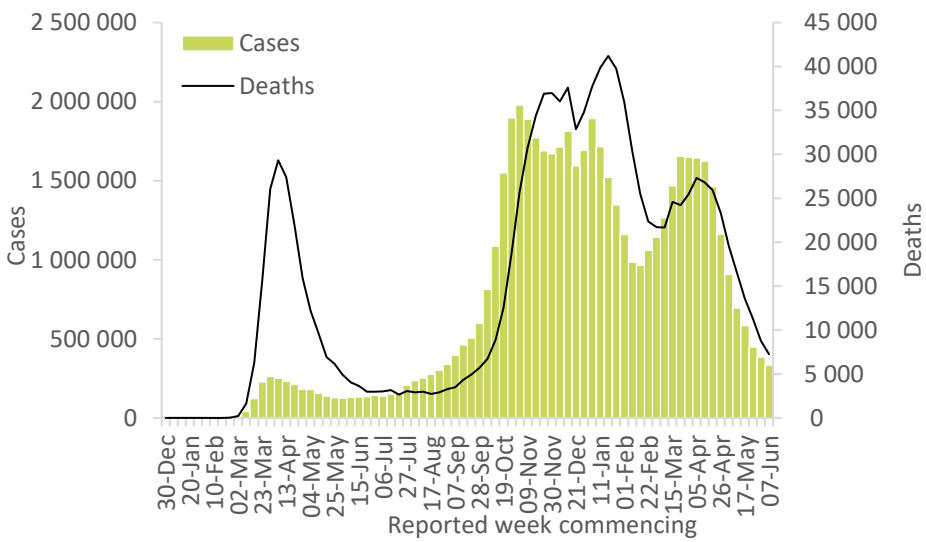
The highest numbers of new deaths were reported from the Islamic Republic of Iran (970 new deaths; 1.2 new deaths per 100 000; a 19% decrease), Tunisia (488 new deaths; 4.1 new deaths per 100 000; a 30% increase), and Pakistan (444 new deaths; 0.2 new deaths per 100 000; a 13% decrease).



European Region

The European Region reported over 332 000 new cases, a 13% decrease when compared to the previous week and a declining trend for the ninth consecutive week. The Region reported over 7200 new deaths, a 17% decrease when compared to the previous week. While most countries across the Region continue to see decreasing or stabilizing trends, some countries, such as the Russian Federation, the United Kingdom and Kyrgyzstan have reported increases in case incidence this week compared to the previous week. The highest numbers of new cases were reported from Russian Federation (82 250 new cases; 56.4 new cases per 100 000; a 31% increase), The United Kingdom (46 825 new cases; 69.0 new cases per 100 000; a 52% increase), and Turkey (42 841 new cases; 50.8 new cases per 100 000; an 8% decrease).

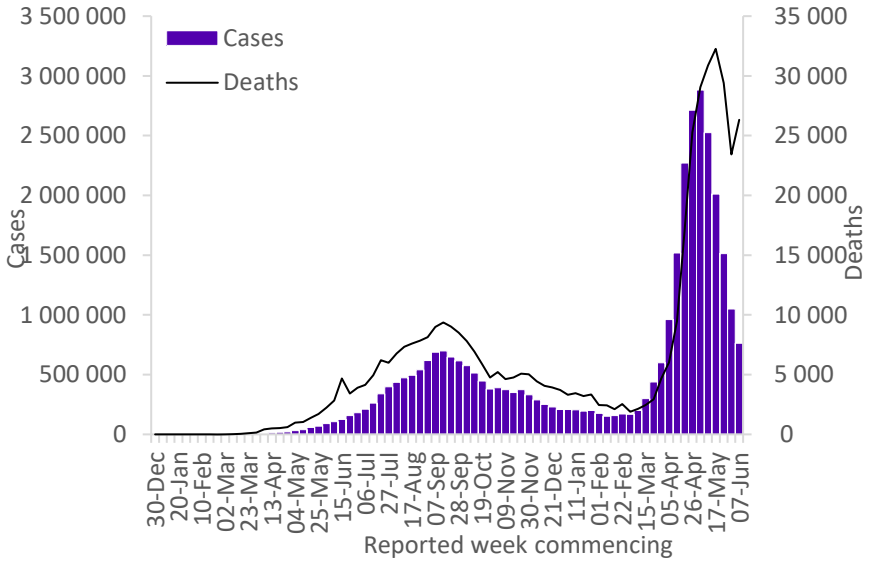
The highest numbers of new deaths were reported from Russian Federation (2643 new deaths; 1.8 new deaths per 100 000; a 1% increase), Germany (612 new deaths; 0.7 new deaths per 100 000; a 25% decrease), and Turkey (600 new deaths; 0.7 new deaths per 100 000; a 25% decrease).



South-East Asia Region

The South-East Asia Region reported over 763 000 new cases, a 27% decrease compared to the previous week. Weekly case incidence has been decreasing sharply for five consecutive weeks, largely driven by decreases in the number of cases in a small number of countries. While the number of newly reported cases continues to decrease in India, Bangladesh has reported an increasing trend in cases for the past four weeks. The Region reported over 26 000 new deaths a 12% increase when compared to the previous week. The highest numbers of new cases were reported from India (630 650 new cases; 45.7 new cases per 100 000; a 31% decrease), Indonesia (55 320 new cases; 20.2 new cases per 100 000; a 38% increase), and Nepal (20 348 new cases; 69.8 new cases per 100 000; a 34% decrease).

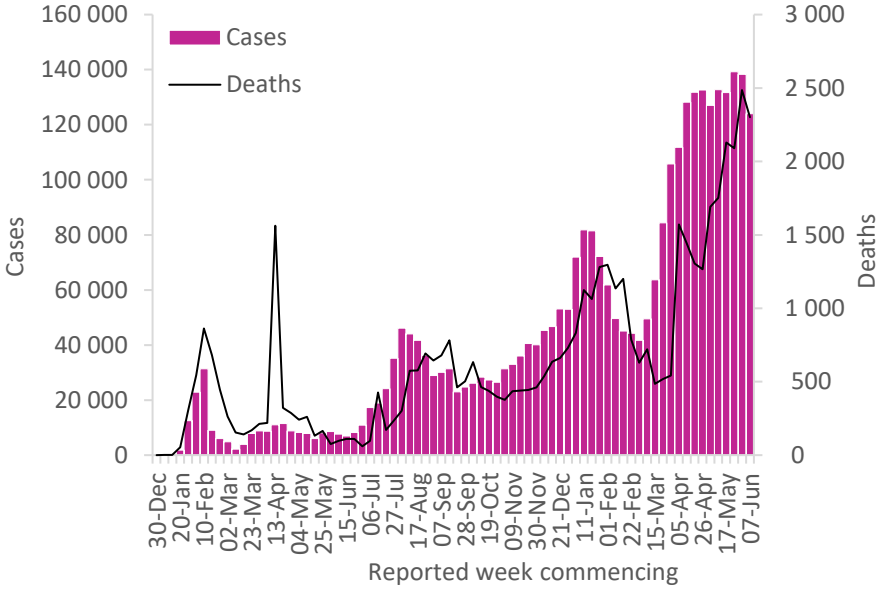
The highest numbers of new deaths were also reported from India (23 625 new deaths; 1.7 new deaths per 100 000; a 14% increase), Indonesia (1267 new deaths; 0.5 new deaths per 100 000; a 5% increase), and Nepal (514 new deaths; 1.8 new deaths per 100 000; an 18% decrease).



Western Pacific Region

The Western Pacific Region reported over 124 000 new cases and over 2300 new deaths, a 10% and a 7% decrease respectively compared to the previous week. While the region has an overall decreasing trend in cases, some countries, including Fiji, Vietnam and Mongolia are reporting increases and peak numbers of cases. The highest numbers of new cases were reported from the Philippines (46 087 new cases; 42.1 new cases per 100 000; a 1% increase), Malaysia (41 630 new cases; 128.6 new cases per 100 000; a 20% decrease), and Japan (13 499 new cases; 10.7 new cases per 100 000; a 28% decrease).

The highest numbers of new deaths were also reported from the Philippines (920 new deaths; 0.8 new deaths per 100 000; a 9% decrease), Malaysia (553 new deaths; 1.7 new deaths per 100 000; a 14% decrease), and Japan (510 new deaths; 0.4 new deaths per 100 000; a 15% decrease).



Key weekly updates

WHO Director-General's key messages

- In his opening remarks at the media briefing on COVID-19 – 14 June 2021, the Director-General highlighted that the global decline in cases of COVID-19 reported to WHO masks a worrying increase in cases and deaths in many countries, and that the steep increase in Africa is especially concerning because it is the region with the least access to vaccines, diagnostics and therapeutic oxygen.
- The emergence of more transmissible variants means public health and social measures (PHSM) may need to be more stringent and applied for longer, particularly in areas where vaccination rates remain low. To improve the evidence base on the effectiveness of PHSM, WHO is collecting data globally on which measures are used and the level at which they are applied. WHO has also established a new working group, with the support of Norway, to study the impact of PHSM during COVID-19 and other health emergencies.
- In his opening remarks at the G7 Summit – 12 June 2021, the Director-General said that to end the pandemic, our shared goal must be to vaccinate at least 70% of the world's population by the time the G7 meets again in Germany in 2022. He welcomed the announcement that the G7 countries will donate 870 million vaccine doses, primarily through COVAX. "This is a big help, but we need more, and we need them faster. More than 10 000 people are dying every day."

Updates and publications

- Young people and COVID-19: Behavioural considerations for promoting safe behaviours
- COVID-19 Vaccine Introduction and deployment Costing tool (CVIC tool)
- Update on WHO Interim recommendations on COVID-19 vaccination of pregnant and lactating women
- Statement for healthcare professionals: How COVID-19 vaccines are regulated for safety and effectiveness
- G7 announces pledges of 870 million COVID-19 vaccine doses, of which at least half to be delivered by the end of 2021
- The ACT Accelerator partnership welcomes commitment of 870 million vaccine doses and calls for more investment in all tools to end the pandemic

Technical guidance and other resources

- Technical guidance
- WHO Coronavirus Disease (COVID-19) Dashboard
- Weekly COVID-19 Operational Updates
- WHO COVID-19 case definitions
- COVID-19 Supply Chain Inter-Agency Coordination Cell Weekly Situational Update
- Research and Development
- Online courses on COVID-19 in official UN languages and in additional national languages
- 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
- Updates from WHO regions:
  - African Region
  - Region of the Americas
  - Eastern Mediterranean Region
  - South-East Asia Region
  - European Region
  - Western Pacific Region
- Recommendations and advice for the public:
  - Protect yourself
  - Questions and answers
  - Travel advice
- EPI-WIN: tailored information for individuals, organizations and communities
- WHO Academy COVID-19 mobile learning app

Annex

Annex 1. COVID-19 confirmed cases and deaths reported in the last seven days by countries, territories and areas, and WHO Region, as of 13 June 2021**

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Africa	**95 151**	**3 658 976**	**326.1**	**1 400**	**89 674**	**8.0**	
South Africa	47 934	1 739 425	2 932.8	724	57 653	97.2	Community transmission
Zambia	10 792	110 332	600.2	62	1 365	7.4	Community transmission
Uganda	8 574	60 250	131.7	49	423	0.9	Community transmission
Namibia	6 148	64 205	2 526.9	88	993	39.1	Community transmission
Botswana	3 276	62 040	2 638.2	30	896	38.1	Community transmission
Kenya	2 851	175 176	325.8	132	3 396	6.3	Community transmission
Algeria	2 389	133 070	303.5	55	3 565	8.1	Community transmission
Democratic Republic of the Congo	2 153	34 949	39.0	37	834	0.9	Community transmission
Ethiopia	1 223	274 028	238.4	36	4 237	3.7	Community transmission
Seychelles	1 176	13 414	13 639.5	1	43	43.7	Community transmission
Angola	1 006	36 600	111.4	31	825	2.5	Community transmission
Cameroon	975	79 904	301.0	27	1 302	4.9	Community transmission
Zimbabwe	684	39 852	268.1	27	1 632	11.0	Community transmission
Cabo Verde	568	31 571	5 678.4	6	273	49.1	Community transmission
Rwanda	498	27 660	213.6	7	366	2.8	Community transmission
Eritrea	387	4 848	136.7	2	16	0.5	Community transmission
Mozambique	379	71 461	228.6	3	840	2.7	Community transmission
Senegal	321	41 952	250.6	6	1 151	6.9	Community transmission
Ghana	305	94 493	304.1	3	789	2.5	Community transmission
Nigeria	303	167 059	81.0	0	2 117	1.0	Community transmission
Madagascar	263	41 894	151.3	23	882	3.2	Community transmission
Mauritania	255	20 040	431.0	9	475	10.2	Community transmission

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Liberia	233	2 484	49.1	7	93	1.8	Community transmission
Côte d'Ivoire	186	47 662	180.7	0	306	1.2	Community transmission
Gabon	145	24 736	1 111.4	2	156	7.0	Community transmission
Sierra Leone	144	4 312	54.1	3	82	1.0	Community transmission
Guinea	134	23 389	178.1	5	167	1.3	Community transmission
Mauritius	114	1 572	123.6	0	18	1.4	Clusters of cases
Burundi	108	5 013	42.2	0	8	0.1	Community transmission
Malawi	101	34 485	180.3	3	1 159	6.1	Community transmission
Eswatini	96	18 732	1 614.6	3	676	58.3	Community transmission
Togo	64	13 597	164.2	1	126	1.5	Community transmission
Mali	53	14 349	70.9	5	523	2.6	Community transmission
Benin	27	8 109	66.9	0	102	0.8	Community transmission
Equatorial Guinea	24	8 650	616.5	2	120	8.6	Community transmission
Lesotho	22	10 859	506.9	0	326	15.2	Community transmission
Guinea-Bissau	15	3 802	193.2	1	69	3.5	Community transmission
Gambia	9	6 008	248.6	1	180	7.4	Community transmission
Comoros	8	3 964	455.8	0	146	16.8	Community transmission
Niger	8	5 446	22.5	0	192	0.8	Community transmission
Burkina Faso	7	13 459	64.4	0	167	0.8	Community transmission
Sao Tome and Principe	4	2 357	1 075.5	0	37	16.9	Community transmission
Chad	3	4 942	30.1	0	174	1.1	Community transmission
Central African Republic	0	7 101	147.0	0	98	2.0	Community transmission
Congo	0	11 920	216.0	0	155	2.8	Community transmission
South Sudan	0	10 688	95.5	0	115	1.0	Community transmission
United Republic of Tanzania	0	509	0.9	0	21	0.0	Pending
Territories[iii]							
Réunion	1 160	27 235	3 042.0	9	212	23.7	Community transmission

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Mayotte	26	19 373	7 101.1	0	173	63.4	Community transmission
Americas	**1 148 857**	**69 519 254**	**6 797.1**	**31 902**	**1 826 772**	**178.6**	
Brazil	454 710	17 296 118	8 137.1	13 393	484 235	227.8	Community transmission
Argentina	177 693	4 093 090	9 056.4	4 217	84 628	187.2	Community transmission
Colombia	176 661	3 694 707	7 261.2	3 725	94 615	185.9	Community transmission
United States of America	105 019	33 120 623	10 006.2	2 996	594 272	179.5	Community transmission
Chile	48 726	1 468 992	7 684.5	763	30 579	160.0	Community transmission
Uruguay	24 994	333 484	9 600.2	390	4 906	141.2	Community transmission
Peru	21 890	1 998 056	6 059.9	2 287	188 100	570.5	Community transmission
Bolivia (Plurinational State of)	19 834	403 291	3 454.9	517	15 417	132.1	Community transmission
Paraguay	19 504	387 687	5 435.5	952	10 561	148.1	Community transmission
Mexico	19 189	2 448 820	1 899.3	1 255	229 823	178.3	Community transmission
Costa Rica	11 921	339 900	6 672.4	169	4 322	84.8	Community transmission
Canada	10 208	1 399 716	3 708.6	207	25 886	68.6	Community transmission
Venezuela (Bolivarian Republic of)	9 568	248 820	875.0	99	2 797	9.8	Community transmission
Cuba	8 407	156 238	1 379.4	54	1 057	9.3	Community transmission
Dominican Republic	8 166	307 847	2 837.8	53	3 705	34.2	Community transmission
Guatemala	7 916	269 308	1 503.2	136	8 416	47.0	Community transmission
Ecuador	5 692	437 121	2 477.6	224	20 997	119.0	Community transmission
Panama	5 147	386 269	8 952.3	38	6 427	149.0	Community transmission
Honduras	4 656	245 695	2 480.6	145	6 599	66.6	Community transmission
Trinidad and Tobago	2 305	28 106	2 008.3	88	644	46.0	Community transmission
Suriname	1 790	17 799	3 034.1	58	390	66.5	Community transmission
El Salvador	1 210	75 351	1 161.7	26	2 292	35.3	Community transmission
Guyana	629	18 088	2 299.7	16	419	53.3	Community transmission
Haiti	475	16 079	141.0	18	346	3.0	Community transmission

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Jamaica	331	49 232	1 662.6	32	996	33.6	Community transmission
Nicaragua	136	6 085	91.9	1	188	2.8	Community transmission
Belize	77	12 938	3 253.8	0	325	81.7	Community transmission
Bahamas	65	12 052	3 064.8	2	234	59.5	Clusters of cases
Saint Lucia	60	5 168	2 814.4	0	80	43.6	Community transmission
Saint Kitts and Nevis	41	119	223.7	0	0	0.0	Clusters of cases
Saint Vincent and the Grenadines	33	2 101	1 893.8	0	12	10.8	Community transmission
Barbados	4	4 033	1 403.4	0	47	16.4	Community transmission
Dominica	1	189	262.5	0	0	0.0	Clusters of cases
Antigua and Barbuda	0	1 263	1 289.7	0	42	42.9	Clusters of cases
Grenada	0	161	143.1	0	1	0.9	Sporadic cases
Territories[iii]							
French Guiana	781	25 506	8 539.5	12	133	44.5	Community transmission
Puerto Rico	374	139 323	4 870.0	14	2 530	88.4	Community transmission
Guadeloupe	180	17 288	4 320.7	5	265	66.2	Community transmission
United States Virgin Islands	130	3 690	3 533.6	0	28	26.8	Community transmission
Saint Martin	115	2 228	5 763.2	3	25	64.7	Community transmission
Martinique	70	12 130	3 232.4	2	99	26.4	Community transmission
Sint Maarten	63	2 511	5 855.6	3	31	72.3	Community transmission
Aruba	51	11 069	10 367.5	0	107	100.2	Community transmission
Curaçao	15	12 291	7 490.3	1	123	75.0	Community transmission
British Virgin Islands	6	295	975.6	0	1	3.3	Clusters of cases
Cayman Islands	5	592	900.8	0	2	3.0	Sporadic cases
Bermuda	3	2 497	4 009.8	0	33	53.0	Community transmission
Saint Barthélemy	3	1 032	10 440.1	0	1	10.1	Clusters of cases
Bonaire	2	1 591	7 607.0	0	17	81.3	Community transmission
Turks and Caicos Islands	1	2 421	6 252.9	1	18	46.5	Clusters of cases

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Anguilla	0	109	726.6	0	0	0.0	Clusters of cases
Falkland Islands (Malvinas)	0	63	1 808.8	0	0	0.0	Sporadic cases
Montserrat	0	20	400.1	0	1	20.0	No cases
Saba	0	7	362.1	0	0	0.0	No cases
Saint Pierre and Miquelon	0	25	431.4	0	0	0.0	No cases
Sint Eustatius	0	20	637.1	0	0	0.0	No cases
Eastern Mediterranean	**191 794**	**10 470 698**	**1 432.7**	**3 353**	**208 498**	**28.5**	
Iran (Islamic Republic of)	59 771	3 020 522	3 596.2	970	81 911	97.5	Community transmission
Iraq	29 013	1 250 691	3 109.4	172	16 690	41.5	Community transmission
United Arab Emirates	14 820	596 017	6 026.2	28	1 724	17.4	Community transmission
Tunisia	13 265	367 047	3 105.7	488	13 436	113.7	Community transmission
Afghanistan	10 637	89 861	230.8	382	3 527	9.1	Community transmission
Kuwait	10 551	326 451	7 644.2	23	1 817	42.5	Community transmission
Oman	10 353	233 152	4 565.7	88	2 489	48.7	Community transmission
Pakistan	9 420	939 931	425.5	444	21 633	9.8	Community transmission
Bahrain	8 270	257 852	15 153.7	115	1 206	70.9	Community transmission
Saudi Arabia	8 218	464 780	1 335.0	113	7 553	21.7	Community transmission
Egypt	5 320	272 491	266.3	273	15 582	15.2	Clusters of cases
Jordan	3 512	742 831	7 280.4	66	9 582	93.9	Community transmission
Morocco	2 425	523 620	1 418.6	34	9 207	24.9	Community transmission
Libya	1 809	188 762	2 747.1	21	3 158	46.0	Community transmission
Qatar	1 158	219 613	7 622.7	10	576	20.0	Community transmission
Lebanon	1 100	542 523	7 948.5	36	7 794	114.2	Community transmission
Sudan	300	36 304	82.8	35	2 732	6.2	Clusters of cases
Syrian Arab Republic	150	24 789	141.6	18	1 808	10.3	Community transmission
Yemen	77	6 857	23.0	22	1 347	4.5	Community transmission
Somalia	50	14 779	93.0	1	774	4.9	Community transmission

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Djibouti	16	11 572	1 171.3	0	154	15.6	Clusters of cases
Territories[iii]							
occupied Palestinian territory	1 559	340 253	6 669.8	14	3 798	74.4	Community transmission
Europe	**332 656**	**54 988 102**	**5 893.3**	**7 248**	**1 166 500**	**125.0**	
Kosovo [1]	85	107 528		5	2 239		Community transmission
Russian Federation	82 250	5 208 687	3 569.2	2 643	126 430	86.6	Clusters of cases
The United Kingdom	46 825	4 558 498	6 714.9	60	127 896	188.4	Community transmission
Turkey	42 841	5 325 435	6 314.3	600	48 668	57.7	Community transmission
France	27 792	5 632 993	8 660.9	403	109 499	168.4	Community transmission
Germany	14 602	3 714 969	4 466.9	612	89 834	108.0	Community transmission
Spain	13 768	3 729 458	7 879.3	69	80 465	170.0	Community transmission
Italy	13 329	4 243 482	7 115.0	504	126 976	212.9	Clusters of cases
Netherlands	10 491	1 671 678	9 603.2	34	17 708	101.7	Community transmission
Ukraine	9 041	2 223 558	5 084.3	497	51 679	118.2	Community transmission
Kazakhstan	7 584	458 452	2 441.6	121	7 586	40.4	Clusters of cases
Belarus	5 831	404 740	4 283.3	69	2 969	31.4	Community transmission
Greece	5 824	414 613	3 868.2	152	12 405	115.7	Community transmission
Belgium	5 203	1 076 337	9 341.2	52	25 088	217.7	Community transmission
Georgia	4 867	353 965	8 873.1	138	5 048	126.5	Community transmission
Portugal	4 706	856 740	8 321.2	13	17 045	165.6	Clusters of cases
Sweden	4 215	1 083 456	10 490.9	5	14 574	141.1	Community transmission
Denmark	3 923	289 559	4 972.9	7	2 525	43.4	Community transmission
Kyrgyzstan	3 397	110 370	1 691.7	43	1 890	29.0	Clusters of cases
Ireland	2 347	266 489	5 368.0	0	4 941	99.5	Community transmission
Poland	2 333	2 877 469	7 580.6	421	74 573	196.5	Community transmission
Austria	1 932	644 361	7 239.1	23	10 396	116.8	Community transmission

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Uzbekistan	1 788	103 510	309.3	12	708	2.1	Clusters of cases
Switzerland	1 766	696 934	8 052.7	11	10 246	118.4	Community transmission
Czechia	1 580	1 665 097	15 570.5	66	30 225	282.6	Community transmission
Norway	1 507	127 676	2 378.7	5	789	14.7	Clusters of cases
Lithuania	1 293	277 746	9 940.5	32	4 339	155.3	Community transmission
Latvia	1 263	135 940	7 126.0	44	2 451	128.5	Community transmission
Serbia	1 191	714 753	10 318.8	49	6 958	100.5	Community transmission
Slovenia	1 131	256 352	12 231.3	9	4 721	225.3	Clusters of cases
Croatia	998	358 563	8 835.6	53	8 139	200.6	Community transmission
Romania	915	1 079 657	5 585.7	108	31 825	164.7	Community transmission
Bulgaria	868	420 294	6 046.1	85	17 898	257.5	Clusters of cases
Hungary	782	806 790	8 258.2	50	29 820	305.2	Community transmission
Finland	616	93 774	1 697.2	5	964	17.4	Clusters of cases
Slovakia	590	391 026	7 164.4	35	12 439	227.9	Clusters of cases
Armenia	502	223 682	7 548.6	26	4 484	151.3	Community transmission
Azerbaijan	479	335 126	3 305.3	17	4 953	48.9	Clusters of cases
Cyprus	407	73 157	8 238.4	10	373	42.0	Clusters of cases
Estonia	391	130 510	9 820.3	3	1 266	95.3	Clusters of cases
Republic of Moldova	326	255 758	6 340.1	20	6 152	152.5	Community transmission
Bosnia and Herzegovina	283	204 643	6 237.6	93	9 488	289.2	Community transmission
Luxembourg	224	70 406	11 245.0	0	818	130.6	Community transmission
Montenegro	121	99 947	15 913.6	6	1 598	254.4	Clusters of cases
North Macedonia	121	155 528	7 465.2	23	5 471	262.6	Sporadic cases
Israel	97	839 663	9 700.9	12	6 430	74.3	Community transmission
Albania	75	132 449	4 602.4	2	2 453	85.2	Clusters of cases
Andorra	55	13 813	17 877.4	0	127	164.4	Community transmission
Monaco	16	2 524	6 431.6	0	33	84.1	Sporadic cases

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Malta	13	30 581	5 943.1	0	419	81.4	Clusters of cases
Iceland	12	6 616	1 816.9	0	30	8.2	Community transmission
Liechtenstein	4	3 117	8 044.5	1	58	149.7	Sporadic cases
Holy See	0	26	3 213.8	0	0	0.0	Sporadic cases
San Marino	0	5 090	14 997.9	0	90	265.2	Community transmission
Tajikistan	0	13 714	143.8	0	91	1.0	Pending
Territories[iii]							
Jersey	31	3 274	3 037.2	0	69	64.0	Community transmission
Faroe Islands	14	755	1 545.1	0	1	2.0	Sporadic cases
Gibraltar	8	4 308	12 786.8	0	94	279.0	Clusters of cases
Isle of Man	2	1 599	1 880.5	0	29	34.1	No cases
Greenland	1	44	77.5	0	0	0.0	No cases
Guernsey	0	823	1 276.6	0	17	26.4	Community transmission
South-East Asia	**763 305**	**33 432 290**	**1 653.9**	**26 324**	**451 838**	**22.4**	
India	630 650	29 439 989	2 133.3	23 625	370 384	26.8	Clusters of cases
Indonesia	55 320	1 911 358	698.8	1 267	52 879	19.3	Community transmission
Nepal	20 348	608 472	2 088.3	514	8 412	28.9	Community transmission
Thailand	18 442	195 909	280.7	213	1 449	2.1	Clusters of cases
Sri Lanka	18 305	223 638	1 044.4	394	2 136	10.0	Clusters of cases
Bangladesh	15 932	826 922	502.1	279	13 118	8.0	Community transmission
Maldives	2 351	70 301	13 005.6	12	197	36.4	Clusters of cases
Myanmar	1 286	145 603	267.6	19	3 244	6.0	Clusters of cases
Timor-Leste	545	8 285	628.4	1	18	1.4	Community transmission
Bhutan	126	1 813	235.0	0	1	0.1	Clusters of cases
Western Pacific	**124 019**	**3 263 070**	**166.1**	**2 301**	**49 935**	**2.5**	
Philippines	46 087	1 308 337	1 193.9	920	22 652	20.7	Community transmission
Malaysia	41 630	652 204	2 015.1	553	3 844	11.9	Community transmission

Reporting Country/Territory/Area[i]	New cases in last 7 days	Cumulative cases	Cumulative cases per 100 thousand population	New deaths in last 7 days	Cumulative deaths	Cumulative deaths per 100 thousand population	Transmission classification[ii]
Japan	13 499	773 822	611.8	510	14 033	11.1	Clusters of cases
Mongolia	9 918	73 896	2 254.1	44	351	10.7	Clusters of cases
Cambodia	4 346	37 959	227.0	68	320	1.9	Sporadic cases
Republic of Korea	3 724	147 874	288.4	12	1 985	3.9	Clusters of cases
China	1 998	116 103	7.9	187	5 257	0.4	Clusters of cases
Viet Nam	1 757	10 337	10.6	5	58	0.1	Clusters of cases
Fiji	409	1 013	113.0	0	4	0.4	Sporadic cases
Papua New Guinea	353	16 727	187.0	1	165	1.8	Community transmission
Singapore	87	62 263	1 064.3	1	34	0.6	Sporadic cases
Australia	79	30 237	118.6	0	910	3.6	Clusters of cases
Lao People's Democratic Republic	33	1 990	27.4	0	3	0.0	Sporadic cases
New Zealand	26	2 352	48.8	0	26	0.5	Sporadic cases
Brunei Darussalam	5	249	56.9	0	3	0.7	Sporadic cases
Solomon Islands	0	20	2.9	0	0	0.0	No cases
Territories[iii]							
French Polynesia	41	18 930	6 738.9	0	142	50.6	Sporadic cases
Guam	27	7 984	4 730.6	0	139	82.4	Clusters of cases
Marshall Islands	0	4	6.8	0	0	0.0	No cases
New Caledonia	0	128	44.8	0	0	0.0	Sporadic cases
Northern Mariana Islands (Commonwealth of the)	0	183	317.9	0	2	3.5	Pending
Samoa	0	1	0.5	0	0	0.0	No cases
Vanuatu	0	3	1.0	0	0	0.0	No cases
Wallis and Futuna	0	454	4 037.0	0	7	62.2	Sporadic cases
Global	**2 655 782**	**175 333 154**		**72 528**	**3 793 230**		

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

Annex 2. List of countries/territories/areas reporting Variants of Concern as of 15 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	●	-	-	-	-
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	●	●	●	●	-
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	●	-	-	●	-
Guinea	●	●	-	-	-
Guinea-Bissau	●	●	-	-	-
Guyana	-	-	●	-	-
Haiti	●	-	●	-	-
Hungary	●	○	-	-	○
Iceland	●	-	-	-	-
India	●	●	●	●	-
Indonesia	●	●	-	●	-
Iran (Islamic Republic of)	●	●	-	●	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Delta+
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	●	●	-	-	●
Malaysia	●	●	-	●	-
Maldives	●*	-	-	●*	-
Malta	●	○	●	○	-
Martinique	●	●	●*	-	-
Mauritania	●	●	-	●	-
Mauritius	○	●	-	-	-
Mayotte	●	●	-	-	-
Mexico	●	●	●	●	-
Monaco	●	○	-	-	-
Montenegro	●	-	-	-	-
Morocco	●	-	-	●	-
Mozambique	-	●	-	-	-
Namibia	-	●	-	-	-
Nepal	●	-	-	●	-
Netherlands	●	●	●	●	-
New Caledonia	●	-	-	-	-
New Zealand	●	●	○	○	-
Niger	●	-	-	-	-
Nigeria	●	-	-	●	-
North Macedonia	●	●	-	-	●
Norway	●	●	●	●	-
Occupied Palestinian Territory	●	●	-	-	-
Oman	●	-	-	○*	-
Pakistan	●	●	●	●	-
Panama	●	●	●	-	●
Paraguay	-	-	●	-	-
Peru	●	-	●	●*	-
Philippines	●	●	●	●	-
Poland	●	○	●	●	-
Portugal	●	●	●	○	-
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	●	●	●	●	-
South Africa	●	●	-	●	-
Spain	●	●	●	●	-
Sri Lanka	●	●	-	○	-
Suriname	●	●	●	-	-
Sweden	●	●	●	●	-
Switzerland	●	●	○	●	-
Thailand	●	●	●	●	-
Timor-Leste	●*	-	-	-	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Delta+
Togo	●	●	-	-	-
Trinidad and Tobago	●	-	●	-	-
Tunisia	●	●	-	-	-
Turkey	●	●	●	●	-
Turks and Caicos Islands	●	-	-	-	-
Uganda	●	●	-	●	-
Ukraine	●	○	-	-	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Delta+
United Arab Emirates	●	●	●	-	-
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 Beta for Ecuador was 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. 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.

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.

Global totals include 758 cases and 13 deaths reported from international conveyances.

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.

[i] Excludes countries, territories, and areas that have never reported a confirmed COVID-19 case (Annex 1), or the detection of a variant of concern (Annex 2).

[ii] Transmission classification is based on a process of country/territory/area self-reporting. Classifications are reviewed on a weekly basis and may be revised as new information becomes available. Differing degrees of transmission may be present within countries/territories/areas. For further information, please see: Considerations for implementing and adjusting public health and social measures in the context of COVID-19.

[iii] "Territories" include territories, areas, overseas dependencies and other jurisdictions of similar status.

COVID-19 Weekly Epidemiological Update

Edition 45, published 22 June 2021

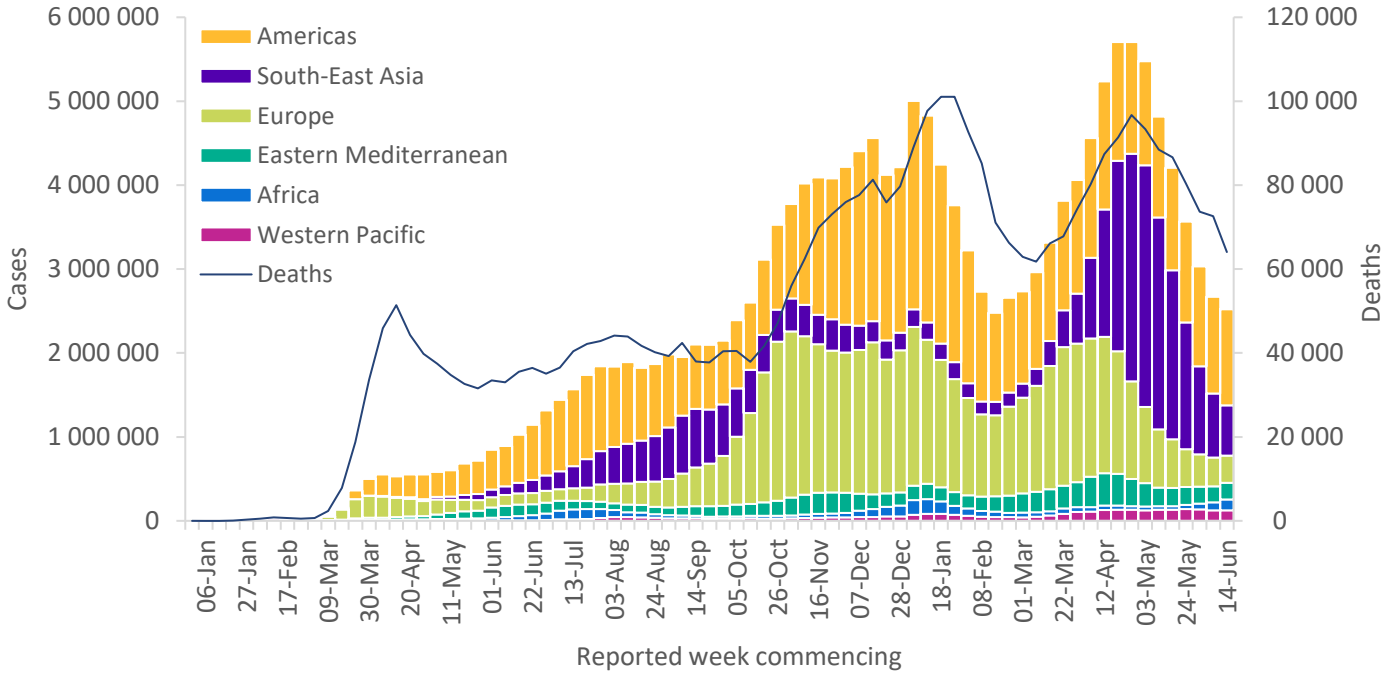
In this edition:

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**

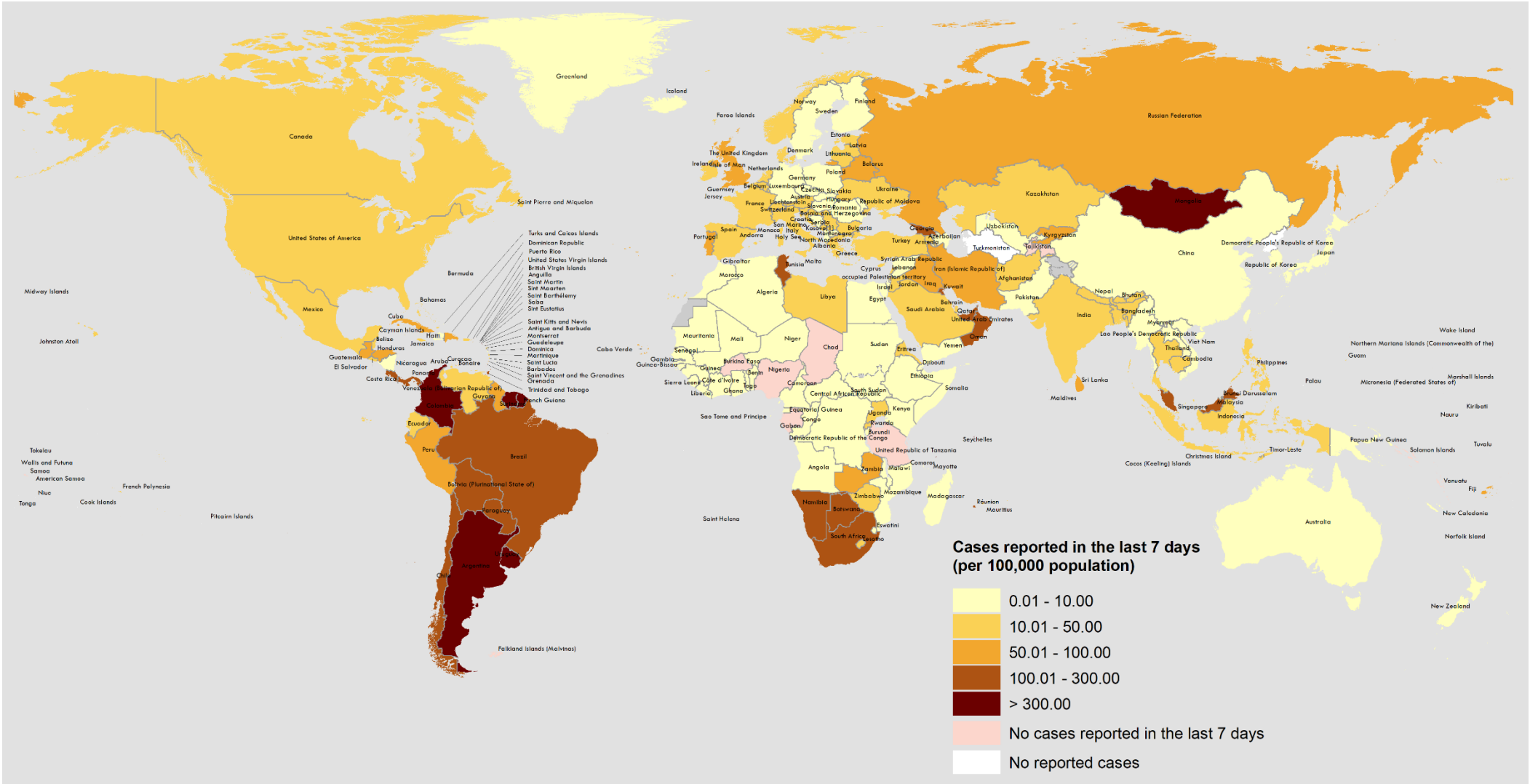
WHO Region	New cases in last 7 days (%)	Change in new cases in last 7 days *	Cumulative cases (%)	New deaths in last 7 days (%)	Change in new deaths in last 7 days *	Cumulative deaths (%)
Americas	1 143 672 (45%)	0%	70 663 034 (40%)	30 748 (48%)	-4%	1 857 523 (48%)
South-East Asia	600 677 (24%)	-21%	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:

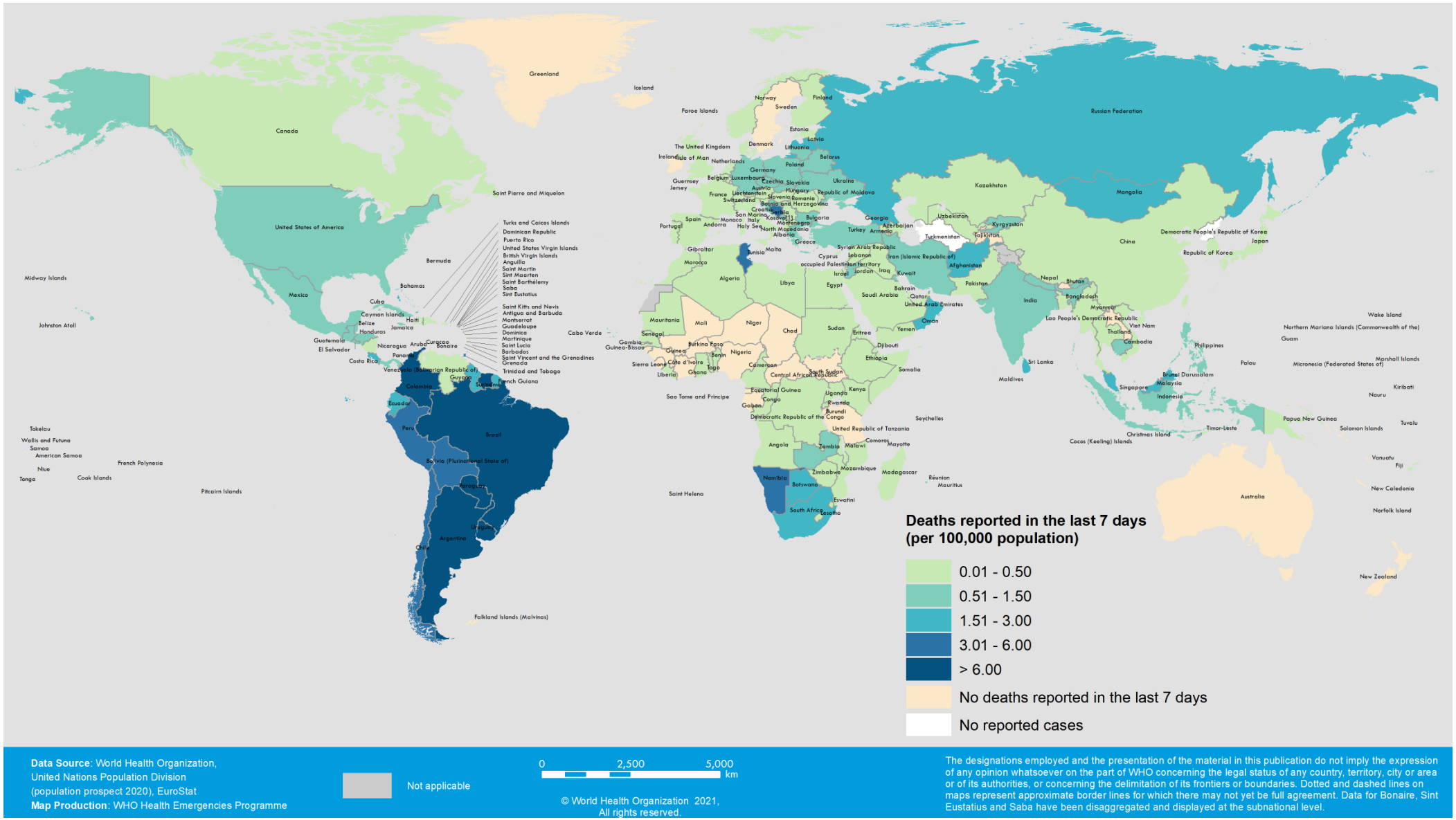
- WHO COVID-19 Dashboard
- WHO COVID-19 Weekly Operational Update and previous editions of the Weekly Epidemiological Update

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 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 • Severe disease: No/minimal loss: Pfizer BioNTech-Comirnaty[23–28] • Symptomatic Disease: No/minimal loss: AstraZeneca- Vaxzevria, Novavax-Covavax, PfizerBioNTech-Comirnaty[24,25,28–31] • Infection: No/minimal loss: PfizerBioNTech-Comirnaty[32] • 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 • Severe disease: No/minimal loss: Janssen Ad26.COV 2.5, Pfizer BioNTech-Comirnaty[25,34] • 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] • Infection: Moderate loss: Pfizer BioNTech-Comirnaty[25] • Asymptomatic infection: no evidence	Protection likely against disease; very limited evidence on three vaccines • Symptomatic disease: No/minimal loss: Sinovac-CoronaVac, [37,38]; no/minimal to modest loss: *single dose* of Moderna- mRNA-1273 or PfizerBioNTech-Comirnaty[39]* • 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 • Severe disease: No/minimal loss: PfizerBioNTech-Comirnaty, AstraZeneca-Vaxzevria[31,40] • Symptomatic disease: No/minimal to modest loss: PfizerBioNTech-Comirnaty[41,42]; no/minimal to moderate loss: AstraZeneca-Vaxzevria[41,42] • 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] • Minimal/moderate loss: AstraZeneca-Vaxzevria[30,57]	• Minimal/modest loss: Bharat-Covaxin, Beijing CNBG-BBIBP-CorV, Sinovac-CoronaVac, Anhui ZL - Recombinant[68–71] • Minimal to substantial loss: Moderna-mRNA-1273, Pfizer BioNTech-Comirnaty[18,44,48,50–52,54,56–58,64,66,67,72–78] • 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] • Minimal to moderate loss: Moderna-mRNA-1273, Pfizer BioNTech-Comirnaty[18,44,45,54,56,57,63,66,83,84] • Modest loss: Janssen-Ad26.COV 2.5[81]	• No/minimal loss: Bharat-Covaxin[71] • No/Minimal to moderate loss: Pfizer BioNTech Comirnaty, Bharat-Covaxin[64,85,86] • 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

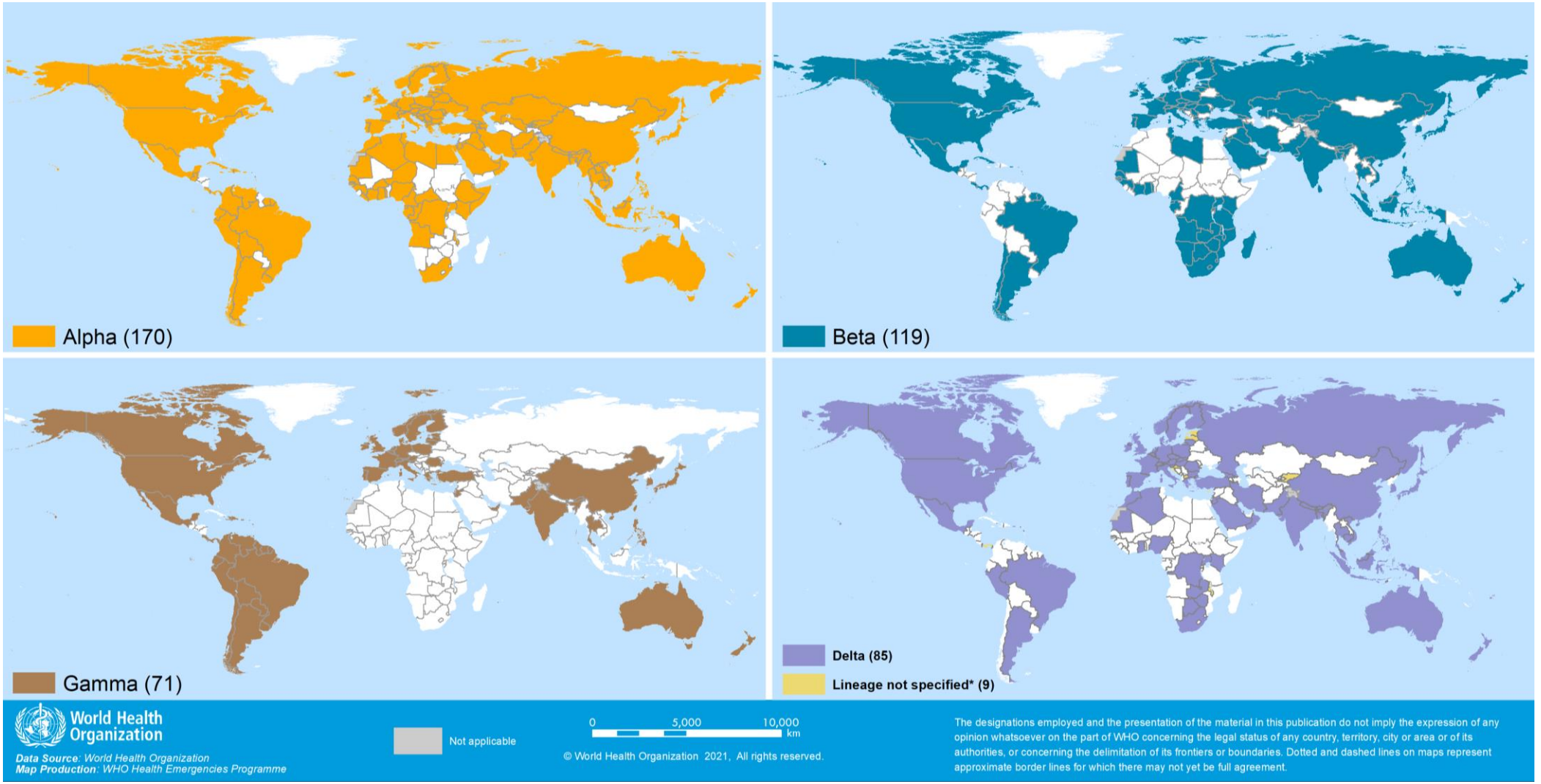
References

1. Buchan SA, Tibebu S, Daneman N, et al. Increased household secondary attacks rates with Variant of Concern SARS-CoV-2 index cases. *Clinical Infectious Diseases*. 2021;(ciab496). doi:10.1093/cid/ciab496
2. Tegally H, Wilkinson E, Giovanetti M, et al. Emergence of a SARS-CoV-2 variant of concern with mutations in spike glycoprotein. *Nature*. Published online 2021. https://doi.org/10.1038/s41586-021-03402-9
3. Curran J, Dol J, Boulos L, et al. Transmission characteristics of SARS-CoV-2 variants of concern Rapid Scoping Review. *medRxiv*. Published online January 1, 2021:2021.04.23.21255515. doi:10.1101/2021.04.23.21255515
4. Cherian S, Potdar V, Jadhav S, et al. Convergent evolution of SARS-CoV-2 spike mutations, L452R, E484Q and P681R, in the second wave of COVID-19 in Maharashtra, India. *bioRxiv*. Published online January 1, 2021:2021.04.22.440932. doi:10.1101/2021.04.22.440932
5. Public Health England. *SARS-CoV-2 Variants of Concern and Variants under Investigation in England Technical Briefing 16*.; 2021. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/994839/Variants_of_Concern_VOC_Technical_Briefing_16.pdf
6. Bager P, Wohlfahrt J, Fonager J, Albertsen. Increased Risk of Hospitalisation Associated with Infection with SARS-CoV-2 Lineage B.1.1.7 in Denmark. doi:Bager, Peter and Wohlfahrt, Jan and Fonager, Jannik and Albertsen, Mads and Yssing Michaelsen, Thomas and Holten Møller, Camilla and Ethelberg, Steen and Legarth, Rebecca and Fischer Button, Mia Sara and Gubbels, Sophie Madeleine and Voldstedlund, Marianne and Mølbak, Kåre and Skov, Robert Leo and Fomsgaard, Anders and Grove Krause, Tyra, Increased Risk of Hospitalisation Associated with Infection with SARS-CoV-2 Lineage B.1.1.7 in Denmark. Available at SSRN: https://ssrn.com/abstract=3792894 or http://dx.doi.org/10.2139/ssrn.3792894
7. NERVTAG paper on COVID-19 variant of concern B.1.1.7. *GOVUK*. Published online 2021. https://www.gov.uk/government/publications/nervtag-paper-on-covid-19-variant-of-concern-b117, http://files/64/nervtag-paper-on-covid-19-variant-of-concern-b117.html %[2021/02/08/18:37:19
8. Pearson CA, Eggo. Estimates of severity and transmissibility of novel South Africa SARS-CoV-2 variant 501Y.V2. https://cmmid.github.io/topics/covid19/reports/sa-novel-variant/2021_01_11_Transmissibility_and_severity_of_501Y_V2_in_SA.pdf
9. Jassat W MC. *Increased Mortality among Individuals Hospitalised with COVID-19 during the Second Wave in South Africa*.; 2021. https://www.medrxiv.org/content/10.1101/2021.03.09.21253184v1
10. Funk T, Pharris A, Spiteri G, et al. Characteristics of SARS-CoV-2 variants of concern B.1.1.7, B.1.351 or P.1: data from seven EU/EEA countries, weeks 38/2020 to 10/2021. *Eurosurveillance*. 2021;26(16). doi:https://doi.org/10.2807/1560-7917.ES.2021.26.16.2100348
11. Public Health England. *SARS-CoV-2 Variants of Concern and Variants under Investigation in England Technical Briefing 14*.; 2021. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/991343/Variants_of_Concern_VOC_Technical_Briefing_14.pdf
12. Muik A, Wallisch A-K, Sänger B, et al. Neutralization of SARS-CoV-2 lineage B.1.1.7 pseudovirus by BNT162b2 vaccine–elicited human sera. *Science*. Published online 2021:eabg6105. https://science.sciencemag.org/content/sci/early/2021/01/28/science.abg6105.full.pdf
13. Gallais F, Gantner P, Bruel T, et al. Anti-SARS-CoV-2 Antibodies Persist for up to 13 Months and Reduce Risk of Reinfection. *medRxiv*. Published online January 1, 2021:2021.05.07.21256823. doi:10.1101/2021.05.07.21256823
14. Graham MS, Sudre CH, May A, et al. Changes in symptomatology, reinfection, and transmissibility associated with the SARS-CoV-2 variant B.1.1.7: an ecological study. *Lancet Public Health*. 2021;6(5):e335-e345. doi:10.1016/S2468-2667(21)00055-4
15. Wibmer CK, Ayres F, Hermanus T, et al. SARS-CoV-2 501Y.V2 escapes neutralization by South African COVID-19 donor plasma. *Nat Med*. Published online March 2021. https://www.ncbi.nlm.nih.gov/pubmed/33654292
16. Li R, Ma X, Deng J, et al. Differential efficiencies to neutralize the novel mutants B.1.1.7 and 501Y.V2 by collected sera from convalescent COVID-19 patients and RBD nanoparticle-vaccinated rhesus macaques. *Cell Mol Immunol*. Published online February 2021. https://www.ncbi.nlm.nih.gov/pubmed/33580167
17. Cele S, Gazy I, Jackson L, et al. Escape of SARS-CoV-2 501Y.V2 variants from neutralization by convalescent plasma. :19. https://www.medrxiv.org/content/10.1101/2021.01.26.21250224v1
18. Caniels TG, Bontjer I, Straten K van der, et al. Emerging SARS-CoV-2 variants of concern evade humoral immune responses from infection and vaccination. *medRxiv*. Published online June 1, 2021:2021.05.26.21257441. doi:10.1101/2021.05.26.21257441
19. Sabino EC, Buss LF, Carvalho MPS, et al. Resurgence of COVID-19 in Manaus, Brazil, despite high seroprevalence. *The Lancet*. 2021;397(10273):452-455. https://linkinghub.elsevier.com/retrieve/pii/S0140673621001835
20. Naveca F, Nasciment V, Souza V, et al. Phylogenetic relationship of SARS-CoV-2 sequences from Amazonas with emerging Brazilian variants harboring mutations E484K and N501Y in the Spike protein. *Virological*. Published online 2021. https://virological.org/t/phylogenetic-relationship-of-sars-cov-2-sequences-from-amazonas-with-emerging-brazilian-variants-harboring-mutations-e484k-and-n501y-in-the-spike-protein/585
21. Planas D, Veyer D, Baidaliuk A, et al. *Reduced Sensitivity of Infectious SARS-CoV-2 Variant B.1.617.2 to Monoclonal Antibodies and Sera from Convalescent and Vaccinated Individuals*. Microbiology; 2021. doi:10.1101/2021.05.26.445838

22. SARS-CoV-2 lateral flow antigen tests: evaluation of VUI-202012/01. *GOVUK*. https://www.gov.uk/government/publications/sars-cov-2-lateral-flow-antigen-tests-evaluation-of-vui-20201201/sars-cov-2-lateral-flow-antigen-tests-evaluation-of-vui-20201201, http://files/62/sars-cov-2-lateral-flow-antigen-tests-evaluation-of-vui-20201201.html %[2021/02/08/16:54:26
23. Goldberg Y, Mandel M, Woodbridge Y, et al. Protection of previous SARS-CoV-2 infection is similar to that of BNT162b2 vaccine protection: A three-month nationwide experience from Israel. *medRxiv*. Published online April 2021:2021.04.20.21255670-2021.04.20.21255670. doi:10.1101/2021.04.20.21255670
24. Haas EJ, Angulo FJ, McLaughlin JM, et al. Impact and effectiveness of mRNA BNT162b2 vaccine against SARS-CoV-2 infections and COVID-19 cases, hospitalisations, and deaths following a nationwide vaccination campaign in Israel: an observational study using national surveillance data. *The Lancet*. 2021;0(0). doi:10.1016/S0140-6736(21)00947-8
25. Abu-Raddad LJ, Chemaitelly H, Butt AA, National Study Group for COVID-19 Vaccination. Effectiveness of the BNT162b2 Covid-19 Vaccine against the B.1.1.7 and B.1.351 Variants. *The New England journal of medicine*. Published online May 2021. doi:10.1056/NEJMc2104974
26. Lopez Bernal J, Andrews N, Gower C, et al. *Effectiveness of BNT162b2 MRNA Vaccine and ChAdOx1 Adenovirus Vector Vaccine on Mortality Following COVID-19*. https://khub.net/documents/135939561/430986542/Effectiveness+of+BNT162b2+mRNA+vaccine+and+ChAdOx1+adenovirus+vector+vaccine+on+mortality+following+COVID-19.pdf/9884d371-8cc8-913c-211c-c2d7ce4dd1c3
27. Ismail SA, Vilaplana TG, Elgohari S, et al. Effectiveness of BNT162b2 mRNA and ChAdOx1 adenovirus vector COVID-19 vaccines on risk of hospitalisation among older adults in England: an observational study using surveillance data. :18.
28. Chung H, He S, Nasreen S, et al. Effectiveness of BNT162b2 and mRNA-1273 COVID-19 vaccines against symptomatic SARS-CoV-2 infection and severe COVID-19 outcomes in Ontario, Canada. Published online 2021:30.
29. Heath PT, Eva Galiza FP, David Neil Baxter M, et al. Efficacy of the NVX-CoV2373 Covid-19 Vaccine Against the B.1.1.7 Variant. *medRxiv*. Published online May 2021:2021.05.13.21256639-2021.05.13.21256639. doi:10.1101/2021.05.13.21256639
30. Emary KRW, Golubchik T, Aley PK, et al. Efficacy of ChAdOx1 nCoV-19 (AZD1222) vaccine against SARS-CoV-2 variant of concern 202012/01 (B.1.1.7): an exploratory analysis of a randomised controlled trial. *The Lancet*. 2021;397(10282):1351-1362. doi:10.1016/S0140-6736(21)00628-0
31. Lopez Bernal J, Andrews N, Gower C, et al. Effectiveness of the Pfizer-BioNTech and Oxford-AstraZeneca vaccines on covid-19 related symptoms, hospital admissions, and mortality in older adults in England: test negative case-control study. *BMJ (Clinical research ed)*. 2021;373:n1088-n1088. doi:10.1136/bmj.n1088
32. Pritchard E, Matthews PC, Stoesser N, et al. Impact of vaccination on SARS-CoV-2 cases in the community: a population-based study using the UK's COVID-19 Infection Survey. *medRxiv*. Published online April 2021:2021.04.22.21255913-2021.04.22.21255913. doi:10.1101/2021.04.22.21255913
33. Jones NK, Rivett L, Seaman S, et al. Single-dose BNT162b2 vaccine protects against asymptomatic SARS-CoV-2 infection. *eLife*. 2021;10. doi:10.7554/elife.68808
34. Sadoff J, Gray G, Vandebosch A, et al. Safety and Efficacy of Single-Dose Ad26.COV2.S Vaccine against Covid-19. *New England Journal of Medicine*. Published online April 2021:NEJMoa2101544-NEJMoa2101544. doi:10.1056/NEJMoa2101544
35. Shinde V, Bhikha S, Hoosain Z, et al. Efficacy of NVX-CoV2373 Covid-19 Vaccine against the B.1.351 Variant. *New England Journal of Medicine*. Published online May 2021:NEJMoa2103055-NEJMoa2103055. doi:10.1056/NEJMoa2103055
36. Madhi SA, Baillie V, Cutland CL, et al. Efficacy of the ChAdOx1 nCoV-19 Covid-19 Vaccine against the B.1.351 Variant. *New England Journal of Medicine*. Published online March 2021:NEJMoa2102214-NEJMoa2102214. doi:10.1056/NEJMoa2102214
37. Hitchings MD, Ranzani OT, Sergio Scaramuzzini Torres M, et al. Effectiveness of CoronaVac in the setting of high SARS-CoV-2 P.1 variant transmission in Brazil: A test-negative case-control study. *medRxiv*. Published online April 2021:2021.04.07.21255081-2021.04.07.21255081. doi:10.1101/2021.04.07.21255081
38. Ranzani OT, Hitchings M, Neto MD, et al. Effectiveness of the CoronaVac vaccine in the elderly population during a P.1 variant-associated epidemic of COVID-19 in Brazil: A test-negative case-control study. *medRxiv*. Published online May 21, 2021:2021.05.19.21257472. doi:10.1101/2021.05.19.21257472
39. Skowronski DM, Setayeshgar S, Zou M, et al. Single-dose mRNA vaccine effectiveness against SARS-CoV-2, including P.1 and B.1.1.7 variants: a test-negative design in adults 70 years and older in British Columbia, Canada. *medRxiv*. Published online June 9, 2021:2021.06.07.21258332. doi:10.1101/2021.06.07.21258332
40. Stowe J, Andrews JR, Gower C, et al. Effectiveness of COVID-19 vaccines against hospital admission with the Delta variant - Public library - PHE national - Knowledge Hub. Accessed June 18, 2021. https://khub.net/web/phe-national/public-library/-/document_library/v2WsRK3ZlEig/view/479607266
41. Lopez Bernal J, Andrews N, Gower C, et al. Effectiveness of COVID-19 vaccines against the B.1.617.2 variant. doi:https://doi.org/10.1101/2021.05.22.21257658
42. Sheikh A, McMenamin J, Taylor B, Robertson C. SARS-CoV-2 Delta VOC in Scotland: demographics, risk of hospital admission, and vaccine effectiveness. *The Lancet*. 2021;0(0). doi:10.1016/S0140-6736(21)01358-1
43. Edara VV, Floyd K, Lai L, et al. Infection and mRNA-1273 vaccine antibodies neutralize SARS-CoV-2 UK variant. *medRxiv : the preprint server for health sciences*. Published online February 2021:2021.02.02.21250799-2021.02.02.21250799. doi:10.1101/2021.02.02.21250799
44. Garcia-Beltran WF, Lam EC, St. Denis K, et al. Multiple SARS-CoV-2 variants escape neutralization by vaccine-induced humoral immunity. *Cell*. 2021;0(0). doi:10.1016/j.cell.2021.03.013
45. Liu Y, Liu J, Xia H, et al. Neutralizing Activity of BNT162b2-Elicited Serum. *New England Journal of Medicine*. 2021;384(15):1466-1468. doi:10.1056/nejmc2102017
46. Muik A, Wallisch A-K, Sänger B, et al. Neutralization of SARS-CoV-2 lineage B.1.1.7 pseudovirus by BNT162b2 vaccine–elicited human sera. *Science*. 2021;371(6534):1152-1153. doi:10.1126/science.abg6105
47. Trinité B, Pradenas E, Marfil S, et al. Previous SARS-CoV-2 infection increases B.1.1.7 cross-neutralization by vaccinated individuals. Equal contribution. *bioRxiv*. Published online March 2021:2021.03.05.433800-2021.03.05.433800. doi:10.1101/2021.03.05.433800
48. Wang Z, Schmidt F, Weisblum Y, et al. mRNA vaccine-elicited antibodies to SARS-CoV-2 and circulating variants. *Nature*. 2021;592(7855):616-616. doi:10.1038/s41586-021-03324-6
49. Wang P, Nair MS, Liu L, et al. Antibody Resistance of SARS-CoV-2 Variants B.1.351 and B.1.1.7. *Nature*. Published online March 2021:1-6. doi:10.1038/s41586-021-03398-2
50. Shen X, Tang H, Pajon R, et al. Neutralization of SARS-CoV-2 Variants B.1.429 and B.1.351. *New England Journal of Medicine*. Published online April 2021:NEJMc2103740-NEJMc2103740. doi:10.1056/nejmc2103740
51. Wu K, Werner AP, Moliva JI, et al. mRNA-1273 vaccine induces neutralizing antibodies against spike mutants from global SARS-CoV-2 variants. *bioRxiv : the preprint server for biology*. Published online January 2021:2021.01.25.427948-2021.01.25.427948. doi:10.1101/2021.01.25.427948
52. Planas D, Bruel T, Grzelak L, et al. Sensitivity of infectious SARS-CoV-2 B.1.1.7 and B.1.351 variants to neutralizing antibodies. *Nature Medicine*. Published online March 2021:1-8. doi:10.1038/s41591-021-01318-5
53. Becker M, Dulovic A, Junker D, et al. Immune response to SARS-CoV-2 variants of concern in vaccinated individuals. *Nat Commun*. 2021;12(1):3109. doi:10.1038/s41467-021-23473-6
54. McCallum M, Bassi J, De Marco A, et al. SARS-CoV-2 immune evasion by variant B.1.427/B.1.429. *bioRxiv*. Published online April 2021:2021.03.31.437925-2021.03.31.437925. doi:10.1101/2021.03.31.437925
55. Skelly DT, Harding Sir William AC, Gilbert-Jaramillo Sir William J, et al. Vaccine-induced immunity provides more robust heterotypic immunity than natural infection to emerging SARS-CoV-2 variants of concern. Published online February 2021. doi:10.21203/rs.3.rs-226857/v1
56. Hoffmann M, Arora P, Groß R, et al. SARS-CoV-2 variants B.1.351 and P.1 escape from neutralizing antibodies. *Cell*. 2021;184(9):2384-2393.e12. doi:10.1016/j.cell.2021.03.036
57. Dejnirattisai W, Zhou D, Supasa P, et al. Antibody evasion by the P.1 strain of SARS-CoV-2. *Cell*. 2021;0(0). doi:10.1016/j.cell.2021.03.055
58. Kuzmina A, Khalaila Y, Voloshin O, et al. SARS-CoV-2 spike variants exhibit differential infectivity and neutralization resistance to convalescent or post-vaccination sera. *Cell Host and Microbe*. 2021;29(4):522-528.e2. doi:10.1016/j.chom.2021.03.008
59. Ikegame S, A Siddiquey MN, Hung C-T, et al. Qualitatively distinct modes of Sputnik V vaccine-neutralization escape by SARS-CoV-2 Spike variants. *medRxiv*. Published online April 2021:2021.03.31.21254660-2021.03.31.21254660. doi:10.1101/2021.03.31.21254660
60. Gonzalez C, Saade C, Bal A, et al. Live virus neutralisation testing in convalescent patients and subjects vaccinated 1 against 19A, 20B, 20I/501Y.V1 and 20H/501Y.V2 isolates of SARS-CoV-2 2 3. *medRxiv*. Published online May 2021:2021.05.11.21256578-2021.05.11.21256578. doi:10.1101/2021.05.11.21256578

61. Liu Y, Liu J, Xia H, et al. BNT162b2-Elicited Neutralization against New SARS-CoV-2 Spike Variants. *New England Journal of Medicine*. Published online May 2021:NEJMc2106083-NEJMc2106083. doi:10.1056/NEJMc2106083
62. Collier AY, McMahan K, Yu J, et al. Immunogenicity of COVID-19 mRNA Vaccines in Pregnant and Lactating Women. Published online 2021. doi:10.1001/jama.2021.7563
63. Pegu A, O'Connell S, Schmidt SD, et al. Durability of mRNA-1273-induced antibodies against SARS-CoV-2 variants. *bioRxiv*. Published online May 2021:2021.05.13.444010-2021.05.13.444010. doi:10.1101/2021.05.13.444010
64. Wall EC, Wu M, Harvey R, et al. Neutralising antibody activity against SARS-CoV-2 VOCs B.1.617.2 and B.1.351 by BNT162b2 vaccination. *The Lancet*. 2021;0(0). doi:10.1016/S0140-6736(21)01290-3
65. Liu J, Bodnar BH, Wang X, et al. Correlation of vaccine-elicited antibody levels and neutralizing activities against SARS-CoV-2 and its variants. *bioRxiv*. Published online May 31, 2021:2021.05.31.445871. doi:10.1101/2021.05.31.445871
66. Anichini G, Terrosi C, Gori Savellini G, Gandolfo C, Franchi F, Cusi MG. Neutralizing Antibody Response of Vaccinees to SARS-CoV-2 Variants. *Vaccines*. 2021;9(5):517. doi:10.3390/vaccines9050517
67. Tada T, Dcosta BM, Samanovic MI, et al. Convalescent-Phase Sera and Vaccine-Elicited Antibodies Largely Maintain Neutralizing Titer against Global SARS-CoV-2 Variant Spikes. *mBio*. Published online June 1, 2021:e0069621. doi:10.1128/mBio.00696-21
68. Huang B, Dai L, Wang H, et al. Neutralization of SARS-CoV-2 VOC 501Y.V2 by human antisera elicited by both 1 inactivated BBIBP-CorV and recombinant dimeric RBD ZF2001 vaccines 2 3 Authors. *bioRxiv*. Published online February 2021:2021.02.01.429069-2021.02.01.429069. doi:10.1101/2021.02.01.429069
69. Wang G-L, Wang Z-Y, Duan L-J, et al. Susceptibility of Circulating SARS-CoV-2 Variants to Neutralization. *New England Journal of Medicine*. Published online April 2021:NEJMc2103022-NEJMc2103022. doi:10.1056/nejmc2103022
70. Cao Y, Yisimayi A, Bai Y, et al. Humoral immune response to circulating SARS-CoV-2 variants elicited by inactivated and RBD-subunit vaccines. *Cell Research*. Published online May 21, 2021:1-10. doi:10.1038/s41422-021-00514-9
71. Yadav PD, Sapkal GN, Ella R, et al. Neutralization against B.1.351 and B.1.617.2 with sera of COVID-19 recovered cases and vaccinees of BBV152. *bioRxiv*. Published online June 7, 2021:2021.06.05.447177. doi:10.1101/2021.06.05.447177
72. Becker M, Dulovic A, Junker D, et al. Immune response to SARS-CoV-2 variants of concern in vaccinated individuals. *medRxiv*. Published online March 2021:2021.03.08.21252958-2021.03.08.21252958. doi:10.1101/2021.03.08.21252958
73. Bates TA, Leier HC, Lyski ZL, et al. Neutralization of SARS-CoV-2 variants by convalescent and vaccinated serum. *medRxiv*. Published online April 2021:2021.04.04.21254881-2021.04.04.21254881. doi:10.1101/2021.04.04.21254881
74. Stamatatos L, Czartoski J, Wan Y-H, et al. mRNA vaccination boosts cross-variant neutralizing antibodies elicited by SARS-CoV-2 infection. *Science*. Published online March 2021:eabg9175-eabg9175. doi:10.1126/science.abg9175
75. Zhou D, Dejnirattisai W, Supasa P, et al. Evidence of escape of SARS-CoV-2 variant B.1.351 from natural and vaccine-induced sera. *Cell*. 2021;189(0):1-14. doi:10.1016/j.cell.2021.02.037
76. Chang X, Sousa Augusto G, Liu X, et al. BNT162b2 mRNA COVID-19 vaccine induces antibodies of broader cross-reactivity than natural infection but recognition of mutant viruses is up to 10-fold reduced. *bioRxiv*. Published online March 2021:2021.03.13.435222-2021.03.13.435222. doi:10.1101/2021.03.13.435222
77. Edara VV, Norwood C, Floyd K, et al. Infection- and vaccine-induced antibody binding and neutralization of the B.1.351 SARS-CoV-2 variant. *Cell Host and Microbe*. 2021;29(4):516-521.e3. doi:10.1016/j.chom.2021.03.009
78. Ferreira I, Datir R, Papa G, et al. SARS-CoV-2 B.1.617 emergence and sensitivity to vaccine-elicited antibodies. *bioRxiv*. Published online May 2021:2021.05.08.443253-2021.05.08.443253. doi:10.1101/2021.05.08.443253
79. COVID-19 vaccinesWHO Meeting on correlates of protection. Accessed June 4, 2021. https://www.who.int/news-room/events/detail/2021/06/01/default-calendar/covid-19-vaccineswho-meeting-on-correlates-of-protection
80. Moore PL, Moyo-Gwete T, Hermanus T, et al. Neutralizing antibodies elicited by the Ad26.COV2.S COVID-19 vaccine show reduced activity against 501Y.V2 (B.1.351), despite protection against severe disease by this variant. *bioRxiv*. Published online June 11, 2021:2021.06.09.447722. doi:10.1101/2021.06.09.447722
81. Alter G, Yu J, Liu J, et al. Immunogenicity of Ad26.COV2.S vaccine against SARS-CoV-2 variants in humans. *Nature*. Published online June 9, 2021:1-9. doi:10.1038/s41586-021-03681-2
82. Palacios R, Batista AP, Albuquerque CSN, et al. Efficacy and Safety of a COVID-19 Inactivated Vaccine in Healthcare Professionals in Brazil: The PROFISCOV Study. *SSRN Electronic Journal*. Published online April 2021. doi:10.2139/ssrn.3822780
83. Wu K, Werner AP, Koch M, et al. Serum Neutralizing Activity Elicited by mRNA-1273 Vaccine. *New England Journal of Medicine*. 2021;384(15):1468-1470. doi:10.1056/NEJMc2102179
84. Wang P, Casner RG, Nair MS, et al. Increased Resistance of SARS-CoV-2 Variant P.1 to Antibody Neutralization. *bioRxiv*. Published online April 9, 2021:2021.03.01.433466. doi:10.1101/2021.03.01.433466
85. Planas D, Veyer D, Baidaliuk A, et al. Reduced sensitivity of infectious SARS-CoV-2 variant B.1.617.2 to monoclonal antibodies and sera from convalescent and vaccinated individuals. *bioRxiv*. Published online May 27, 2021:2021.05.26.445838. doi:10.1101/2021.05.26.445838
86. Liu J, Liu Y, Xia H, et al. BNT162b2-elicited neutralization of B.1.617 and other SARS-CoV-2 variants. *Nature*. Published online June 10, 2021:1-5. doi:10.1038/s41586-021-03693-y
87. Ong SWX, Chiew CJ, Ang LW, et al. *Clinical and Virological Features of SARS-CoV-2 Variants of Concern: A Retrospective Cohort Study Comparing B.1.1.7 (Alpha), B.1.315 (Beta), and B.1.617.2 (Delta)*. Social Science Research Network; 2021. Accessed June 21, 2021. https://papers.ssrn.com/abstract=3861566
88. Ito K, Piantham C, Nishiura H. Predicted domination of variant Delta of SARS-CoV-2 before Tokyo Olympic games, Japan. *medRxiv*. Published online June 15, 2021:2021.06.12.21258835. doi:10.1101/2021.06.12.21258835
89. Campbell F, Archer B, Laurenson-Schafer H, et al. Increased transmissibility and global spread of SARS-CoV-2 variants of concern as at June 2021. *Eurosurveillance*. 2021;26(24):2100509. https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2021.26.24.2100509
90. Nyberg T, Twohig KA, Harris RJ, et al. Risk of hospital admission for patients with SARS-CoV-2 variant B.1.1.7: cohort analysis. *BMJ*. 2021;373:n1412. doi:10.1136/bmj.n1412
91. Lindner AK, Krüger LJ, Nikolai O, et al. *SARS-CoV-2 Variant of Concern B.1.1.7: Diagnostic Accuracy of Three Antigen-Detecting Rapid Tests*. Infectious Diseases (except HIV/AIDS); 2021. doi:10.1101/2021.06.15.21258502
92. Althaus CL, Baggio S, Reichmuth ML, et al. A tale of two variants: Spread of SARS-CoV-2 variants Alpha in Geneva, Switzerland, and Beta in South Africa. *medRxiv*. Published online June 15, 2021:2021.06.10.21258468. doi:10.1101/2021.06.10.21258468
93. Ramanathan M, Ferguson ID, Miao W, Khavari PA. SARS-CoV-2 B.1.1.7 and B.1.351 spike variants bind human ACE2 with increased affinity. *The Lancet Infectious Diseases*. Published online May 2021:S1473309921002620. doi:10.1016/S1473-3099(21)00262-0
94. Curran J, Dol J, Boulos L. Public Health and Health Systems Impacts of SARS-CoV-2 Variants of Concern: A Rapid Scoping Review | medRxiv. Accessed June 21, 2021. https://www.medrxiv.org/content/10.1101/2021.05.20.21257517v1.full

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.

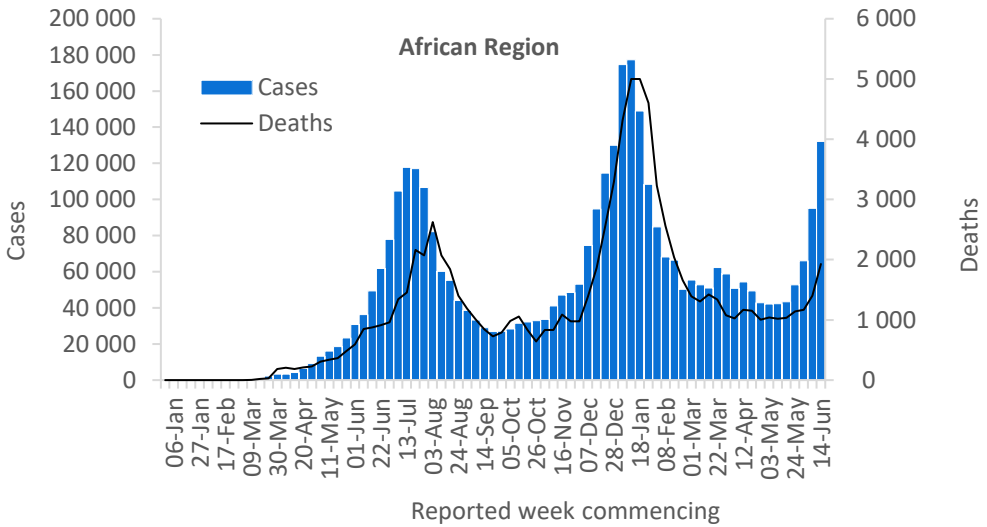
The recording from the consultation can be found here (passcode: m#t9b!Tl).

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).

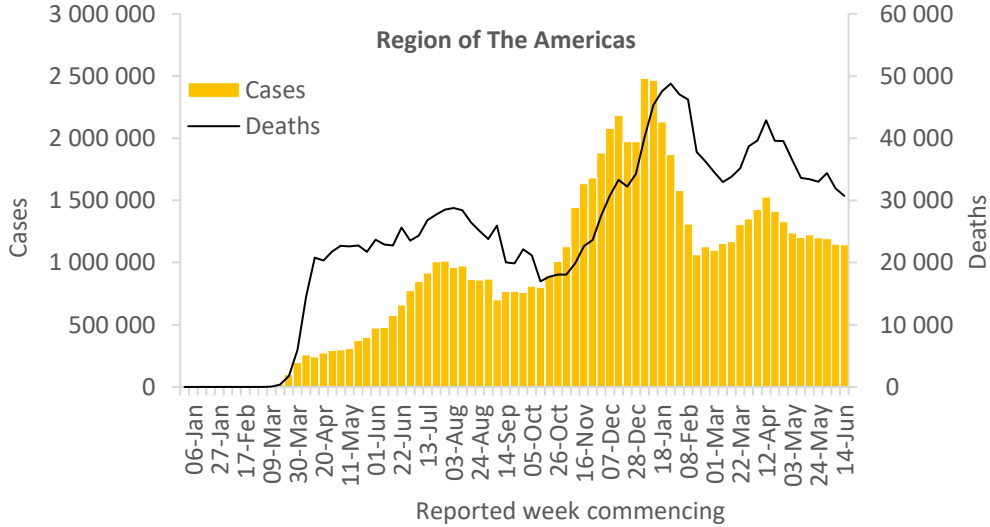


Updates from African Region

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).

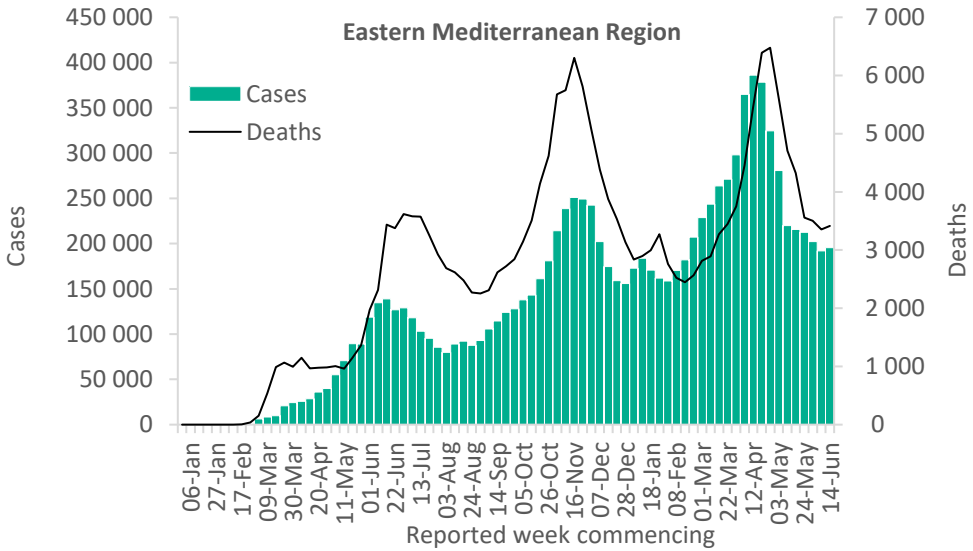


Updates from Region of the Americas

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).

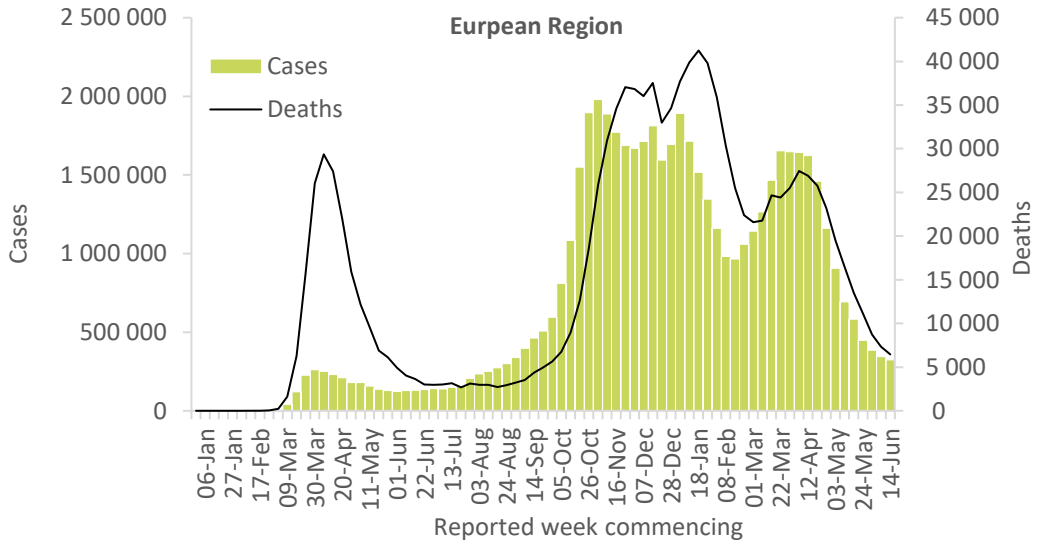


Updates from Eastern Mediterranean Region

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).



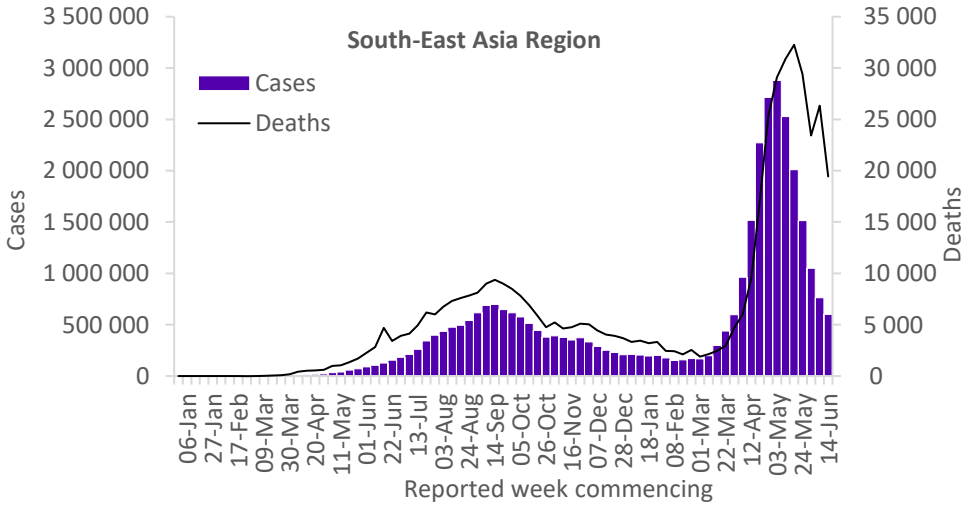
Updates from European Region

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).



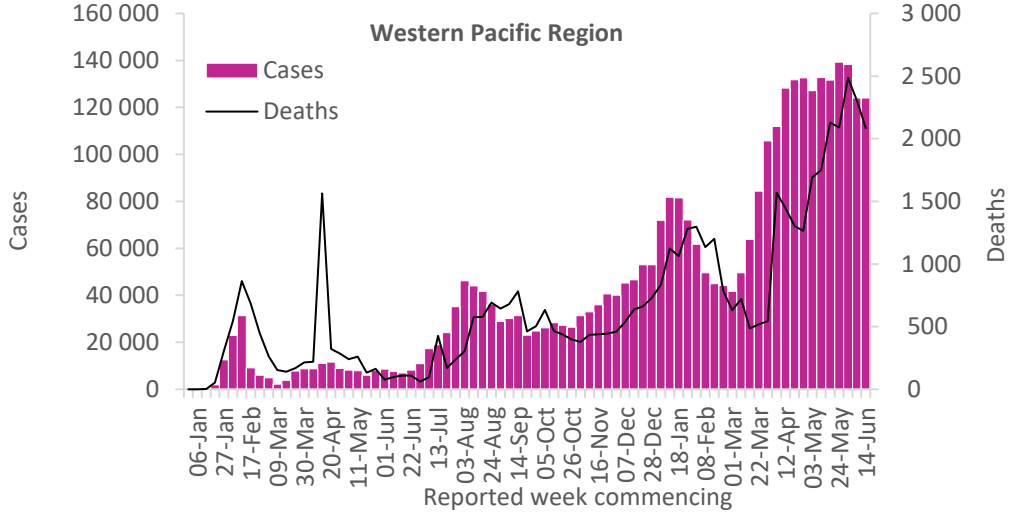
Updates from South-East Asia Region

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

COVID-19 Weekly Epidemiological Update

Edition 46, published 29 June 2021

In this edition:

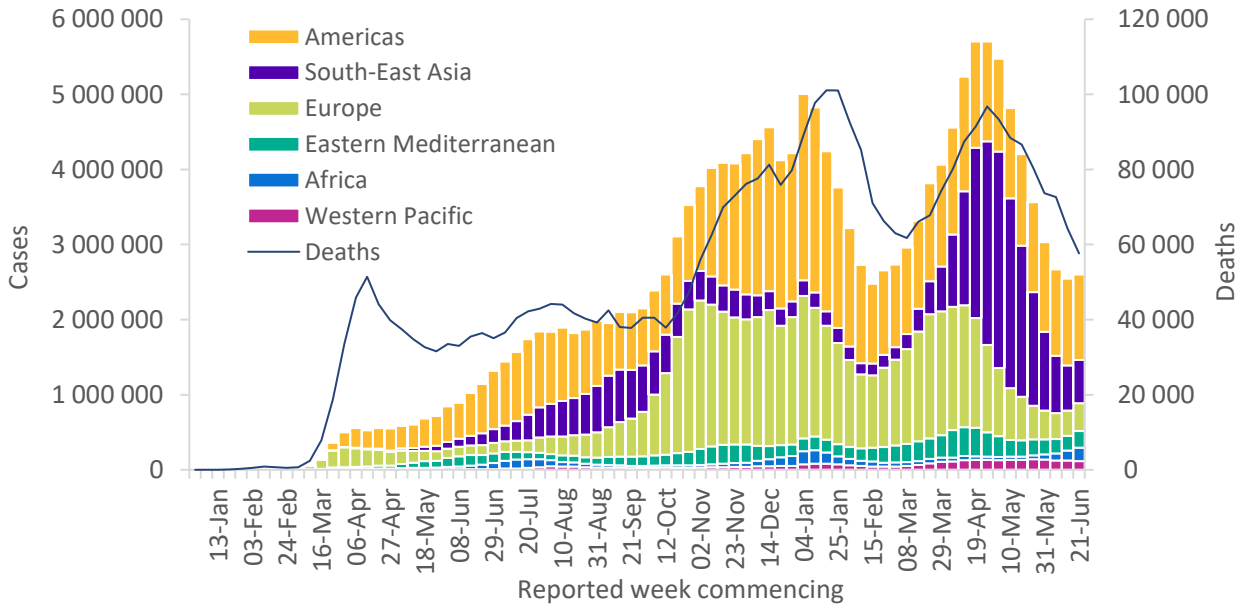
Global overview

Data as of 27 June 2021

The global number of new cases over the past week (21-27 June 2021) was over 2.6 million, a similar number compared to the previous week (Figure 1). The number of weekly deaths continued to decrease, with more than 57 000 deaths reported in the past week, a 10% decrease as compared to the previous week. This is the lowest weekly mortality figure since those recorded in early November 2020. Globally, COVID-19 incidence remains very high with an average of over 370 000 cases reported each day over the past week. The cumulative number of cases reported globally now exceeds 180 million and the number of deaths is almost 4 million.

This week, the African region recorded a sharp increase in incidence (33%) and mortality (42%) when compared to the previous week (Table 1). The Eastern Mediterranean and European Regions also reported increases in the number of weekly cases. All Regions, with the exception of the African Region, reported a decline in the number of deaths in the past week.

Figure 1. COVID-19 cases reported weekly by WHO Region, and global deaths, as of 27 June 2021**



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

The highest numbers of new cases were reported from Brazil (521 298 new cases; 3% increase), India (351 218 new cases; 12% increase), Colombia (204 132 new cases; 5% increase), the Russian Federation (134 465 new cases; 24% increase), and Argentina (131 824 new cases; 11% decrease). Over the past week, the highest numbers of new cases per 100 000 population were reported from Seychelles (708 new cases per 100 000 pop), Namibia (509 new cases per 100 000 pop) and Mongolia (491 new cases per 100 000 pop).

Globally, cases of the Alpha variant have been reported in 172 countries, territories or areas (hereafter countries; two new countries in the past week), of Beta in 120 countries (one new country), Gamma in 72 countries (one new country) and Delta in 96 countries (11 new countries).

Table 1. Newly reported and cumulative COVID-19 cases and deaths, by WHO Region, as of 27 June 2021**

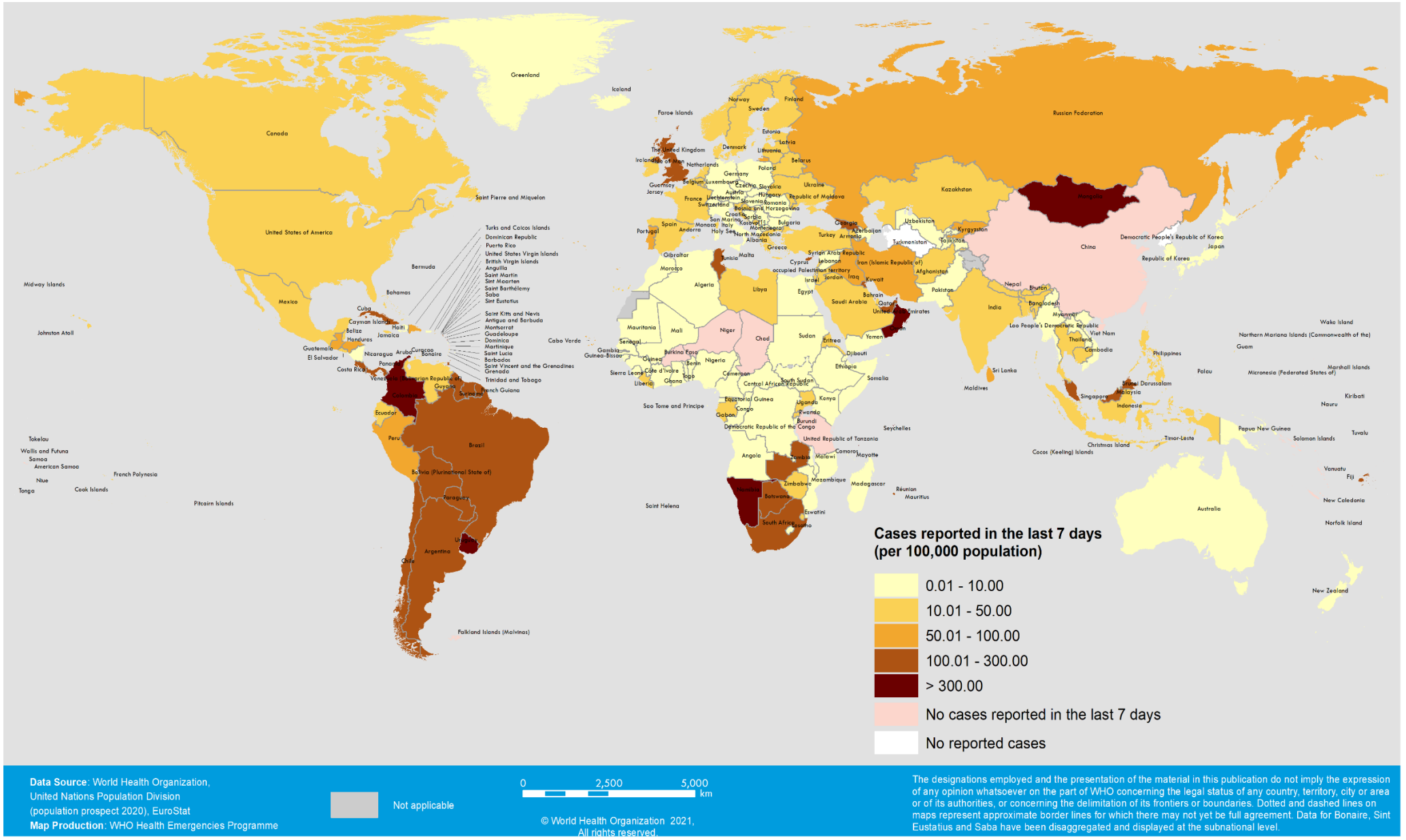
WHO Region	New cases in last 7 days (%)	Change in new cases in last 7 days *	Cumulative cases (%)	New deaths in last 7 days (%)	Change in new deaths in last 7 days *	Cumulative deaths (%)
Americas	1 139 518 (44%)	-1%	71 812 677 (40%)	30 120 (52%)	-2%	1 887 752 (48%)
Europe	372 448 (14%)	10%	55 713 043 (31%)	6 435 (11%)	-1%	1 181 135 (30%)
South-East Asia	573 244 (22%)	-5%	34 606 211 (19%)	13 107 (23%)	-33%	484 397 (12%)
Eastern Mediterranean	221 169 (9%)	13%	10 887 414 (6%)	3 411 (6%)	0%	215 325 (5%)
Africa	177 367 (7%)	34%	3 968 421 (2%)	2 724 (5%)	42%	94 323 (2%)
Western Pacific	116 567 (4%)	-6%	3 503 601 (2%)	1 806 (3%)	-13%	53 826 (1%)
Global	**2 600 313 (100%)**	**2%**	**180 492 131 (100%)**	**57 603 (100%)**	**-10%**	**3 916 771 (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, 21 – 27 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, 21 – 27 June 2021**

***Data Source**: World Health Organization*
United Nations Population Division (Population prospect 2020)
***Map Production**: WHO Health Emergencies Programme*

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**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 effectiveness of 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 these risks evolve, WHO will update lists 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 impacts of these variants. Here we provide updates on classifications of VOCs and VOIs, as well as the updated countries/territories/areas reporting the detection of VOCs.

Table 2: SARS-CoV-2 Variants of Concern (VOCs) and Variants of Interest (VOIs), as of 29 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 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, Dec-2020	14-Jun-2021

Geographic distribution

As surveillance activities to detect SARS-CoV-2 variants are strengthened at local and national levels, including by strategic genomic sequencing, the number of countries/areas/territories (hereafter countries) reporting VOCs continue to increase (Figure 3, Annex 1). This distribution should be interpreted with due consideration of surveillance limitations, including differences in sequencing capacities and sampling strategies between countries.

WHO recommendations

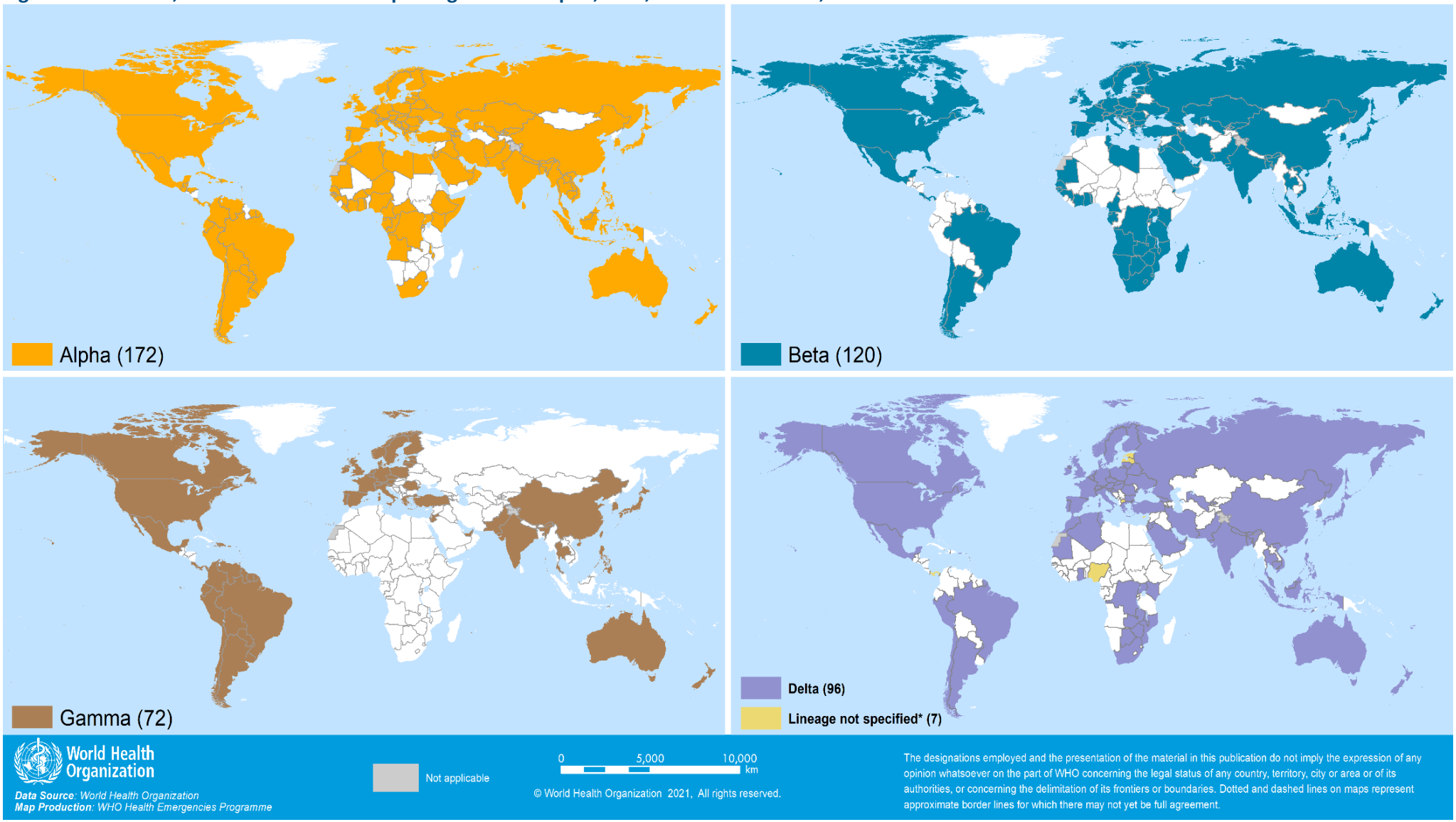
Virus evolution is expected, and the more SARS-CoV-2 circulates, the more opportunities it has to evolve. Reducing transmission through established and proven disease control methods such as those outlined in the COVID-19 Strategic Preparedness and Response Plan, as well as avoiding introductions into animal populations, are 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 all SARS-CoV-2 variants. Evidence from multiple countries with extensive transmission of VOCs has indicated that PHSM, including infection prevention and control (IPC) measures, 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 and IPC measures. 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 epidemiological 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 public health and social measures in the context of COVID-19
- COVID-19 Situation Reports from WHO Regional Offices and partners: AFRO, AMRO/PAHO, EMRO, EURO/ECDC, SEARO, WPRO

Figure 3. Countries, territories and areas reporting variants Alpha, Beta, Gamma and Delta, as of 29 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: Current challenges in the context of the COVID-19 pandemic

Well into the second year of the COVID-19 pandemic, the global situation remains highly fragile. While at the global level, trends in cases and deaths have been declining in recent weeks, there is significant variation by region, by country and within countries. In all WHO regions, there are countries reporting sharp increases in cases and hospitalizations. There are a number of factors contribute to this, as repeatedly outlined by WHO,[1] including the emergence and circulation of more transmissible variants of SARS-CoV-2, increased social mixing and mobility, uneven and inequitable vaccination; and considerable pressure to lift public health and social measures.

SARS-CoV-2 variants of concern

On 11 May 2021, WHO designated Delta (B.1.617.2) as a variant of concern due to evidence of increased transmissibility.[2] The increase in the effective reproduction number compared with the Alpha variant (B.1.1.7) is estimated to be 55% (95% CI: 43–68).[3] Given the increase in transmissibility, the Delta variant is expected to rapidly outcompete other variants and become the dominant variant over the coming months.[3]

As of 29 June 2021, 96 countries have reported cases of the Delta variant, though this is likely an underestimate as sequencing capacities needed to identify variants are limited. A number of these countries are attributing surges in infections and hospitalizations to this variant.

Low vaccination coverage at the global level

While more than 2.65 billion doses of COVID-19 vaccines have been administered,[4] the majority of these have been in a small number of high-income countries. The gap in vaccine administration between high- and low-income countries is starting to shrink due to the delivery of vaccines through the COVAX facility, but the majority of the world's population still remains susceptible to SARS-CoV-2 infection and at risk of developing COVID-19.

Increased social mixing and lifting of public health and social measures

Countries have moved in and out of restrictions of varying stringency over the past 18 months. Now, many face considerable pressure to lift any remaining public health and social measures. Social mixing and mobility are increasing, as are the number of gatherings – from small-scale gatherings of friends and family to large sporting and side events, and religious celebrations. Improper planning or assessment of risk of transmission provide opportunities for the virus to spread.

WHO response

Since the beginning of the pandemic, WHO has recommended a comprehensive approach to controlling COVID-19,[5] including the implementation and adjustment of public health and social measures to suppress transmission and reduce severe disease and death.[6] This includes, but is not limited to, strong surveillance, strategic testing, early case detection, isolation and clinical care of cases by trained and protected health and care workers, tracing and supported quarantine of contacts, infection prevention and control measures, engineering controls and adopting risk-based approaches for gatherings and international travel. The

[1] World Health Organization. Director-General's opening remarks at the media briefing on COVID-19 – 25 June 2021. https://www.who.int/director-general/speeches/detail/director-general-s-opening-remarks-at-the-media-briefing-on-covid-19-25-june-2021
[2] World Health Organization. Weekly Epidemiological Update on COVID-19: 11 May 2021. Available at: https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---11-may-2021
[3] Campbell F, Archer B, Laurenson-Schafer L et al. Increased transmissibility and global spread of SARS-CoV-2 variants of concern as at June 2021. Euro Surveill; 2021;26(24):pii=2100509.
[4] World Health Organization. WHO Coronavirus (COVID-19) Dashboard. https://covid19.who.int
[5] World Health Organization. Strategic response and preparedness plan. Available from: https://www.who.int/publications/i/item/strategic-preparedness-and-response-plan-for-the-new-coronavirus
[6] World Health Organization. Considerations for implementing and adjusting public health and social measures in the context of COVID-19. Available from: https://www.who.int/publications/i/item/considerations-in-adjusting-public-health-and-social-measures-in-the-context-of-covid-19-interim-guidance

addition of several safe and effective COVID-19 vaccines and the initiation of vaccination adds an incredibly powerful tool to complement prevention and control efforts.

Importantly, the tools that exist today—including individual-, community level-public health and social measures, infection prevention and control measures, that have been used since the beginning of the pandemic—remain effective against current variants of concern, including the Delta variant. Although the increased transmissibility of VOCs means that measures may need to be maintained for longer periods of time, particularly in a context of low vaccination coverage, these measures must be targeted, time-bound, reinforced and supported by Member States.

SARS-CoV-2 will continue to evolve, with selective advantage generally favouring more transmissible variants.[7] The emergence of new variants requires constant evaluation and careful adjustment of public health and social measures and vaccination strategies as the COVID-19 pandemic continues.

WHO will continue to work with Member States and technical partners through existing and new technical networks and advisory groups to critically evaluate variants through the Global Risk Assessment and Monitoring Framework for SARS-CoV-2 variants.[8] The situation is dynamic and WHO is working with partners to harmonize the decision-making processes for assessing the impact of variants of concern on public health and medical interventions.

Over the past 18 months, substantial progress has been made towards ending the acute phase of the COVID-19 pandemic. However, the combination of more transmissible variants, increasing social mixing, suboptimal vaccination coverage and relaxation of public health and social measures will slow this progress and delay the end of the pandemic.

[7] Krause PR, Fleming TR, Longini IM, et al. SARS-CoV-2 variants and vaccines. New Engl J Med. 2021;

[8] World Health Organization. Tracking SARS-CoV-2 variants. https://www.who.int/en/activities/tracking-SARS-CoV-2-variants/

Special focus: WHO global conference on communicating science during health emergencies, 7-25 June 2021

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Since the beginning of the pandemic, the evidence on COVID-19 and related protective measures evolved continuously. Changes in recommendations and pandemic response measures expose the public to high levels of uncertainty. Increasing pandemic fatigue and an overabundance of information highlight the need for effective, innovative and reliable science communication. Due to the all-disruptive nature of the COVID-19 pandemic, almost everybody has become a science communicator – be it at work, the dinner table or on social media.

However, scientific processes are complex and not always communicated in an understandable manner. To facilitate the solution-oriented discussion of challenges and innovations to improve the translation of science and make it accessible and relevant to all, the World Health Organization Information Network for Epidemics (WHO EPI-WIN) organized a global conference on communicating science during health emergencies from 7 to 25 June 2021. The conference took a multidisciplinary approach, convening science communicators, representing research, policy, civil society and international organizations, working in the areas of health, education, journalism and broadcasting, tourism and social media and culture, among others.

Conference structure

The opening and closing sessions of the conference featured renowned keynote speakers from academia and practice in the fields of public health, medicine, communication and design. Over 3000 participants from 159 countries joined the opening session and submitted almost 500 questions. To date, the recording of the opening session on YouTube has been viewed more than 14 000 times, reflecting the public interest in the topic of science communication during the pandemic. The closing session featured three innovative science communication concepts submitted to a global call for good practice examples launched by WHO in April 2021.

A panel further reported back on the thematic discussions held in June 2021 including researchers, media representatives, decision-makers and professionals working in health, education, tourism and culture. The thematic discussions included 61 experts from 26 countries. Discussions were grouped into four thematic tracks and ran over the course of three weeks. Each group attended three 90-minute discussions on profession-specific challenges and solutions to improve science communication during health emergencies. The discussions with the global experts disclosed some of the challenges science communicators have been facing

during the pandemic: from science being instrumentalized for political purposes, to a lack of scientific literacy among different population groups and a flood of information – both correct and incorrect - that does not take into account the target audiences' needs, beliefs and values.

Lessons learnt from the expert discussions

Participants identified key steps towards effective science translation. First, a need to re-think existing scientific processes to ensure research is being shared in a timely manner during health crises but still undergoes quality control and scientific debate. This includes a transparent communication of scientific processes to help people understand what science can and cannot do. While the public often expects science to provide clear answers, scientific knowledge generation takes time, is built on scientific debate and is inherently linked to uncertainty. Open communication of this uncertainty will prevent people from losing trust in science when the constantly evolving evidence leads to changes in public health recommendations. Second, the concerns, beliefs and needs of target audiences need to be taken into consideration when communicating science. There is no one-size-fits all solution. Instead of "pouring out" general information, a constant dialogue with communities is required to ensure the scientific information is relevant, understandable and credible to them. The continuous dialogue with different stakeholders will also help to build trust in science and encourage people to ask questions and voice concerns. Third, it takes innovation and creativity for effective science translation. People consume information on different channels, at different times of the day and in different formats. Science communication should add to people's lives in a meaningful and action-oriented manner and meet them where they are in terms of preferences, values and beliefs.

Next steps

WHO is committed to translating the insights from the conference into action; not just to improve science translation during the COVID-19 pandemic but also to be prepared for future health emergencies. Follow-up activities of the conference will include:

- Building a global, multidisciplinary network of science communicators. A continuous dialogue with researchers, media representatives, decision-makers and professionals working in health, education, culture and tourism will help to identify and address challenges in a concerted, collaborative manner;
- Developing capacity building resources for science communicators, especially journalists, to empower them to judge the quality and independence of scientific research and share this with their audiences;
- Strengthening scientific and health literacy in the whole population to empower all stakeholders to ask critical questions about the information they encounter on- and offline and make evidence-informed decisions;
- Analyzing existing good practice examples of science communication to understand what works and what does not work, and develop more effective, innovative science communication concepts for the future.

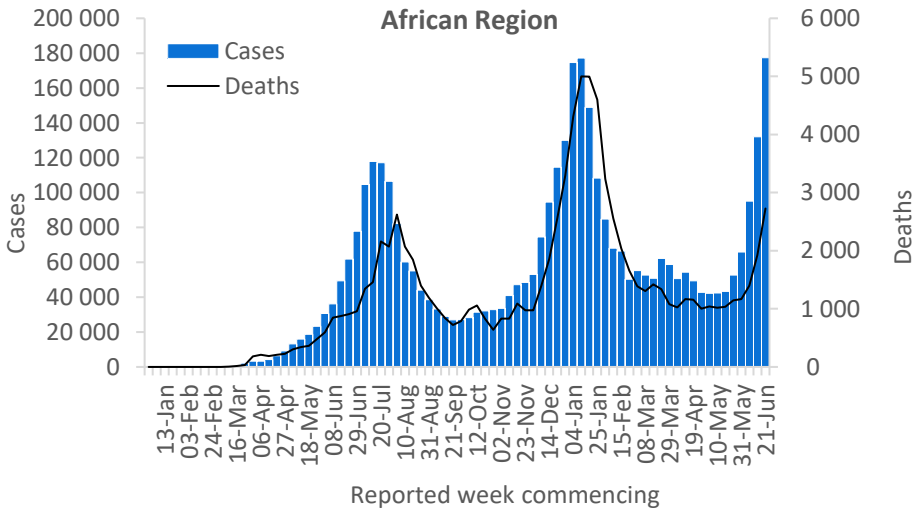
The high interest in the global conference confirmed WHO's mandate to play a key role in science communication during health emergencies. The timely implementation of follow-up activities will be crucial to support countries and the multidisciplinary science communication community to build trust in science and make it accessible and understandable to all.

WHO regional overviews - Epidemiological week 21-27 June 2021

African Region

Many countries in the African region continue to see increases in weekly case incidence and mortality. The Region reported over 177 000 new cases and over 2700 new deaths, a 34% and a 42% increase respectively compared to the previous week. The weekly number of COVID-19 cases has been increasing sharply since 15 May. Since then, 76% of cases and 72% of reported deaths in the Region where from countries in Southern Africa.

Aside from South Africa (103 697 new cases; 174.8 new cases per 100 000 population; a 47% increase), the highest numbers of new cases in the Region were reported from Zambia (19 058 new cases; 103.7 new cases per 100 000; a 15% increase), and Namibia (12 944 new cases; 509.4 new cases per 100 000; a 71% increase). Mortality in the African Region continued to increase sharply with the countries reporting the highest numbers of new deaths per 100 000 population over the past week being Namibia (11 new deaths per 100 000), Botswana (7 deaths per 100 000) and Zambia (20 new deaths per 100 000).



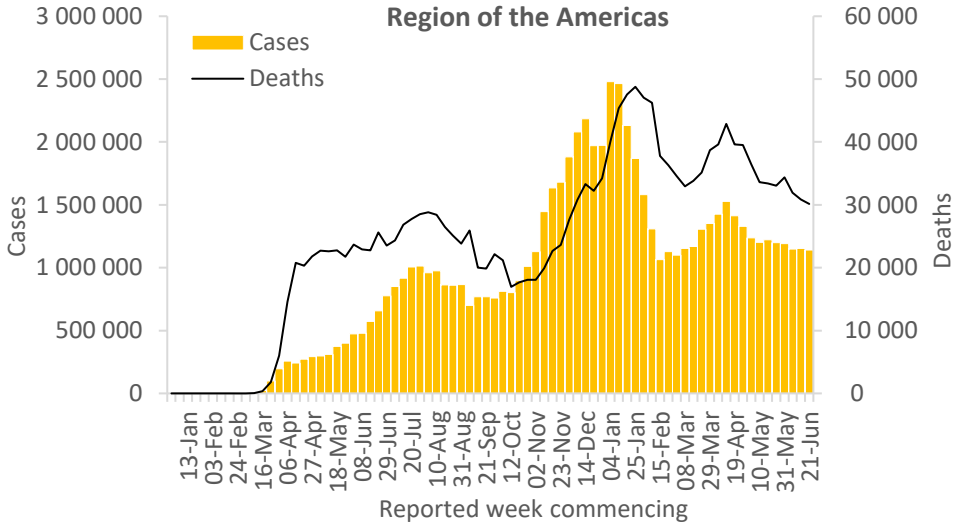
Updates from the African Region

Region of the Americas

The Region of the Americas reported over 1.1 million new cases and over 30 000 new deaths, similar to the previous week. The Region reported the highest number of new cases and deaths per 100 000 over the past week when compared to the other regions (111 cases and 3 deaths per 100 000 population).

The highest numbers of new cases were reported from Brazil (521 298 new cases; 245.2 new cases per 100 000; a 3% increase), Colombia (204 132 new cases; 401.2 new cases per 100 000; a 5% increase), and Argentina (131 824 new cases; 291.7 new cases per 100 000; a 12% decrease).

The highest numbers of new deaths per 100 000 population were reported from Paraguay (113 deaths per 100 000), Colombia (90 deaths per 100 000) and Argentina (83 deaths per 100 000) over the past week.



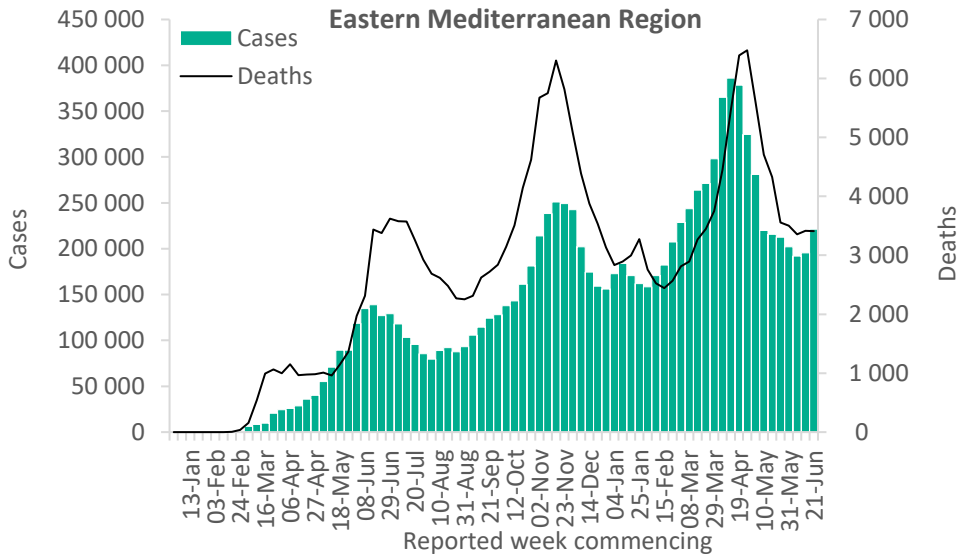
Updates from the Region of the Americas

Eastern Mediterranean Region

The Eastern Mediterranean Region reported over 221 000 new cases, a 13% increase compared to the previous week. This increase in cases is the largest relative increase seen in the Region since the end of March 2021. Over 3400 new deaths were reported, a similar number with the previous week. The Region reported 30 new cases and 0.5 new deaths per 100 000 population over the past week.

The highest numbers of new cases per 100 000 population were reported from Oman (348 new cases per 100 pop), Kuwait (294 new cases per 100 pop) and Tunisia (189 new cases per 100 000 pop).

The highest numbers of new deaths were reported from the Islamic Republic of Iran (857 new deaths; 1.0 new deaths per 100 000; a 9% decrease), Tunisia (619 new deaths; 5.2 new deaths per 100 000; an 18% increase), and Afghanistan (528 new deaths; 1.4 new deaths per 100 000; an 11% decrease).



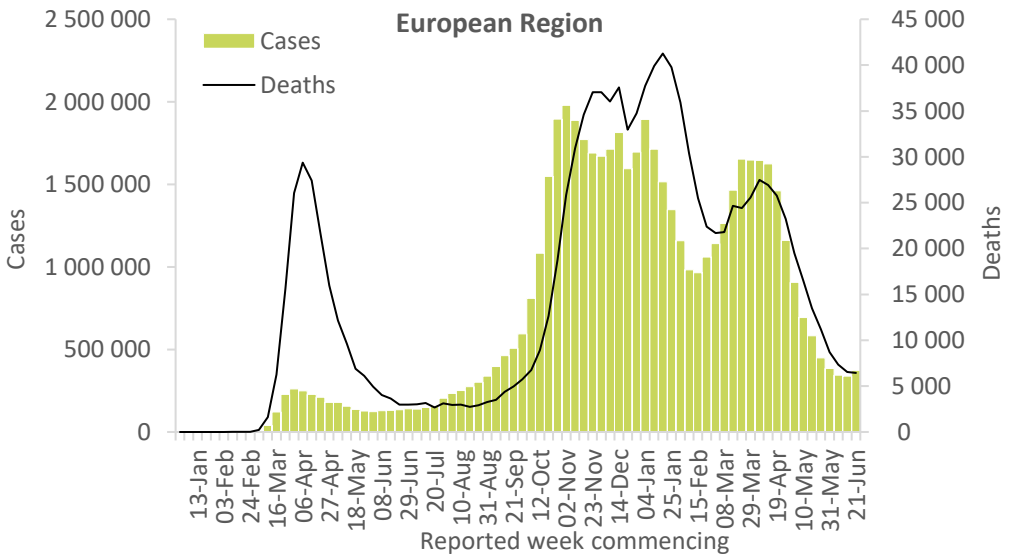
Updates from the Eastern Mediterranean Region

European Region

The European Region reported over 372 000 new cases, a 10% increase compared to the previous week, and over 6400 new deaths, similar to the previous week. This is the first weekly increase in the number of cases reported by the Region after more than two months of a decreasing trend.

The highest numbers of new cases were reported from the Russian Federation (134 465 new cases; 92.1 new cases per 100 000; a 24% increase), the United Kingdom (96 843 new cases; 142.7 new cases per 100 000; a 55% increase), and Turkey (38 936 new cases; 46.2 new cases per 100 000; a 2% decrease).

The highest numbers of new deaths were reported from the Russian Federation (3921 new deaths; 2.7 new deaths per 100 000; a 34% increase), Turkey (402 new deaths; 0.5 new deaths per 100 000; an 11% decrease), and Germany (369 new deaths; 0.4 new deaths per 100 000; a 33% decrease).

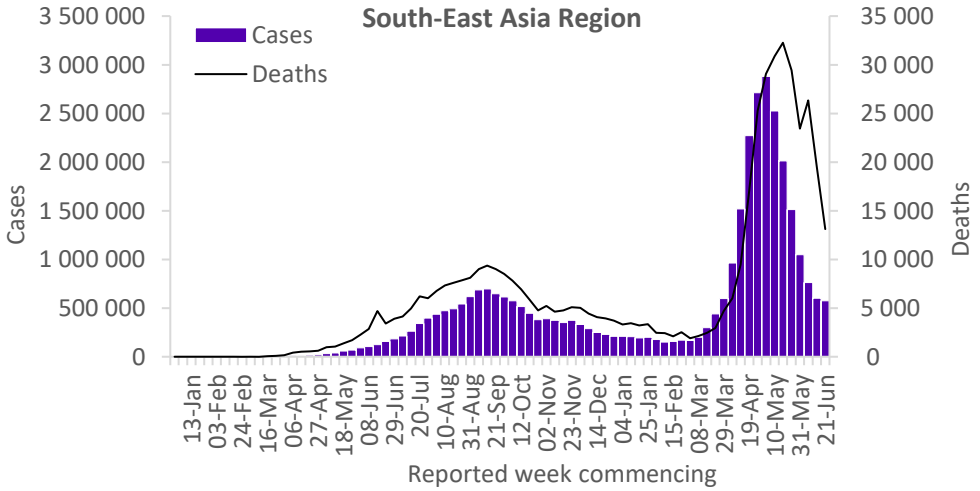


Updates from the European Region

South-East Asia Region

The South-East Asia Region reported over 573 000 new cases and over 13 000 new deaths, a 5% and a 33% decrease respectively compared to the previous week. Although there is a slight overall decrease in the number of cases reported this week, mostly due to the decrease in the number of cases reported in India, a number of countries, including Myanmar (112% increase), Indonesia (60% increase) and Bangladesh (48% increase), reported large increases in the number of newly reported cases for this week.

The highest numbers of new cases were reported from India (351 218 new cases; 25.5 new cases per 100 000; a 21% decrease), Indonesia (125 395 new cases; 45.8 new cases per 100 000; a 60% increase), and Bangladesh (36 738 new cases; 22.3 new cases per 100 000; a 48% increase). The highest numbers of new deaths were reported from India (9038 new deaths; 0.7 new deaths per 100 000; a 45% decrease), Indonesia (2476 new deaths; 0.9 new deaths per 100 000; a 39% increase), and Bangladesh (624 new deaths; 0.4 new deaths per 100 000; a 45% increase).



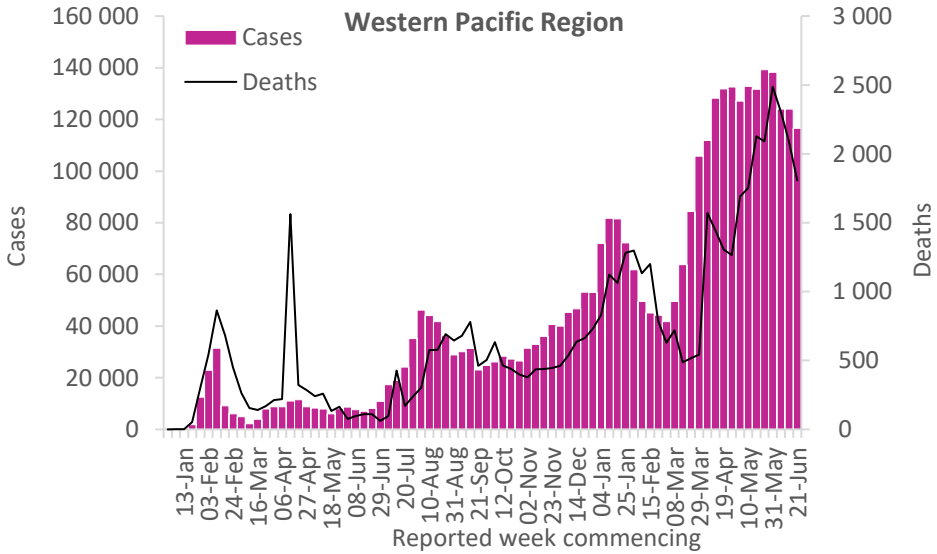
Updates from the South-East Asia Region

Western Pacific Region

The Western Pacific Region reported over 116 000 new cases and over 1800 new deaths, a 6% and a 13% decrease respectively compared to the previous week. The weekly number of newly reported cases has decreased over the past several weeks, after reaching a peak in mid-May.

The highest numbers of new cases were reported from the Philippines (38 684 new cases; 35.3 new cases per 100 000; a 14% decrease), Malaysia (37 347 new cases; 115.4 new cases per 100 000; a 4% decrease), and Mongolia (16 111 new cases; 491.4 new cases per 100 000; a 7% decrease).

The highest numbers of new deaths were reported from the Philippines (706 new deaths; 0.6 new deaths per 100 000; a 20% decrease), Malaysia (536 new deaths; 1.7 new deaths per 100 000; a 6% increase), and Japan (257 new deaths; 0.2 new deaths per 100 000; a 30% decrease).



Updates from the Western Pacific Region

Key weekly updates

WHO Director-General's key messages

- In his opening remarks at the media briefing on COVID-19 – 25 June 2021, the Director-General highlighted one of the most important ways WHO coordinates the response to COVID-19 and other emergencies is through our global network of emergency medical teams. Globally, WHO has certified teams from 20 countries, who have gone through a rigorous process of quality assurance to ensure they meet internationally agreed standards.
- In his introductory remarks at the high-level event: The Role of Primary Health Care in the COVID-19 Pandemic response and leading equitable recovery- 22 June 2021, the Director-General emphasized that there is no global health security without local health security, thus strengthening primary health care is essential for an equitable and resilient recovery.

Updates and publications

- WHO support remains critical in countries and regions facing COVID-19 surges- 24 June 2021
- Directors General of WHO, WIPO and the WTO agree on intensified cooperation in support of access to medical technologies worldwide to tackle the COVID-19 pandemic – 24 June 2021
- Recommendations for national SARS-CoV-2 testing strategies and diagnostic capacities -25 June 2021
- Indicator framework for the evaluation of the public health effectiveness of digital proximity tracing solutions- 25 June 2021

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 29 June 2021**

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Unspecified B.1.617
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	Unspecified B.1.617
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	●	●	-	-	-
Liechtenstein	●	-	-	-	-
Lithuania	●	●	●	○	-
Luxembourg	●	●	●	●	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Unspecified B.1.617
Madagascar	-	●	-	-	-
Malawi	●	●	-	●*	-
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	●	-	●	●	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Unspecified B.1.617
Philippines	●	●	●	●	-
Poland	●	○	●	●	-
Portugal	●	●	●	●	-
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	●	●	○	●	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Unspecified B.1.617
Thailand	●	●	●	●	-
Timor-Leste	●	-	-	-	-
Togo	●	●	-	-	-
Trinidad and Tobago	●	-	●	-	-
Tunisia	●	●	-	●*	-
Turkey	●	●	●	●	-
Turks and Caicos Islands	●	-	●	-	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Unspecified B.1.617
Uganda	●	●	-	●*	-
Ukraine	●	○	-	○*	-
United Arab Emirates	●	●	●	●*	-
United Kingdom	●	●	●	●	-
United Republic of Tanzania	-	●	-	-	-
United States of America	●	●	●	●	-
Uruguay	●	-	●	-	-

Country/Territory/Area	Alpha	Beta	Gamma	Delta	Unspecified B.1.617
Uzbekistan	●	●	-	○*	-
Venezuela (Bolivarian Republic of)	●	-	●	-	-
Viet Nam	●	●	-	●	-
Wallis and Futuna	●	-	-	-	-
Zambia	-	●	-	●	-
Zimbabwe	-	○	-	●	-

**Newly reported in this update.*
"Unspecified B.1.617" 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 Delta for Honduras, Iraq, Kazakhstan, Kyrgyzstan and Oman 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