



Update 125 FHP-Update 02 November 2022



GLOBAL

↗
632 181 477
confirmed cases
619 600 000
recovered
6 597 367 deaths

TWN

7-days incidence
971

SGP

7-days incidence
637

BRN

7-days incidence
703

News:

- **WHO:** [Shortage of cholera vaccines leads to temporary suspension of two-dose strategy](#), as cases rise worldwide. A strained global supply of cholera vaccines led to temporarily suspend the standard two-dose vaccination regimen in cholera outbreak response campaigns, using instead a single-dose approach. The pivot in strategy will allow for the doses to be used in more countries, at a time of unprecedented rise in cholera outbreaks worldwide.
- **WHO One Health Initiative:** One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems. It recognizes the health of humans, domestic and wild animals, plants, and the wider environment are closely linked and interdependent. The [WHO One Health Initiative](#) acts as the Secretariat for the High-Level Expert Panel on One Health.
- **WHO Europe/ECDC:** [The Flu Awareness Campaign](#) is marked across the WHO European Region every year in October. It aims to raise awareness of the importance of vaccination for people's health and well-being and to increase the uptake of seasonal influenza vaccination of people with underlying risk factors.
- **ECDC:** Published a report on ['Prevalence of post COVID-19 condition symptoms: A systematic review and meta-analysis of cohort study data stratified by recruitment setting'](#). That reveals that post –COVID-19 symptoms appear to be more prevalent amongst patients from hospital settings when compared to community settings.
- **WHO/ECDC:** Published a [Joint Surveillance Bulletin on Hepatitis of Unknown Origin in Children](#). The report provides an overview of the cases of hepatitis of unknown origin in children aged 16 years and below reported to ECDC and the WHO Regional Office for Europe through The European Surveillance System (TESSy).
- **WHO:** There was a third meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the [multi-country outbreak of monkeypox](#).
- **WHO/WMO:** launch a [new knowledge platform for climate and health - climahealth.info](#) –. the new global open-access platform is designed to become the go-to technical reference point for users of interdisciplinary health, environmental, and climate science.

Topics:

- Global situation: COVID-19 (slide 2 – 6)
- Other infectious diseases (slide 7 - 10)
- Ukraine Situation Report (slide 11)

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Getting vaccinated against seasonal flu is important, especially among vulnerable groups, healthcare professionals or those caring for the elderly.

Let's prevent flu from spreading this year!

Staying up to date on vaccines
protects health care professionals and their patients

AMONG OVER 3,600 HEALTH CARE PROFESSIONALS*:

4 in 5
got a **flu vaccine**
during 2021-22 season

2 in 3
who got primary
COVID-19 vaccines
received a booster

EMPLOYERS:

► Recommend employees receive flu and COVID-19 vaccines

► Consider requiring employees receive flu and COVID-19 vaccines, including boosters



EUROPE

↘
253 557 761
confirmed cases
248 600 000
recovered
2 064 377 deaths

GRC

7-days incidence
1.026
↗

AUT

7-days incidence
463
↘

CHE

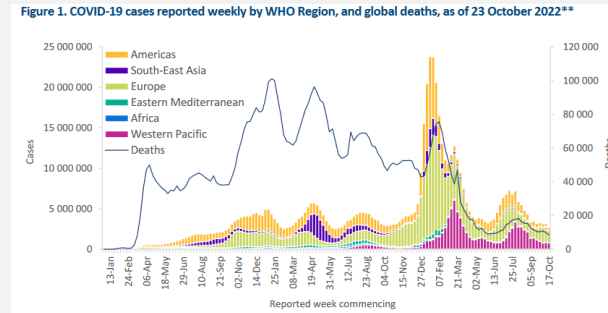
7-days incidence
350
↘

COVID-19 Situation by WHO Region, as of 26 October

Global epidemiological situation overview; WHO as of 26 October 2022

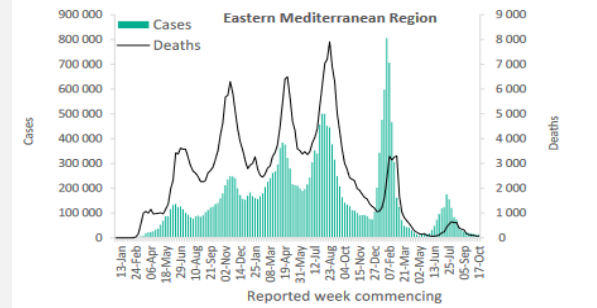
Globally, the number of new weekly cases decreased by 15% during the week of 17 to 23 October 2022 as compared to the previous week, with over 2.6 million new cases reported (Figure 1, Table 1). The number of new weekly deaths decreased by 13% as compared to the previous week, with over 8500 fatalities reported. As of 23 October 2022, over 624 million confirmed cases and over 6.5 million deaths have been reported globally. At the regional level, the number of newly reported weekly cases decreased or remained stable across all six WHO regions: the African Region (-41%), the European Region (-23%), the Eastern Mediterranean Region (-9%), the Western Pacific Region (-5%), the South-East Asia Region (-4%) and the Region of the Americas (+2%). The number of new weekly deaths decreased across four of the six regions: the African Region (-72%), the European Region (-24%), the South-East Asia Region (-13%), and the Western Pacific Region (-8%); while the number remained stable in the Region of the Americas (-1%) and increased in the Eastern Mediterranean Region (+9%).

At the country level, the highest numbers of new weekly cases were reported from Germany (498 787 new cases; -23%), France (307 610 new cases; -22%), China (285 348 new cases; -13%), the United States of America (255 116 new cases; -1%) and Italy (252 777 new cases; -12%). The highest numbers of new weekly deaths were reported from the United States of America (2538 new deaths; similar to the previous week), the Russian Federation (636 new deaths; -9%), Italy (586 new deaths; +23%), France (484 new deaths; +21%) and China (469 new deaths; +9%).



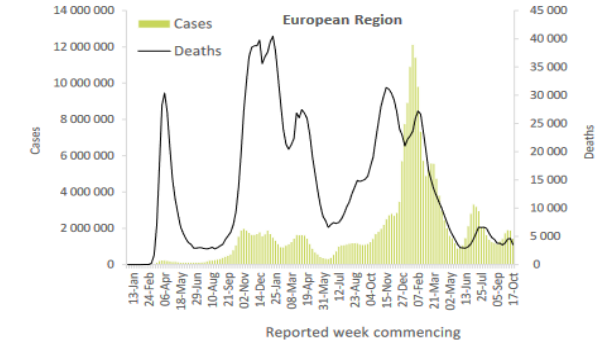
The Eastern Mediterranean Region reported just under 14 000 new cases, a 9% decrease as compared to the previous week. Six (27%) countries reported increases in new cases of 20% or greater, with the highest proportional increases observed in Lebanon (1083 vs 361 new cases; +200%), Morocco (181 vs 115 new cases; +57%) and Saudi Arabia (1564 vs 1102 new cases; +42%). The highest numbers of new cases were reported from Qatar (3732 new cases; 129.5 new cases per 100 000; -19%), the United Arab Emirates (2262 new cases; 22.9 new cases per 100 000; +11%), and Bahrain (2084 new cases; 122.5 new cases per 100 000; +3%).

The number of new weekly deaths increased in the Region by 9% as compared to the previous week, with 73 new deaths reported. The highest numbers of new deaths were reported from the Islamic Republic of Iran (27 new deaths; <1 new death per 100 000; -29%), Saudi Arabia (13 new deaths; <1 new death per 100 000; -7%) and Lebanon (11 new deaths; <1 new death per 100 000; +175%).



In the European Region, the number of new weekly cases decreased by 23% as compared to the previous week, with over 1.4 million new cases reported. Three (5%) countries reported increases in new cases of 20% or greater, with the highest proportional increases observed in Monaco (87 vs 66 new cases; +32%), Malta (184 vs 147 new cases; +25%) and Spain (25 422 vs 20 652 new cases; +23%). The highest numbers of new cases were reported from Germany (498 787 new cases; 599.7 new cases per 100 000; -23%), France (307 610 new cases; 473.0 new cases per 100 000; -22%) and Italy (252 777 new cases; 423.8 new cases per 100 000; -12%).

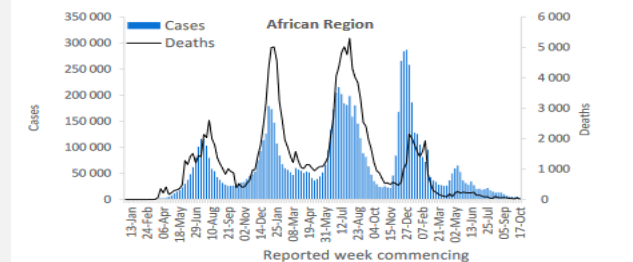
Over 3500 new weekly deaths were reported in the Region, a 24% decrease as compared to the previous week. The highest numbers of new deaths were reported from the Russian Federation (636 new deaths; <1 new death per 100 000; -9%), Italy (586 new deaths; 1.0 new death per 100 000; +23%) and France (484 new deaths; <1 new death per 100 000; +21%).



WHO regional overviews: Epidemiological week 17 - 23 October 2022** African Region

The Africa Region reported over 3900 new cases, a 41% decrease compared to the previous week. Six (12%) countries reported increases in the number of new cases of 20% or greater, with some of the greatest proportional increases seen in the Democratic Republic of the Congo (55 vs four new cases; +1275%), Kenya (178 vs 78 new cases; +128%) and Algeria (41 vs 29 new cases; +41%). The highest numbers of new cases were reported from South Africa (2017 new cases; 3.4 new cases per 100 000 population; -22%), Réunion (340 new cases; 38.0 new cases per 100 000; +1%) and Comoros (191 new cases; 22.0 new cases per 100 000; +3720%).

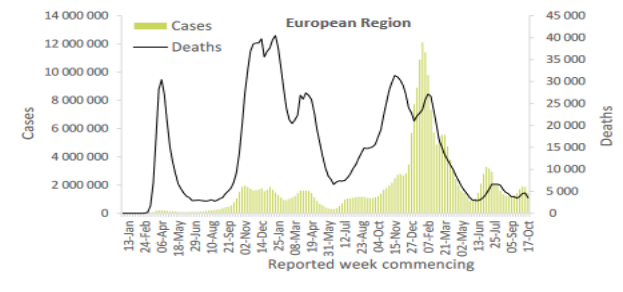
The number of new weekly deaths in the Region decreased by 72% as compared to the previous week, with 17 deaths reported. The highest numbers of new deaths were reported from South Africa (11 new deaths; <1 new death per 100 000 population; -79%), Réunion (two new deaths; <1 new death per 100 000; similar to the previous week) and Togo (two new deaths; <1 new death per 100 000; +100%).



Region of the Americas

The Region of the Americas reported over 365 000 new cases, a 2% increase compared to the previous week. Ten of 56 (18%) countries for which data are available reported increases in the number of new cases of 20% or greater, with some of the greatest proportional increases observed in Sint Maarten (32 vs 11 new cases; +191%), Curaçao (28 vs 16 new cases; +75%) and Paraguay (368 vs 221 new cases; +67%). The highest numbers of new cases were reported from the United States of America (255 116 new cases; 77.1 new cases per 100 000; -1%), Chile (34 497 new cases; 180.5 new cases per 100 000; +38%) and Brazil (34 180 new cases; 16.1 new cases per 100 000; +9%).

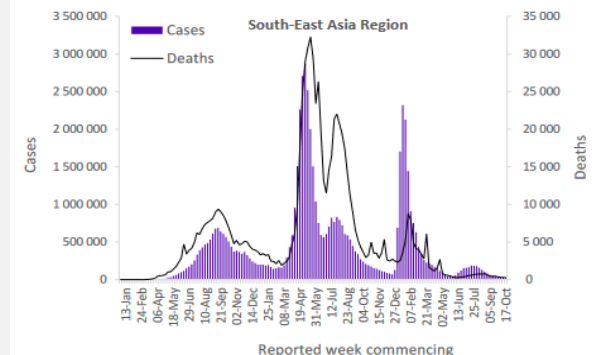
The number of new weekly deaths reported in the Region decreased by 1% as compared to the previous week, with over 3400 new deaths reported. The highest numbers of new deaths were reported from the United States of America (2538 new deaths; <1 new death per 100 000; similar to the previous week), Brazil (383 new deaths; <1 new death per 100 000; +12%) and Canada (278 new deaths; <1 new death per 100 000; +18%).



South-East Asia Region

The South-East Asia Region reported just under 35 000 new cases, a 4% decrease as compared to the previous week. Three of the 10 countries (30%) in the Region for which data are available showed an increase in the number of new cases of 20% or greater: Bhutan (83 vs 48 new cases; +73%), Sri Lanka (73 vs 52 new cases; +40%) and the Maldives (86 vs 69; +25%). The highest numbers of new cases were reported from Indonesia (14 093 new cases; 5.2 new cases per 100 000; +18%), India (13 914 new cases; 1.0 new cases per 100 000; -17%) and Thailand (2616 new cases; 3.7 new cases per 100 000; +17%).

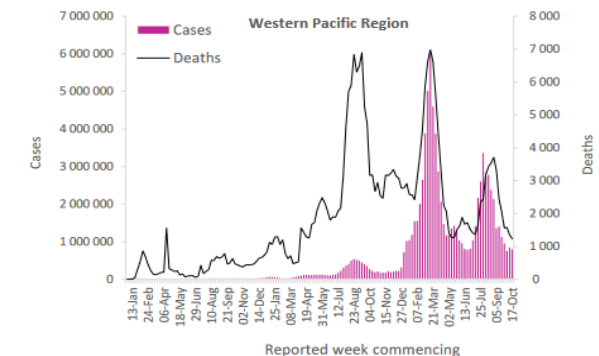
The Region reported over 200 deaths, a 13% decrease as compared to the previous week. The highest numbers of new deaths were reported from Indonesia (116 new deaths; <1 new death per 100 000; +7%), India (66 new deaths; <1 new death per 100 000; -31%) and Thailand (40 new deaths; <1 new death per 100 000; -25%).



Western Pacific Region

The Western Pacific Region reported over 812 000 new cases, a 5% decrease as compared to the previous week. Two (6%) countries reported increases in new cases of 20% or greater, with the largest proportional increases observed in Fiji (nine vs three new cases; +200%) and Malaysia (14 525 vs 11 957 new cases; +21%). The highest numbers of new cases were reported from China (285 348 new cases; 19.4 new cases per 100 000; -13%), Japan (233 682 new cases; 184.8 new cases per 100 000; +7%) and the Republic of Korea (176 869 new cases; 345.0 new cases per 100 000; +18%).

The Region reported an 8% decrease in new weekly deaths as compared to the previous week, with over 1200 deaths reported. The highest numbers of new deaths were reported from China (469 new deaths; <1 new death per 100 000; +9%), Japan (404 new deaths; <1 new death per 100 000; -1%) and the Philippines (159 new deaths; <1 new death per 100 000; -35%).



COVID-19 situation update

Update on SARS-CoV-2 variants of interest and variants of concern

Source: WHO

Geographic spread and prevalence of VOCs

Globally, from 24 September to 24 October 2022, 107 952 SARS-CoV-2 sequences were shared through GISAID. Among these, 107 678 sequences were the Omicron variant of concern (VOC), which accounted for 99.7% of sequences reported globally in the past 30 days. During epidemiological week 40, (3 to 9 October 2022), 11.7% of all shared sequences have not yet been assigned a specific Pango name but are presumed to be descendent lineages of Omicron (category unassigned). In the same reporting period, 1.4% of sequences are assigned as recombinants, the majority of which are XBB and its descendent subvariant XBB.1. No sequences other than Omicron have been reported in the past 30 days.

The trends describing the circulation of Omicron descendent lineages should be interpreted with due consideration of the limitations of the COVID-19 surveillance systems. These include differences in sequencing capacity and sampling strategies between countries, changes in sampling strategies over time, reductions in tests conducted and sequences shared by countries around the world and delays in sequence submission. Genetic diversification continues and has given rise to 390 Omicron descendent lineages, as well as 48 identified recombinants. All these variants are being monitored and assessed by WHO based on criteria of genetic constellations of mutations, and/or indications of a rise in prevalence in a geographic location, as well as any evidence of phenotypic changes.

BA.5 descendent lineages remain predominant with a prevalence of 77.1% as of epidemiological week 40, followed by BA.4 descendent lineages with a prevalence of 5.4%. BA.2 descendent lineages have risen in prevalence, accounting for 4.3% of sequences within the same reporting period. The prevalence of BA.1.X is <1% and BA.3.X sequences have not been reported at the global level within the last eight weeks. Figure 4 and Table 2 report the global proportions and prevalence of the six variants currently classified as Omicron subvariants under monitoring, a list that is regularly updated.

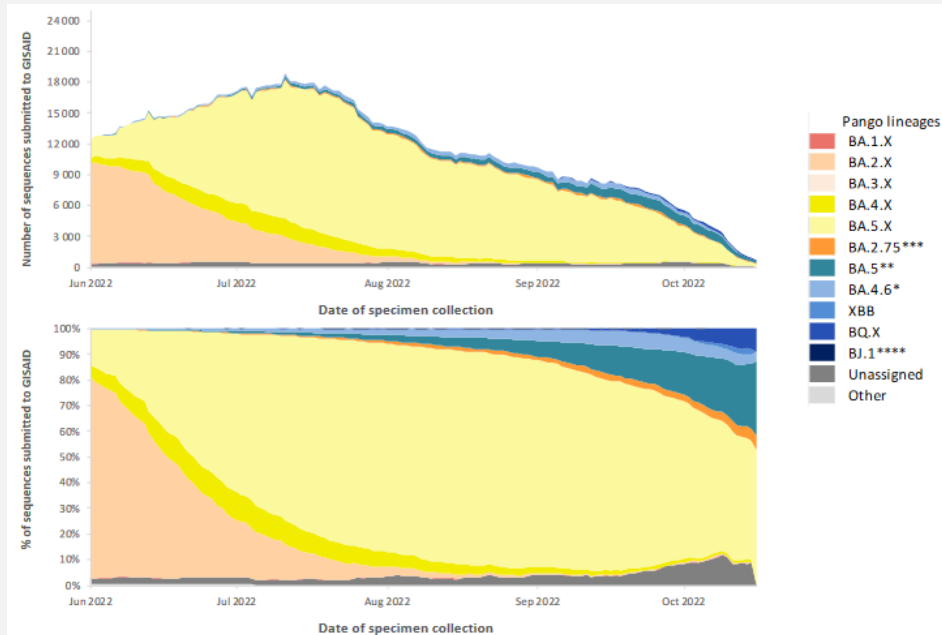


Figure 4 Panel A shows the number, and Panel B the percentage, of all circulating variants since June 2022. Omicron sister-lineages and additional Omicron VOC descendent lineages under further monitoring are shown. BA.1.X, BA.2.X, BA.3.X, BA.4.X and BA.5.X include all BA.1, BA.2, BA.3, BA.4 and BA.5 pooled descendent lineages, except the Omicron subvariants under monitoring shown individually. The Unassigned category includes lineages pending for a Pango lineage name, whereas the Other category includes lineages that are assigned but not listed in the legend. Source: SARS-CoV-2 sequence data and metadata from GISAID, as of 24 October 2022.

Table 2. Relative proportions of SARS-CoV-2 sequences over the last four weeks by specimen collection date

Lineage	Countries	Sequences	Last 4 weeks by collection date (%)			
			2022-37	2022-38	2022-39	2022-40
BA.1.X	184	2 192 470	0.04	0.04	0.02	0.03
BA.2.X	164	2 018 702	2.93	3.12	3.61	4.34
BA.3.X	28	791	0.0	0.0	0.0	0.0
BA.4.X	124	113 056	7.42	7.24	6.68	5.39
BA.5.X	142	1 067 974	85.84	83.47	80.15	77.12
Unassigned	96	102 296	3.49	5.71	8.86	11.68
Other	204	6 595 633	0.17	0.14	0.13	0.15
Omicron subvariants under monitoring						
BA.5 (+ 5 mutations)	103	57 679	11.58	13.75	16.77	20.71
BA.2.75.X	63	15 585	2.27	2.51	2.76	3.22
BA.4.6.X	87	36 469	5.77	5.82	5.48	4.39
BJ.1 (BA.2 subvariant)	11	118	0.01	0.01	0.01	0.01
XBB.X	27	880	0.11	0.27	0.56	1.29
BA.2.3.20.X	27	613	0.21	0.24	0.35	0.36
BQ.1.X (BA.5 subvariant)	51	4 855	0.84	1.64	3.51	5.96

Table 2 shows the number of countries reporting the highlighted lineages, the total number of sequences reported and the prevalence of the lineages for the last four weeks. BA.1.X, BA.2.X, BA.3.X, BA.4.X and BA.5.X include all BA.1, BA.2, BA.3, BA.4 and BA.5 pooled descendent lineages. The Unassigned category includes lineages pending for a Pango lineage name, whereas the Other category includes lineages other than those listed in the legend. The Omicron subvariants under monitoring are updated regularly, more detailed information can be found at the WHO variant tracking site. Data source: sequences and metadata from GISAID, retrieved on 24 October 2022.

The relevant Spike protein (S) amino acid positions and substitutions under monitoring are S:R346X, S:K444X, S:V445X, S:N450X and S:N460X. BA.2, BA.4 and BA.5 and their various subvariants have in many cases acquired the same mutations at the same position, indicating convergent evolution. Convergent evolution refers to the independent genetic adaptation of two or more different variants at the same genomic position, i.e., the same nucleotide or amino acid change is observed in multiple variants, with these variants not being direct descendants of each other. Areas of convergent evolution point to a potential role in the adaptation and further evolution of the virus. Convergent evolution can be effective in identifying the drivers of phenotypic adaptation and effect.

Furthermore, it shows the ongoing adaptive potential of the virus to further evolve.

As of 25 October 2022, XBB and XBB.1 have been reported by 35 countries with 1453 sequences. BQ.1 and its descendent lineages are reported from 65 countries with 8077 sequences. BQ.1 is a BA.5 subvariant with additional spike mutations K444T and N460K, while BQ.1.1 also has spike mutation R346T.

The WHO Technical Advisory Group on Virus Evolution (TAG-VE) met on 24 October 2022 to share and evaluate evidence on XBB and BQ.1. The TAG-VE will publish a statement on these lineages.

Figure 5. Vaccine effectiveness (VE) of primary series and first booster vaccination against the Omicron variant of concern



Dots represent point estimates of VE from each study; dark black horizontal lines represent median VE across all studies in stratum. All data are from a systematic review of COVID-19 VE studies; methods and summary tables of VE studies can be found on view-hub.org. Vertical panels represent VE for full primary series (grey dots) and VE for homologous or heterologous booster vaccination (other colored dots) following completion of primary series vaccination with vaccine of primary series noted in column header. All booster VE estimates are for first booster dose. Severe disease includes hospitalization; symptomatic disease includes disease of any severity level; any infection can include symptomatic and asymptomatic infection. Not shown in plot: VE against severe disease at 0.5-3 primary post primary series of Beijing CNBG-BBIBP-CoV (59%, 95% CI: 4 to 80%) and Gamaleya-Gam-Covid Vac (64%, 95% CI: -45 to 92.2%). Additional details on the methods for inclusion of the estimates in the plots provided in text.

COVID-19 situation update

Update on SARS-CoV-2 variants of interest and variants of concern

Source: [WHO](#)

Figure 5 shows the absolute vaccine effectiveness (VE) over time against the Omicron variant, grouped by the primary series vaccine; booster doses may have been a different vaccine (i.e., both homologous and heterologous booster vaccination VEs are shown). All vaccines included in Figure 5 are vaccines based on the ancestral SARS-CoV-2 strain; no VE data is yet available for variant-based vaccines. Since the last update on 21 September 2022, six new studies have been added to Figure 5. Two studies assessed the VE of a primary series of Pfizer BioNTech-Comirnaty against infection and symptomatic disease due to Omicron over time among adolescents in the United States and Scotland, UK, respectively, while a third evaluated VE of two and three doses of Pfizer BioNTech against infection among healthcare workers in Italy. A fourth study assessed the VE Pfizer BioNTech-Comirnaty, Moderna-Spikevax, and Janssen-Ad26.Cov2.S against infection, hospitalization, and death due to Omicron among adults in the United States. A fifth study (not yet peer-reviewed) estimated VE of two and three doses of Pfizer BioNTech-Comirnaty and of Moderna-Spikevax against emergency department/urgent care encounters and hospitalization due to the Omicron BA.4 or BA.5 sub-lineages among adults in the United States. Finally, a sixth study (not yet peer-reviewed) provided evidence for the VE of three doses of Moderna-Spikevax against infection and hospitalization due to each of the Omicron BA.1, BA.2, BA.2.12.1, BA.4, and BA.5 sublineages among adults in the United States.

Table 3. Summary of phenotypic characteristics of the Omicron VOC

Public health domain of impact	Omicron (B.1.1.529)		Omicron sub lineages		
	Omicron (B.1.1.529)	BA.1	BA.2	BA.4	BA.5
Transmissibility	Growth advantage and increased transmissibility compared to Delta ¹	Lower growth rate compared to BA.2, BA.4 and BA.5 ²⁷	Lower growth rate compared to BA.4 and BA.5 ²	Lower growth advantage compared to BA.5 ²	Growth advantage compared to BA.1, BA.2 and BA.4 ²
Disease severity	Overall evidence suggests lower severity compared to Delta despite contrasting evidence. Earlier studies reported lower severity ²⁻⁷ . However, more recent studies report lower ⁸ or similar severity ⁹	There is evidence of similar severity compared to BA.2 ¹⁰ . However, there is contrasting evidence in favor of similar ¹¹ or higher disease severity compared to BA.4 and BA.5 ¹²	Similar disease severity compared to BA.1 ¹⁰ . There is evidence, both in favor of higher severity ¹² compared to BA.4 and BA.5, as well as in support of similar disease severity compared to BA.4 and BA.5 ¹³	One preliminary study suggests lower severity compared to BA.1 and BA.2 ¹² while another study reported similar disease severity compared to BA.1 ¹¹	A preliminary study suggested increased severity compared to BA.1 and BA.2 ¹⁴ , while another study found lower disease severity compared to BA.1 and BA.2 ¹² . A recent study found no difference in severity compared to BA.1 ¹¹
Risk of reinfection	Reduced risk of Omicron reinfection among individuals previously infected with a different SARS-CoV-2 variant compared to immune-naïve individuals ^{15,16}	Earlier studies reported reduced risk of reinfection with BA.1 after infection with BA.2 ¹⁵ . However, a recent study reported increased risk of reinfection following prior infection with any Omicron sublineage, as compared to non-Omicron VOCs ¹⁷	There is a reduced risk of reinfection reported in earlier ¹⁵ and more recently studies ¹⁸ . However, a recent study reported increased risk of reinfection following prior infection with any Omicron sublineage, as compared to non-Omicron VOCs ¹⁷	There is varying evidence regarding the risk of reinfection. One study reported protection against infection following previous BA.2 infection ¹⁹ . A recent study reported increased risk of reinfection following prior infection with any Omicron sublineage, as compared to non-Omicron VOCs ¹⁷ , while another reported reduced risk of reinfection following prior infection with any Omicron sublineage, as compared to non-Omicron VOCs ²⁰	There is varying evidence regarding the risk of reinfection. One study reported protection against infection following previous BA.2 infection ¹⁹ . A recent study reported increased risk of reinfection following prior infection with any Omicron sublineage, as compared to non-Omicron VOCs ¹⁷ , while another reported reduced risk of reinfection following prior infection with any Omicron sublineage, as compared to non-Omicron VOCs ²⁰
Impact on antibody responses	Reduced neutralizing activity reported as compared to other VOCs ²¹⁻²³	Lower neutralizing antibody titers compared to the index virus ²³	Lower neutralizing antibody titers compared to the index virus ²³	Lower neutralizing antibody titers compared to BA.1 ^{24,25}	Lower neutralizing antibody titers compared to BA.1 ²⁴⁻²⁶
Impacts on diagnostics	PCR assays that include multiple gene targets maintain their accuracy to detect Omicron ²⁷ ; S gene target failure/positivity (SGTF) may be a proxy for screening. Limited to no impact on sensitivity of Ag-RDTs observed ²⁸⁻³¹	S gene target failure	The majority will be S gene target positive	S gene target failure	S gene target failure
Impact on treatments	No difference in the effectiveness of antiviral agents (polymerase and protease inhibitors) against the Omicron variant ³² . Conserved neutralizing activity for three broadly neutralizing monoclonal antibodies (sotrovimab, S2X259 and S2H97) and reduced effectiveness of other monoclonal antibodies ³³⁻³⁵	Reduced neutralization activity of sotrovimab and casirivimab-imdevimab ³⁶	Reduced neutralization activity of sotrovimab and casirivimab-imdevimab ³⁶	Reduced neutralization activity of sotrovimab and casirivimab-imdevimab ³⁶	Reduced neutralization activity of sotrovimab and casirivimab-imdevimab ³⁶
Impact on vaccination	Results of vaccine effectiveness (VE) studies should be interpreted with caution because estimates vary with the type of vaccine administered and the number of doses and scheduling (sequential administration of different vaccines). For further information, see the section Interpretation of the results of the VE for the Omicron variant				

Interpretation of the results of absolute VE for the Omicron variant for primary series and first booster dose vaccination to date, 49 studies from 18 countries (Argentina, Brazil, Canada, Chile, Czech Republic, Denmark, Finland, Hong Kong (SAR), Norway, Israel, Italy, Paraguay, Qatar, Singapore, South Africa, the United Kingdom, the United States of America and Zambia) have collectively assessed the protection of seven vaccines against the Omicron variant with evidence for the five vaccines with more than one VE estimate shown in Figure 5 (19 studies contributed VE estimates of primary series vaccination only to the plot, six contributed estimates of the first booster vaccination only, and 24 contributed to both). Findings from these studies show reduced VE of COVID-19 primary series vaccines against the Omicron variant for all outcomes (severe disease,

symptomatic disease, and infection) compared to those that have been observed for the original SARS-CoV-2 strain and the other four VOCs (plots of VE against other VOCs can be found on the VIEW-hub.org Resource Page). Importantly though, VE estimates against the Omicron variant remain higher for severe disease than the other outcomes for Omicron, in the majority of studies. The first booster vaccination substantially improves VE for all outcomes and for all combinations of schedules with estimates available for both primary series and booster vaccination. VE declines more in the first six months after the first booster vaccination for symptomatic disease and infection than it does for severe disease⁴³; however, studies that assess VE of booster vaccination beyond six months are not yet available.

For severe disease, VE of the primary series showed little decline over six months. During the first three months after primary series vaccination, VE was ≥70% for 12 of 18 (67%) VE estimates for the mRNA vaccines (Moderna-Spikevax and Pfizer BioNTech-Comirnaty). Of the three vector vaccines studies available all had VE <70%: two reported VE <70% for AstraZeneca-Vaxzevria and Gamaleya-Gam-Covid-Vac, and the other reported VE <50% for Janssen- Ad26.COVID.S. Four estimates were available for inactivated vaccines: all three estimates for Sinovac-CoronaVac and the single estimate for Beijing CNBG-BBIBP-CorV (Sinopharm) were < 70%, but ≥ 50%. (The single estimates for Beijing CNBG-BBIBP-CorV (Sinopharm) and Gamaleya-Gam-Covid-Vac are not shown in the figure.) Beyond three months after vaccination with the primary series, VE was ≥70% for 17 of 46 (37%) VE estimates for the mRNA vaccines (31 [67%] had VE ≥50%); one of 13 (8%) AstraZeneca-Vaxzevria VE estimates was ≥70% (10 [77%] were ≥50%); none of the three estimates for a single dose of the other vector-based vaccine, Janssen-Ad26.COVID.S, was ≥70% (one [33%] was ≥50%); the four VE estimates for Sinovac-CoronaVac were ≥50% but <70%. The first booster dose vaccination improved VE against severe disease in all studies, and VE was ≥70% in 39 (87%) of 45 estimates evaluating VE between 14 days and three months of receipt of a booster dose (42 estimates evaluated an mRNA booster, two evaluated a Janssen-Ad26.COVID.S booster, and one evaluated a Sinovac-CoronaVac booster); one Pfizer BioNTech-Comirnaty booster dose VE and one Moderna-Spikevax booster dose VE were <50% (though confidence intervals were wide particularly for Moderna-Spikevax). At three to six months post mRNA booster, VE was ≥70% for 27 of 35 (77%) estimates (the primary series was an mRNA vaccine in 24 of the 35 estimates, AstraZeneca-Vaxzevria in eight and Sinovac-CoronaVac in three). One study found the VE to be <70% but ≥50% following three to six months from the third dose of Sinovac-CoronaVac. VE against symptomatic disease and infection within the first three months of primary series vaccination was lower than against severe disease, and VE decreased more rapidly over time. For symptomatic disease, only five of 20 (25%) VE estimates for the mRNA vaccines were ≥70% and only 12 (60%) were ≥50%; one (25%) of the four VE estimates for AstraZeneca-Vaxzevria was ≥70% while the remaining three estimates were <50%; the single estimate for Janssen-Ad26.COVID.S was ≥70%, and all three estimates for Sinovac (CoronaVac) were <50%. Beyond three months after vaccination, only one of 44 (2%) VE estimates was ≥50% (34 estimates evaluated mRNA vaccines, eight evaluated AstraZeneca-Vaxzevria, and two evaluated Sinovac-CoronaVac). mRNA booster vaccination after completion of a primary series of an mRNA vaccine, AstraZeneca-Vaxzevria, or Sinovac-CoronaVac improved VE against symptomatic disease: eight of 27 (30%) VE estimates between 14 days and three months post booster were ≥70%, although 22 (81%) were ≥50%; one (50%) of two VE estimates evaluating three doses of AstraZeneca-Vaxzevria was ≥50% but <70%; the single estimate for two doses of Janssen-Ad26.COVID.S was ≥50% but <70%, and the single estimate for three doses of Sinovac-CoronaVac was <50%. First booster dose protection declined rapidly over time: only four of 18 (22%) estimates available at three to six months following receipt of an mRNA booster dose had VE ≥50% and none were ≥70%. Neither the single VE estimate for three doses of AstraZeneca-Vaxzevria nor the single estimate for three doses of Sinovac-CoronaVac assessed three to six months post booster vaccination was above 50%. VE against infection showed a similar pattern of steep waning as that against symptomatic disease. Of note, two recent studies (not yet peer reviewed) among adults in the United States provided new evidence of vaccine effectiveness against Omicron sub-lineages. One study assessed VE of two and three doses of both Pfizer BioNTech-Comirnaty and Moderna-Spikevax against emergency department/urgent care encounters and hospitalization due to Omicron BA.4/BA.5 among adults and found similar magnitude of VE, as well as patterns of decreasing effectiveness over time for Omicron BA.4/BA.5 as was observed previously for

COVID-19 situation update

Update on SARS-CoV-2 variants of interest and variants of concern

Source: [WHO](#)

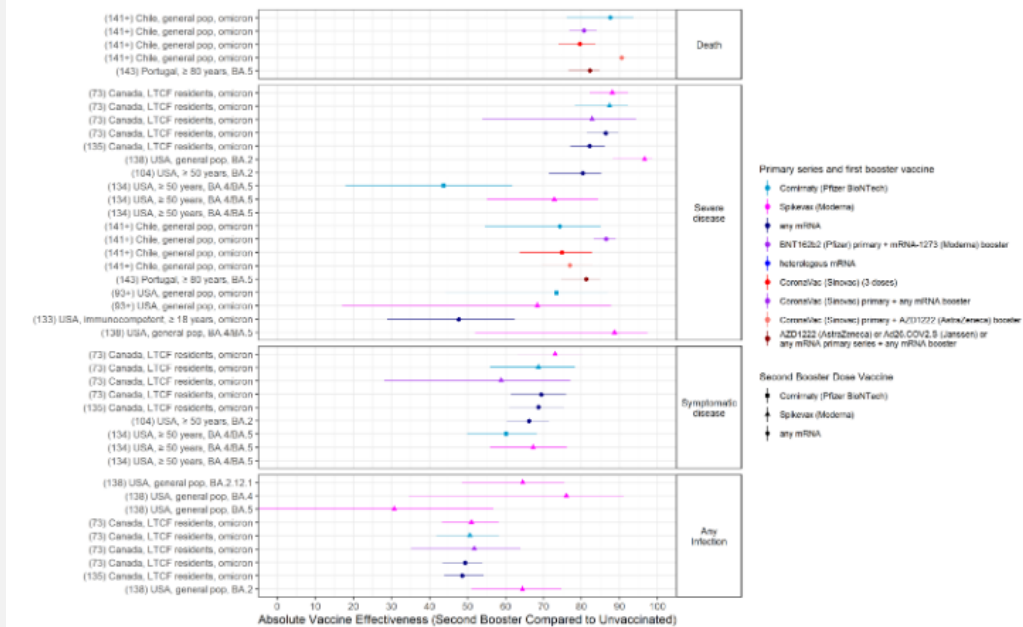
BA.2/BA.2.12.1, but lower magnitude of VE than that observed for Omicron BA.1. Similarly, the second study found that the VE of three doses of Moderna-Spikevax against infection declined more rapidly over time for BA.2, BA.2.12.1, BA.4, and BA.5 (VE ranged from 61-91% at 14-30 days with protection lost by 150 days post third dose) compared to BA.1 (VE of 86% at 14-30 days declining to 55% at 150 days post third dose); VE against hospitalization due to BA.4 and BA.5 combined (72%, 95% CI: 24-90%) was lower than BA.2 (82%, 95% CI: 65-91%) and BA.1 (98%, 95% CI: 96-98%) over the entire study period with a maximum potential follow-up time of approximately nine months post receipt of a third dose. Interpretation of the results of absolute VE and relative VE for the Omicron variant for second booster dose vaccination. Nine studies have evaluated absolute VE of a second booster dose of mRNA vaccines, comparing infection and disease events among persons receiving four doses to an unvaccinated comparison group. VE of a second mRNA booster against death, severe disease, symptomatic disease, and infection due to Omicron was $\geq 70\%$ among 100% (five/five), 84% (16/19), 11% (one/nine), and 11% (one/nine) of estimates, respectively (Figure 6). Limited evidence is available on the duration of protection of a second booster dose; however, three studies found similar declines over time as has been seen with the first booster dose.

To date 16 studies (see Figure 7), conducted among long-term care facility residents, older adults, healthcare workers, and adults 18 years and older have assessed relative VE of a second booster dose of mRNA vaccines, by comparing the risk of Omicron infection, disease, and death among persons receiving four doses to persons having received only a first booster dose of mRNA vaccines at various time points ranging from relatively recently up to nine months ago. For all outcomes, a fourth dose achieved marginal gains in VE compared to three doses (Figure 7).

Relative VE of four doses of mRNA vaccine is higher for severe disease and death than for symptomatic disease and infection.

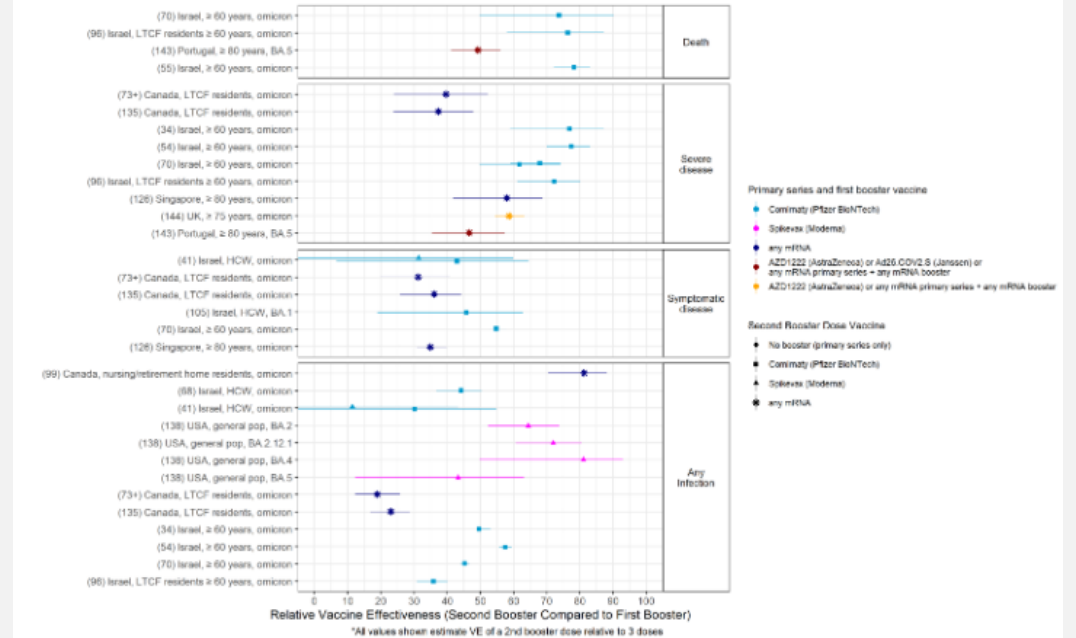
It is important to note that interpretation of relative VE is not straightforward; it cannot be translated into absolute VE or cases prevented after a second booster dose. Moreover, relative VE cannot be compared across studies due to differences in the absolute VE (which is often not reported) and epidemiological context of the setting of each study. In addition, the follow-up time after the fourth dose in most studies was short (ranging from one to four months) so that waning of the fourth dose is not evaluable.

Figure 6. Absolute vaccine effectiveness of second booster vaccination against Omicron (compared to receiving no doses)



Abbreviations: LTCF=long-term care facility, pop=population. Dots represent point estimates of vaccine effectiveness; horizontal lines represent the 95% confidence intervals. Labels along left side of plot indicate reference numbers, country, study population, and Omicron sub-lineage (if specified). Reference numbers identify the study and link to the summary table of VE effectiveness studies on view-hub.org (Table 2 in summary table). + indicates maximum potential follow-up period extends beyond four months post receipt of second booster dose. Severe disease includes any hospitalization and hospitalization with severe illness; symptomatic disease includes disease of any severity level; any infection can include symptomatic and asymptomatic infection.

Figure 7. Relative vaccine effectiveness of second booster vaccination against Omicron (relative to first booster vaccination)



Abbreviations: LTCF=long-term care facility; HCW=healthcare workers. Dots represent point estimates of vaccine effectiveness; horizontal lines represent the 95% confidence intervals. Labels along left side of plot indicate reference numbers, country, study population, and Omicron sub-lineage (if specified). Reference numbers identify the study and link to the summary table of VE effectiveness studies on view-hub.org (Table 2 in summary table). + indicates maximum potential follow-up period extends beyond four months post receipt of second booster dose. Severe disease includes any hospitalization and hospitalization with severe illness; symptomatic disease includes disease of any severity level; any infection can include symptomatic and asymptomatic infection.



COVID-19 Country Spotlight

Country Spotlight for Locations with Notable Disease Activity

	XBB	BQ.1.1
Origin	BA.2 → BJ.1 and BA.2.75 → recombinant XBB	BA.2 → BA.5 → BQ.1.1
Locations with current detection	Mostly across Southeast Asia (dominant in Singapore)	Mostly across Africa, Europe, and North America
Global prevalence, as of October 8 (epiweek 40)	1.29%	5.96%
Immune evasion [20]	Resistance to monoclonal antibody treatments (bebtelovimab and Evusheld)	

This report is highlighting the notable COVID-19 disease activity in Singapore and Germany, where the SARS-CoV-2 Omicron XBB and BQ.1.1 subvariants, respectively, are increasing in prevalence.

The COVID-19 disease activity trends in Singapore and Germany suggest that the global epidemiological situation can be characterized as a “variant soup” where multiple immune-evasive subvariants may co-circulate rather than one variant outcompeting another. Globally, both Singapore and Germany are among the countries with the highest overall booster coverage (Singapore ranking 9th, and Germany ranking 16th globally). Both countries experienced a recent summer wave, which may have helped mitigate severity. As the northern hemisphere enters its winter season and COVID-19 cases are expected to increase, improving booster vaccine coverage is the best way to decrease the risk of severe disease and death, while indoor masking and appropriate indoor ventilation can limit transmission.

Singapore

Disease Activity

- On October 25, 2022 Singapore’s seven-day rolling average number of daily new cases was 7,218. This is a **14.9% decrease from a week prior** on October 18, 2022, and a 254.2% increase from a month earlier on September 25, 2022.
- On October 15, 2022, **Singapore’s Ministry of Health reported that its current wave of COVID-19 is driven by the XBB variant** and has a notable increase in the proportion of reinfections. Health authorities expected this wave to be short and sharp due to the country’s high infection-derived (most likely due to its recent BA.5 wave) and vaccine-derived immunity. [2,3] With recent data showing a steady decline in cases, it is now speculated that **the wave has peaked and will subsequently end earlier than the models forecasted.** [4]
- In September 2022, genomic surveillance showed that all COVID-19 cases in the country were attributed to the Omicron variant, and 6% of locally acquired cases were the XBB variant. It is **estimated that 54% of locally acquired cases during week of October 3 were the XBB variant.** [5] On October 26, 2022, four imported cases of BQ.1 and BQ.1.1 were reported. [6]

Hospitalizations, ICU Admissions, and Deaths

- Since the end of August 2022, Singapore has experienced an increasing trend in the number of hospital and ICU admissions; both of which reached a peak on October 18, 2022, with 1,116 new weekly hospital admissions and 23 new weekly ICU admissions. **As of October 23, 2022, both indicators are showing a decreasing trend, with new weekly hospital admissions falling to 936 and new weekly ICU admissions falling to 17.**
- Similarly, weekly confirmed deaths also reached a peak in the same period, with 20 deaths reported over the week prior to October 20, 2022. This indicator also shows a decreasing trend, with 14 deaths over the week prior to October 26, 2022. **The average number of deaths reported remains lower than previous waves.** [7]

Vaccination

- According to the Singapore Ministry of Health, 92% of the population have received two doses of a COVID-19 vaccine and 80% had received a booster shot, as of October 24, 2022. [8]
- On October 25, 2022, Singapore’s Health Sciences Authority provided interim authorization for the use of Pfizer-BioNTech’s BA.4/BA.5 bivalent vaccine following their approval of the Moderna BA.1 subvariant-targeted vaccine for which vaccination began in early October 2022. [9] On the same day, Singapore began a vaccination campaign for children aged six months to four years old. [10]

Public Health Measures

- Public health measures have been lifted in Singapore, with the country reopening to travel and tourism. However, the most recent wave prompted health officials to state that if the situation continues to worsen, a masking mandate may be reinstated. [11]
- Singapore views COVID-19 as having almost reached an endemic state, they urge the public to practice good personal and social responsibility, limit visits to hospitals and residential care homes, and keep vaccinations up to date. [12]

Germany

Disease Activity

- Germany is well into its seventh wave of COVID-19. According to BlueDot’s COVID-19 Data Suite, as of **October 25, 2022, the incidence rate of COVID-19 cases in Germany is high (> 350 cases per 100,000 population), with a stable or increasing trend,** and has remained at the same level for the majority of days since early September.
- BA.5 remains the dominant variant in Germany** and continues to largely drive the current wave. However, the **BQ.1.1 variant has been reported to be circulating in Germany with its prevalence increasing** (exact estimates remain uncertain). The increase in cases may be attributed to the lack of mask mandates, loosening of public health restrictions in Germany prior to October, and recent mass gatherings event such as Oktoberfest, that occurred between September 17 to October 3 with minimal public health measures in place.

Hospitalizations, ICU Admissions, and Deaths

- According to data from Our World in Data, **Germany is currently reporting an all-time high number of new weekly hospital admissions since the beginning of the pandemic.** Over 17,000 new weekly hospital admissions were reported in mid-October. This may be due to a recent plateauing in booster uptake and overall waning immunity. [13]
- Germany is also reporting an increasing trend in the number of new weekly ICU admissions among COVID-19 patients.** Over 1,700 weekly new ICU admissions were reported in mid-October, surpassing the peak in weekly new ICU admissions observed in Germany’s most recent summer wave (1,460). [14]
- Additionally, **Germany is observing an increasing trend in the rate of deaths.** The seven-day rolling average number of new deaths reported was approximately 137 on October 25, 2022, which is a 32% increase compared to the previous week.

Vaccination

- Overall, approximately 76% of the population in Germany had received two doses of a COVID-19 vaccine and 73.5% of the population have received at least one booster dose, as of October 25, 2022.
- In September, the European Union approved the use of three new Omicron vaccines: the Moderna BA.1 subvariant-targeted vaccine, the Pfizer-BioNTech BA.1 subvariant-targeted vaccine, and the Pfizer-BioNTech BA.4/BA.5 bivalent vaccine. [15]

Public Health Measures

- Germany implemented new measures on October 1 including: the use of FFP2 masks (similar to N95 masks) by everyone over the age of 14 on long-distance trains within the country, use of FFP2 masks by all hospital and nursing home employees and visitors, the requirement of a negative rapid test for all hospital visitors, and the required testing of hospital staff three times a week. These measures will stay in effect until April 7, 2023. [16]

XBB and BQ.1.1 Subvariants

Of the several new subvariants of Omicron that have recently emerged globally, XBB and BQ.1.1 have been reported to be potentially two of the most immune-evasive ones. **Early laboratory data shows that those with waning immunity may be affected to a greater extent by XBB and BQ.1.1, due to their immune evasion.** [17] As of October 26, 2022, the WHO listed XBB and BQ.1 variants as Omicron subvariants under monitoring. [18] According to the European Centre for Disease Prevention and Control’s most recent epidemiological update on October 17, **BQ.1 (including its subvariants such as BQ.1.1) is modelled to become the dominant variant in Europe** by mid-November to the beginning of December and will account for **over 80% of all COVID-19 cases in Europe by early 2023.** [19]

[20]

Other Infectious Disease Outbreaks/ Conflicts



Ebola in Uganda; Follow Up

SUBLOCATIONS AFFECTED: districts 5

The EVD outbreak continued to grow during its fifth week. So far, 115 officially confirmed cases and 32 confirmed deaths have been reported across seven districts (Mubende, Kagadi, Kampala Kyegegwa, Kassanda, Bunyangabu and Wakiso). This is an increase from 71 confirmed cases and 27 confirmed deaths across 5 districts as of October 21, 2022. While Mubende continues to report the most cases overall with 63 (55%), Kassanda has experienced rapid growth from eight cases (11.2% of the total) on October 21, 2022, to 28 cases (24.3%) as of October 28, 2022. The cases in the Kampala metropolitan region (Wakiso) are close contacts of infected individuals in the Kassanda or Mubende districts.

At the beginning of the outbreak, cases spread to the districts of Bunyangabo, Kagadi and Kyegegwa. These districts have completed the 21 days of contact follow up and individuals have been retired from the contact list. Health officials believe that transmission may have been interrupted since there has been no evidence of secondary transmission. However, the 42-day surveillance period must be completed before the districts can be cleared.

The virus circulating in Uganda is the Sudan strain of Ebola, for which there is no proven vaccine. The Uganda Ministry of Health announced that they will be evaluating three Ebola Sudan vaccine candidates in close contacts of the affected individuals in the upcoming weeks. The manufacturing companies of the vaccine candidates are Oxford, Sabin, and Merck. The main objective of disseminating the candidate vaccines is to evaluate their efficacy in protecting primary contacts of EVD patients within 29 days of contact. The protocol aims to initially vaccinate 3000 contacts of 150 confirmed cases.

CONCERN LEVEL: HIGH.

Source: [Reliefweb](#), [ECDC](#)

Figure 1. Geographical distribution of EVD cases in Uganda, 2022.



Poliomyelitis in Democratic Republic of the Congo

SUBLOCATIONS AFFECTED: 16 health zones, south eastern province

Environmental samples of wild poliovirus have been reported from four of sixteen health zones in the southeastern province of Haut-Lomami in the Democratic Republic of the Congo (over 1,500 km from Kinshasa and approximately 900 km from the southeastern border with Zambia). According to local media sources, samples were confirmed to be positive for poliovirus in health zones in Malemba Nkulu (5), Mukanga (3), Kinkondja (1), and Kitenge (1). In addition, on October 28, 2022, media sources reported the death of three adults with symptoms of paralysis in four limbs in Haut-Lomami; however, it is unclear if these deaths are related to wild poliovirus infection. Furthermore, an adult with four-limb paralysis remains admitted at the Malemba Nkulu General Hospital. The provincial Minister of Health has sent laboratory samples for further investigation, and public health actions are being taken to control the spread of the virus.

CONCERN LEVEL: HIGH.

Source: [NewsMedia](#)



Diphtheria in Migrants, Europe (Source [ECDC](#))

Since the beginning of 2022, and as of 26 October 2022, there have been 90 cases of diphtheria among migrants reported by eight EU/EEA countries: Austria (24), Belgium (8), France (14), Germany (31), Italy (3), the Netherlands (2), Norway (7) and Spain (1). Cases have also been reported in Switzerland (25) and the United Kingdom (14), bringing the overall number for Europe to 129. Among these cases, the majority presented with the cutaneous form of the disease, all patients were male.

Highly Pathogenic Avian Influenza H5N1 in Vietnam; Follow Up

Additional case details have been released by the Phu Tho Centers for Disease Control and Prevention (CDC) in regard to the single human case of H5N1 influenza reported in Phu Tho, Vietnam on October 17, 2022. The affected child is reported to be from the Dong Thanh commune, Thanh Ba district, Phu Tho province, and developed symptoms, including a cough and fever, following exposure to poultry. She was transferred to the National Children's Hospital from the Phu Tho Obstetrics and Children's Hospital after developing renal and hepatic failure. News media reports on Oct 21, 2022, that the child is in stable condition, and continues to have her condition monitored. According to avian influenza surveillance data from March 2022, positive avian samples of both H5N1 and H5N6 were collected from five communes of two districts, including Dong Thanh commune.

CONCERN LEVEL: MEDIUM.

Source: [NewsMedia](#)

Flood, Nigeria and Chad

Both Nigeria and neighbouring Chad have been swamped by the worst flooding in decades. In [Nigeria](#), more than 600 people have been killed, and over 1.4 million made homeless, after exceptionally heavy rains hit 33 of the country's 36 states – compounded by the release of water from a dam in next-door Cameroon. In Chad, where the government has declared a [state of emergency](#), more than a million people have been affected. The situation is particularly bad in the country's south, where the Chari and Logone rivers broke their banks, inundating homes in the capital, N'Djamena. With farmland destroyed, and roads and other infrastructure washed away, both countries are facing a long-term crisis. Chad was already struggling after three consecutive [poor harvests](#). In Nigeria, rice production is expected to [fall by 21 percent](#), and maize by 12 percent. That will affect food prices, at a time when inflation is already at 23 percent – a 17-year high. [Fuel shortages](#) are forcing people to use the black market – at triple the price per litre – and gas suppliers have declared [force majeure](#), which will affect sales to Europe, worsening the government's existing cash crunch.

Source: [The NewHumanitarian](#); [ReliefwebNigeria](#); [ReliefwebChad](#)

Weekly influenza overview , Europe

Weeks 42/2022 (17-23 October 2022); (Source: [FluNetEurope](#))

- Two countries in the Region reported widespread influenza activity, Kazakhstan and United Kingdom (Scotland).
- The percentage of all sentinel primary care specimens from patients presenting with ILI or ARI symptoms that tested positive for an influenza virus decreased to 6% from 7% in the previous week, which is below the epidemic threshold set at 10%.
- Germany, Kazakhstan, Portugal and Spain reported seasonal influenza activity above 10% positivity in sentinel primary care.
- Of 339 SARI cases tested for influenza, 64 were positive, 59 (92%) of which were infected with influenza type B viruses.
- For the season, among the SARI influenza B positive cases ascribed to a lineage, all were B/Victoria.
- Both influenza type A and type B viruses were detected among all monitoring systems, with influenza A(H3) viruses being dominant in sentinel and non-sentinel surveillance.
- Both type A and type B viruses were detected among hospitalized patients with laboratory confirmed influenza, with A(H3) viruses dominating in both ICU and non-ICU wards while type B viruses dominated in data from SARI surveillance. However, it is important to consider that data for ICU, non-ICU and SARI cases come from different countries so, although differences in virus circulation may be attributable to geographical differences, there is insufficient data to make a definite conclusion.

ECDC assessment: For the WHO European Region as a whole, influenza activity remained at inter-seasonal levels with signs of slowly increasing activity. Overall, influenza A(H3) viruses have dominated across the surveillance systems with the majority of SARI cases tested being type B viruses. Currently three European countries, Germany, Spain and Portugal are experiencing seasonal influenza activity above 10% positivity with A(H3) being the dominant virus.

Other Infectious Disease Outbreaks/ Conflicts

Cholera cases rise worldwide – shortage of cholera vaccine



Shortage of cholera vaccines leads to temporary suspension of two-dose strategy, as cases rise worldwide

A strained global supply of cholera vaccines has obliged the International Coordinating Group (ICG) — the body which manages emergency supplies of vaccines — to temporarily suspend the standard two-dose vaccination regimen in cholera outbreak response campaigns, using instead a single-dose approach.

The pivot in strategy will allow for the doses to be used in more countries, at a time of unprecedented rise in cholera outbreaks worldwide.

The stopgap is a sign of the growing concern as cholera outbreaks rise – fuelled by a mix of conflict, violence, and poverty, and turbocharged by climate change.

Since January this year, 29 countries have reported cholera cases, including Haiti, Malawi and Syria which are facing large outbreaks. In comparison, in the previous 5 years, fewer than 20 countries on average reported outbreaks. Kenya is one of the latest countries to confirm an outbreak (and health officials warned it will likely be worsened by drought). Pakistan had already reported cases, but weeks of severe flooding will amp up the risks.

The global trend is moving towards more numerous, more widespread and more severe outbreaks, due to floods, droughts, conflict, population movements and other factors that limit access to clean water and raise the risk of cholera outbreaks.

The one-dose strategy has proven to be effective to respond to outbreaks, even though evidence on the exact duration of protection is limited, and protection appears to be much lower in children. With a two-dose regimen, when the second dose is administered within 6 months of the first, immunity against infection lasts for 3 years.

The benefit of supplying one dose still outweighs no doses: although the temporary interruption of the two-dose strategy will lead to a reduction and shortening of immunity, this decision will allow more people to be vaccinated and provide them protection in the near term, should the global cholera situation continue deteriorating.

The current supply of cholera vaccines is extremely limited. Its use for emergency response is coordinated by the ICG which manages the global stockpile of oral cholera vaccines. Of the total 36 million doses forecast to be produced in 2022, 24 million have already been shipped for preventive (17%) and reactive (83%) campaigns and an additional 8 million doses were approved by the ICG for the second round for emergency vaccination in 4 countries, illustrating the dire shortage of the vaccine. As vaccine manufacturers are producing at their maximum current capacity, there is no short-term solution to increase production. The temporary suspension of the two-dose strategy will allow the remaining doses to be redirected for any needs for the rest of the year.

This is a short-term solution but to ease the problem in the longer term, urgent action is needed to increase global vaccine production.

The ICG will continue to monitor the global epidemiological trends as well as the status of the cholera vaccine stockpile, and will review this decision regularly.

Cholera vaccine: By the numbers

Of 36 million doses to be produced in 2022:

- **24 million** have already been shipped
- **8 million** are earmarked for emergency vaccination in just **4 countries**
- At least **29 countries** are reporting cholera cases

CHOLERA, Syria

Syria's cholera outbreak has now spread to every one of the country's 14 provinces, with **24,000 suspected cases** and more than 80 deaths since early September. Severe water shortages – exacerbated by war, politics, and climate change – have forced people to drink unsafe water and allowed cholera bacteria to spread in the extremely low Euphrates River. There are other **dangerous impacts** from what the UN calls an **“already dire water crisis”** that is likely to get worse: Pastures dry up, and farmers have to sell their livestock. Crop yields are low, prices go up, and more families are forced to skip meals. It's almost as predictable as what happens when winter comes to northern Syria: Many can't afford heating and resort to burning whatever they can find, **tents collapse** under the weight of storms, and the **temperatures can be deadly**. Aid groups are working on what's known as “winterisation”, but **last week a UN representative** called the response “grossly underfunded”, warning that if more money doesn't come in, “families will not receive the heating, fuel, blankets, and winter clothes they desperately need to keep warm.”

Source: [TheNewHumanitarian](#); [Reliefweb](#); [ECDC](#)

CHOLERA, Haiti

Children face increasing risks as Haiti battles endemic gang violence and a new cholera outbreak. Since the notification of the first two confirmed cases of *Vibrio cholerae* O1 in the greater Port-au-Prince area on 2 October 2022, to 22 October 2022, the

Haitian Ministry of Health (Ministère de la Santé Publique et de la Population, MSPP per its French acronym)², reported a total of 2,243 suspected cases, including 219 confirmed cases, 1,415 hospitalized suspected cases, and 55 registered deaths. Of the total reported suspected cases with available information, 58% are male and 53% are aged 19 years or younger. The most affected age group is 1 to 4-year-olds, followed by 5 to 9-year-olds.

Among confirmed cases with available age and sex information (205), 46% (94) are aged 19 years or younger and 21% (43) of cases were among children aged 4 years or younger.

Dominican Republic

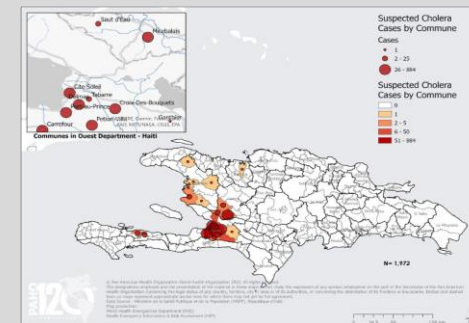
On 20 October 2022, the Dominican Republic Ministry of Public Health confirmed the first imported case of cholera in the country. This is a 32-year-old woman of Haitian nationality, who entered the Dominican Republic on October 17 from Port-au-Prince and then travelled to the province of La Altagracia. The case began symptoms on October 18 with acute diarrhoea, which is why cholera was suspected. The case was admitted to the Hospital Nuestra Señora de la Altagracia in the municipality of Higüey and is currently under treatment. On October 20, the National Surveillance Laboratory of the Ministry of Health, Dr. Defilló, confirmed the presence of *Vibrio cholerae* serogroup O1, serotype Ogawa. For now, none of the contacts have presented symptoms. The Ministry's press release is available at:

<https://bit.ly/3DhfERG>

Source: [TheNewHumanitarian](#); [Reliefweb](#)

CHOLERA, Kenya

The outbreak has been reported in seven counties as listed below; Nairobi, Kiambu, Nakuru, Uasin Gishu, Kajiado, Murang'a and Machakos. The outbreak started with people who had attended a wedding which was held in Red Hill Gardens, Limuru sub county, Kiambu county on Saturday of 8th Oct 22. The outbreak has now extended across the counties to people who had not attended the event. A total of one hundred and thirty eight (138) cases, 15 Confirmed by culture and four (4) deaths (CFR 2.9%) have been reported. Source: [Reliefweb](#)



Other Infectious Disease Outbreaks/ Conflicts

Statement of the Thirty-third Polio IHR Emergency Committee



The Emergency Committee reviewed the data on wild poliovirus (WPV1) and circulating vaccine derived polioviruses (cVDPV) in the context of global eradication of WPV and cessation of outbreaks of cVDPV2 by end of 2023. Technical updates were received about the situation in the following countries and territories: Afghanistan, Algeria, Malawi, Mozambique, Pakistan, the United Kingdom of Great Britain and Northern Ireland, the United States of America and Yemen.

Wild poliovirus

The committee was concerned that since its last meeting in June 2022, Pakistan has reported twelve WPV1 cases all from southern Khyber Pakhtunkhwa (KP) province in Pakistan. Nine cases were from the district of North Waziristan, two from Lakki Marwat and one from South Waziristan bringing the total number of cases in 2022 in Pakistan to 20. Furthermore, there have been 31 additional positive environmental samples detected in districts in KP, Punjab, Sindh and Islamabad, bringing the total to 33 (65 isolates detected in 2021). However, no human polio case has been reported outside of southern KP. The committee noted that the key challenges which are driving transmission in southern KP include the complex security situation leading to inadequate campaign quality and missed children, community resistance (eg fake finger-marking without vaccination, refusals due to various reasons, vaccination boycotts), lack of female frontline workers, weak health infrastructure and service delivery, and sub-optimal routine immunization. Another challenge faced in the most recent campaign was the impact of widespread flooding.

The committee noted that although the ongoing WPV1 outbreak in Pakistan led to a risk of spillover into Afghanistan, there is no evidence of cross-border transmission to date in 2022. Two cases have been reported to date in 2022, one in Paktika province and a second in Kunar province in the East. The polio programme in Afghanistan has gained and sustained access across the country including nearly 3 million children previously inaccessible for almost four years. There remain approximately half a million missed children mostly in the southern region, due to the continued implementation of the mosque to mosque campaign modality. There are also clusters of refusals mainly in the South-East and East regions. Pockets of insecurity pose a threat to polio workers noting that eight vaccinators were killed on 24 February 2022 during a campaign.

The committee was very concerned about continued WPV1 transmission in the Tête province of northern Mozambique. Genetic sequencing confirms that all the viruses are related indicating the outbreak is due to international spread through a single importation event. While the quality of the rounds in the multi-country immunization response is improving, coverage has been insufficient to halt transmission. Furthermore, while synchronization of activities has been agreed upon by all countries involved in the response, it has yet to be implemented in practice. Zimbabwe has yet to conduct any immunization response although it shares a border with the outbreak zone in Tête. Surveillance activities have also been insufficiently coordinated across borders, with Mozambican citizens coming to Malawi for medical care for acute flaccid paralysis and being notified in Malawi rather than Mozambique. Surveillance in Mozambique relies on case finding during campaigns with a lack of active surveillance between campaigns. Other challenges include multiple emergencies, frontline worker fatigue and high population movement within the subregion.

The committee noted with concern that several frontline health workers were killed in Afghanistan in February 2022, and commended the dedication of health care workers in all countries who are responding to these outbreaks.

Circulating vaccine derived poliovirus (cVDPV)

Northern Yemen, eastern Democratic Republic of Congo and northern Nigeria continue to account for more than 85% of the global cVDPV2 caseload. There have been four new countries reporting cVDPV2 - Algeria, Israel, the United Kingdom of Great Britain and Northern Ireland and the United States of America. The viruses detected in the latter three countries are genetically linked indicating long-distance international spread through air travel has occurred. In the USA, there has been a single cVDPV2 case whilst in Israel and the United Kingdom positive environmental isolates have been detected. The US case belongs to a community that has a low level of immunization coverage. Local transmission in these IPV only using countries represents a

new risk and the committee noted that this phenomenon should remind all countries that until polio is eradicated, pockets of un- or under-immunized persons pose a risk of polio outbreaks, even in countries that have not reported indigenous transmission for a long time. The virus in Algeria is genetically linked to viruses circulating in Nigeria and is therefore an importation due to international spread. Furthermore, the detection of cVDPV2 in Benin, as has been seen in Ghana, Togo and Côte d'Ivoire appears to have resulted from reinfection caused by new international spread from Nigeria.

Three new countries have reported cVDPV1 - Democratic Republic of the Congo, Malawi and Mozambique.

The committee noted that much of the risk for cVDPV outbreaks can be linked to a combination of inaccessibility, insecurity, a high concentration of zero dose children and population displacement. These have been most clearly evidenced in northern Yemen, northern Nigeria, south central Somalia and eastern DRC. Despite the ongoing decline in the number of cases and lineages circulating, the recent episodes of international spread of cVDPV2 indicates the risk remains high.

The committee noted that the roll out of wider use of novel OPV2 continues under EUL. The committee also noted the delays to timely, quality outbreak response with countries delaying response with the immediately available vaccine until novel OPV2 vaccine became available. The committee noted the SAGE recommendation that timely outbreak response is of paramount importance and countries should use immediately available vaccines and avoid any delays that may occur while waiting for supply of novel OPV2 vaccine.

Conclusion

Although encouraged by the reported progress, the Committee unanimously agreed that the risk of international spread of poliovirus remains a Public Health Emergency of International Concern (PHEIC) and recommended the extension of Temporary Recommendations for a further three months. The Committee recognizes the concerns regarding the lengthy duration of the polio PHEIC and the importance of exploring alternative IHR measures in the future but concluded that there are still significant risks as exemplified by the importation and continued transmission of virus in Malawi and Mozambique. The Committee considered the following factors in reaching this conclusion:

Ongoing risk of WPV1 international spread:

Based on the following factors, the risk of international spread of WPV1 remains:

- the **current outbreak of WPV1 in Pakistan** where there have been 20 cases in 2022 with spread outside the source of the outbreak but within Pakistan
- **high-risk mobile populations in Pakistan** represent a specific risk of international spread to Afghanistan in particular
- **the large pool of unvaccinated 'zero dose' children in southern Afghanistan** constitutes a major risk of WPV1 re-introduction;
- the **importation of WPV1** from Pakistan into Malawi and Mozambique, noting that the exact route the virus took remains unknown;
- **sub-optimal immunization coverage** achieved during recent campaigns in southeastern Africa, meaning ongoing transmission may be occurring;
- **surveillance gaps** means that such transmission may be missed;
- **pockets of insecurity** in the remaining endemic transmission zones.

Other Infectious Disease Outbreaks/ Conflicts

Statement of the Thirty-third Polio IHR Emergency Committee



Ongoing risk of cVDPV2 international spread:

Based on the following factors, the risk of international spread of cVDPV2 appears to remain high:

- the explosive outbreak of cVDPV2 in northern Yemen and ongoing high transmission in eastern Democratic Republic of the Congo and northern Nigeria, which have caused international spread to neighbouring countries;
- ongoing cross border spread including into newly infected countries such as Algeria, and re-infection of Benin;
- the long distance spread by air travel of cVDPV2 between Israel, the United Kingdom and the USA;
- the ever-widening gap in population intestinal mucosal immunity in young children since the withdrawal of OPV2 in 2016 and consequently high concentration of zero dose children in certain areas, especially the four areas mentioned above (second dot point)
- insecurity in those areas that are the source of polio transmission.

Other factors include

- Weak routine immunization: Many countries have weak immunization systems that can be further impacted by humanitarian emergencies including conflict and protracted complex emergencies poses a growing risk, leaving populations in these fragile states vulnerable to polio outbreaks.
- Lack of access: Inaccessibility continues to be a major risk, particularly in northern Yemen which have sizable populations that have been unreached with polio vaccine for extended periods of more than a year.

Risk categories

The Committee provided the Director-General with the following advice aimed at reducing the risk of international spread of WPV1 and cVDPVs, based on the risk stratification as follows:

- States infected with WPV1, cVDPV1 or cVDPV3.
- States infected with cVDPV2, with or without evidence of local transmission:
- States no longer infected by WPV1 or cVDPV, but which remain vulnerable to re-infection by WPV or cVDPV.

Criteria to assess States as no longer infected by WPV1 or cVDPV:

- Poliovirus Case: 12 months after the onset date of the most recent case PLUS one month to account for case detection, investigation, laboratory testing and reporting period OR when all reported AFP cases with onset within 12 months of last case have been tested for polio and excluded for WPV1 or cVDPV, and environmental or other samples collected within 12 months of the last case have also tested negative, whichever is the longer.
- Environmental or other isolation of WPV1 or cVDPV (no poliovirus case): 12 months after collection of the most recent positive environmental or other sample (such as from a healthy child) PLUS one month to account for the laboratory testing and reporting period
- These criteria may be varied for the endemic countries, where more rigorous assessment is needed in reference to surveillance gaps.

Once a country meets these criteria as no longer infected, the country will be considered vulnerable for a further 12 months. After this period, the country will no longer be subject to Temporary Recommendations, unless the Committee has concerns based on the final report.

States infected with WPV1, cVDPV1 or cVDPV3 with potential risk of international spread

WPV1

Afghanistan	most recent detection 29 August 2022
Malawi	most recent detection 19 November 2021
Mozambique	most recent detection 10 August 2022
Pakistan	most recent detection 15 September 2022

cVDPV1

Madagascar	most recent detection 9 May 2022
Mozambique	most recent detection 5 August 2022
Malawi	most recent detection 15 August 2022
DR Congo	most recent detection 16 August 2022

cVDPV3

Israel	most recent detection 24 March 2022
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States infected with cVDPV2, with or without evidence of local transmission:

1. Algeria	most recent detection 21 August 2022
2. Benin	most recent detection 17 August 2022
3. Burkina Faso	most recent detection 28 December 2021
4. Cameroon	most recent detection 29 October 2021
5. Central African Republic	most recent detection 12 August 2022
6. Chad	most recent detection 22 June 2022
7. Côte d'Ivoire	most recent detection 18 July 2022
8. Democratic Republic of the Congo	most recent detection 20 August 2022
9. Djibouti	most recent detection 22 May 2022
10. Egypt	most recent detection 29 August 2022
11. Eritrea	most recent detection 2 March 2022
12. Ethiopia	most recent detection 16 September 2021
13. Gambia	most recent detection 9 September 2021
14. Ghana	most recent detection 6 September 2022
15. Israel	most recent detection 16 June 2022
16. Mauritania	most recent detection 15 December 2021
17. Mozambique	most recent detection 26 March 2022
18. Niger	most recent detection 13 August 2022
19. Nigeria	most recent detection 13 August 2022
20. Senegal	most recent detection 18 November 2021
21. Somalia	most recent detection 21 July 2022
22. Togo	most recent detection 22 March 2022
23. Uganda	most recent detection 2 November 2021
24. Ukraine	most recent detection 24 December 2021
25. United Kingdom of Great Britain and Northern Ireland	most recent detection 31 May 2022
26. United States of America	most recent detection 20 June 2022
27. Yemen	most recent detection 16 August 2022

For more information and recommendations please see [WHO report](#).

Ukraine

Flash Update No. 4 (31 October 2022)

Highlights

- A new wave of missile attacks on urban centres this morning has, once again, left an unconfirmed number of civilians injured and caused large-scale disruption to electricity and water supplies. The attacks happened in the earlier hours of the morning, when people were commuting to work.
- This is the fifth time this month that we have seen a wave of attacks on energy infrastructure across Ukraine, which are leaving millions of people across the country without power and limited access to clean water as the pumps to supply water depend on electricity.
- Today's attacks reportedly caused power outages in at least 10 of Ukraine's 24 regions, causing trains to stop and leaving hospitals relying on generators to continue services in some locations, including Kharkiv.
- In the capital Kyiv, most people are without water at their homes and some 350,000 houses and businesses have no electricity, according to the Ukrainian authorities.
- In times of war, civilian infrastructure is protected under international humanitarian law. With the harsh winter in Ukraine approaching, it is particularly important to preserve energy and water supplies, which are also necessary to run the heating systems in most of the country.

General security and humanitarian situation

After eight months of war, fighting continued in the east and south of Ukraine, while daily airstrikes took place across the country. On 17 October, one week after the intensification of missile attack in Kyiv and other cities, attacks on energy infrastructure cut off electricity for many residents and caused civilian casualties. Similar attacks across the country subjected most regions and millions of Ukrainians to disruptions in power and water supplies with at least one-third of the country's energy infrastructure damaged, according to the Government estimates. Later on 22 October, another wave of attacks targeted energy facilities, including in the western [Khmelnyska](#), [Rivnenska](#) and [Volynska](#) oblasts as well as central [Kirovohradska](#) oblast. Throughout the reporting period, and for weeks prior, the cities of Zaporizhzhia in Zaporizka oblast and Mykolaiv in the southern Mykolaivska oblast have been hit with daily airstrikes and shelling. Meanwhile, Bakhmut, in the eastern Donetsk oblast has also come under increasingly regular fire. Officials have appealed to Ukrainians to conserve energy and have scheduled temporary power outages.

Access

On 19 October, the Russian Federation [declared](#) "Martial law" in the parts of the four Ukrainian oblasts it recently claimed to have annexed – Donetsk, Khersonska, Luhanska and Zaporizka –, creating concerns that it would become more difficult for civilians to move in and out of these oblasts, and for humanitarian organizations to access people in need. The humanitarian community continued efforts to reach people in need in areas recently retaken by the Ukrainian Government in the eastern Kharkivska and southern Khersonska oblasts, including through humanitarian-aid convoys. Over the last two weeks, the Government of Ukraine reported it had regained control of 90 settlements in Khersonska oblast. Humanitarian organizations also geared up efforts to help Ukrainians in these areas prepare for the coming winter.

Health Needs

- Some 14.5 million people in Ukraine are estimated to need health assistance.
- According to the [WHO Health Needs Assessment](#), almost one in five people (22 per cent) in Ukraine have been unable to obtain the medicine they needed; while in active conflict areas and areas beyond the control of the Government of Ukraine, this increases to one in three people. Internally displaced people face similar challenges.
- According to a Samaritan's Purse [rapid health-needs assessment](#) in areas recently retaken by Ukraine in Kharkivska oblast (Bohodukhiv, Izium, Kharkiv, Kupiansk and Lozova), half of respondents listed medicine as their second most-pressing need.
- As one-third of Ukraine's energy system is estimated to have been destroyed, [a priority this winter](#) will be to ensure electricity supplies continue to health facilities.

Health Gaps

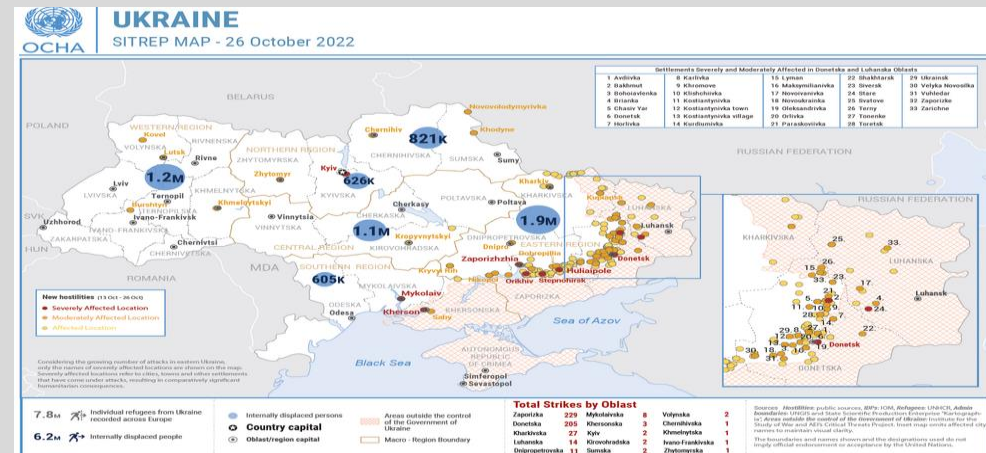
- According to the [WHO Surveillance System for Attacks on Health Care](#), there were 631 attacks on health care in Ukraine – resulting in 100 deaths and 129 injuries – between 24 February and 25 October.
- According to the key findings of the recent [WHO Health Needs Assessment](#), the major barriers to accessing health care are the cost of care, time constraints as well as limited transport-availability.

Water, Sanitation and Hygiene (WASH) Needs

- Up to 16 million people in Ukraine need water, sanitation and hygiene assistance. These include communities living in areas where water and waste-water infrastructure has been damaged; energy supply disrupted; as well as internally displaced people in collective centres and host communities.
- As a consequence of the impact on services, there is an elevated risk of WASH-related diseases in affected areas.

Water, Sanitation and Hygiene (WASH) Gaps

- A limited number of partners with contingency supplies and/or funds for rapid interventions – notably generators, pipe fittings, household water-treatment means for recently retaken areas.
- More sustainable approaches need to be found for water-scarce settlements near the frontline and in retaken areas.
- Few organizations are prepared to respond to potential damage to district heating networks during the winter months.



Source: [reliefweb.int reports.unocha.org](https://reliefweb.int/reports.unocha.org)