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Home / Disease Outbreak News / Item / Cholera – Global situation

Cholera – Global situation

Countries 🗸

العربية		中文	Français	Русский	
Español					

11 February 2023

Global overview

Current Situation

Since the first disease outbreak news on the global cholera situation was published on 16 December 2022, the global situation has further deteriorated with additional countries reporting cases and outbreaks.

Since mid-2021, the world is facing an acute upsurge of the 7th cholera pandemic characterized by the number, size and concurrence of multiple outbreaks, the spread to areas free of cholera for decades and alarming high mortality rates.

In 2021, 23 countries reported cholera outbreaks, mainly in the WHO Regions of Africa and the Eastern Mediterranean. This trend continued into 2022 as 30 countries across five of the six WHO regions reported cholera cases or outbreaks. Among those, 14 had not reported cholera in 2021, including non-endemic countries (Lebanon and Syria)^{i,ii} or countries that had not reported cases over three years (Haiti and the Dominican Republic), while most of the remaining countries reported higher case numbers and case fatality ratios (CFR) than in previous years.

As of 1 February 2023, at least 18 countries continue to report cholera cases (Table 1 A & B). As according to the seasonality patterns large parts of the world are in currently in low or interepidemic transmission period this number could increase in the months to come.

The mortality associated to those outbreaks is of particular concern as many countries reported higher CFR than in previous years. The average cholera CFR reported globally in 2021 was 1.9% (2.9% in Africa), a significant increase above acceptable (<1%) and the highest recorded in over a decade. Preliminary data suggests similar trend for 2022 and 2023.

The potential drivers of the outbreaks and challenges impacting response activities were highlighted in the last Disease Outbreak News. The simultaneous progression of several cholera outbreaks, compounded in countries facing complex humanitarian crises with fragile health systems and aggravated by climate change, poses challenges to outbreak response and risks further spreading to other countries.

The overall capacity to respond to the multiple and simultaneous outbreaks continues to be strained due to the global lack of resources, including the oral cholera vaccine, as well as overstretched public health and medical personnel, who are dealing with multiple disease outbreaks at the same time.

Based on the current situation, including the increasing number of outbreaks and their geographic expansion, as well as a lack of vaccines and other resources, WHO assesses the risk at the global level as very high.

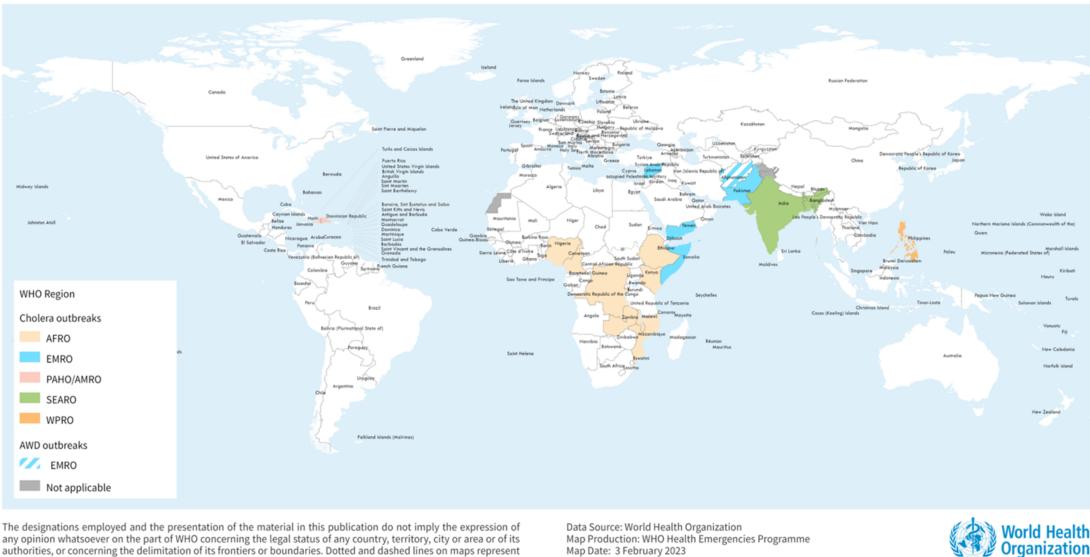
Epidemiology

Cholera is an acute diarrheal infection. When severe, it is characterized by extreme watery diarrhoea and potentially fatal dehydration. It is caused by the ingestion of food or water contaminated with the bacterium *Vibrio cholerae*. It has a short incubation period, ranging between twelve hours and five days. Most people will develop no or mild to moderate symptoms; about 20% of ill persons develop acute watery diarrhoea with severe dehydration and are at risk of death. Despite being easily treatable with rehydration solution, cholera remains a global health threat due to its high morbidity and mortality in vulnerable populations without access to adequate health care.

Seven distinct pandemics of cholera have been recorded over the past two centuries. The seventh pandemic, which is still going on now, is considered to have started in 1961. During the first two decades, following (re)introduction, many countries transitioned to becoming cholera-endemic. While global incidence greatly decreased in the late 1990s, cholera remains prevalent in parts of Africa and Asia.

The global burden of cholera is largely unknown because the majority of cases are not reported, however, previous studies estimate 2.9 million cases, and 95 000 deaths occur annually.

Figure-1: Global situation of active epidemics of cholera and acute watery diarrhoea as of 1 February 2023

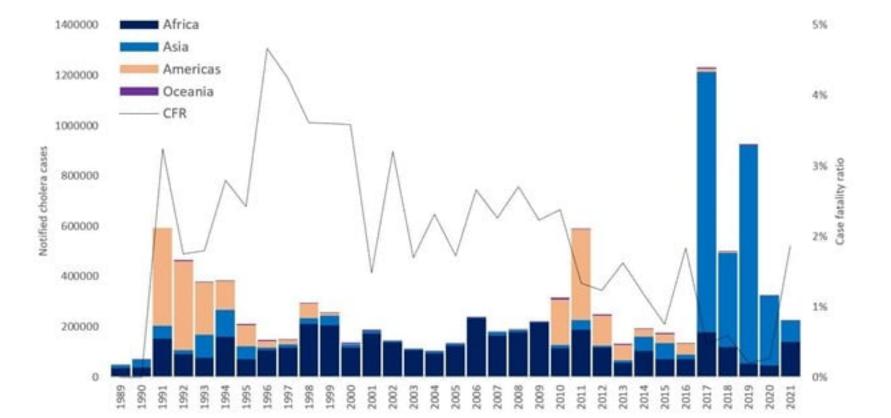


authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

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Note: Countries in white are not reporting ongoing cholera outbreaks as of 1 February 2023.

Figure-2: Cholera cases* reported to WHO by year and continent, global CFR, 1989-2021**



* In 2017 and 2019, Yemen accounted for 84% and 93% of all cholera cases respectively (Weekly Epidemiological Report 2018, 2020).

**The data for 2022 is not included in the epidemic curve due to (i) incompleteness (ii) provisional estimates. Official reporting of case counts per country to WHO is expected at the end of the year and remains to be consolidated for the annual report.

To note: data on cholera are often incomplete and underreporting is common. Several countries do not have reporting systems for cholera. This is why complete lists of countries with outbreaks, and accurate case and death counts cannot be provided.

Regional overview

In the table below, countries under monitoring are described. These include countries with active outbreaks of cholera and those which reported outbreaks in 2022. Other factors including the length of the outbreak, the size of vulnerable populations, and the overall contextual challenges are also taken into consideration.

WHO Region of Africa: The ongoing conflict in the province of North Kivu in the Democratic Republic of the Congo (DRC) led to an increased influx of internally displaced people (IDPs) to camps close to Goma, during the last months of 2022. The lack of access to water and sanitation in the camps fueled the ongoing cholera outbreak. Additionally, the rainy season is worsening the cholera situation in other eastern provinces, increasing the risk of regional spread. Burundi recently declared a cholera outbreak in the city of Bujumbura, along the shores of Lake Tanganyika and near the border with the province of South Kivu in DRC. While the number of reported cases in some countries with widespread outbreaks in 2022, such as Cameroon and Nigeria, is currently declining, the situation in Malawi continues to deteriorate in early 2023 as it reports over 600 new cases per day. The country is experiencing its deadliest cholera outbreak in history with a continually high CFR (>3%) since March 2022. In addition, neighbouring Mozambique has registered a sharp increase in cases and alerts since mid-December 2022, with cases reported from five provinces, including provinces bordering Malawi.

On 26 January 2023, Zambia notified WHO of a cholera outbreak in the Eastern province bordering Malawi and Mozambique. There remains a high risk of spread to other countries in the region, including Tanzania and Zimbabwe. Additionally, three countries in the Horn of Africa (Ethiopia, Kenya, and Somalia in the Eastern Mediterranean Region) are reporting ongoing cholera outbreaks. The continued drought is driving population movements which increase the risk of spread of cholera, and high levels of malnutrition, which increase the risk of severe outcomes of cholera in the region. There are multiple graded emergencies and stretched resource and human capacity due to other public health emergencies (COVID-19, mpox, malnutrition). Many affected areas are highly insecure and there is limited access to the population, which has limited access to healthcare. Climate change is leading to drought in some areas in Africa, and floods in others, resulting in increased population displacement and reduced access to clean water. High CFRs were reported from multiple outbreaks. There is high risk of regional spread in both Southern Africa with the rainy/cyclone season approaching and in the Lake Chad basin where there is limited response capacity due to insecurity.

WHO Region of the Americas: The situation in Haiti's Ouest Department (which includes the metropolitan area of Port-au-Prince) is stabilizing. The department reported a third of the confirmed cases reported during the October-November 2022 peak. However, the outbreak is not yet under control and suspected and confirmed cases of cholera continue to be reported in all ten departments of the country. In addition, imported cases and limited local transmission are being reported from Santo Domingo, the capital of neighbouring Dominican Republic.

The mobility of the local population – although restricted because of the severe insecurity in the country and lack of fuel – represents a continued risk of national and international spread. Additional exportations from Haiti to other countries and territories in the Region of the Americas are possible. According to the 2 December 2022 AMRO rapid risk assessment the risk in Hispaniola is evaluated as Very High and the regional risk is assessed as Moderate. Efforts are ongoing to improve surveillance and laboratory capacity in the region. A cholera vaccination campaign is underway on Hispaniola Island.

WHO Eastern Mediterranean Region: Weak surveillance systems (e.g. sentinel, hospital-based surveillance) in many countries of the region make the interpretation of data challenging. The region is characterized by stretched staff capacity due to complex humanitarian crises, and emigration of trained staff. The outbreaks in the region are spreading, with population movement exacerbated by conflict, climate change, droughts, and flooding. In 2022, the first cholera outbreak in over 10 years was reported in Lebanon and Syria, while Pakistan recorded its largest outbreak in decades. Cases in Afghanistan, Lebanon, Pakistan and Somalia are currently declining, and other countries in the region which reported outbreaks in 2022, such as Iraq and IR Iran, remain under monitoring. The widespread outbreak continues in parts of Syrian Arab Republic, and risk of further spread to other countries in the region and beyond persist.

WHO European Region: Cholera is not endemic in the WHO European Region. Current robust public health systems, including access to adequate hygiene and sanitation standards at community and healthcare facilities coupled with surveillance and response capacities, lower the risk of further transmission following importation. However, countries bordering Syria and Lebanon, where large ongoing outbreaks are reported, may have a heightened risk of introduction and onward transmission in particular settings e.g., amongst refugee and displaced persons (Türkiye). A heightened risk of cholera outbreaks in Türkiye should be anticipated given the recent large earthquake that struck the southern and central parts of the country on 6 February 2023, and has had a devastating impact on infrastructure. In addition, in November 2022, Israel reported to WHO the detection of toxigenic *Vibrio cholerae* O1 in environmental samples from the Yarmuch stream upon its entry into Israel. Israel has taken substantive proactive measures to prevent cholera introduction and transmission and, as a result, the overall risk is considered low. The ongoing war in Ukraine stands to further worsen environmental and sanitary conditions and weaken health infrastructure in this area, however, cholera occurrence is of lower risk during winter months.

In November of 2022, WHO European Region IHR invited Member States to report any imported or autochthonous case of cholera on an ad hoc basis to support global outbreak monitoring. As of 27 December 2022, 28 cases of cholera have been reported to WHO by eight European Region Member States, of which 24 were linked with travel to cholera-affected countries.

WHO South-East Asia Region: The expected post-monsoon peak in 2022 was not apparent. Low-level transmission continues in Cox's Bazaar in Bangladesh in 2023, particularly among Forcibly Displaced Myanmar Nationals (FDMN). Both India and Nepal, which reported outbreaks in 2022, remain under monitoring. There is limited surveillance (often sentinel-based) and low reporting. There is continued risk of export to other regions.

WHO Western Pacific Region: In the Philippines, recurrent cholera outbreaks were reported in 2022 with a cumulative number of recorded cases three times higher than in 2021. While countries of the region have overall good control capacity, there is inadequate monitoring of drinking water quality.

 Table 1A & B. Summary of reported ongoing cholera outbreaks as of January 2023

WHO Region	Countries under monitoring	Context					
WHO Region of Africa	Burundi	Between December 2022 and 29 January 2023, Burundi has reported 105 cases and one death (CFR 1%) in five districts. Most affected is the city of Bujumbura, located on Lake Tanganyika and bordering the Democratic Republic of the Congo's South Kivu province, which is also reporting an ongoing and worsening outbreak. In the past, small outbreaks have occurred in Burundi and have been controlled rapidly, but there remains a risk of spread in the country and region.					
Cameroon		The outbreak has been ongoing for more than one year and has affected all eight provinces in 2022, including the highly insecure Far North, with several vulnerable IDP camps. As of 29 January 2023, a total of 15 175 cases and 302 deaths (CFR 2.0%) have been reported since the beginning of the outbreak in October 2021. Multiple rounds of OCV have been deployed in 2022 and case numbers are declining since the end of 2022, with currently only a small number of cases being reported from two provinces. The fourth OCV campaign is in preparation.					
	Democratic Republic of the Congo	The Democratic Republic of the Congo reported 18 403 cases and 302 deaths (1.6%) across 26 provinces in 2022. There was an increase in cases in endemic provinces, especially in the East, following the usual seasonal pattern of an increase during the rainy season. Spread to non-endemic, remote areas with low response capacity and high CFR had also been observed. The conflict between government forces and the M23 group led to increased displacement and the arrival of a large number of IDPs in North Kivu camps, close to Goma. A cholera outbreak with 4104 cases and 16 deaths (CFR 0.4%) reported as of 27 January 2023, has been ongoing in North Kivu since December 2022. An OCV campaign reaching IDPs as well as the host population in the affected health zones was conducted in January 2023.					
	Ethiopia	Recurrent outbreaks have been reported. Recent outbreaks have been reported in Oromia and Somali regions, near the border with Somalia. From 17 September 2022 to 23 January 2023, 1036 cases with 28 deaths (CFR 2.7%) have been registered. An OCV campaign was conducted in January 2023, but there is a risk of low effectiveness due to population movement in the area, as observed in the past. Conflict, the impact of drought and increased risk of food insecurity in the area are other fueling factors. There is also a continued risk of spread in the Horn of Africa.					
	Kenya	Since October 2022, the outbreak has spread rapidly in 15 counties, including Nairobi, where a high CFR (>5%) was recorded in the beginning of the outbreak. The outbreak remains active in nine counties as of 29 of January 2023 with 4391 cases and 82 deaths (CFR 31.9%). Garissa, Nairobi, Tana River, and Kiambu counties are currently the most affected. Most of the cases in Garissa County, which is bordering Somalia, have been reported from the three large refugee camps in Dadaab sub-county (Dagahaley, Ifo and Hagadera) and host communities. The situation is also exacerbated by an ongoing drought that is pushing pastoralist communities to other counties within Kenya, but also to other countries like Somalia, South Sudan, Uganda, Ethiopia and Tanzania to get pasture for their livestock as well as improved access to humanitarian services. Population movement between Kenya and Somalia is increasing the risk for spread. An OCV campaign targeting four districts is in preparation for the beginning of February.					
Malawi Mozamb	Malawi	The largest outbreak in Malawi's history continues since March 2022. As of 29 of January 2023, 33 608 cases and 1093 deaths (CFR 3.3%) have been reported from all 29 districts. The national scope with continued high CFR, especially in urban settings, remains of great concern and is a challenge for response and outbreak control. Many of the currently affected districts had not reported cases for many years. Reports and continued risk of a spread between Malawi and Mozambique, including to Tanzania, Zambia, and Zimbabwe. The current rainy/cyclone season (November through May) is posing a further risk in the region.					
	Mozambique	There was an increase in cases reported towards the end of 2022, which continued in 2023, with five provinces affected, and 2256 cases and 19 deaths (CFR 0.8 %) reported as of 26 of January 2023. Additional reports of cases of acute watery diarrhea with positive test results from cholera Rapid Diagnostic Test (RDT) were reported from several additional districts, including the capital of Maputo ar insecure province of Cabo Delgado. Several affected provinces are bordering Malawi, including the most-affected Niassa province, where the outbreak has been ongoing since September 2022. Several have a probable epidemiological link to the Malawi outbreak and there is the risk of a continued spread in the region. The risk is heightened by the ongoing rainy/cyclone season (November through Marguest for OCV has been approved by the International Coordinating Group (ICG) and a campaign is in preparation.					
	Nigeria	A large-scale outbreak with 20 768 cases, 489 deaths (CFR 2.4%) was reported in 2022, amidst a severe humanitarian crisis in the Northeast leading to a high proportion of IDPs sheltered in crowded conditions, inadequate hygiene, and sanitation in the IDP sites and host communities, open defecation in most of the cholera affected areas. Additionally, severe floods affected the majority of states in 2022. Cases declined towards the end of 2022. Issues with timelines of follow-up due to only monthly reports. Upcoming elections in 2023 pose a further risk for violence in the country, potentially leading to displacement and hampering the response to outbreaks. The importation of cases into neighbouring Niger has been documented in 2022. There is a risk for spread to Cameroon.					
	Zambia	On 26 January 2023, Zambia notified WHO of a cholera outbreak in its eastern province bordering Malawi and Mozambique. One of the cases reported in Vubwi district had history of travel to Mozambique. As of 30 January 2023, 21 suspected cases with 10 confirmed and one death have been recorded in the country.					

 WHO Region
 Countries under monitoring

 WHO Region of the Americas
 Haiti^{1,2}



Since the re-emergence of cholera cases in early October 2022, as of 30 January 2023, a total of 27 434 suspect cases and 560 deaths (CFR 2.0%) have been reported in all 10 departments of the country. The

Public health response

WHO is working with partners at global, regional & country level to support Member States in the following cholera outbreak response activities:

Coordination

- Cholera headquarter Incident Management System Team (IMST) has been established.
- The multi-region cholera event was graded at the global level as a grade 3 emergency, the highest grade, on 26 January 2023.
- Providing a forum for technical expertise exchange through the Global Task Force on Cholera Control (GTFCC) coordination, and cooperation on cholera-related activities to strengthen the country's capacity to prevent and control cholera.
- Providing technical support to all ongoing outbreaks (laboratory, case management, OCV, IPC, WASH).
- Collaborating with key partners (UNICEF, MSF) to coordinate supply and optimal access to supplies.
- Leveraging resources to support global monitoring of the cholera pandemic, provide technical support to countries, enhance data collection and reporting, strengthen advocacy, and provide medical and non-medical
- items to countries in need, especially for case management and diagnosis.Supporting the deployment of experts through Global Outbreak Alert and Response Network (GOARN), and
- Standby Partners.
- Risk communication and community engagement partners activated through the Collective Service.
- Conducting advocacy and resource mobilization activities to support cholera prevention and control at national, regional, and global levels.

Surveillance

• Strengthening surveillance including strengthening diagnostic algorithms, use of rapid diagnostic tests, collecting and transporting of samples, and strengthening laboratory capacity to culture *V. cholerae*.

Vaccination

- Providing guidance to identify target populations for vaccination and requesting vaccine through the ICG mechanism, in the context of acutely limited supply.
- Supporting advocacy to increase OCV production and engage new vaccine manufacturers.
- Working with countries to identify the areas/hotspots where vaccination is most needed.³

Case management

- Strengthening access and improving care quality for patients by setting-up dedicated healthcare facilities (Cholera Treatment Centers (CTCs) and Cholera Treatment Units (CTUs)) which provide: 1) high quality triage; 2) focused and protocolized clinical management; 3) identification and management of complications. This requires a skilled workforce and clear clinical pathways, ensured through training for health workers and provision of technical guidance. Communities also need to be engaged to ensure rapid hydration support to people with suspected cholera and rapid care seeking behaviour.
- Embedding Oral Rehydration Points (ORPs) into the response to provide early intervention, which reduces the risk of severe disease and improves the referral processes when hospitalization is required.
- Harmonizing clinical data collection, reporting, and enabling quality improvement and audit through case report forms and common documentation

Infection Prevention and Control (IPC)

• Supporting countries to assess and implement safety and quality of care focused interventions in health facilities to reduce risk of health care associated cholera infections

Risk communication and community engagement (RCCE)

- Working closely with communities, Member States and partners to establish RCCE coordination mechanisms embedded within the broader outbreak response, mapping partners, identifying at risk communities and trusted channels/influencers, (especially WASH interventions, case management, vaccination campaigns and community based surveillance).
- Providing support to maintain and build trust and manage risk perception and knowledge among communities about the disease, its symptoms, associated risks, precautions to take, and when to ensure adequate hydration and seek treatment when symptoms appear.
- Collecting, analysing and using social and behavioural data should be to inform the outbreak response to understand behavioural drivers of transmission, effective interventions and knowledge, attitudes and practices over time.

Water, Sanitation, and Hygiene (WASH)

- Working closely with communities, Member States and partners to strengthen water, hygiene, and sanitation
- systems through multi-sectoral mechanisms, including IPC and guidance on drinking-water quality surveillance.
 Supporting countries for the implementation of effective cholera control strategies and monitoring of progress.
- Supporting communities to advocate for, plan and implement sustainable WASH interventions to reduce the risk of cholera outbreaks and support response efforts.

Operations, Support, and Logistics (OSL)

• Working closely with suppliers to secure Cholera Kits, sourcing other WASH supplies, and establishing a pipeline for bulk items.

WHO risk assessment

The risk of cholera is not equally distributed between regions, countries or within countries. The risk of cholera increases with decreasing access to clean water and sanitation.

However, there are a number of outbreaks occurring simultaneously across all six WHO regions (the African Region, the Region of the Americas, the Eastern Mediterranean Region, the European Region,ⁱⁱⁱ the South-East Asia Region,^{iv} the Western Pacific Region), which are straining the overall epidemic response capacity. Protracted cholera outbreaks are exhausting public health response personnel and depleting global and local resources.

Several countries including Cameroon, Ethiopia, Haiti, Lebanon, Nigeria (north-east of the country), Pakistan, Somalia, Syria and the Democratic Republic of Congo (eastern part of the country) are in the midst of complex humanitarian crises with fragile health systems, inadequate access to clean water and sanitation and have insufficient capacity to respond to the outbreaks. Climate change and a lack of development are also contributing to outbreaks.

In addition, many affected countries have highly mobile populations that may spread cholera to neighbouring countries (e.g. high risk of spread between Malawi and Mozambique, and to Tanzania, Zambia and Zimbabwe; the surge in cases in DRC's North and South Kivu provinces increases the risk for spread to Burundi, Rwanda, Uganda;

in Somalia, the uncontrolled cross-border movement of people, including refugees/asylum seekers with neighbouring countries especially Ethiopia, Kenya, Djibouti and Yemen; heavy population movement between Pakistan-Afghanistan, Iraq-Iran; the outbreak from Syria has spread to Lebanon with a continued risk of spread into Jordan). There is also a risk of spreading to currently unaffected areas by international travel to countries such as Sierra Leone and Liberia, which are at high risk for cholera outbreaks. After at least 10 reported imported cases from Haiti between October 2022 and January 2023, the neighbouring Dominican Republic continues to report cases linked to local transmission in 2023. There is the risk of further spread in the Americas. Cross-border population movements and increased global travel following the lefting of COVID-19-related restrictions, increase the risk of further international spread.

In October 2022, the ICG made the unprecedented decision to temporarily suspend the second dose of OCV for outbreak response, due to the global shortage of OCV, which continues in 2023. Although effective, the single-dose strategy will result in a shortened duration of vaccine-induced immunity, particularly in children under five years of age, leaving the populations vulnerable to cholera the following year.

Based on the current situation, in particular: 1) the increasing number of outbreaks and geographical expansion; 2) the complex humanitarian context of many crises; 3) continuous risk of spread; 4) lack of vaccines and limited response capacity (supplies, human resources), **the risk at the global level is assessed as very high** and cholera remains a global threat to public health and an indicator of inequity and lack of social development.

WHO advice

WHO recommends improving access to proper and timely case management of cholera cases, improving access to safe drinking water and sanitation infrastructure, as well as improving infection prevention and control in healthcare facilities. These measures along with the promotion of rapid hydration and care seeking behaviour for potential cholera cases and preventive hygiene practices and food safety in affected communities are the most effective means of controlling cholera. Listening to and understanding community concerns, needs, challenges and capacities and positioning communities as partners in the planning and implementation of response efforts is key. This includes understanding and addressing barriers that impact the uptake of protective behaviors, the impact of stigma and discrimination and trust in health systems, actors and authorities. Recognizing community knowledge and capacities and systematically involving communities in strengthening WASH, community-based surveillance, case management and safe and dignified burial practices will build trust and help align health system response efforts with community needs. Equipping health workers to work with communities to ensure rapid care seeking behaviour and to hold safe and dignified burials will be essential to maintain trust between communities and the health system.

The OCV should be used in conjunction with improvements in water and sanitation to control cholera outbreaks and for prevention in targeted areas known to be at high risk for cholera. Given the limited supply of OCV globally, RCCE and vaccine demand efforts should be a critical part of vaccination campaigns to ensure maximum uptake.

WHO recommends Member States to strengthen and maintain surveillance for cholera, especially at the community level, for the early detection of suspected cases and to provide adequate treatment and prevent its spread. Early and adequate treatment limits the CFR of patients to less than 1%.

WHO does not recommend any travel or trade restrictions on Member States based on the currently available information. However, as the outbreak also affects border areas where there is a significant cross-border movement, WHO encourages Member States to ensure cooperation and regular information sharing across all levels of the organization so that any spread across the border is quickly assessed and contained.

Further information

- Cholera fact sheet
- Ending Cholera, A Global Roadmap To 2030
- Disease outbreak news Cholera Democratic Republic of the Congo
- Disease outbreak news Cholera Haiti
- Disease outbreak news Cholera Malawi
- Disease outbreak news Cholera-Global situation
- Global Task Force on Cholera Control (GTFCC)

References

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- https://www.paho.org/en/documents/cholera-haiti-risk-assessment (accessed 12.15.22).
 Cholera- Haiti [WWW Document], n.d. URL https://www.who.int/emergencies/disease-outbreak-news/item/2022-
- DON427 (accessed 12.15.22).
- 3. About the International Coordinating Group (ICG) on Vaccine Provision [WWW Document], n.d. URL https://www.who.int/groups/icg/about (accessed 12.12.22).

¹ A cholera-endemic area is one where confirmed cholera cases were detected during the last three years with evidence of local transmission (i.e., the cases are not imported from elsewhere). A cholera outbreak/epidemic can occur in both endemic countries and in countries where cholera does not regularly occur.

ⁱⁱ Lebanon and Syria were not identified as endemic. Source: Global Task Force on Cholera Control (GTFCC) Ending Cholera: a global roadmap to 2030 strategy.

ⁱⁱⁱ North-west Syria

^{iv} Bangladesh

Citable reference: World Health Organization (11 February 2023). Disease Outbreak News; Cholera – Global situation. Available at: https://www.who.int/emergencies/disease-outbreak-news/item/2023-DON437

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