



News:

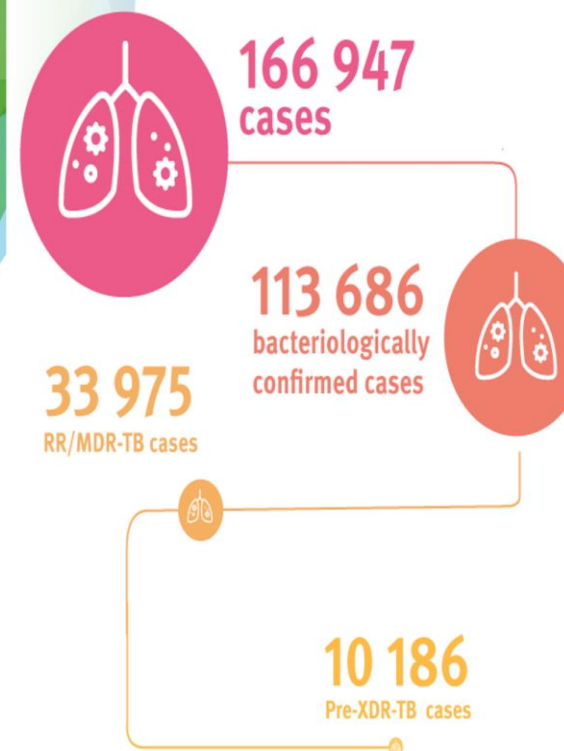
- WHO:** has [certified Azerbaijan and Tajikistan for achieving elimination of malaria](#) in their territories. The certification is granted when a country has shown that the chain of indigenous malaria transmission by Anopheles mosquitoes has been interrupted nationwide for at least the past three consecutive years. A country must also demonstrate the capacity to prevent the re-establishment of transmission. A total of 42 countries or territories have reached the malaria-free milestone.
- WHO:** Following its 20-23 March meeting, WHO's Strategic Advisory Group of Experts on Immunization (SAGE) [revised the roadmap for prioritizing the use of COVID-19 vaccines](#), to reflect the impact of Omicron and high population-level immunity due to infection and vaccination. (see slide 3)
- WHO:** Newly released SARS-CoV-2 metagenomics data from China CDC on GISAID, find the SAGO statement [here](#).
- UN:** Between two and three billion people face water shortages for at least one month per year, posing severe risks to their livelihoods, food security, and electricity access, according to the [UN's latest World Water Development Report](#). With water scarcity expected to rise, the UN is calling for better international cooperation on water management and touting the hidden benefits of sanitation solutions.
- TUR:** Heavy rainfall and flooding hit the southern Turkish provinces of Adiyaman and Sanliurfa, killing a [reported](#) 14 people with five more missing. The area was already hit by February's earthquakes, and tents for survivors had to be evacuated.
- WHO:** has [updated its tracking system and working definitions for variants of SARS-CoV-2](#), the virus that causes COVID-19, to better correspond to the current global variant landscape, to independently evaluate Omicron sublineages in circulation, and classify new variants more clearly when required.
- WHO:** publishes recommendations on two new types of insecticide-treated nets in the [WHO Guidelines for malaria](#). It cover 2 new classes of dual ingredient ITNs with different modes of action: **Pyrethroid-chlorfenapyr nets** combine a pyrethroid and a pyrrole insecticide to enhance the killing effect of the net. **Pyrethroid-pyriproxyfen nets** combine a pyrethroid with an insect growth regulator (IGR). The IGR disrupts mosquito growth and reproduction.

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Tuberculosis



Pulmonary cases in the European Region, 2021

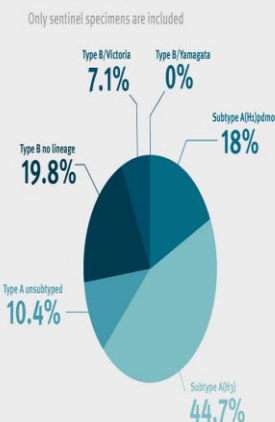


RR/MDR-TB - Rifampicin-resistant/multi drug-resistant tuberculosis
Pre-XDR - pre-extensively drug resistant tuberculosis

Influenza in Europe

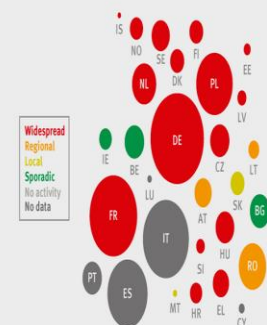
Data from EU and EEA countries for the 2022-2023 season
Week 11 (13 Mar - 19 Mar 2023)

Influenza viruses circulating in 2022-2023



Influenza geographic spread

based on sentinel reports of influenza-like illness and/or acute respiratory infections



Bubble size is indicative of country population

Influenza trend

based on the percentage of sentinel specimens found positive, by week



COVID-19 Situation by WHO Region, as of 22 March

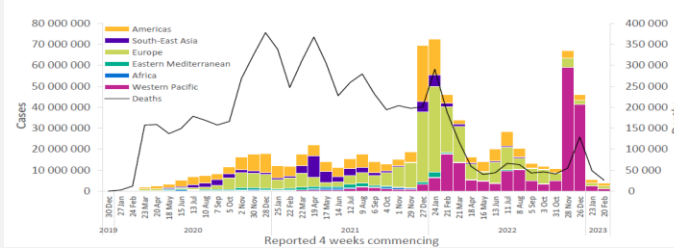
Global epidemiological situation overview; WHO as of 19 March 2023

Globally, over 3.7 million new cases and over 26 000 deaths were reported in the last 28 days (20 February to 19 March 2023), a decrease of 31% and 46%, respectively, compared to the previous 28 days (23 January to 19 February 2023) (Figure 1, Table 1); however, there are significant regional differences including increases in some regions. As of 19 March 2023, over 760 million confirmed cases and over 6.8 million deaths have been reported globally.

Current trends in reported COVID-19 cases are underestimates of the true number of global infections and reinfections as shown by prevalence surveys.^{1–4} This is partly due to the reductions in testing and delays in reporting in many countries. Data presented in this report may be incomplete and should therefore be interpreted with caution. Additionally, data from previous weeks are continuously being updated to incorporate retrospective changes in reported COVID-19 cases and deaths made by countries.

At the country level, the highest numbers of new 28-day cases were reported from the United States of America (792 202 new cases; -29%), the Russian Federation (339 564 new cases; +25%), China (320 029 new cases; -50%), Japan (291 672 new cases; -73%), and Germany (281 468 new cases; -18%). The highest numbers of new 28-day deaths were reported from the United States of America (8187 new deaths; -39%), the United Kingdom (2474 new deaths; -9%), Japan (1898 new deaths; -71%), Brazil (1587 new deaths; -15%), and China (1472 new deaths; -85%).

Figure 1. COVID-19 cases reported by WHO Region, and global deaths by 28-day intervals, as of 19 March 2023**



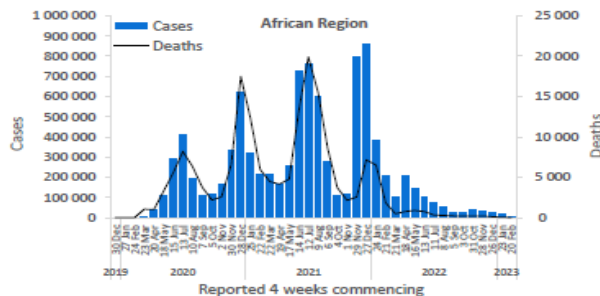
WHO regional overviews

Data for 20 February to 19 March 2023

African Region

The African Region reported over 12 000 new cases, a 43% decrease as compared to the previous 28-day period. Fifteen (30%) of the 50 countries for which data are available reported increases in new cases of 20% or greater, with the highest proportional increases observed in Guinea-Bissau (180 vs one new cases; +17 900%), Sao Tome and Principe (16 vs one new cases; +1500%), and Comoros (50 vs six new cases; +733%). The highest numbers of new cases were reported from South Africa (7839 new cases; 13.2 new cases per 100 000; +27%), Zambia (933 new cases; 5.1 new cases per 100 000; -79%), and Zimbabwe (489 new cases; 3.3 new cases per 100 000; -79%).

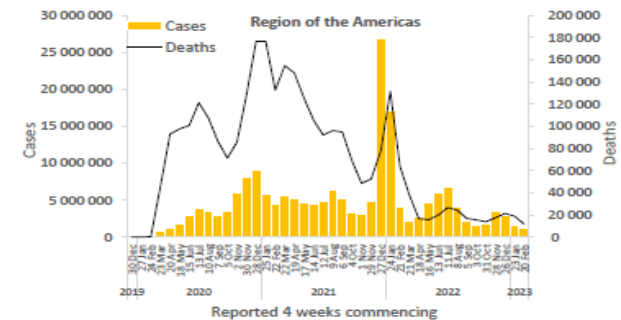
The number of new 28-day deaths in the Region decreased by 57% as compared to the previous 28-day period, with 23 new deaths reported. The highest numbers of new deaths were reported from Zimbabwe (nine new deaths; <1 new death per 100 000; -18%), Zambia (six new deaths; <1 new death per 100 000; -57%), and Cameroon (three new deaths; <1 new death per 100 000; no death reported the previous 28-day period).



Region of the Americas

The Region of the Americas reported over 1.1 million new cases, a 28% decrease as compared to the previous 28-day period. Three (5%) of the 56 countries for which data are available reported increases in new cases of 20% or greater, with the highest proportional increases observed in Chile (79 750 vs 45 846 new cases; +74%), Trinidad and Tobago (1774 vs 1307 new cases; +36%), and Costa Rica (20 019 vs 16 684 new cases; +20%). The highest numbers of new cases were reported from the United States of America (792 202 new cases; 239.3 new cases per 100 000; -29%), Brazil (157 832 new cases; 74.3 new cases per 100 000; -43%), and Chile (79 750 new cases; 417.2 new cases per 100 000; +74%).

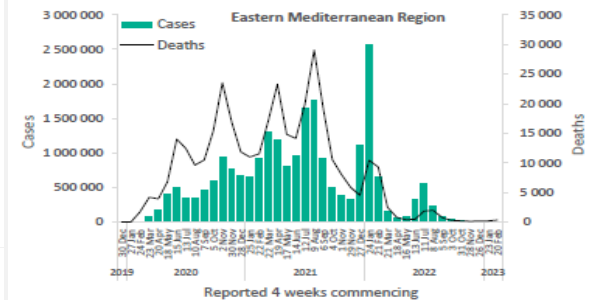
The number of new 28-day deaths in the Region decreased by 38% as compared to the previous 28-day period, with 11 706 new deaths reported. The highest numbers of new deaths were reported from the United States of America (8187 new deaths; 2.5 new deaths per 100 000; -39%), Brazil (1587 new deaths; <1 new death per 100 000; -15%), and Canada (628 new deaths; 1.7 new deaths per 100 000; -30%).



Eastern Mediterranean Region

The Eastern Mediterranean Region reported over 28 000 new cases, an 89% increase as compared to the previous 28-day period. Ten (45%) of the 22 countries for which data are available reported increases in new cases of 20% or greater, with the highest proportional increases observed in the Islamic Republic of Iran (12 635 vs 3163 new cases; +299%), Kuwait (946 vs 310 new cases; +205%), and Pakistan (1389 vs 482 new cases; +188%). The highest numbers of new cases were reported from the Islamic Republic of Iran (12 635 new cases; 15.0 new cases per 100 000; +299%), the United Arab Emirates (3912 new cases; 39.6 new cases per 100 000; +67%), and Lebanon (2700 new cases; 39.6 new cases per 100 000; -34%).

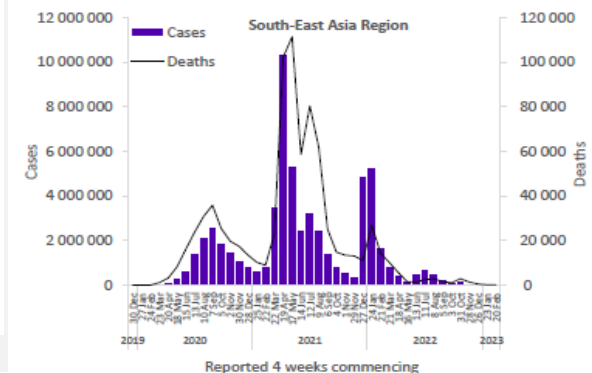
The number of new 28-day deaths in the Region increased by 68% as compared to the previous 28-day period, with 366 new deaths reported. The highest numbers of new deaths were reported from the Islamic Republic of Iran (257 new deaths; <1 new death per 100 000; +308%), Lebanon (36 new deaths; <1 new death per 100 000; -14%), and Saudi Arabia (24 new deaths; <1 new death per 100 000; -47%).



South-East Asia Region

The South-East Asia Region reported over 18 000 new cases, a 70% increase as compared to the previous 28-day period. Three (27%) of the 11 countries for which data are available reported increases in new cases of 20% or greater, with the highest proportional increases observed in India (10 503 vs 2 996 new cases; +251%), Bhutan (32 vs 17 new cases; +88%), and the Maldives (26 vs 16 new cases; +62%). The highest numbers of new cases were reported from India (10 503 new cases; <1 new case per 100 000; +251%), Indonesia (7139 new cases; 2.6 new cases per 100 000; +16%), and Thailand (651 new cases; <1 new case per 100 000; -51%).

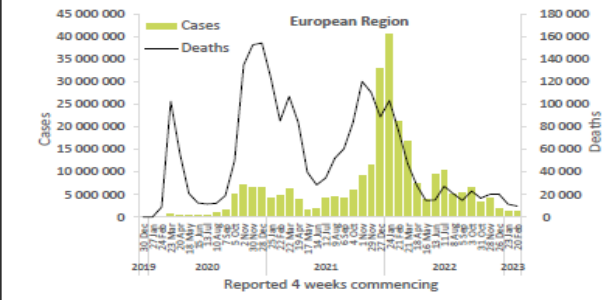
The number of new 28-day deaths in the Region decreased by 24% as compared to the previous 28-day period, with 156 new deaths reported. The highest numbers of new deaths were reported from Indonesia (85 new deaths; <1 new death per 100 000; -19%), India (42 new deaths; <1 new death per 100 000; +56%), and Thailand (27 new deaths; <1 new death per 100 000; -59%).



European Region

The European Region reported over 1.5 million new cases, a 9% increase as compared to the previous 28-day period. Twenty-nine (48%) of the 61 countries for which data are available reported increases in new cases of 20% or greater, with the highest proportional increases observed in Kyrgyzstan (129 vs 23 new cases; +461%), Armenia (1497 vs 473 new cases; +216%), and Ukraine (45 265 vs 15 063 new cases; +201%). The highest numbers of new cases were reported from the Russian Federation (339 564 new cases; 232.7 new cases per 100 000; +25%), Germany (281 468 new cases; 338.4 new cases per 100 000; -18%), and Austria (139 925 new cases; 1572.0 new cases per 100 000; +33%).

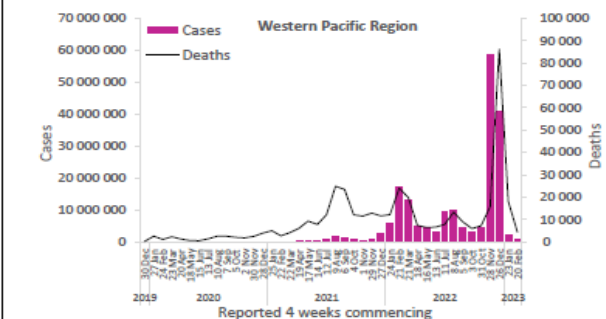
The number of new 28-day deaths in the Region decreased by 15% as compared to the previous 28-day period, with 9607 new deaths reported. The highest numbers of new deaths were reported from the United Kingdom (2474 new deaths; 3.6 new deaths per 100 000; -9%), the Russian Federation (1035 new deaths; <1 new death per 100 000; -6%), and Germany (985 new deaths; 1.2 new deaths per 100 000; -27%).



Western Pacific Region

The Western Pacific Region reported over 966 000 new cases, a 58% decrease as compared to the previous 28-day period. Three (9%) of the 35 countries for which data are available reported increases in new cases of 20% or greater, with the highest proportional increases observed in Palau (seven vs two new cases; +250%), Marshall Islands (122 vs 57 new cases; +114%), and Singapore (19 249 vs 12 035 new cases; +60%). The highest numbers of new cases were reported from China (320 029 new cases; 21.8 new cases per 100 000; -50%), Japan (291 672 new cases; 230.6 new cases per 100 000; -73%), and the Republic of Korea (269 459 new cases; 525.6 new cases per 100 000; -37%).

The number of new 28-day deaths in the Region decreased by 76% as compared to the previous 28-day period, with 4289 new deaths reported. The highest numbers of new deaths were reported from Japan (1898 new deaths; 1.5 new deaths per 100 000; -71%), China (1472 new deaths; <1 new death per 100 000; -85%), and the Republic of Korea (306 new deaths; <1 new death per 100 000; -53%).



SAGE updates COVID-19 vaccination guidance

Source: [WHO](#)

Following its 20-23 March meeting, WHO's Strategic Advisory Group of Experts on Immunization (SAGE) revised the roadmap for prioritizing the use of COVID-19 vaccines, to reflect the impact of Omicron and high population-level immunity due to infection and vaccination.

The roadmap continues SAGE's **prioritization** of protecting populations at the **greatest risk of death and severe disease** from SARS-CoV-2 infection and its focus on maintaining resilient health systems. The roadmap newly **considers the cost-effectiveness of COVID-19 vaccination for those at lower risk** – namely healthy children and adolescents – compared to other health interventions. The roadmap also includes **revised recommendations** on additional **booster doses** and the spacing of boosters. The current COVID-19 vaccines' reduction of post-COVID conditions is also considered but the evidence on the extent of their impact is inconsistent.

The revised roadmap outlines **three priority-use groups** for COVID-19 vaccination: **high, medium, and low**. These priority groups are principally based on **risk of severe disease and death**, and consider vaccine performance, cost-effectiveness, programmatic factors and community acceptance.

The **high priority group** includes **older adults; younger adults with significant comorbidities** (e.g. diabetes and heart disease); people with **immunocompromising conditions** (e.g. people living with HIV and transplant recipients), including **children aged 6 months and older; pregnant persons; and frontline health workers**.

➤ SAGE recommends an **additional booster of either 6 or 12 months after the last dose**, with the timeframe depending on factors such as age and immunocompromising conditions.

The **medium priority group** includes **healthy adults** – usually *under the age of 50-60* – without comorbidities and **children and adolescents with comorbidities**.

➤ SAGE recommends **primary series and first booster doses** for the medium priority group. Although **additional boosters** are safe for this group, SAGE does **not routinely recommend** them, given the comparatively low public health returns.

The **low priority group** includes **healthy children and adolescents aged 6 months to 17 years**.

➤ SAGE recommends: Primary and booster doses are safe and effective in children and adolescents. However, considering the low burden of disease, SAGE urges countries **considering vaccination of this age group** to base their decisions on contextual factors, such as the **disease burden, cost effectiveness**, and other health or programmatic priorities and opportunity costs.

Countries that already have a policy in place for additional boosters should assess the evolving need based on national disease burden, cost effectiveness and opportunity costs.

Separate to the roadmap, SAGE also updated their recommendations on bivalent COVID-19 vaccines, now recommending that countries can consider using BA.5 bivalent mRNA vaccine for the primary series.

Other meeting highlights include:

Polio

SAGE evaluated the data on the **novel oral polio vaccine type 2**, recommending that it should be the **preferred choice** for response to circulating vaccine-derived poliovirus type 2 (cVDPV2) wherever possible. It also recommended that to rapidly boost immunity levels in hard to reach or conflict-prone areas, the **interval between vaccines can be as low as 1 week**, compared to the regular 4-week interval.

In areas of persistent poliovirus circulation, SAGE recommended that countries supplement outbreak response with additional campaigns using inactivated polio vaccines (full or fractional doses).

Regional reports on measles

The increase in the size and number of measles outbreaks exemplifies the repercussions of the pandemic's seismic impact on routine immunization. In **2021, coverage with the first dose of measles vaccine was at its lowest level since 2008, with 25 million children missing out**.

With measles cases **increasing in all WHO regions** in 2022, challenges include difficulties with delivering vaccines in conflict-affected settings, weak health systems, competing priorities, and inadequate financing. Surveillance quality declined globally during the pandemic, although there are signs of recovery in several countries.

SAGE noted the need to review policies on age eligibility for measles vaccination to enable catch-up, accelerate the development and use of new technologies and innovations, and review the evidence for vaccination of infants below six months and during pregnancy.

Status of new tuberculosis vaccines

Tuberculosis (TB) is a leading cause of death and a vaccine that prevents disease in adolescents and adults is urgently needed. A substantial effort for vaccine development is underway, with several candidates in late-stage clinical trials and the potential for multiple vaccines to receive **regulatory authorization within 3 years**.

A process has been initiated to systematically determine research evidence needs that will allow for vaccines policy and vaccine introduction decisions. In this context, SAGE made proposals to build the evidence base regarding a promising TB vaccine candidate for adults and adolescents, M72/AS01E.

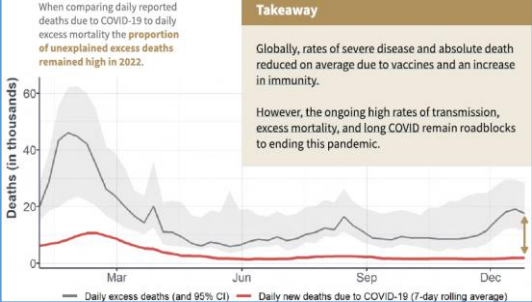
Malaria

Introducing the RTS,S malaria vaccine has resulted in a **substantial reduction in severe malaria** and all-cause mortality among age eligible children. There is high demand for the vaccine, with at least **28 countries expressing interest in introducing the vaccine**. Of these, 15 countries have already submitted a formal application for support to Gavi, and more than 15 additional applications are expected later this year. Supply remains highly constrained. SAGE recommends flexibility in the immunization schedule and supports **reducing the minimum interval between doses 3 and 4 to 6 months to optimize impact**.

Identifying priority pathogens for new vaccines

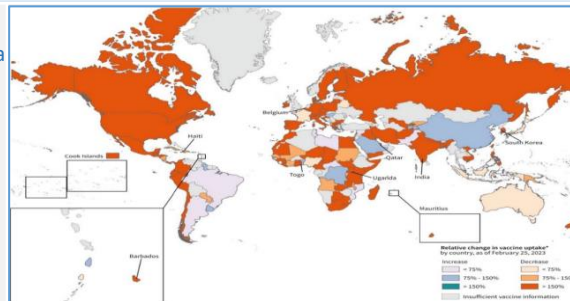
WHO is in the process of defining regional priority targets for new vaccine development for non-epidemic pathogens. Early results indicate that **tuberculosis, HIV, and pathogens that exhibit high levels of antimicrobial resistance** (e.g. *Klebsiella pneumoniae*) are important across all regions. ***Streptococcus pyogenes* (Group A streptococcus), Shigella, and respiratory syncytial virus (RSV)** were identified as important by 4 or more regions, as was ***Plasmodium falciparum*** by the African region.

Are the population health impacts of the COVID-19 pandemic subsiding?



Current State of the Pandemic

Three years after the World Health Organization first declared COVID-19 as a Public Health Emergency of International Concern, on January 30, 2023, it extended that declaration. In this report, we explore the current state of the pandemic, using a data-driven approach.



➤ **Takeaway:** Regions with decreasing recent vaccine coverage are at increased risk of waning immunity and impacts of new variants, especially among high-risk populations. Continuing to counter vaccine hesitancy and improve access globally is necessary in order to prevent further spread of the disease.

Looking Beyond Routine Indicators

Measuring the full impact of COVID-19 requires a broad assessment the range of its downstream effects on population health and the economy. This requires looking beyond reported cases, hospitalizations, and deaths that have been attributed to COVID-19.

Waning Immunity against Infections

Hybrid immunity appears to be the most effective form of immunity at 12 months following the most recent vaccination or infection. However, the protection conferred by any form of immunity (hybrid immunity, vaccine-only, or infection-only) is less durable against reinfection. (1) A global meta-analysis of countries with seroprevalence data demonstrated that infection-derived immunity increased substantially from 7.7% in June 2020 to 48% in March 2022. (2) While a greater proportion of the global population now has high levels of vaccine-derived, infection-derived and hybrid immunity compared to earlier in the pandemic, the severe toll of achieving hybrid immunity includes a reported 6.8 million deaths due to COVID-19 as of February 25, 2023.

Immunity at the 12 Month Mark:	Against Severe Disease	Against Reinfection
Infection-only Immunity	75%	25%
Hybrid Immunity	97%	42%

➤ **Takeaway:** Despite headway against severe disease, a persistently high level of disease activity in communities and lack of a seasonal pattern indicates a hyperendemic state.

Toll of Hybrid Immunity: Inordinate Deaths

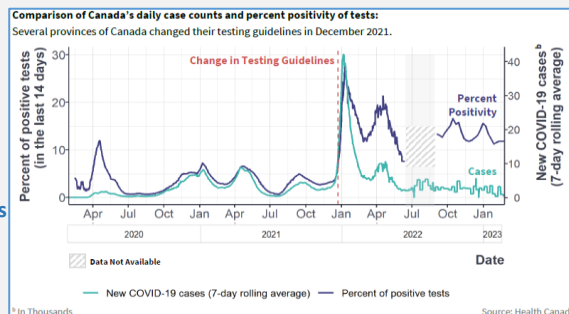
Approximately 30 countries/regions reported their highest number of deaths in 2022 due to COVID-19 compared to previous years of the pandemic; this is likely due to the high transmissibility of the Omicron variant and the lifting of many public health and border measures. Some regions and countries, such as Sweden, Japan, and mainland China, have reported their highest death rates in late 2022/early 2023, with people 60 or older accounting for a large proportion of Japan's recent COVID-19 deaths. (3)

➤ **Takeaway:** The high rates of infection in 2022, which led to a higher proportion of population having hybrid immunity, came at the cost of preventable deaths.

Increasing Challenges for Monitoring

Globally, changes in pandemic policies and surveillance systems following a surge in cases after the emergence of the Omicron variant have resulted in reduced access to PCR testing for the general population and consequently increased underreporting of COVID-19 cases.

➤ **Takeaway:** Changes in policy have made it more challenging to assess and respond quickly to changes in community transmission, which has remained higher than at most points prior to the emergence of Omicron.



Decreasing Vaccine Uptake

Vaccination rates have been tapering globally, and there has been an overall decreasing uptake with each new booster campaign. For example, 33.5% of the population in the Belgium have received a second booster, in comparison with 62.5% that received a first booster. (4)

Change in Rate of Vaccination Uptake:

Compared to the average rate from 3 months prior, redder shades indicates the sharpest decline in rate.

Top 10 countries in terms of declining rates have been named in world map.

Countries that had earlier access to vaccines, such as those in North America and Europe, are seeing similar levels of decreasing vaccine uptake as countries with more recent access, such as those in Africa. There may be many factors contributing to declining uptake, including vaccine fatigue and hesitancy, policy around eligibility, lack of awareness and lack of access.

Risks of Post-acute Sequelae

COVID-19, being a multi-system endothelial disease, (5) can result in a wide array of post-acute sequelae lasting beyond the acute stage of infection. Long COVID is a multi-system condition in which symptoms can persist for weeks, months, or years after the initial infection. Rates of other adverse outcomes such as cardiac arrest, diabetes, heart failure, pulmonary embolism, and stroke, have been shown to increase in the year following a COVID-19 diagnosis. (6)

As of October 1, 2022, an estimated 3.3% of the UK population were experiencing self-reported long COVID symptoms, with approximately half (50%) reporting a duration of at least 1 year. (7) An estimated 15% of unfilled jobs in the US are attributed to long COVID in the working population as of January 2022. (9)

➤ **Recommendation:** Long COVID should be considered in policy decisions and warrants urgent investments into treatment options.

Excess Mortality

Excess deaths depict the total impact of COVID-19 on mortality throughout the pandemic. Excess death estimates were modelled by The Economist using 121 different indicators such as officially reported deaths, historical trends in deaths, reported number of COVID-19 cases, and demographic information, among others.

➤ **Takeaway:** Understanding the impact of SARS-CoV-2 infection(s) and unmitigated transmission on excess morbidity and mortality across different countries can inform public health policy decisions.

➤ **Recommendation:** It is becoming imperative to investigate the extent to which COVID-19 is contributing to excess deaths globally.

Conclusion

The current state of the pandemic is less disruptive than during the acute phase but remains highly complex. Factors supporting its continued consideration as a Public Health Emergency of International Concern include:

- Continued rapid viral evolution
- Waning population immunity
- Vaccination access, uptake, and efficacy
- Ongoing burden of acute disease and post-acute sequelae (including long COVID)
- Unprecedented excess mortality

Accurately measuring disease activity, including the number of infections, hospitalizations, and deaths due to COVID-19 has become increasingly challenging. A multi-pronged approach inclusive of different forms of surveillance and improved data collection would enable timelier responses to potential changes in risk.

The development of more durable and effective vaccines that prevent transmission, as well as focused efforts and policies to improve indoor air quality in locations at high risk of spread, would provide the greatest ability to reduce the ongoing burden of COVID-19.

Poliomyelitis in the Region of the Americas, as of 23 March 2023

Source: [PAHO](#).

3. Peru International Health Regulations (IHR) National Focal Point (NFP). 23 March 2023 email report. Lima; 2023. Unpublished.

Global situation summary

According to the Polio Global Eradication Initiative, there are 35 countries with poliovirus outbreaks, and two endemic countries globally (1). Countries with outbreaks are those that have eliminated indigenous wild poliovirus but are experiencing reinfection either through importation of wild or vaccine-derived poliovirus from another country, or the emergence and circulation of vaccine-derived poliovirus.

During the last meeting on 2 February 2023 of the Polio Emergency Committee under the International Health Regulations (IHR), the Emergency Committee assigned countries under the following categories: States infected with wild poliovirus type 1 (WPV1), circulating vaccine-derived poliovirus type 1 (cVDPV1), or circulating vaccine-derived poliovirus type 3 (cVDPV3); States infected with circulating vaccine-derived poliovirus type 2 (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.

Find the list of states [here](#).

As of 14 March 2023, four countries have cases with WPV1 (Afghanistan, Malawi, Mozambique, and Pakistan), four countries have cases with cVDPV1 (Madagascar, Mozambique, Malawi, and the Democratic Republic of the Congo), one country with cases of cVDPV3 (Israel), and 29 countries with cases of cVDP2 (2).

Situation summary in the Region of the Americas

Since the last PAHO/WHO Epidemiological Update on polio, published 19 January 2023 (2) one additional case of vaccine-derived poliovirus type 1 was reported from [Peru](#) on 21 March 2023. The case is a 16-month-old male, belonging to an indigenous community in the Manseriche district in the Datem del Marañón province of the Loreto department, with no history of vaccination or travel history before the onset of symptoms (3).

The coverage rates of the third dose of polio vaccine (Polio3) in the Manseriche district in the last 5 years was: 87.4% in 2018, 96.5% in 2019 with, 66.6% in 2020, 33.8% in 2021, and 43.6% in 2022. In 2022, there were no cases of acute flaccid paralysis (AFP) in the Manseriche district, Datem del Marañón province, in the Loreto department; however, 8 cases of Guillain Barre Syndrome (GBS) were reported in people in the 18-60 age group. In 2023, one GBS case has been reported in a 50-year-old adult (5).

In the last 4 years Polio3 vaccination coverage in Peru has been <95%, with coverage below 80% reported in: 2020 (71.58%) and 2021 (78.77%). Of the 1,874 districts of the country, 840 (45%) report coverage with Polio3 <80%.

In July 2022, the [United States of America](#) detected a case of poliomyelitis in the state of New York in an unvaccinated patient with no recent travel history (2). The case resided in Rockland County, New York State and was initially confirmed as a type 2 VDPV by the US-CDC. However, subsequent investigations on environmental wastewater samples from the county of residence of the case, Rockland County, and nearby counties (Orange and Sullivan) collected between 21 April and 26 August 2022 were consistently positive for Sabin virus type 2 with genetic sequences related to the virus identified in the New York State poliomyelitis case (2, 4).

[Canada](#) also conducted the search for the virus in wastewater. Sampling sites were determined based on close links with communities in New York. Retrospectively analyzed wastewater samples showed two samples positive for VDPV2. To date, no confirmed or suspected cases of polio have been reported in the jurisdiction of Canada where VDPV2 was detected during 2022 (2).

PAHO/WHO reminds Member States that the risk of the emergence of a circulating vaccine-derived poliovirus type 1 (cVDPV1) or circulating vaccine-derived poliovirus type 3 (cVDPV3) has increased due to low vaccination coverage. In addition, there is a continuing risk of importation of a circulating wild poliovirus type 1 (WPV1) or vaccine-derived poliovirus (VDPV), particularly circulating vaccine-derived poliovirus type 2 (cVDPV2). It is important to mention that the countries and territories of the Region of the Americas have the conditions that would allow transmission to be maintained, mainly due to low vaccination coverage and poorly performing surveillance systems; this situation has been aggravated by the COVID-19 pandemic (5).

Regional vaccination coverage for the third dose of polio vaccine (Polio3) in 2021 was 80%. The decline in coverage began before the pandemic; comparing to the coverage of 2018 and 2019, a decrease was observed in 20 of the 39 countries and territories of the Region. When comparing coverage between 2018 and 2021, coverage decreases in 33 of the 39 countries/territories. According to the information available for 2021, approximately 5.7 million children under 1 year of age (corresponding to 46% of the regional birth cohort) live in areas where coverage is <80% and 1.3 million of these children live in municipalities with coverage <50% (Figure 1) (6).

Declining mucosal immunity to type 2 virus among young children born after the switch (from tOPV to bOPV + IPV), added to low immunization coverage with IPV are contributing to the risk of an outbreak of cVDPV2 (6).

Some countries have repeatedly presented coverage of less than 80% in some subnational level areas, with which the risk of a resurgence of a VDPV is increasing.

The recent detection of a case of polio due to VDPV1 in Peru, a case due to cVDPV2 in the United States, as well as the subsequent detection of the virus in wastewater both in the United States and Canada, underscore the importance of maintaining coverage of high and homogeneous vaccination against polio to minimize the risk of poliovirus circulation and the appearance of cases of poliomyelitis, and also highlights the need for sensitive surveillance systems for the timely detection of an importation of WPV1/VDPV or the emergency of a VDPV.

PAHO/WHO is working with the national authorities of the respective countries to monitor and respond to the situation.

Figure 1. Vaccination coverage with the third dose of polio vaccine OPV or IPV (Polio3). Countries and territories of the Region of the Americas, 2012-2021.



Source: Adapted from United Nations Children's Fund, Immunizations – Last update: July 2022. New York: UNICEF; 2022 [cited 28 February 2023]. Available from: <https://bit.ly/3c2AEr>.

Geographical expansion of cases of dengue and chikungunya beyond the historical areas of transmission in the Region of the Americas

Source: WHO

Situation at a glance

The increase in the incidence and geographical distribution of arboviral diseases, including chikungunya and dengue, is a major public health problem in the Region of the Americas (1). Dengue accounts for the largest number of cases in the Region, with epidemics occurring every three to five years. Although dengue and chikungunya are endemic in most countries of Central America, South America, and the Caribbean, in the current summer season, increased transmission and expansion of chikungunya cases have been observed beyond historical areas of transmission. Furthermore, 2023 is showing intense dengue transmission. In addition, higher transmission rates are expected in the coming months in the southern hemisphere, due to weather conditions favourable for the proliferation of mosquitoes.

There have been 2.8 million dengue cases reported in the Americas in 2022, which represents over a two-fold increase when compared to the 1.2 million cases reported in 2021. The same increasing trend has been observed for chikungunya, with a high incidence of meningoencephalitis possibly associated to chikungunya reported by Paraguay, which is of further concern. At the regional level, WHO is assessing the risk as high due to the widespread presence of vector mosquitoes, the continued risk of severe disease and even death, and the expansion outside of historical areas of transmission, where all the population, including risk groups and healthcare workers, may not be aware of clinical manifestations of the disease, including severe clinical manifestations; and where populations may be immunologically naïve (2).

Regional overview

In 2022, a total of 3 123 752 cases (suspected and confirmed) of arboviral disease were reported in the Region of the Americas. Of these, 2 809 818 (90%) were dengue cases and 273 685 (9%) were chikungunya cases. This represents a proportional increase of approximately 119% compared to 2021. In 2022, both dengue and chikungunya peaked at epidemiological week (EW) 18 (week commencing 1 May 2022) (3).

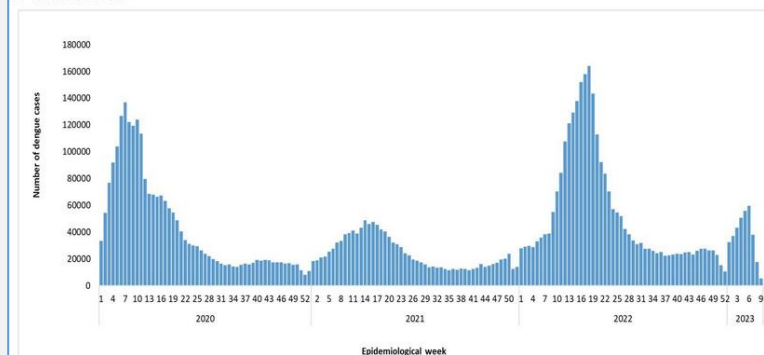
Dengue

Regional overview

In 2022, a total of 2 809 818 cases of dengue, including 1290 deaths, representing a two-fold increase in cases and almost three-fold increase in deaths compared with the cases reported in 2021 (1 269 004 cases, including 437 deaths). During the same period, the highest cumulative incidence of dengue cases was reported in the following countries: Nicaragua with 1455.4 cases per 100 000 population, followed by Brazil with 1104.5 cases per 100 000 population, and Belize with 788.9 cases per 100 000 population (3).

Between 1 January 2023 and 4 March 2023, a total of 342 243 dengue cases including 86 deaths were reported in the Region of the Americas. During the same period, the highest cumulative incidence of dengue cases was reported in Bolivia, with 264.4 cases per 100 000 population, followed by Nicaragua with 196.8 cases per 100 000 population, and Belize with 145.6 cases per 100 000 population (3).

Figure 1. Distribution of suspected dengue cases, by epidemiological Week, Region of the Americas, 1 January 2020 to 4 March 2023.



Source: PAHO/WHO Health Information Platform for the Americas (PLISA per its acronym in Spanish) as provided by Ministries and Institutes of Health of the countries and territories of the Region of the Americas. Washington DC: PAHO.

Chikungunya

Regional overview

Between 1 January and 4 March 2023, a total of 113 447 cases of chikungunya were reported in the Region of the Americas, including 51 deaths, representing a four-fold increase in cases and deaths compared with the same period in 2022 (21 887 cases, including eight deaths). These counts also exceeded the average number of cases for the previous five years for EW1 through EW10. Of the cases reported in the Region, the highest cumulative incidence of chikungunya cases was reported in Paraguay with 1103.4 cases per 100 000 population, followed by Brazil with 14.2 cases per 100 000 population, and Belize with 10.4 cases per 100 000 population. Of the total deaths reported in 2023, all were reported from Paraguay (3).

In 2022, the number of cases exceeded the average for the previous four years (2018-2021), with a total of 273 685 cases including 87 deaths, representing a two-fold increase in cases and seven-fold increase in deaths compared with the cases reported in 2021 (137 025 cases, including 12 deaths). Of the total deaths reported in 2022, all were reported from Brazil (3).

WHO risk assessment

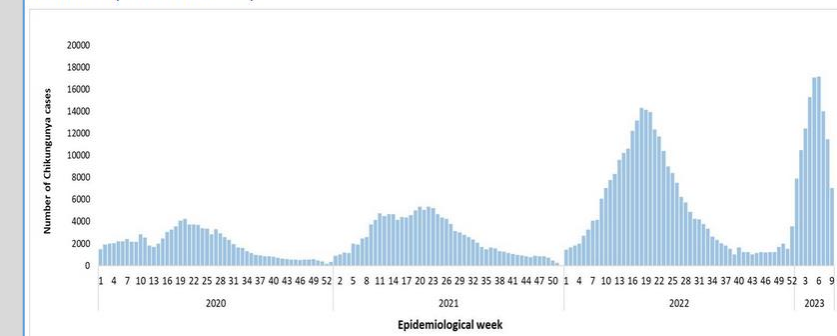
The risk at the regional level is assessed as high, due to the widespread presence of the mosquito vector species (especially *Aedes aegypti*), the continued risk of severe disease and even death, and the expansion outside of historical areas of transmission, where all the population, including risk groups and healthcare workers, may not be aware of warning signs and may be immunologically naïve. Moreover, one country in the Region (Paraguay) is experiencing an unprecedented increase of chikungunya cases, and another country in the Region (Bolivia) is experiencing high incidence of dengue cases.

WHO advice

- Prevention efforts should be highly focused on the surveillance and control of *Aedes* spp. mosquitoes (the most competent vector in the region).
- Early detection of severe disease progression and access to proper medical attention is the key to lowering severity and mortality. Personal protective measures to prevent mosquito bites should be maintained by the communities at workplaces, schools and at homes.
- No specific antiviral treatment exists for chikungunya and dengue. Clinical management is based on supportive care, including fluids and antipyretics.
- Given the incidence of arboviral diseases over the last three years, an increase in arbovirus cases is expected in the first half of 2023 in the southern hemisphere, and may be followed by a high transmission season in the countries located in northern South America, Central America and the Caribbean, given the susceptible populations and increasing temperatures.

Based on the currently available information, WHO does not recommend any travel and/or trade restrictions for countries in the Americas experiencing the current arboviral epidemics.

Figure 2. Chikungunya cases by epidemiological week (EW) of report. Region of the Americas, 1 January 2020- 4 March 2023 (until EW 9 of 2023).



Source: PAHO/WHO Health Information Platform for the Americas (PLISA per its acronym in Spanish) as provided by Ministries and Institutes of Health of the countries and territories of the Region of the Americas. Washington DC: PAHO.

Other Infectious Disease Outbreaks

Marburg Virus Disease - Equatorial Guinea – Follow up

Additional laboratory-confirmed cases of Marburg Virus Disease (MVD) have been reported in the provinces of Litoral and Centre Sur. Four additional cases of MVD have been reported in the large port city of Bata, Litoral province. The US Embassy in Equatorial Guinea states that there are also two suspected cases linked to Evinayong, Centre Sur province. As Bata is a densely populated major port city, these cases are of high concern.

Surveillance Data as of 23-Mar-2023:

- Laboratory-Confirmed: 9 human cases (including 7 death)
- Probable: 24 human cases (including 20 deaths)
- Suspected: 2 human cases

Additional information:

- Equatorial Guinea (EG) healthcare capacity includes an average of 2.1 hospital beds per 1,000 inhabitants (global mean = 2.9 beds per 1,000 inhabitants) and an average of 0.40 doctors per 1,000 population (global mean = 1.50 physicians per 1,000 population).
- Institut Pasteur has confirmed that genetic analysis results indicate the present MVD strain is closely related to the Angola 2004-2005 MVD strain.

Source: [WHO](#)

Marburg Virus Disease – Tanzania

On 16 March 2023, the MoH of the United Republic of Tanzania announced that seven cases and five deaths from an unknown disease had been reported in two villages in Bukoba district, Kagera region, northern Tanzania. The cases were later confirmed as Marburg virus infection by reverse transcriptase-polymerase chain reaction (RT-PCR) at the National Public Health Laboratory, Tanzania. On 21 March 2023, the MoH officially declared the first MVD outbreak in the country. As of 22 March, no cases have been reported from outside the Bukoba district of Kagera Region.

Surveillance Data as of 22-Mar-2023:

Reported: 8 human cases including 5 deaths (which includes the death of one healthcare worker)

Situational Highlight:

- This is the first historical Marburg virus outbreak confirmed in Tanzania
- The country’s public health laboratory confirmed the disease on patient samples that were sent for testing last week
- Three patients are currently receiving treatment in the hospital and 161 contacts have been identified and are being monitored by authorities
- There is a concurrent outbreak of Marburg disease in Equatorial Guinea, a country located on the west coast of Africa, approximately 2,900 km away from Tanzania. The distance between these two outbreaks makes it unlikely that they are linked. However, the driving factors behind these outbreaks may be similar with respect to seasonality and wildlife exposure.

WHO risk assessment

The affected region, Kagera, borders three countries (Uganda to the north, and Rwanda and Burundi to the west) and Lake Victoria, and cross-border population movements may increase the risk of disease spread. In addition, Marburg virus has been isolated from fruit bats (*Rousettus aegyptiacus*) in Tanzania and countries neighboring the affected Kagera region, therefore, the same bat species may carry the virus in this region.

Due to the high CFR and existing risk of spread of the outbreak to other areas of the country, inadequate human, financial and material resources to implement response interventions, and the likelihood of existing capacities being overwhelmed if the cases increase, the risk at the ***national level is assessed as very high.***

Based on the available information, the risk is considered as ***high at the subregional level, moderate at the regional level and low at the global level.***

Source: [WHO](#)

Vaccine-derived Poliomyelitis - Peru

A human case of circulating-vaccine-derived polio type 1 has been confirmed in the Amazon area of the region of Loreto northeast Peru

Situational Highlights:

- On 21-March-2023, the Peru IHR National Focal Point (NFP) notified Pan American Health Organization/ World Health Organization (PAHO/WHO) of a laboratory-confirmed case of cVDPV-1
- The affected is a 16-month-old male child residing in an Indigenous community in the Manseriche district in the Datem del Marañón province of the Loreto department, with no history of vaccination and no travel history before the onset of symptoms
- On 27-December-2022, the child developed fever and 48 hours later developed paralysis in the lower limbs and was admitted to a local hospital
- Fecal samples were collected for testing and sent to the regional reference laboratory, the Oswaldo Cruz Foundation (Fiocruz) in Brazil

Polio Immunization Coverage in Peru

- The minimum WHO-recommended level for polio herd immunity (population coverage) is at least 89%
- In the Manseriche district (where the case was confirmed) there is not only a low immunization rate but there has also been a significant drop in the third dose coverage of polio vaccine that occurred over the last four years; 87.4% in 2018, 96.5% in 2019 decreasing to 66.6% in 2020, 33.8% in 2021, and 43.6% in 2022
- Overall in Peru, polio vaccination coverage at the national level has been below the WHO-recommended threshold over the last four years. Official data shows immunization coverage below 80% in 2019, 71.6% in 2020, and 78.8% in 2021
- Of the 1,874 districts across the country, 840 (45%) have reported coverage with the third dose of polio below 80%

SOURCE: [ProMed](#), [Reliefweb](#)

Vaccine-derived Poliomyelitis - United States – Follow up

On 22-Mar-2023, Rockland County (New York State) reported one new positive poliovirus environmental sample had been collected from wastewater in February 2023. It was not reported whether this sample was genetically linked to the individual case of paralytic polio in Rockland County which was found on 21-Jul-2022. The last positive environmental sample from Rockland County was reported on 21-Oct-2022.

Surveillance data (as of 22-Mar-2023):

- Confirmed: 1 human case (21-Jul-2022) – By Official Source
- Environmental Samples (ES): 101 positive samples (1 new positive on 22-Mar-2023), 94 genetically linked to the confirmed case

Latest Known Measures:

- Wastewater surveillance for polio in New York State will continue within key locations until further notice
- New York State wastewater surveillance includes both proactive sampling as well as the collecting and testing of retrospective samples when available
- The New York Department of Health continues to encourage the population to stay up to date with their polio immunizations, especially those who reside in the Rockland, Orange, and Sullivan Counties

Source: [DepartmentOfHealth NYS](#)

Other Infectious Disease Outbreaks due to climate change



Dengue - United States

Locally-acquired cases of dengue virus (DENV) infection have been confirmed for the first time in Maricopa County, in the state of Arizona, USA.

Background information

1. DENV outbreaks occasionally occur in the continental USA
2. Historically, the majority of DENV cases have been reported among returning travellers from endemic areas across the 48 states of the continental USA
3. Locally-acquired cases of DENV in the USA have been reported in Maricopa County, Arizona.
4. Many areas in the United States have mosquito species that can become infected with and spread Zika, chikungunya, and dengue viruses.
5. Recent outbreaks in the United States of chikungunya and dengue, which are spread by mosquito species, have been relatively small and limited to small areas:
 - Laredo, Texas, 1999
 - Hawaii 2001-2002, and 2015 (outbreak) and cases reported since then
 - Brownsville, Texas, 2005
 - Florida 2013-2020 (outbreak) and cases reported since then

Epidemiology

- The first patient had travelled to Mexicali, Mexico where DENV is endemic, though DENV-3 is not known to be circulating in this region.
- Maricopa County Environmental Services Department conducted retrospective testing for DENV in samples collected from 21 mosquito pools located within 5 miles (8 km) of the case residence from 1 October to 3 November 2022, A sample collected from one mosquito pool (pool A) on 5-October-2022 was positive for DENV-3.
- Thus, local DENV transmission is suggested given that DENV-3 is not known to be circulating in the case's region of travel, but was identified in the case along with a positive sample from the mosquito pool A through whole genome sequencing by CDC's Dengue branch.
- One additional human case was reported based on a positive result in serum enzyme immunoassays of 53 blood samples taken from other individuals in the area who had DENV-like symptoms. This second case had not travelled in the two weeks before symptom onset.

Source: [Johns Hopkins](#)

Babesiosis - United States

Babesiosis, an emerging zoonotic tick-borne parasitic disease in the US which is primarily endemic in the Northeast and Midwest states, has shown increased incidence between 2011 and 2019 according to data from US CDC. Furthermore, these data also show that three states (Maine, New Hampshire, and Vermont) that were not considered previously endemic to babesiosis had a significantly increased incidence of infection similar in magnitude to previously known endemic areas.

Surveillance Data:

- Between 2011–2019, a total of 16,456 cases of babesiosis were reported to US CDC across 37 states
- New York reported the largest number of cases (4,738 total; average = 526.4 per year), followed by Massachusetts (4,136; 459.6), and Connecticut (2,200; 244.4)
- The three states with the highest reported incidences were Rhode Island (18.0 per 100,000 population in 2015), Maine (10.3 in 2019), and Massachusetts (9.1 in 2019)

Highlights:

1. Data from US CDC indicates that there has been an overall 25% increase across different tickborne diseases (i.e. Lyme disease, anaplasmosis, ehrlichiosis, and spotted fever rickettsiosis) in the USA between 2011 and 2019 (reported cases: 40,795 in 2011 to 50,856 in 2019)
2. US CDC assessed babesiosis trends in 10 states between 2011 and 2019 with the following findings:
 - The reported number of cases increased significantly in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. Specifically:
 - Vermont: from 2 to 34 cases (1,602% increase)
 - Maine: from 9 to 138 cases (1,422% increase)
 - New Hampshire: from 13 to 78 cases (372% increase)
 - Connecticut: from 74 to 328 cases (338% increase)
 - Three states (Maine, New Hampshire, and Vermont) that were previously not considered to have endemic babesiosis had a significant increase in reported case counts similar to or higher than those in the seven states with the known endemic transmission. However, historical incidence information is not available as these states were not included in endemic surveillance.

Source: [ProMed](#), [NewsMedia](#)

Dengue - Argentina

News media reports that due to the high percent positivity of dengue fever tests and to reduce strain on medical laboratories in the Mataderos barrio located in the City of Buenos Aires, the Buenos Aires Ministry of Health has modified the epidemiological criteria for diagnosis of the disease.

Going forward individuals who present to medical facilities with clinical dengue-like symptoms and are in mild condition will not have a lab-diagnostic test performed. Instead, they will be considered dengue-positive based on their symptoms and will be called back for follow-up within 48-72 hours. It is reported that one in 20 patients in Mataderos who have severe symptoms and are in a high-risk category will have their sample analyzed for serotype.

It is unclear how the change in testing may affect case counts. Although a spike in test positivity may occur, there may also be a relative decline in confirmed cases and an increase in probable and suspected cases observed due to a reduction in the volume of tests and prioritization of the most severe clinical presentations. It is likely the number of cases and deaths is already an under-representation of the true extent of the outbreak. Further under-representation will likely occur due to the absence of laboratory tests to confirm or rule out a dengue virus infection and individuals with mild symptoms who do not seek medical attention.

In addition, the change will add to uncertainties on the true clinical diagnosis and also decreases the likelihood of detecting and providing timely treatment for other dengue-like infections (such as chikungunya and Zika) or any disease with similar symptoms, such as influenza. Commune Nine (comprised of Mataderos, Liniers, and Parque Avellaneda barrios) in the southwestern corner of the City of Buenos Aires, has contributed 42% of the positive dengue cases reported from the city since July 2022.

Source: [BlueDot](#)

Other Infectious Disease Outbreaks/ Conflicts/Disaster



Earthquake - AFGHANISTAN/PAKISTAN

A 6.5-magnitude earthquake struck the border of Pakistan and Afghanistan on 21 March, killing at least 19 people and injuring 200. While the epicentre was in the Hindu Kush mountains, tremors were felt as far away as India and at least one building in Islamabad was evacuated after cracks appeared. Still small magnitudes occur until today.

The earthquake comes less than a year after a deadly quake hit Afghanistan's east in June 2022, killing more than 1,000 people and wounding many more, exacerbating an already dire humanitarian crisis in the country.

Additionally, despite the worsening economic and humanitarian situation in Afghanistan, the Pakistani government is intensifying its crackdown on Afghan refugees, adding a string of new movement restrictions on top of a wave of detentions and deportations.

Source: [NewsMedia](#), [Earthquake Hazards Program](#), [The New Humanitarian](#)

Cyclone Freddy - Malawi

The death toll from last week's tropical cyclone Freddy has risen to 507. The record-breaking storm displaced more than 550,000 people, and 543 camps have been set up to accommodate them.

The impact of Freddy is also being felt in rising food prices: The staple crop, maize, is 300% higher than last year due to the inaccessibility of markets. Damage has also been done to this season's harvest, deepening the poverty of subsistence farmers in the country's southern regions, hit in recent years by successive climate-related disasters.

HIGHLIGHTS

- Cyclone Freddy has significantly impacted livelihoods, with over 194,500 livestock dead and nearly 91,000 injured, while over 204,800 hectares of land have been submerged or washed away.
- Despite a decrease in cases in recent weeks, the cholera outbreak in Malawi is currently the biggest in Africa and the passage of Cyclone Freddy is posing renewed risks, according to WHO.
- The Government has announced the resumption of physical classes in some schools on 27 March, while 426 schools are still hosting displaced people.
- With many areas remaining cut-off by road, a World Food Programme (WFP) helicopter is arriving today, 25 March, and will begin operating to increase delivery of relief items to hard-to-reach locations. The Government is also undertaking road repairs to increase accessibility.

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

Iatrogenic Botulism- European Region - Türkiye

On 7 March 2023, the National IHR Focal Point (NFP) for Germany notified WHO of five cases of iatrogenic botulism in individuals who underwent medical procedures with the injection of botulinum neurotoxin type A (BoNT/A) in health institutions in Türkiye. As of 17 March 2023, a total of 71 cases were reported in four countries in the European Region, mainly linked to two hospitals in different locations in Türkiye. No fatalities have been reported so far. No new symptomatic cases have been reported since 8 March 2023.

The products used for the treatment were seized and taken for examination and evaluation by the Turkish Medicines and Medical Devices Agency. The agency evaluated that the products used and found was approved, but was deemed to have been used in a manner other than its indicated purpose for gastric botulinum toxin treatment (off-label use). Consequently, the relevant departments of both hospitals have had their activities suspended, and investigations are ongoing against the parties involved.

Outbreaks of botulism are very rare and can be associated with a natural, accidental, or potentially deliberate source of infection.

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

Measles – South Africa

Sporadic cases of measles were reported in South Africa throughout 2022. In epidemiological week 40 in 2022 (ending 8 October 2022) an outbreak was declared in Limpopo province. As of 16 March 2023, confirmed cases have been reported from all provinces; eight out of nine South African provinces have declared measles outbreaks ([1](#)). No deaths associated with measles have been recorded. Most cases (86%) are reported among those aged under 14 years.

Community-based surveillance has been strengthened and the Ministry of Health (MoH) is conducting a mass measles vaccination campaign targeting children aged between 6 months and 15 years in all provinces.

[WHO assesses the risk](#) posed by the current outbreak as **high at the national level, moderate at the regional level and low at the global level**.

Source: [WHO](#)

Measles – Austria

The Austrian Agency for Health and Food Safety (AGES) reported an outbreak of measles with a total of 89 confirmed cases in 2023. Compared with the national report from 3 March 2023 (ECDC CDTR week 10), there was an increase of 55 cases based on data as of 21 March. The outbreak is mostly localised to the region of Styria, where 80 (of 89) cases were reported as of week 11, and the first case was reported in week four of 2023. Cases have also been reported from Upper Austria (5), Vienna (3), and Carinthia (1). The age distribution and vaccination status of the cases have not been provided by the health authority. Media reports some of the cases are children. Austrian authorities are encouraging full vaccination according to the national immunisation program. The measles vaccination coverage in Austria was 94–95% for the first dose and 84–88% for the second dose in 2018–2021.

In the EU/EEA in January 2023, a total of nine cases of measles were reported in six EU/EEA countries, 127 and 57 cases in 2022 and 2021, respectively.

ECDC assessment:

The outbreak in Austria is the first significant outbreak of measles reported in the EU/EEA since the start of the COVID-19 pandemic. Between March 2020 and January 2023, only sporadic cases or very small clusters of cases were reported across the EU/EEA. Aside from the outbreak in Austria, **measles activity in the EU/EEA currently remains low**.

The risk for the **general population is considered low**, however outbreaks of measles can occur in populations with suboptimal levels of population immunity.

Source: [ECDC](#)

Influenza Europe; Weeks 11/2023 (13 March – 19 March 2023)

- The percentage of all sentinel primary care specimens from patients presenting with ILI or ARI symptoms that tested positive for an influenza virus remained stable at 25% in week 11/2023 and remaining above the epidemic threshold (10%).
- 16 of 37 countries or areas reported medium intensity and 18 of 36 countries reported widespread activity indicating substantial seasonal influenza virus circulation across the Region.
- Of the 21 countries that reported sentinel primary care specimen influenza virus positivity above the 10% epidemic threshold, only Hungary and the Netherlands reported activity above 40%.
- Influenza type A and type B viruses were detected in sentinel and non-sentinel surveillance, with influenza type B predominating in both systems.
- Hospitalized patients with confirmed influenza virus infection were reported from ICU (with higher proportions of type B viruses), other wards (1 type A and 1 type B virus) and SARI surveillance (with higher proportions of type B viruses). Four countries or areas reported influenza virus positivity rates above 10% in SARI surveillance.

Source: [Flu News Europe](#)

Other Infectious Disease Outbreaks



Unknown Hemorrhagic Fever - Burundi

SUBLOCATIONS AFFECTED: Kirundo Province (Ntega), Muyinga Province

NOTABLE EVENT DESCRIPTION:

Local media reports are raising concerns over an unknown hemorrhagic illness that has been affecting individuals across different communities of at least two different provinces within Burundi, nearby areas to the Kagera region in northwestern Tanzania where there is an ongoing outbreak of Marburg virus.

Symptoms among the affected individuals:

Abdominal pain, nasal bleeding, headache, high fever, vomiting, and dizziness.

Surveillance Data as of 28 March 2023:

1. Kirundo province, northern Burundi:

1.1. Gitobe commune: three individuals have died over the last three days. According to media reports, all the affected died within 24 hours of the onset of the symptoms, and all the cases are from the same location: Migwa Hill, in the Baziro area. Health authorities have sent samples for laboratory testing and results are being awaited from the INSP (National Institute of Public Health) to identify the cause of the deaths.

1.2. Ntega commune: an unspecified number of individuals presented with similar symptoms to a local hospital on the evening of 24 March 2023. There are limited details on these individuals.

1.3. Giteranyi commune: A student from the Kobero Basic School died on 22 March 2023. There are no further details provided.

2. Butihinda commune in Muyinga province, northeastern Burundi:

According to media reports, at least two women were admitted to a local hospital, namely the Migwa Health Centre in the Gashoho health district. Media reports indicate that the local Ministry of Health preliminary results have tested negative for both Ebola and Marburg viruses.

Source: [Flu Tracker](#)

Additional context:

While this event is relatively poorly described and is occurring a large distance away, while we await confirmation of the likely cause(s), there are other ongoing high-concern hemorrhagic disease outbreaks in the African continent that may be linked:

Marburg in Tanzania:

- Outbreak declared on 21 March 2023.
- The present affected region of Kagera within Tanzania is a mixed urban/rural agricultural region with a population of almost 3 million, located west of Lake Victoria and in proximity to borders with Burundi. Further, it is also known that the domestic airport in Bukoba serves Mwanza, Tanzania, which is also connected to Burundi among other national and international locations.
- The estimated distance between the Kagera region, Tanzania, and the Gitobe commune in Burundi is approximately 262.5 km.

Marburg in Equatorial Guinea:

- Outbreak declared on 13 February 2023.
- Equatorial Guinea is located on the west coast of Africa and is approximately 2,253 km away from Burundi, which is located in the Great Rift Valley at the junction between the African Great Lakes region and East Africa.

Lastly, It is unknown whether the authorities have tested patient samples for other viral hemorrhagic fevers such as Crimean-Congo hemorrhagic fever, Ebola virus disease, Lassa fever, Rift Valley fever, malaria, and yellow fever.

This event is considered this event of **high concern at the local and regional levels**, remaining **lower at the global level**, for the following reasons:

1. Given the high connectivity with neighbouring countries experiencing Marburg virus outbreaks and compatible symptoms among individuals in Burundi, Marburg remains a potential cause of the cases in Burundi and a high concern for the risk of human-to-human transmission.
2. Given the number of individuals with symptoms across different locations and the lack of information regarding potential epidemiological links between them, this could represent a larger than what is being reported.
3. If Marburg virus is confirmed as the cause of this disease event and is linked to another ongoing outbreak, the large geographical distribution of Marburg cases across Africa will pose greater challenges for containment.
4. Burundi is one of the most severely under-resourced African countries and has a heavy burden of communicable, maternal, neonatal, nutritional, and non-communicable diseases. Many Burundians do not have access to primary healthcare.
5. The availability of healthcare workers is a key factor limiting healthcare services in Burundi, and the ratios of nurses and doctors per inhabitant fall well below WHO standards: 1 nurse for every 1,380 inhabitants (WHO standard: 1 nurse per 3,000 inhabitants), and 0.6 doctors per 10,000 inhabitants (WHO standard: 1 doctor per 10,000 inhabitants). Lack of access to healthcare negatively influences the detection and reporting of disease in the region, and the ability to contain outbreaks.

