



**GLOBAL**

620 471 068 confirmed cases  
606 800 000 recovered  
6 554 565 deaths

**TWN**

7-days incidence  
1,285

**MSR**

7-days incidence  
1,263

**BRN**

7-days incidence  
1,909

News:

- **CDC:** [Understanding Exposure risks of COVID-19](#)
- **ECDC:** published a guidance [“The EU experience in the first phase of COVID-19: implications for measuring preparedness”](#)
- **ECDC:** published a [Monkeypox Reporting Protocol](#). This reporting protocol is intended for reporting national case-based data for surveillance of monkeypox from all the countries and areas of the WHO European Region, including the 27 countries of the European Union (EU) and the additional three countries of the European Economic Area (EEA), to the European level.
- **ECDC:** published a guidance for [Testing and detection of zoonotic influenza virus infections in humans](#) in the EU/EEA, and occupational safety and health measures for those exposed at work.
- **EMA:** The EMA authorised [Comirnaty Original/Omicron BA.1 and BA.4-5 vaccine](#) to use it in people aged 12 years and older and who have received at least a primary vaccination course against COVID-19
- **WHO:** WHO and ILO call for [new measures to tackle mental health issues at work](#)

Topics:

- Global situation: COVID-19 (slide 2 – 4)
- Monkeypox Outbreak 2022 (slide 5)
- Notable Public Health Events (slide 6)
- Other infectious diseases (slide 7 - 9)
- Ukraine Situation Report (slide 10)

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**ASIA AND THE PACIFIC**  
Weekly Regional Humanitarian Snapshot  
20 - 26 September 2022

**PAKISTANI**  
Outbreaks of vector-borne and water-borne diseases are a growing concern in Sindh and Balochistan, where many districts remain sandblasted by floodwaters. Some 1,400 health facilities and their contents have reportedly been damaged, including 346 refrigerators and solar direct drive systems, disrupting vaccine cold chains. Around 7.9 million people are estimated to be displaced, including some 598,000 people living in relief camps. More than 7,000 schools are being used as temporary relief camps. Over 2 million houses have been impacted by the heavy rains and floods, with more than 1.7 million houses partially destroyed and nearly 825,000 fully destroyed. At least 25,100 schools and 13,000 km of roads have also reportedly been damaged. The UN and humanitarian partners continue to scale up the response and have reached more than 1.6 million people directly affected by the floods.

**PHILIPPINES**  
After rapid intensification in the span of hours, Super Typhoon Nora (local name Karding) made landfall on 25 September in Burdeos, Sorsogon Province, around 114 km west of Manila. Tropical Cyclone Wind Speed (TCWS) No. 5 (135 or higher km/h), the highest possible warning, was raised over several portions of Quezon and Aurora provinces. Media reports from these provinces show wind damage, while the areas of Bulacan and Pampanga are currently inundated with flood waters from the Sierra Madre Mountain range and the nearby darts. The Government is leading response efforts and conducting rapid needs assessments. As per retail data, more than 2,400 families were pre-emptively evacuated, with five casualties. Thirty-four evacuation centers are operational, with reports of some flooding in agricultural areas. The Department of Agriculture has estimated that around 16,000 hectares of agricultural areas have been damaged, equivalent to USD 22.9m. The Department of Education has reported that 11.4m learners in eight regions were affected. After passing the Philippines, the storm is expected to continue east and make landfall in central Viet Nam, and will likely bring heavy rains in Cambodia and northern Thailand.

**LA NIÑA/EL NIÑO LEVEL**  
The precipitation forecast for the Oct-Nov Decade shows that precipitation is likely to be below normal across Afghanistan, northern parts of Pakistan, central parts of China, DPR Korea, RO Korea, and Solomon Islands. Above normal precipitation is likely across Viet Nam, Philippines, Indonesia, India, Thailand, Lao PDR, Cambodia, Papua New Guinea, Myanmar, Fiji, and Australia.

**MYANMAR**  
Fighting between the Myanmar Armed Forces (MAF) and ethnic armed organizations (EAOs) and Peoples Defence Force (PDFs) continues to pose grave protection risks to civilians in conflict areas across Myanmar. In Rakhine, the conflict between the MAF and Arakan Army (AA) has intensified, with reports of armed clashes involving artillery fire, the destruction of civilian properties, heavy movement restrictions and arrests in several townships. About 300 residents in Buthidaung Township fled their village on 23 September due to military fire and presence of military troops, bringing the total of new internally displaced persons (IDPs) since August in Rakhine to nearly 9,000. Restrictions on movement of people and additional interference in humanitarian activities, including expanded checkpoints and roadblocks, have further compounded the already difficult living conditions for affected and displaced people across the state. In Kachin, about 400 people have been displaced from three villages due to clashes between the MAF and PDFs in Shwegu Township since 22 September. In the Southeast, the UN recorded the displacement of 320 people from Kawng town of Pabon township in southern Shan to Loikaw township in Kayah State due to air strikes and artillery fire since the beginning of September. As of 19 September, there are more than 1.3 million internally displaced peoples across Myanmar, 98,400 of which were fled their homes since the military takeover.

**EUROPE**

247,227,809 confirmed cases  
241,700,000 recovered  
2,045,447 deaths

**AUT**

7-days incidence  
960

**SVN**

7-days incidence  
766

**GRC**

7-days incidence  
526

# COVID-19 Situation by WHO Region, as of 25 September

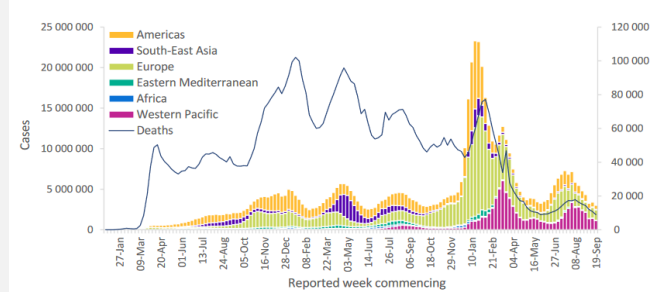
## Global epidemiological situation overview; WHO as of 25 September 2022

Globally, the number of new weekly cases decreased by 11% during the week of 19 to 25 September 2022 as compared to the previous week, with over three million new cases reported (Figure 1, Table 1). The number of new weekly deaths decreased by 18% as compared to the previous week, with just over 8,900 fatalities reported. As of 25 September 2022, over 612 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 (-33%), the Western Pacific Region (-19%), the Region of the Americas (-15%), South-East Asia Region (-11%), the Eastern Mediterranean Region (-8%) and the European Region (-1%). The number of new weekly deaths also decreased or remained stable across all six regions: the African Region (-34%), the Eastern Mediterranean Region (-26%), the European Region (-26%), the Western Pacific Region (-16%), the Region of the Americas (-12%) and the South-East Asia Region (-3%).

At the country level, the highest numbers of new weekly cases were reported from Japan (535,502 new cases; -12%), the United States of America (361,599 new cases; -11%), the Russian Federation (353,826 new cases; -5%), China (292,476 new cases; similar to the previous week) and Germany (249,144 new cases; +9%). The highest numbers of new weekly deaths were reported from the United States of America (2,484 new deaths; -11%), the Russian Federation (712 new deaths; similar to the previous week), Japan (659 new deaths; -43%), China (497 new deaths; +38%) and Brazil (450 new deaths; -8%).

Figure 1. COVID-19 cases reported weekly by WHO Region, and global deaths, as of 25 September 2022\*\*



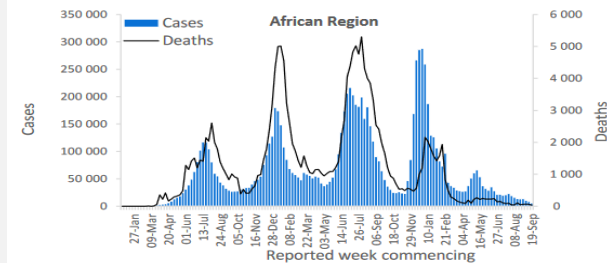
## WHO regional overviews:

Epidemiological week 19 - 25 September 2022\*\*

### African Region

The African Region reported over 5700 new weekly cases, a 33% decrease as compared to the previous week. Eight (16%) countries reported increases in the number of new cases of 20% or greater, with some of the greatest proportional increases seen in Zimbabwe (344 vs 126 new cases; +173%), Togo (196 vs 128 new cases; +53%) and Kenya (57 vs 42 new cases; +36%). The highest numbers of new cases were reported from Saint Helena (1357 new cases; 22 352.2 new cases per 100 000 population; +1867%), Réunion (1325 new cases; 148.0 new cases per 100 000; -48%) and South Africa (1283 new cases; 2.2 new cases per 100 000; -20%).

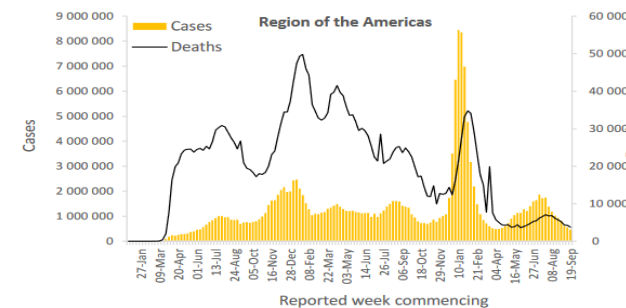
The number of new weekly deaths in the Region decreased by 34% as compared to the previous week, with 37 deaths reported. The highest numbers of new deaths were reported from South Africa (23 new deaths; <1 new death per 100 000 population; +35%), Réunion (eight new deaths; <1 new death per 100 000; +60%) and Mali (two new deaths; <1 new death per 100 000; no cases reported during the previous week).



### Region of the Americas

The Region of the Americas reported over 485 000 new cases, a 15% decrease as compared to the previous week. One of the 56 (2%) countries for which data are available reported an increase in the number of new cases of 20% or greater: Antigua and Barbuda (81 vs 34 new cases; +138%). The highest numbers of new cases were reported from the United States of America (361 599 new cases; 109.2 new cases per 100 000; -11%), Brazil (45 342 new cases; 21.3 new cases per 100 000; -27%) and Chile (19 860 new cases; 103.9 new cases per 100 000; -17%).

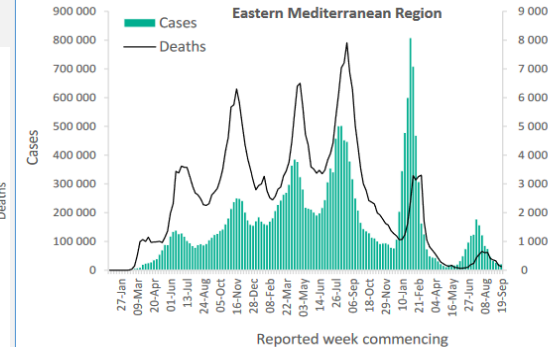
The number of new weekly deaths reported in the Region decreased by 12% as compared to the previous week, with over 3700 new deaths reported. The highest numbers of new deaths were reported from the United States of America (2484 new deaths; <1 new death per 100 000; -11%), Brazil (450 new deaths; <1 new death per 100 000; -8%) and Canada (195 new deaths; <1 new death per 100 000; -22%).



### Eastern Mediterranean Region

The Eastern Mediterranean Region reported over 21 000 new cases, an 8% decrease as compared to the previous week. One (5%) country reported an increase in new cases of 20% or greater: Bahrain (2539 vs 2048 new cases; +24%). The highest numbers of new cases were reported from Qatar (5697 new cases; 197.7 new cases per 100 000; +6%), the Islamic Republic of Iran (3121 new cases; 3.7 new cases per 100 000; -24%) and Jordan (2776 new cases; 27.2 new cases per 100 000; -18%).

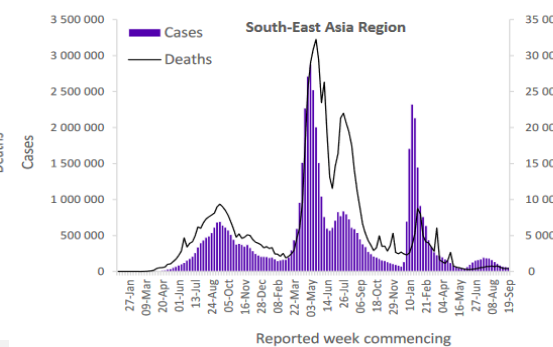
The number of new weekly deaths decreased in the Region by 26% as compared to the previous week, with over 100 new deaths reported. The highest numbers of new deaths were reported from the Islamic Republic of Iran (85 new deaths; <1 new death per 100 000; -29%), Lebanon (13 new deaths; <1 new death per 100 000; +8%) and Saudi Arabia (11 new deaths; <1 new death per 100 000; -27%).



### South-East Asia Region

The South-East Asia Region reported over 59 000 new cases, an 11% decrease as compared to the previous week. Two of the 10 countries (20%) in the Region for which data are available showed an increase in the number of new cases of 20% or greater: Bangladesh (4076 vs 2727 new cases; +49%) and Myanmar (2504 vs 2046 new cases; +22%). The highest numbers of new cases were reported from India (33 926 new cases; 2.5 new cases per 100 000; -13%), Indonesia (13 723 new cases; 5.0 new cases per 100 000; -16%) and Thailand (4965 new cases; 7.1 new cases per 100 000; -15%).

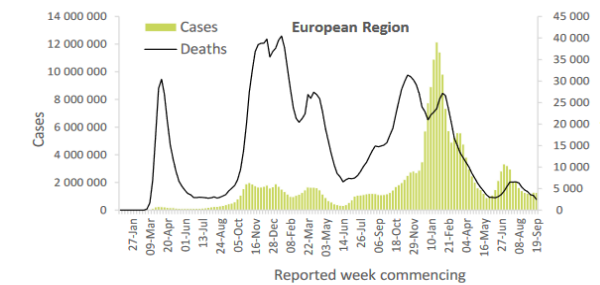
The Region reported over 400 deaths, similar to the previous week. The highest numbers of new deaths were reported from India (173 new deaths; <1 new death per 100 000; -7%), Indonesia (122 new deaths; <1 new death per 100 000; similar to the previous week) and Thailand (89 new deaths; <1 new death per 100 000; similar to the previous week).



### European Region

In the European Region, the number of new weekly cases remained stable this week as compared to the previous week, with over 1.2 million new cases reported. Five (8%) countries reported increases in new cases of 20% or greater, with the highest proportional increases observed in San Marino (102 vs 66 new cases; +55%), Ukraine (36 683 vs 23 864 new cases; +54%) and Austria (47 812 vs 33 909 new cases; +41%). The highest numbers of new cases were reported from the Russian Federation (353 826 new cases; 242.5 new cases per 100 000; -5%), Germany (249 144 new cases; 299.6 new cases per 100 000; +9%) and France (191 463 new cases; 294.4 new cases per 100 000; similar to the previous week).

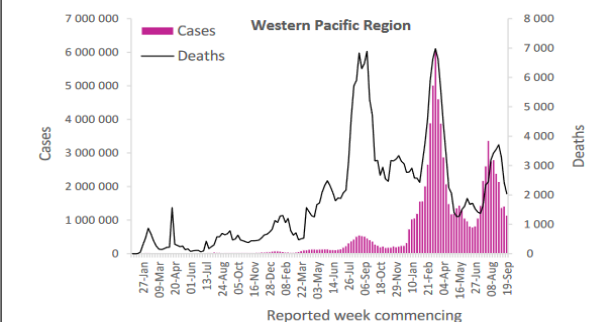
Over 2500 new weekly deaths were reported in the Region, a 26% decrease as compared to the previous week. The highest numbers of new deaths were reported from the Russian Federation (712 new deaths; <1 new death per 100 000; similar to the previous week), Italy (321 new deaths; <1 new death per 100 000; -13%) and Spain (284 new deaths; <1 new death per 100 000; -52%).



### Western Pacific Region

The Western Pacific Region reported over 1.1 million new cases, a 19% decrease compared to the previous week. Five (15%) countries reported increases in new cases of 20% or greater, with some of the largest proportional increases observed in New Zealand (12 957 vs 3178 new cases; +308%), Papua New Guinea (44 vs 25 new cases; +76%) and the Philippines (16 357 vs 12 069 new cases; +36%). The highest numbers of new cases were reported from Japan (535 502 new cases; 423.4 new cases per 100 000; -12%), China (292 476 new cases; 19.9 new cases per 100 000; similar to the previous week) and the Republic of Korea (225 662 new cases; 440.2 new cases per 100 000; -42%).

The Region reported a 16% decrease in new weekly deaths as compared to the previous week, with over 2000 deaths reported. The highest numbers of new deaths were reported from Japan (659 new deaths; <1 new death per 100 000; -43%), China (497 new deaths; <1 new death per 100 000; +38%) and the Republic of Korea (385 new deaths; <1 new death per 100 000; similar to the previous week).



# COVID-19 situation update

## Updates for Omicron Descendant Lineages



### Global Epidemiology of Omicron Descendant Lineages

The World Health Organization (WHO) reports that the number of new COVID-19 cases has **remained stable** during the week of September 12 to September 18, 2022, when compared to the previous week.

**99%** of sequences reported globally in the past 30 days through GISAID **have been of the Omicron variant of concern**; this represents no change since our previous messaging on [August 26, 2022](#).

As of the week of August 29, 2022, the WHO reports that the pooled descendant lineage of **BA.5.X** showed the highest relative global **prevalence at 76.6%** of samples subtyped. This was followed by **BA.4.X with 7.5% prevalence**. Of note, **BA.2.75.X showed a 1.26% prevalence** but has been rising over the last few weeks; a majority of BA.2.75.X sequences continue to be reported from India.

### Omicron Sub-Lineage BA.4.6

There is currently a **high amount of evolution occurring among Omicron descendant lineages**, some of which are gaining relative growth against the predominant BA.5 or have mutations that suggest they have a fitness advantage. At a country level, an increasing prevalence of the Omicron sub-lineage BA.4.6 has been noted in both the United States (US) and United Kingdom (UK). As of September 17, 2022, **BA.4.6 made up 10.9% of the total sequenced samples in the U.S.**, [2] while in the **UK it made up approximately 9% of samples**. According to the UK Health Security Agency (UKHSA), the first BA.4.6 sample was registered on April 5, 2022, in GISAID, from Spain; since then, the BA.4.6 sub-lineage has been reported in many countries with a wide geographic distribution. [3]

The **BA.4.6 sub-lineage** shares mutations with the BA.4 parent lineage; however, it **contains an additional spike mutation (R346T)** which has been associated with increased immune system evasion in other variants, such as BA.2.75.X. [4] The University of Oxford reports that for individuals who received three doses of Comirnaty (Pfizer-BioNTech COVID-19 vaccine), their blood sera showed a reduced ability to neutralize BA.4.6 when compared to BA.4 or BA.5. [3] This study further supports the hypothesis that **BA.4.6 has an increased ability to evade the immunity conferred by a three-dose series of vaccination** and supports its growth currently observed in the U.K.

The UKHSA has estimated that **BA.4.6 has a 6.55% relative fitness advantage over BA.5 in England**, indicating a slightly higher growth rate when compared to BA.5. On August 30, 2022, UKHSA's modelled relative growth rate showed **BA.4.6 to have a relative daily doubling time of 23.35 days**. [3] Currently, there is limited data available to indicate whether, and to what degree BA.4.6 may contribute to an increase in COVID-19 cases and deaths or differ from other variants in terms of transmissibility and disease severity.

### Omicron Sub-Lineage BA.2.75.2 Immune System Evasion

In a recent pre-print article, researchers have stated that **Omicron sub-lineage BA.2.75.2 has the most extensive immune escape when compared to the other variants included in this study** (B.1, BA.5, BA.4.6, BA.2.10.4, and BA.2.75). This statement comes from an investigation into the neutralization sensitivity of Omicron sub-lineages BA.4.6, BA.2.10.4, and BA.2.75.2 against clinical and pre-clinical monoclonal antibody treatments, and recent blood serum samples from donors in Stockholm, Sweden. Blood samples were collected during three timeframes: late 2021 (prior to Omicron), early 2022 (during the Omicron BA.1/BA.2 wave), and a recent cohort (after the spread of BA.5). [5]

Key findings included:

- **BA.2.75.2 and BA.4.6** (which both share spike mutation R346T) **showed complete escape from cilgavimab and cilgavimab + tixagevimab (Evusheld)**.
- **All three sub-lineages were strongly neutralized by bebtelovimab**.
- Across all three blood sample timeframes, **BA.4.6 showed reduced neutralization when compared to BA.5**.
- Across all three blood sample timeframes, **BA.2.75.2 serum antibodies were significantly lower than the other variants evaluated**. [5]

Overall, this shows that **BA.2.75.2 can evade the current humoral immunity in the population and poses additional risks of severe disease and death for those who are not able to mount an effective immune response** either from vaccination, previous infection, or both and may require supplementary preventative treatment options. This is of concern because **Evusheld** which in this study showed no protection against BA.2.75.2 or BA.4.6 infection, is **currently recommended as a pre-clinical drug, particularly for immunocompromised individuals**. Bebtelovimab, which showed strong protection against all three evaluated sub-lineages, currently only holds Emergency Use Authorization in the US. [6, 7] Caution in drawing comparisons is advised, provided that this pre-print is based on a small sample size specific to Stockholm, Sweden. Other regions may have experienced waves of variants at different times, with different approved treatments available, and will have varying vaccination statuses.

This builds on the increased interest in the longevity of immunity conferred by COVID-19 booster vaccinations and/or the latest SARS-CoV-2 exposure as SARS-CoV-2 continues to evolve and new lineages emerge with mutations conferring immune escape. In a recent letter to the editor in the New England Journal of Medicine, researchers from the US showed that booster immune response waned more substantially in participants who did not have breakthrough infections and subsequently experienced BA.2.12.1, BA.4, or BA.5 infections. They suggest that **booster-induced immune protection is reduced by both waning neutralizing-antibody titers and SARS-CoV-2 variant evolution**. [8]

While **vaccinations continue to provide the safest and most effective protection against severe illness and death from SARS-CoV-2**, the composition and dosing strategy for booster vaccines amidst the ever-changing SARS-CoV-2 variant landscape presents a real challenge at this stage in the pandemic. We are observing some evolutionary convergence of specific mutations that confer immune evasion advantages (such as R346T). **Converging evolution may eventually lead to improved cross-protection of variant-specific boosters and/or infections against future variants**. [9] There is also the possibility of a non-Omicron lineage emerging. Currently, it is unclear which variant may be the predominant strain circulating over the next few months, and how effective the updated boosters may be at mitigating impacts. **High uptake of booster vaccinations, improving coverage of primary series and using mitigations to reduce transmission all remain critically important to blunt the population-level impacts of COVID-19**.

# COVID-19 situation update

## Centers for Disease Control and Prevention

The Centers for Disease Control and Prevention (CDC) updated COVID-19 related information on their [website](#).

### Understanding Exposure Risks

If you were around a person with COVID-19, consider these factors to help determine the likelihood that you were infected.

#### Risk of transmission is increased when:

- Exposure time is longer. Contact longer than 15 minutes is more likely to result in transmission than two minutes of contact.
- A person is coughing, singing, shouting, or breathing heavily due to exertion.
- You are around people who are symptomatic.
- You are close to someone who is infected with COVID-19. Crowded settings can increase your chance of being close to someone with COVID-19.

#### Risk of transmission is decreased when:

- One person is wearing a mask. If both people are wearing masks, the risk is substantially decreased.
- Activities are outdoors.

Shorter exposure time



Lower Risk

Medium exposure time



Moderate Risk

Longer exposure time



Higher Risk

### Isolation and Exposure Calculator

If you or someone you know has COVID-19 or has been exposed to COVID-19 this tool can help to determine if you need to isolate or take other steps to protect others.

By using this tool people with COVID-19 learn how long to stay home and take precautions. Please who were exposed to COVID-19 learn what steps to take such as getting tested and how long they should wear a high-quality mask.

Please find the Exposure Calculator [here](#)



### Caring for People with Post-COVID Conditions

Having a post-COVID condition or supporting someone with a post-COVID condition can be challenging. It can be difficult to care for yourself or loved ones, especially when there are few or no immediate answers or solutions.

People experiencing post-COVID conditions may find different strategies to be helpful. If you are experiencing a post-COVID condition, you should engage in whatever coping strategies are best for your mental and physical health.

Experts are still determining which types of medication for treatments can help to relieve the effects of post-COVID conditions. However, there are established ways people can manage the stress associated with a post-COVID condition.

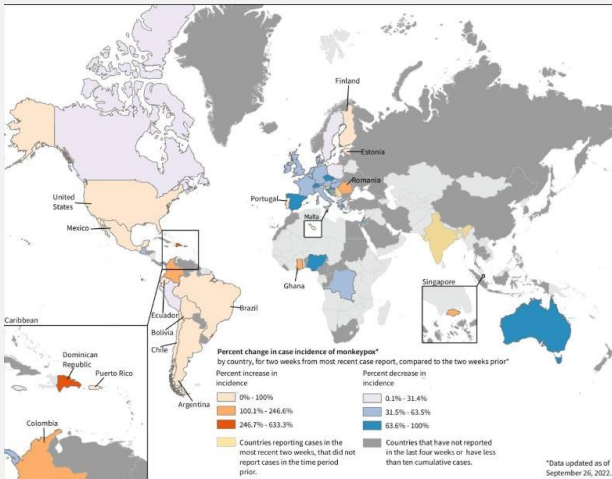
CDC's How Right Now campaign provides helpful tools for navigating conversations about the type of support someone with post-COVID conditions might need.



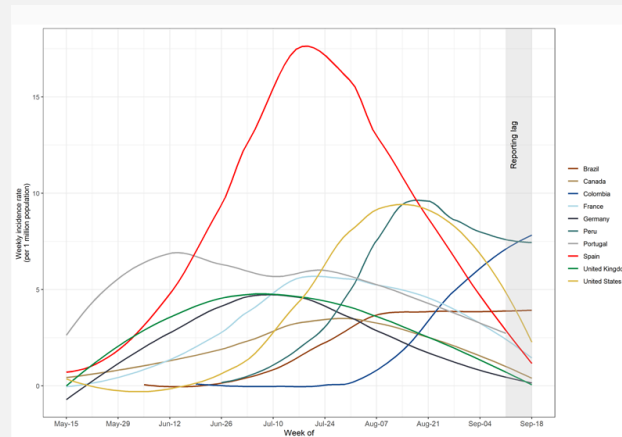
# Monkeypox

## Outbreak 2022

According to the World Health Organization (WHO) from **January 1, 2022, to September 28, 2022**, there have been **67,556 laboratory-confirmed cases** and **27 deaths** attributed to monkeypox. A total of 3,661 new cases (**7.4% decrease**) were reported during the week of September 19 to September 25, as compared to the previous week. Of the cases which have provided detailed demographic data, the current monkeypox outbreak continues to **disproportionately affect males (97.5%; 35,590/36,510)**. Additionally, **0.8% (316/37,757) of cases are reported to be aged 0-17** and **0.2% (91/37,757) of cases were aged 0-4**. [1]



**Fig. 1 outlines the percent change in the number of new monkeypox cases (incidence) reported in the 2 weeks from the most recent case report, by country, compared to the previous two weeks.** The presented data should be interpreted with caution as recent data may be influenced by reporting lags, and due to variability in scale, access and timeliness of testing and reporting among countries. Countries that reported cases in the most recent two weeks, but not in the time period prior include India, Lebanon, Slovenia, and Serbia. Note: Estonia is the only country included in the map reporting a 0% change.



**Fig. 2 shows the weekly rate of new monkeypox cases, per 1 million population, reported by country, since May 2022. A locally weighted smoothing (LOESS) curve has been applied to the data.** The presented data should be interpreted with caution as recent data may be influenced by reporting lags, access, type, and timeliness of testing among countries.

### Demographic changes in trends

Globally, several countries have been reporting decreasing trends in monkeypox cases, and the US and the UK, both of which are countries with two of the highest cumulative case counts, have reported changes in the demographics of new cases. The trends for these countries are discussed below, however, they may not be generalizable for all countries reporting monkeypox cases. While most states in the US are reporting decreases in cases, some states (such as, Oregon, Indiana, Massachusetts, and Virginia) are continuing to report week over week increases, according to a recent technical report by the US Centers for Disease Control and Prevention (CDC). [1] Additionally, **there has been a gradual change in the demographics of new reported cases.** While earlier in the outbreak, white men who identified as gay or bisexual men who have sex with men (gbMSM) were making up the majority of cases, **the burden has recently shifted more towards Hispanic or Latino and Black men, who made up 68% of all new infections in the week of September 18, 2022** (most recent full week for which data is available). Similarly, the gbMSM population made up the majority of cases in the beginning of the outbreak, however, by mid-August in the US, almost **5% of new cases were reported in women**, while **28% of new cases were in men who did not report sexual contact with men**, indicating that the virus may also be circulating in different populations.

In the UK, cases were largely concentrated in London at the beginning of the outbreak, with over 80% of all new cases being reported in London. By mid-August, however, only 50% of cases were in London, while the rest were reported outside the city. **Although the UK has also been reporting decreasing trends in overall cases, the decreases are likely occurring outside of London**, since the proportion of cases reported in London is beginning to increase again, indicating that challenges remain in controlling the outbreak. [2]

### Decreasing trends due to change in behaviours

The decrease in reported cases may partially be attributed to changes in behaviours, largely among the gbMSM populations. **A survey conducted among the gbMSM populations by the US Centers for Disease Control and Prevention (CDC) in August 2022 indicated that approximately half of the men surveyed reported a change in behaviour to decrease their risk of monkeypox.** [3] In total, 824 men were surveyed, 48% of which reported reducing their number of sexual partners, 50% reported reducing one-time sexual encounters, and 50% reported changes in the use of dating apps in response to the monkeypox outbreak. Additionally, approximately 19% of respondents reported receiving one or more doses of the vaccine. A recent technical briefing by UK Health Security Agency (UKHSA) included trends in other infections that are also transmitted through sexual networks of gbMSM. [4] Trends in these infections, such as Shigella and lymphogranuloma venereum (LGV), were reported to have also decreased over the past several weeks, concurrent with monkeypox. **This change in trends this year suggests that changes in behaviour among gbMSM likely contributed to the decrease in monkeypox cases observed recently in the UK.** The above trends indicate that with the appropriate messaging to the public and proper outreach, behaviours can change at the population level, helping decrease spread of the disease. However, the changes in behaviour may not be sustainable over time, and we may observe a continued circulation of the virus even in countries that appear to be bringing their outbreaks under control.

### Vaccines

Pre- and post-exposure vaccines are likely another key contributor to the recently decreasing trends in cases. However, vaccines are currently not equally accessible by all populations, particularly in low and middle-income countries. Within high-income countries with access, more efforts may be needed to reach those at risk. For example, **in the US, only 9% of all vaccine doses administered have been in Black men, despite this population making up 51% of all new infections in the most recent week of September 18, 2022.** [5,6]

### Potential under-detection of cases

Although overall trends in several countries are decreasing, cases of monkeypox may be under-detected in some regions and in some populations. A study conducted on wastewater samples in Spain highlighted that several regions within Spain were likely under-detecting the number of cases. [7] A large reason for potential under-detection may be the stigma and potential discrimination faced when accessing testing or treatment. Globally, increases in cases are being reported in some countries, especially in South America, such as Brazil and Colombia, while cases in Peru continue to remain high (as seen in Figure 2). There may be indication that **cases in Latin America (among other regions) may be underreported due to stigma** as well, which will likely make it more difficult for individuals to seek information and access healthcare systems for testing and/or treatment, ultimately making it difficult to contain spread. [8] Wastewater sampling may be one method to understand the true extent of virus transmission in a community and may be helpful to determine high-risk locations where vaccine and treatment distribution should be prioritized.

# Notable Public Health Events



## Ebola in Uganda

**SUBLOCATIONS AFFECTED:** Central Region (Kassanda, Mubende District), Western Region (Bunyangabu District, Kagadi District, Kyegegwa District)

**FOLLOW-UP NOTES:** A confirmed case of Ebolavirus has been identified in an additional location, Bunyangabu district in the Western Region of Uganda, thus, bringing the total number of affected districts to five (three within the Western Region and two within the Central Region) including Mubende, Kassanda, Kyegegwa, and Kagadi. The affected individual is a medical student who was caring for Ebola patients at the Mubende Hospital. Notably, they were in contact with the doctor who had recently died with Ebola at the Fort Portal Regional Referral Hospital, where several healthcare professionals from Mubende have been admitted. The patient had travelled to their home district of Bunyangabu (Gatyanga A1 in Rwimi Town Council) on September 24 and was in contact with his wife, but six additional close contacts have been identified. Both parties isolated at the Fort Portal Regional Referral Hospital for testing when the individual developed symptoms on September 27 and later tested positive. The patient has since returned home for isolation, and all contacts will be monitored for symptoms at home.

### **CONCERN LEVEL: High.**

It is possible that the healthcare professionals from the Mubende hospital were infected prior to the outbreak declaration on September 20, 2022, considering the incubation period for Ebola (two to 21 days). From the case described above, at least eight days had passed since the death of the initial confirmed case (September 19) and the medical student developing symptoms (September 27). High-risk exposures between healthcare workers and patients may have occurred in the absence of appropriate infection prevention and control procedures. Although, no explicit case of hospital acquired infections in patients have been reported as of October 4, 2022.

Furthermore, there are concerns regarding the actual size of the outbreak due to the decreasing frequency of official reports and limited details, leading to an incomplete understanding of the event on a community level.

Challenges in outbreak management continue to be faced. There is a heavy reliance on Fort Portal Regional Referral Hospital due to the absence of ambulance services to transport cases. Local health facilities near Bunyangabu districts do not have access to isolation centers and the responsibility for adhering to quarantine measures is placed on the population. The Ugandan government is seeking monetary support given the large number of affected healthcare workers and increasing burden on local hospitals.

This case confirms there is geographical expansion of the outbreak. Further individuals may have been exposed when the case had travelled between the Mubende district and Bunyangabu district (approximately 170 km). The newly identified district is in closer proximity to the border of the Democratic Republic of Congo (approximately 150km) and neighboring the Rwenzori Mountains National Park. Lastly, according to news media, the wife of the confirmed case works within a refugee camp in the neighboring district of Kamwenge with the potential opportunity for exposure in a high-risk population. Although the case was exposed in Mubende, this further emphasizes the plausible risk for international and regional spread through ground travel.

**Source:** [WHO AFRO](#), [open source](#)

## Unknown Illness in Democratic Republic of Congo

An outbreak of an unknown illness is being reported at the Shekinah School, Matete commune in Kinshasa province, western DRC. According to a local media report, 12 cases and at least two associated deaths have been identified as of September 30. The deaths were reported on September 28 by a single media source, however, there is no specific date for which the first cases may have appeared. The age range of those affected is reported to be between 9 - 21 years. The symptoms described include headache, sore throat, influenza-like symptoms, joint pain, and difficulty walking. Difficulty breathing has been reported only among some of the affected. All the identified cases are under care at two medical centres. The aforementioned media report indicated that health authorities have stated that laboratory samples are being processed at the National Institute for Biomedical Research (INRB) and results are pending, however it is unknown which tests are being carried out. The school has been temporarily closed while final reports are disclosed.

### **CONCERN LEVEL: Medium.**

**Source:** [Media news](#)

## Unknown Febrile Illness in Gambia

On August 1, 2022, the Epidemic and Disease Control Unit of the Ministry of Health in The Gambia reported an unknown febrile illness outbreak detected at the Edward Francis Small Teaching Hospital, the main tertiary hospital in the country. According to an official statement, nineteen cases with 17 deaths had been reported as of August 4, 2022; the index case was traced to July 4, 2022. Since then, unofficial media sources have reported 28 deaths, and an associated mortality rate of 90% among cases. All of the affected individuals were under five years of age, ranging from five months to four years. A preliminary investigation was conducted to identify the contacts of the cases. No similar illness among other siblings of similar age or other household members was detected. An official statement has been made that the probable source of the outbreak may be linked to paracetamol syrup since several patients began to fall ill with kidney problems three to five days after taking a paracetamol syrup sold locally. Alternatively, the World Health Organization has also stated that the cases may be due to an infectious disease such as Escherichia coli, which was reportedly found in the stools of several affected children.

### **CONCERN LEVEL: Medium.**

The BlueDot Intelligence team considers this event of medium concern at the local level given: 1. The cause of the illness is uncertain and could possibly be due to an infectious agent (i.e. Escherichia coli) rather than a contaminant (i.e. Paracetamol which could have been contaminated with diethylene glycol (DEG), a compound known to be highly damaging to the kidneys). In the last few decades, there have been hundreds of fatalities associated with DEG contamination in countries including Nigeria, Panama, India and Bangladesh. 2. The mortality rate among those affected presently is very high. At Regional and Global levels, the overall risk has been assessed as low since there is currently no evidence of cases outside the local region. Additionally, no close contacts of the cases have been affected, suggesting that the illness may not be human-to-human transmissible.

**Source:** [WHO AFRO](#), [Reuters](#)

# Other Infectious Disease Outbreaks/ Conflicts



## Unknown Encephalitis in India

SUBLOCATIONS AFFECTED: Uttar Pradesh (Kanpur)

On September 25, 2022, a case of encephalitis with unknown origin was reported in Kanpur, Uttar Pradesh, located in northern India. The affected individual is described as a 25-year-old female medical student from Ganesh Shankar Vidarthi Memorial (GSVM) Medical College who was admitted to Lala Lajpat Rai Hospital ICU in Kanpur with a high fever and severe headache. On Tuesday, medical imaging showed blood clots and swelling of the brain and it was reported that the patient had developed Acute Necrotizing Encephalitis (ANE). At that time the patient was reported to be in a coma and on ventilator support. News media stated on Wednesday, that following preliminary testing by the GSVM microbiology department and King George's Medical University, the patient's blood sample tested positive for H1N1. Additionally, tests for dengue, chikungunya, malaria, and typhoid were negative. The patient remains in critical condition. Approximately 30 other medical students have presented to medical facilities with high-grade fever, some are suspected of having H1N1 as they are showing similar symptoms to the hospitalized patient. They were treated for their symptoms and returned home. This event happens days after 30 swine were found dead around campus. The cause of the swine deaths is unknown, and it is unclear if testing has or will take place. However, school officials state that there is no link between the swine deaths and hospitalized patient.

### CONCERN LEVEL: LOW.

The BlueDot Intelligence team considers this event of low concern to the local, regional, and international populations. This is due to three main reasons: India has been experiencing increased cases of H1N1 during the current influenza season. The number of students affected raises concerns about a potential outbreak of H1N1 in this local area. While one severe case of H1N1 is not unexpected, the progression to ANE is more common amongst young children.

As we do not have official confirmation of the cause of death for the swine, we cannot exclude the possibility of a causal link between the human illnesses and recent swine deaths. Of note, since June 2022 the city has reported increased swine deaths due to African Swine Fever, which is a disease that does not affect humans.

Other possible causes such as a new swine H1N1 variant, meningococcal meningitis or Nipah virus have not been mentioned.

Given the patient is young and healthy, her rapid deterioration and coagulation abnormalities would indicate that meningococcal meningitis should be considered. Furthermore, Nipah is endemic in India and although it is unclear what degree of exposure the patient had to the swine on campus, the death of swine in the area indicates that Nipah virus should also be considered.

Source: [The Times of India](#)

## Syria: Cholera outbreak

Rebel-held northwest Syria reported its [first confirmed case of cholera, leading to fears](#) the country's rapidly spreading outbreak could spiral out of control. There have been [39 reported deaths](#) and [thousands](#) of suspected cases so far. The outbreak – Syria's first since 2009 – has been linked to the use of untreated water from the [Euphrates River](#), which is highly polluted with raw sewage and at [particularly low levels](#) now due to climate change-related drought and [alleged increased damming by Turkey](#). Diminished water flow [can lead to a higher concentration](#) of bacteria like the one that causes cholera. The [World Health Organization](#) (WHO) said on 21 September that medications and other supplies had landed in Damascus and would be sent where needed, with more on the way. Cholera is relatively easy to treat if and when care is available. But it can also kill quickly in environments – like parts of northern Syria – where years of war have crippled health infrastructure. Millions of people in the region live in crowded displacement camps where it's hard to get clean water, and hygienic sanitation facilities are few and far between.

## Avian Influenza overview June – September 2022

The 2021–2022 highly pathogenic avian influenza (HPAI) epidemic season is the largest HPAI epidemic so far observed in Europe, with a total of 2,467 outbreaks in poultry, 47.7 million birds culled in the affected establishments, 187 outbreaks in captive birds, and 3,573 HPAI virus detections in wild birds with an unprecedented geographical extent reaching from Svalbard islands to South Portugal and Ukraine, affecting 37 European countries.

Between 11 June and 9 September 2022, 788 HPAI virus detections were reported in 16 European countries in poultry (56), captive (22) and wild birds (710). Several colony-breeding seabird species exhibited widespread and massive mortality from HPAI A(H5N1) virus along the northwest coast of Europe.

This resulted in an unprecedentedly high level of HPAI virus detections in wild birds between June and August 2022 and represents an ongoing risk of infection for domestic birds. HPAI outbreaks were still observed in poultry from June to September with five-fold more infected premises than observed during the same period in 2021 and mostly distributed along the Atlantic coast. Response options to this new epidemiological situation include the definition and rapid implementation of suitable and sustainable HPAI mitigation strategies such as appropriate biosecurity measures and surveillance strategies for early detection in the different poultry production systems.

The viruses currently circulating in Europe belong to clade 2.3.4.4b with seven genotypes, three of which identified for the first time during this time period, being detected during summer. HPAI A(H5) viruses were also detected in wild mammal species in Europe and North America and showed genetic markers of adaptation to replication in mammals.

Since the last report, two A(H5N6), two A(H9N2) and one A(H10N3) human infections were reported in China. The risk of infection is assessed as low for the general population in the EU/EEA, and low to medium for occupationally exposed people.

Source: [ECDC](#)

## Spread of hepatitis A virus strains of genotype IB in several EU countries and the United Kingdom

As of 29 September 2022, 303 cases with identical or closely related HAV strains have been identified in Austria (7), Germany (8), Hungary (161), the Netherlands (8), Slovenia (35), Sweden (8), and the UK (76). Currently available epidemiological and microbiological data suggest that human-to-human transmission has occurred, and possibly also transmission through contaminated food.

On 15 February 2022, Hungary reported an outbreak of HAV genotype IB with the disease onset of the first case in early December 2021. To date, 161 cases (139 males, 22 females) have been confirmed with this strain in the National Hepatitis Reference Laboratory in Hungary. The weekly number of reported hepatitis A cases have been declining since June 2022. Several infected people identified themselves as men who have sex with men (MSM), suggesting possible transmission among sexual contacts. Several patients have been hospitalised.

In July 2022, a foodborne outbreak was suspected with a link to a restaurant in Hungary, where 16 people fell ill with HAV IB infection. Some of the patients reported consuming cold soup made with frozen berries. In the UK, no clear source of infection has been identified, but epidemiological investigations so far indicate possible foodborne infections in addition to person-to-person transmission. Germany, the Netherlands, and Sweden have reported a total of nine cases infected with strains matching the sequences of the UK strain. Investigations of these cases didn't find any clear risk factors for infection such as a travel history or consumption of berries. Further investigations are ongoing.

HAV is highly transmissible through contaminated water, food, and via the faecal–oral route among close contacts (e.g. household contacts, sexual contacts, and contacts in day-care centres or schools), with an average incubation period of four weeks, ranging from two to six weeks. The virus is highly resistant to environmental conditions as well as to several preservation methods like acidification or freezing. Therefore, possible food-borne transmission should be investigated when several cases are reported within a short period.

Source: [ECDC](#)

# Other Infectious Disease Outbreaks/ Conflicts

## Floods in Pakistan and Associated Infection Disease Threats

### Situation overview

- Pakistan is ranked 9th in terms of flood-affected countries worldwide.<sup>1</sup>
- Long-lasting, heavy monsoon rains in large parts of Pakistan since June 2022 that triggered massive floods has claimed 1,638 lives as of September 25, 2022.<sup>2</sup> Balochistan, Khyber Pakhtunkhwa, and Sindh provinces have been hit the worst (Pakistan's first-level administrative regions shown in Figure 1). Of Pakistan's 154 districts, 116 had been affected by the floods as of August 30, 2022.<sup>3</sup>
- According to the Pakistani government, who declared a state of emergency, more than 33 million people have been affected by the floods.<sup>2</sup> At least 6.4 million people are estimated to be in need of shelter, food, and other essentials alongside nearly 634,000 displaced individuals living in camps.<sup>4</sup>
- The World Health Organization indicated that of the 1,460 health facilities affected, 432 have been completely destroyed and 1,028 have been partially damaged.<sup>4</sup> Access to "health facilities, healthcare workers, and essential medicines and medical supplies" remains a significant healthcare challenges.<sup>5</sup>
- Cases and deaths of diphtheria were reported in the past two months in Sindh<sup>6</sup>, with fears of disruptions to public health/healthcare system hampering detection of all cases and public health responses.<sup>7</sup>
- With limited access to safe drinking water, the most acute infectious disease threats are outbreaks of waterborne diseases that cause diarrhea, including typhoid and cholera. More than 134,000 diarrhea cases in the worst-hit province, Sindh, in week prior to September 20 according to a report released UNICEF.<sup>8</sup> Increased mosquito breeding due to stagnant water is likely to lead to outbreaks of malaria and dengue.<sup>9</sup>
- Prior to 2022, Pakistan had already observed significant upward trends in reported cases of multiple infectious diseases despite suboptimal surveillance contributing to known underreporting of cases (Table 1). Reported dengue, malaria, measles, and Crimean-Congo Hemorrhagic Fever increased throughout 2021. Case counts for 2022 are up to September 26 and will not be complete until the end of the year. BlueDot expects this year's cumulative case counts for many of these diseases to be higher than reported currently. Dengue cases are likely to increase by the end of 2022; comparisons to all of 2021 would be premature at this time. Conditions triggered by the floods further exacerbate the risks spread and amplification of these diseases in the coming weeks.
- There has been a significant setback in the country's efforts to eliminate polio due to the COVID-19 pandemic. Wild poliomyelitis cases reported in 2022 thus far have exceeded the total reported in 2022 (see table on the right). Cases have been linked genetically to several countries (Malawi, Mozambique) that had been polio-free status for many years, which is indicative of likely higher transmission in Pakistan.<sup>10</sup>



Table 1: Reported cases of various infectious diseases of interest in Pakistan from 2020 – 2022. Note: There is known underreporting of cases for all these diseases. Source: BlueDot Surveillance

Disease	2020	2021	2022 (as of Sep 26)	Details
Wild Poliomyelitis	15	0	19	Pakistan is one of the two countries (Afghanistan being the other) in the world where wild poliomyelitis remains endemic despite over 100 rounds of vaccination being carried out in the past decade.
Dengue	4,717	55,011	24,967	Dengue fever is a year-round and nationwide risk in Pakistan. Cases rose in 2021 compared to 2020, particularly in Lahore and the twin cities (Rawalpindi and Islamabad). During the latter half of 2021, the continuous rise in cases in Islamabad led to severe pressure on public and private hospitals amid the COVID-19 pandemic.
Malaria	N/A	1,687,751	144,183	Sindh province has the highest incidence. Media reports raised concerns over increasing disease activity in urban centers and stalled fumigation campaigns since August 2021. Local health officials cited shortages in anti-mosquito chemicals as a challenge to disease management.
Cholera	21	N/A	3,828	Before the floods, cases were confirmed in Karachi, Pakistan's largest city and the provincial capital of Sindh. Official information indicated significant upward trends of diarrhea over the last two months with the majority of the affected in children <5 years old.
Measles	N/A	8,357	5,506	In Feb 2022, suspected cases and measles-related deaths were reported in Dadu district, Sindh province. According to media reports, health authorities have deployed a clinical team to the affected area to confirm that measles is the cause of death. In addition, reports indicate an ongoing measles outbreak since December 2021 and despite efforts of a routine mass immunization campaign, entire villages refused to have their children vaccinated.
Crimean-Congo Hemorrhagic Fever	N/A	26	6	Cases in Pakistan show biannual peaks, usually between March-May and August-October.



# Other Infectious Disease Outbreaks/ Conflicts

## Floods in Pakistan and Associated Infection Disease Threats



### Other health challenges:

- Health authorities also reported more than 100,000 cases of skin-related conditions, 101 snake bites, and 500 dog bites among flood victims as of August 31, 2022.<sup>11</sup> On September 2, 2022, the United Nations Population Fund said at least 650,000 pregnant women and girls are among the flood victims, of which 73,000 are expected to deliver in the next month.<sup>12</sup> This is a concern as there is lacking access to healthcare facilities and support needed for safe delivery. Pakistan authorities also say 47,000 pregnant women are sheltering in the camps.<sup>12</sup>

### Response for concern:

- Historically, natural disasters such as earthquakes and hurricanes have led to outbreaks of endemic infectious diseases due to population displacement, crowding, destruction of infrastructure, and degradation of sanitary conditions.<sup>13</sup>
- Disease outbreaks that are associated with natural disasters include diarrheal diseases, acute respiratory infections, malaria, leptospirosis, measles, dengue fever, viral hepatitis, typhoid fever, meningitis, tetanus, and cutaneous mucormycosis.<sup>14</sup>
- Water-borne outbreaks of diarrheal illness after floods are thought to result primarily from the contamination of water. This occurs due to the disruption of purification and sewage disposal systems. Secondary effects of flooding, including crowding and subsequent fecal-oral spread of gastrointestinal pathogens, may also contribute to the spread of diarrheal diseases.<sup>15</sup>
- Malaria epidemics in the wake of flooding are a well-known phenomenon in endemic areas worldwide. A peer-reviewed article highlighted events following prior floods in Pakistan<sup>15</sup>: Locally in 2006, there was a sharp spike in the incidence of malaria after torrential rain and floodwater inundated large swathes of land in Karachi. It was also reported that the prevalence of cerebral malaria had increased, which was particularly worrying when it subsequently began appearing in resistant forms that did not respond to conventional therapy. Similarly, in January 2009, suspected malaria was reported as the primary diagnosis in 18% of total medical consultations in flood-affected districts of Balochistan, making it the second-leading cause of consultations.
- There is increased exposure to infectious diseases and disease vectors (such as mosquitoes) when large populations are displaced into temporary settlements or camps – settings that are often overcrowded, rudimentary, and have inadequate safe water and sanitation. The rapid displacement of many refugees (Afghan refugees are among the 33 million affected people in Pakistan) during this humanitarian crisis increases the risk of importation and the potential for subsequent domestic spread.<sup>16</sup>
- Exposure to bites from dogs are also of concern as it is a prominent source of human infections of rabies, a disease that is endemic to Pakistan.<sup>17</sup> Most of the Pakistan's population is unaware of the risk of rabies and do not seek prevention following a bite. Children are at particular risk, and death due to rabies are considered to be vastly under-reported in Pakistan.<sup>18</sup> In 2018, 24 of 25 reported human cases in Pakistan occurred in Sindh province, which has been most affected by the current floods.<sup>17</sup> Pre-existing challenges to controlling and detecting rabies due to limited access to up-to-date animal vaccines, lack of public awareness and access to post-exposure prophylactic treatment, and lack of a surveillance system will only further contribute to the difficulty in managing this infectious disease risk.<sup>17</sup>
- Maintaining disease surveillance, disease prevention and control, and providing adequate healthcare is challenging due to service disruptions to the healthcare/public health systems and the physical destruction of healthcare infrastructure. This event is not only affecting the detection and response to infectious diseases, but also other health services including those supporting fertility/birthing.

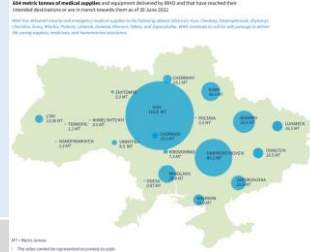
### Outlook

- Pakistan has limited domestic resources to address the infrastructural, health, and socioeconomic impact of the present worsening situation with floods. This only further exacerbates all existing challenges.
- Pakistan has an immediate need for more international support. BlueDot is warning that many infectious disease concerns, including but not limited to COVID-19, water-borne and vector-borne diseases will likely arise or worsen in the short-term future. This will further compound all concerns related to an already overwhelmed public health system, general security, and quality of life. Extending aid to include access to vaccines, other preventive equipment, and treatments for infectious diseases may help to lessen the severity of anticipated outbreaks.

Geographical Area - Balochistan		
Theme/Area	Situation	Need
Shelter	In the Ten assessed districts, colossal damages to HHs shelter has occurred including Fully and Partially damaged HHs. Population in Millions has been displaced.	<ul style="list-style-type: none"> <li>Tents, Tarpoline Sheets</li> <li>Shelter kits &amp; reconstruction materials</li> <li>Rehabilitation and reconstruction of HHs/rooms</li> <li>Provision of Tool-kit, will help in Removal of debris/rehab</li> <li>Cash for work as a preferred modality for rehab/reconstruction</li> <li>Establishment of Safe places for women</li> </ul>
	Exposure to open-atmosphere and mosquito production increased due to water-logging	<ul style="list-style-type: none"> <li>Mosquito nets and Mosquito repellents</li> <li>Provision of chaddars to displaced families to cover children at night</li> <li>Provision of folding sheets/beds</li> </ul>
	Mostly carpets are used in rooms instead of Charpai and have been damaged due to influx of rain-water in rooms	<ul style="list-style-type: none"> <li>Provision of Charpai/Cots</li> <li>Provision of matrices</li> </ul>
	Animals shades are mostly damaged, being more fragile and will be exposed to harsh weather of winter	<ul style="list-style-type: none"> <li>On small scales, animals shades can be provided as support</li> </ul>
WASH (Water)	Water sources are damaged either partially or fully in most affected areas on large scale Open Wells are damaged and DWSS on Tube- Wells are mostly damaged. The major issues with DWSS is recorded as damages of pipelines. Availability of drinking water has been a significant problem.	<ul style="list-style-type: none"> <li>Provision of water-supply through water-tanks in areas with high demand and need for water</li> <li>Provision of water purification plants</li> <li>Rehab of Communal based DWSS through provision of pipelines or other minor issues after inspection</li> <li>Provision of water-storage kits to affected community and jerry cans for water storage on large scale</li> </ul>
	58% Pet latrines are inundated, the structures are perished and septic areas filled with mud/rain water. It is also a critical protection issue for women and PWDs.	<ul style="list-style-type: none"> <li>Provision of portable latrines</li> <li>Provision of materials for latrines construction</li> <li>Provision of sanitation facilities to displaced communities in particular</li> </ul>
Hygiene	Personal hygiene has been a substantial issue	<ul style="list-style-type: none"> <li>Hygiene awareness sessions</li> <li>Provision of hygiene kits and soaps</li> <li>Distribution of dignity kits for adult girls and women as essential item for protection and inclusive needs</li> </ul>
Food and Livelihood	Agri-crops and vegetables are completely inundated Horticulture is substantially damaged Savings of low-income and daily wages dependent HHs is lost Labour and daily wage earners are affected	<ul style="list-style-type: none"> <li>Multi-purpose cash distribution in vulnerable families</li> <li>Provision of food packages and cooked food</li> <li>Support for nutrition for highly vulnerable families, pregnant/ lactating mothers and the neonates and babies</li> <li>Distribution of Seasonal agri-seeds in particular seasons of growth</li> </ul>
	Food stocks are badly affected Accessibility issues have increased Kitchens got damaged	<ul style="list-style-type: none"> <li>Provision of food items on large scale and immediate basis</li> <li>Provision of kitchen sets</li> </ul>
	Small enterprises are reportedly damaged as evident in assessment findings	<ul style="list-style-type: none"> <li>Support for rehabilitation of small enterprises</li> </ul>
Psychosocial Support	Outbreak of diseases in animals caused their deaths	<ul style="list-style-type: none"> <li>Carpet vaccination</li> <li>Coordination with livestock department and diagnosis, medication in target areas</li> <li>Provision of fodder as per needs</li> </ul>
	Several people in community are found traumatized with the feelings of depression, stress and anxiety	<ul style="list-style-type: none"> <li>Provision of psychosocial counseling and support to affected communities as well the specific traumatized individuals and women especially</li> </ul>
Coordination	Coordination needs to be strengthened with response and humanitarian agencies	<ul style="list-style-type: none"> <li>Well-coordinated response is need of the hour</li> </ul>

# Ukraine

## WHO emergency appeal: Ukraine & refugee-receiving and hosting countries



### Current situation and impact on health

Active fighting in proximity to large population centres leads to a high number of people in need of trauma/surgical care.

- A large number of health facilities are located in either conflict areas or in changed areas of control, which leaves the health system vulnerable to infrastructural damage and severe disruptions. Consequently, there is limited or no access to medicines, health facilities, or healthcare workers in some areas. Many health workers are either displaced or unable to work.
- WHO has confirmed 550 attacks on health care reported between 24 February and 29 September.
- Noncommunicable diseases (NCDs) are the leading cause of morbidity and mortality in Ukraine, with the five major NCDs (cardiovascular disease, diabetes, cancer, chronic respiratory disease, and mental health conditions) accounting for 84% of all mortality.
- Ukraine also has one of the highest burdens of chronic infectious diseases in Europe, particularly HIV and tuberculosis.
- Shortages of medical supplies challenge access to essential health services. In contrast, the interruption of prevention, diagnostic and treatment services increase the risk of adverse disease outcomes and threatens treatment continuity.
- The need for continued mental health and psychosocial support services is very high.
- There is a risk of outbreaks of respiratory and diarrheal diseases. There continues to be a risk of COVID-19, and vaccination uptake remains low, particularly in vulnerable populations. This, along with disruption in testing and treatment, puts those most vulnerable at increased risk of severe illness and death.

### WHO PRIORITIES

- Coordinate the health response, including Emergency Medical Teams (EMTs)
- Strengthen health information management  
Immediate emergency care
- Provide essential medical supplies and Equipment
- Continue essential healthcare for priority causes of illness and death
- Prevent, detect and respond to infectious diseases

### Refugee-receiving and hosting countries

As of 22 September 2022, 7,405,590 people have fled the violence in Ukraine. Poland has already welcomed over 1,391,344 refugees, Romania 80,498, Hungary 29,903, Republic of Moldova 91,772, Slovakia 94,530, Czech Republic 433,488 and Bulgaria 61,070.†

- Overcrowded conditions during transit and on arrival at transit sites or shelters with exacerbating factors such as poor access to water, sanitation and hygiene, and low vaccination status can increase the risk of spread of infectious diseases.
- The Regional Refugee Response Plan's (RRRP) health and nutrition response aims to ensure access to preventive, promotive, curative, palliative, and rehabilitative health services for refugees to prevent excess morbidity and mortality.
- The immediate health priorities include emergency medical care, providing access to essential healthcare services, medication, mental health, and psychosocial support, including for mothers and children, HIV and tuberculosis patients, and patients with NCDs.
- Addressing the increased transmission of COVID-19 and other seasonal respiratory infections and vaccine-preventable diseases like measles or the vaccine-derived poliovirus (VDPV) in refugee populations is also a priority.

### WHO Response in focus – Ukraine

Saving lives is the priority of WHO's response in Ukraine. WHO works to ensure time-critical, lifesaving multisectoral assistance, non-discriminatory access to emergency and essential health services and priority prevention programmes, and laying the foundation for longer-term health systems recovery and strengthening.

WHO has established direct supply lines to almost all Ukrainian cities, with shipments in progress and more logistical lines being established with other UN agencies. As of 30 June 2022, WHO has delivered 654 metric tonnes of medical supplies and equipment to Ukraine. Of that, 432 metric tonnes reached their intended destinations and 222 metric tonnes were in transit towards them. Medical supplies delivered to the country cover a broad range of health needs from trauma/surgery supplies to primary healthcare medications, noncommunicable diseases medicines and rehabilitation equipment.

The need for medical supplies remains very high in the eastern and southern oblasts where active fighting is ongoing, in the other oblasts impacted by the conflict and those hosting internally displaced persons (IDPs). The need includes supplies for trauma and emergency care and life-saving treatments for people with NCDs. Oxygen supplies, infrastructural support for hospitals (e.g. generators), and ambulances are also needed. WHO needs to acquire several armoured vehicles given the security situation and the need to transport WHO staff safely across the country despite active fighting and airstrikes in order to carry out priority health interventions with the government and partners. WHO has organized bi-weekly training sessions for thousands of Ukrainian healthcare providers about handling mass casualties. Topics covered include hospital blood transfusions in conflict settings, traumatic limb injuries, emergency nursing care, and essential burn care.

With WHO responding from the first day of the escalation in the conflict, operations were able to scale up quickly due to the organisation's strong presence within Ukraine and preparedness to potential armed conflict since 2021. WHO is operating through nine hubs inside and outside of Ukraine: Kyiv, Lviv, Vynnytsya, Poltava, Odessa, Dnipro, Luhansk, Donetsk, Rzeszow (Poland). WHO also strengthened and built warehousing capacity in Kyiv, Lviv and Dnipro, while in Odesa, warehousing is being secured in September 2022. The temporary hub established in Poland to facilitate cross-border operations is due to be closed in October 2022.

Initially the primary response hub in March and April, the Lviv office has now been reduced, with operations and staff shifted further east to Kyiv, Dnipro and Odesa. As of September 2022, WHO operations in Ukraine scaled up to approximately 200 personnel, from around 120 in February.

Leadership is primarily based in Kyiv, with the Grade 3 Conflict Incident Management and team based in Dnipro. WHO response continues to evolve to the changing health needs, with hubs reviewed regularly to ensure access and support where needed, especially regarding the newly accessible areas.

To assess the health needs in Ukraine, WHO has launched a household health needs assessment together with Premise, a crowdsourcing organization. Results from the first round of the household needs assessment, using crowdsourcing data, were widely distributed within WHO, MoH and health cluster partners to inform response priorities.

The result was also used to synthesise several needs assessments done by health cluster partners. WHO also supports the public health center (UPHC) and regional centers for disease control (RCDC) to enhance their surveillance system to detect timely outbreaks. To supplement the indicator-based surveillance, WHO hired part-time epidemiologists and introduced open-source surveillance on disease outbreaks, chemical and environmental hazards, IDP movement and other public health threats. A time series analysis of surveillance data, identifying trends and prioritising diseases/conditions was conducted, that analysed pre-war monthly e-Health data, both inpatient and outpatient, to estimate the potential impact of service interruption on priority service packages. Analysis of pre-war e-Health data and corresponding needs informed the specific objectives of the WHO response, projected the impact of service interruptions, and prioritized support to hospitals and health facilities accordingly.