ETHIOPIA
Drivers of the cholera outbreak

ACAPS ANALYSIS HUB ETHIOPIA

Thematic report
18 January 2024

KEY MESSAGES

- The current cholera outbreak is occurring in the context of the varying humanitarian crises affecting the country and risks worsening pre-existing humanitarian needs.
- Insufficient safe WASH facilities and poor hygiene continue to be the main driving factors for the outbreak. At the same time, climate hazards such as drought and flooding, and conflict limit the availability of safe water, spread the disease, and limit the ability to treat and diagnose cholera, aggravating the outbreak.
- In woredas where the outbreak has been declared as controlled, there remains a high risk of recurrence given active outbreaks in adjacent woredas.
- The scale of the outbreak is likely underestimated. The data that is currently being collected in Ethiopia only includes cases and deaths reported in health facilities, while community-level cases and deaths remain unknown.
- More male patients with cholera are reported compared to women given the low health-seeking behaviour of the latter. This is not representative of the actual situation, and women are likely at risk of worse health outcomes.

About this report

Aim: the report provides an analysis of the drivers of the current cholera outbreak in Ethiopia. It gives a context overview, explains the drivers of the outbreak, and analyses its impact on community members to support humanitarian decision-making for the cholera response.

Scope: the analysis explores the drivers of the outbreak originally declared in August 2022 and its impact on different community members. A separate analysis released on 28 December 2023 covers the anticipatory analysis of the cholera outbreak in the country. Please email ethiopiahub@acaps.org to receive this analysis.

Methodology: the analysis is based on the secondary data review of public and non-public sources and supplemented by interviews with experts from the humanitarian sector, including health professionals and emergency response staff.

Limitations: available information on the scale of the outbreak is limited to data collected from healthcare facilities. The communal-level impact of the outbreak remains unknown.

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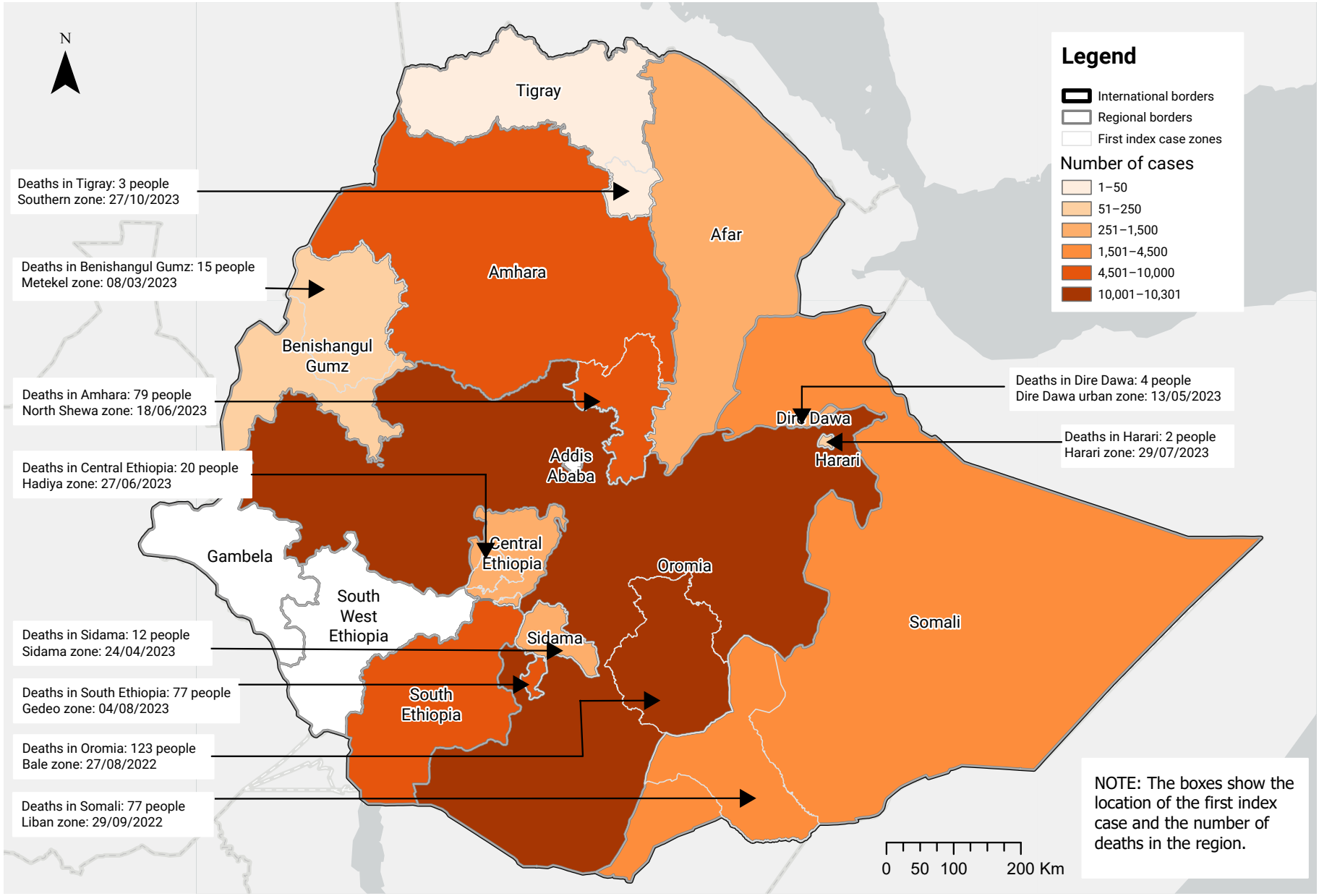
Cholera is an acute, highly transmissible diarrhoeal infection resulting from the consumption of food or water contaminated with the Vibrio cholerae bacterium (WHO 11/12/2023).

- Most people infected with cholera have no or mild symptoms and can be effectively treated with oral rehydration solutions (WHO 11/12/2023).
- In its severe form, cholera can cause the sudden onset of acute voluminous watery diarrhoea that can rapidly lead to dehydration and death if untreated. Severe cases are treated with intravenous fluids and antibiotics (WHO 11/12/2023; MSF accessed 15/12/2023 a).

MAP 1. NUMBER OF CHOLERA CASES AND ASSOCIATED DEATHS, FIRST INDEX CASE DATE, AND LOCATION OF FIRST INDEX CASE ACROSS REGIONS



Sources: ACAPS using data from EPHI (accessed 05/01/2023); OCHA (07/09/2023)
Note: figures as at 1 January 2024, and the number of cases and deaths covered the period from 1 January 2023 to 1 January 2024. The data represents only those who sought treatment in health facilities across the country. The Afar region index case location is missing.

CONTEXT OVERVIEW

Cholera recurred in Ethiopia between 2015–2020. The outbreaks throughout these years started in different parts of the country, disproportionately affecting certain areas. Some areas experienced repeated outbreaks, such as Amhara, Harari, Oromia, Somali, and Southern Ethiopia regions. Somali was the most affected region in 2017, reporting 75% of the total cases nationally (GOE 07/02/2023).

The current cholera outbreak in Ethiopia has been declared in the context of a complex humanitarian crisis, including natural hazards such as droughts and flooding caused by El Niño in almost all regions, conflict between armed groups and federal forces and intercommunal conflicts, and multiple disease outbreaks, namely dengue fever, malaria, and measles (OCHA 10/01/2024 and 01/12/2023). These crises, including access restrictions resulting from insecurity, have resulted in limited and strained resources throughout Ethiopia. The consequences include a shortage of medical commodities, such as diagnosis laboratories and the oral cholera vaccine (OCV), challenging disease control and eradication (KII 10/01/2024). Poor hygiene and inadequate safe WASH facilities continue to be the main driving factors of the outbreak (Health Cluster 06/10/2023).

The first index case of the current cholera outbreak was reported in August 2022 in Harena Buluk, Bale zone, Oromia region. The Ministry of Health confirmed the outbreak on 9 September and officially declared it on 16 September in Harena Buluk and Berbere woredas of Bale zone, Oromia region (OCHA 07/09/2023; GAAC 21/07/2023; IFRC 27/02/2023; IFRC accessed 18/12/2023).

Between 1 January 2023 and 1 January 2024, more than 29,800 cases and more than 400 deaths related to cholera were reported across ten affected regions, namely Afar, Amhara, Benishangul Gumz, Central Ethiopia, Harari, Oromia, Sidama, Somali, South Ethiopia, and Tigray regions, as well as by the Dire Dawa city administration, with the highest numbers reported in Amhara, Oromia, Somali, and South Ethiopia regions (EPHI accessed 02/01/2024; Health Cluster 01/12/2023). The current outbreak is among the longest in Ethiopia that has been been spreading unabated (Health Cluster et al. 20/06/2023). The case fatality rate (CFR)[1] reported for the above period was 1.43%, surpassing 1%, the standard rate for adequate case management (EPHI accessed 20/12/2023). Since the outbreak started in August 2022, the CFR has not gone below 1%, indicating its severity (KII 09/01/2024). The data currently being collected only includes cases and deaths reported in accessible health facilities. The numbers of community-level cases and deaths are unknown, meaning the CFR is likely higher (Health Cluster 02/11/2023; KII 10/01/2024).

The number of woredas with an active outbreak is gradually decreasing. As at 29 November 2023, 97 woredas had active cholera cases, which decreased to 65 by 26 December and then to 57 by 1 January 2024 (Health Cluster 29/12/2023; EPHI accessed 02/01/2024). In some areas, cholera has been reported as controlled. As at 1 January, Benishangul Gumz, Sidama, and South Ethiopia regions reported zero cases in previously affected woredas and kebeles (EPHI accessed 20/12/2023). For cholera to be declared controlled, zero cases should be reported for at least 42 consecutive days, but it is largely unclear how many days the affected woredas in the above regions have reported zero cases (KII 10/01/2024; EPHI accessed 02/01/2024).

With the presence of underlying (inadequate safe drinking water, limited access to WASH-related services) and compounding factors (extreme weather conditions, such as drought and flooding) and conflict affecting monitoring and intervention, cholera has been recurring in controlled areas and spreading to new sites (KII 05/01/2024; KII 09/01/2024; KII 10/01/2024; Health Cluster et al. 20/06/2023). In woredas where the outbreak has been declared as controlled, there remains a high risk of recurrence given active outbreaks in adjacent woredas (EPHI accessed 02/01/2024; OCHA 10/01/2024).

CHOLERA DRIVERS IN ETHIOPIA

Risk and driving factors of cholera in Ethiopia include insufficient access to clean water, both in terms of quality and quantity, open defecation practices, latrines with poor hygiene, and inadequate sanitation among communities. Extreme weather conditions, including drought and flooding, malnutrition, conflict, and the movement of people also aggravate the outbreak (GOE 07/02/2023; KII 09/01/2024; KII 05/01/2024; KII 10/01/2024).

Climate hazards

Drought

Drought causes water scarcity and leads communities to access water from unsafe sources, increasing the risk of disease contraction and spread (KII 10/01/2024). Water scarcity also affects hygiene practices, leading to the contraction of cholera (MSF accessed 15/12/2023 b).

The El Niño phenomenon that began in June 2023 has had different climatic impacts across the country. The north has experienced dry weather conditions, with the *Kiremt* season (June–September) rains delayed in some cases and absent in eastern Amhara, parts of Oromia region, South Ethiopia and South West Ethiopia Peoples Region, and Tigray region. The resulting drought has resulted in human and livestock deaths and severely affecting agricultural productivity (OCHA 10/01/2024 and 31/10/2023; WHO 12/10/2023; EDRMC X 09/01/2024; FEWS NET 10/2023).

1 CFR is the percentage of death from cholera or its complications in treatment facilities or in communities (MSF accessed 09/01/2024 a).

More than five million people across Tigray and Amhara have been affected by the drought (OCHA 10/01/2024). Drought affected zones across Tigray, including South Eastern and Eastern zones, and in Amhara, including North Gondar, North Shewa, North Wello, Oromo Special, South Wello, and Wag Hamra zones (OCHA 01/12/2023; EDRMC X 09/01/2024). In the drought-affected zones of Amhara, more than one million people face a water shortage, leading communities to access drinking water from unsafe sources. The shortage is also resulting in poor hygiene, increasing the risk of diseases and the spread of the current cholera outbreak (OCHA 22/12/2023; WASH Cluster 08/11/2023). Increasing cholera cases have been reported in the drought-affected North Wello and Wag Hamra zones, with more than 500 cases reported in November 2023 (OCHA 01/12/2023).

At the end of October 2023, a cholera outbreak was announced in Southern zone, Tigray region, one of the zones affected by drought and adjacent to North Wello and Wag Hamra zones of Amhara region (OCHA 22/12/2023; WASH Cluster 08/11/2023; Tigrai TV 02/11/2023). Parts of Afar region are also experiencing drought. These extreme conditions have worsened the outbreak in Afar, with over 800 cases reported since cholera was first recorded in the region in August 2023 (OCHA 22/12/2023; Ethiopia Insider YouTube 01/01/2024). As the drought persists in parts of Afar, Amhara, and Tigray, the risk of cholera occurrence and spread also increases (KII 05/01/2024; KII 10/01/2024).

Flooding

Flooding can spread contaminated water to new areas, risking the transmission of cholera and increasing the number of cases in already affected areas. It also results in the scarcity of safe drinking water by impeding access to WASH facilities, and the destruction of latrines in flood-affected areas can lead to more open defecation practices. At the same time, flooding restricts communities from receiving humanitarian assistance to help contain the spread of waterborne diseases and hampers overall emergency operations (OCHA 18/12/2023 and 01/12/2023; Health Cluster 01/12/2023; EPHI accessed 20/12/2023; Ethiopia Insider YouTube 01/01/2024; AAH 29/11/2023; KII 09/01/2024; KII 10/01/2024).

In contrast to the weather conditions in northern Ethiopia, with El Niño, eastern, southeastern, and southern Ethiopia received above-average rainfall between September–December 2023. The excess rainfall resulted in flash and riverine floods and landslides, affecting around 1.5 million people in eastern (Afar), southeastern (parts of Somali), southern (South Ethiopia Region and parts of Oromia), and southwestern (Gambela and South West Ethiopia Peoples Region) Ethiopia. Over 616,000 people were reportedly displaced, with around 60 flood-related deaths reported in the affected areas (OCHA 18/12/2023). Collecting displacement data remains difficult given access restrictions, and people already displaced by drought have likely been displaced for a second or third time. The floods also resulted in the loss of assets, including crops and livestock, and the destruction of infrastructure, such as schools and health facilities (Health Cluster 29/12/2023; OCHA 18/12/2023, 01/12/2023, and 09/10/2023).

Highlighting the possible association between flooding and increased cholera risk, many flood-affected areas are also grappling with the disease in Oromia and Somali regions. A cholera outbreak is active in East Bale zone and Abaya, Bule Hora, and Gelana woredas in West Guji zone in Oromia region, as well as in Kelafo in Shabelle zone in Somali region, which have all been affected by the floods (OCHA 16/11/2023 and 01/12/2023; EPHI accessed 02/01/2024). An increase in cholera cases in part because of floods was apparent in November 2023, with a 12% increase in the number of cholera deaths as compared to October. The number of cholera-related deaths increased from 362 as at 1 November to 404 by 29 November, increasing the CFR from 1.37% to 1.43% (Health Cluster 01/12/2023).

Flooding also increases the risk of renewed outbreaks in areas where cholera has previously been controlled, as has been the case in Somali (KII 05/01/2024). The region reported zero cases for more than 70 days between August–October 2023, but the disease resurfaced in mid-October as a result of flooding, with cases increasing until early December (EPHI accessed 02/01/2024; Health Cluster 02/11/2023). The disease has spread to new areas in Fafan, Shabelle, and Siti zones and recurred in previously affected woredas in Fafan and Shabelle zones. As at 1 January 2024, most of the cases were reported in Jijiga city and surrounding woredas, in Shabelle zone, with more than 700 cases, and Kelafo in Fafan zone, with more than 400 cases. It is particularly hard to control the outbreak in urban and slum areas where people live in close proximity and experience overcrowding (EPHI accessed 20/12/2023; Health Cluster 02/11/2023 and 01/12/2023; KII 05/01/2023; KII 10/01/2024). The use of unsafe water contaminated with waste from flood-ruined latrines has been compounding the new outbreak since mid-October (STC 30/11/2023).

That said, cholera is not currently affecting all inundated areas. For example, Dolo Ado in Liban zone and Dolobay and Charati in Afder zone in Somali region previously experienced the outbreak but report cholera as controlled, each with zero cases for more than 100 days (OCHA 16/11/2023 and 01/12/2023; EPHI accessed 02/01/2024).

The floods have also affected the provision of humanitarian assistance to communities in Oromia and Somali regions. In Abaya, Bule Hora, and Gelana woredas of West Guji zone, humanitarian access challenges and the destruction of health facilities hinder overall emergency operations targeting communities affected by the floods and disease outbreaks. Similarly, flooding and damage to main roads and bridges obstruct access to Afder, Liban, and Shabelle zones in Somali region (OCHA 01/12/2023; Health Cluster 29/12/2023).

Political instability and conflict limiting access

Conflict affects emergency response operations by hindering interventions, increasing the duration and risking the continued spread of outbreaks. It also threatens the safety of civilians and humanitarian responders and limits access to basic services and life-saving assistance, including access to medicine and blood (EPHI accessed 20/12/2023; OCHA 01/12/2023; AS 30/12/2023; KII 05/01/2023; KII 10/01/2024).

The conflict in Amhara region is inhibiting cholera response activities, such as an OCV campaign targeting adults, youths, and children above one year of age (WHO 20/11/2023 a; Amhara Health Bureau Facebook 29/12/2023). With the outbreak happening in the region, unvaccinated people face an increased risk of contracting the disease. Amhara region has been grappling with cholera since mid-July, and the further spread of the outbreak in the region continues to be reported. Other areas simultaneously facing a conflict and cholera outbreak are eastern Borena, Guji, and East and West Shewa zones in Oromia (EPHI accessed 21/12/2023).

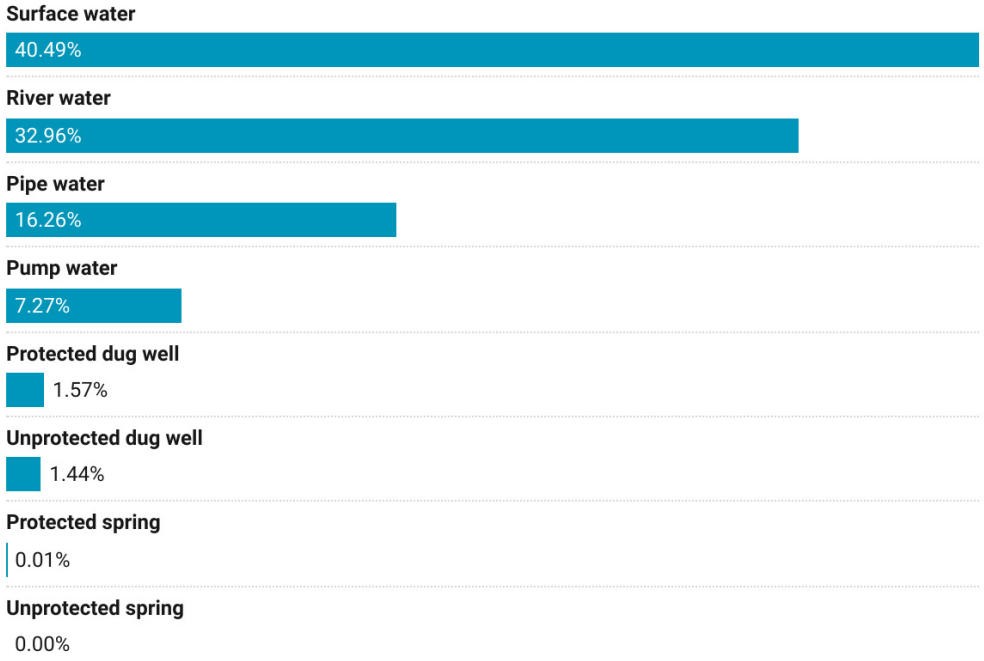
Conflict also results in security and communication challenges, such as internet cut-offs, obstructing the timely reporting of disease data (WHO 20/11/2023 b; Health Cluster 02/11/2023 and 01/12/2023; KII 10/01/2024). Low surveillance, detection, and reporting impede monitoring, which acts as the basis for subsequent intervention (KII 05/01/2024; KII 10/01/2024). The limited reporting of cases in Amhara region implies that current disease data comprises underestimates (Health Cluster 02/11/2023). The cholera status remains unknown in areas of Tigray region where the presence of Amhara armed groups and Eritrean armed forces restrict access, including parts of Central, North Western, and South Eastern zones (KII 09/01/2024; OCHA 10/01/2024). Parts of these zones that are adjacent to Eritrea remain under the control of Eritrean forces (OCHA 10/12/2023; TNH 02/11/2023).

Insufficient WASH facilities

Unaddressed underlining factors, such as poor-quality drinking water and open defecation practices given the lack of latrines, are the main causes of recurrent cholera outbreaks in the country (Health Cluster 06/10/2023; KII 05/01/2023; KII 09/01/2024). Half of Ethiopia's population does not have access to drinking water services, and nine out of ten people lack access to basic sanitation services, including water supply, sewage disposal, and solid waste disposal. 92% of households lack access to handwashing facilities with soap and water (GOE 07/02/2023). There is insufficient safe water supply and sanitation coverage in affected and hotspot woredas2 across the regions, making cholera cases recur and difficult to control and eradicate (WHO 20/11/2023 b; Ethiopia Insider YouTube 01/01/2024; KII 05/01/2023; KII 09/01/2024).

People without access to safe WASH facilities are forced to use water from unprotected sources and practice poor hygiene, including open defecation. These practices lead to the contraction of cholera and aggravate disease outbreaks (KII 05/01/2023; KII 10/01/2024; Health Cluster 06/10/2023; MSF accessed 15/12/2023 b). The use of water contaminated with faecal matter for drinking and food preparation remains the main source of cholera, with most patients using unsafe drinking water (Health Cluster 02/11/2023; WHO 20/11/2023 b). According to Ethiopian Public Health Institute (EPHI) data, of the 30,693 cholera patients surveyed who contracted the disease since August 2022, 40.5% reported using surface water, while 33% used river water (EPHI accessed 03/01/2024). At the same time, an estimated 17% of the population practises open defecation (GOE 07/02/2023). More than 50% of the cholera patients surveyed in the EPHI report did not have access to latrines, encouraging open defecation (EPHI accessed 03/01/2024). This practice aggravates the spread of cholera by contaminating surface water (KII 05/01/2023).

Figure 1. Drinking water sources as reported by cholera patients



Sources: ACAPS using data from EPHI (accessed 05/01/2023); OCHA (07/09/2023)
Note: total number of people is 30,639. Figures as at 1 January 2024 and represent only those who sought treatment in health facilities across the country.

2 Cholera hotspot woredas are areas at a relatively higher risk of cholera based on historical epidemiological data (GOE 07/02/2023).

The presence of the cholera bacterium has been confirmed in rivers in the affected areas. As at June 2023, it has been confirmed in Weito and Sagan Rivers, with most of the cases in Southern Ethiopia Region attributed to kebeles adjacent to these contaminated rivers, which people are using to access water (Health Cluster et al. 20/06/2023).

Seasonal labourers, who travel for seasonal farm work from one area to another, sometimes do not have access to clean water. In Afar region, seasonal workers are not provided with adequate WASH facilities and are forced to use river water as an alternative, resulting in an increased number of cases affecting them (GOE 07/02/2023; Ethiopia Insider YouTube 01/01/2024; KII 09/01/2024).

The limited availability of water treatment chemicals nationally is also a challenge in the fight against cholera. As at 1 January 2024, it was reported there was no national stock of water treatment chemicals (EPHI accessed 03/01/2024; KII 05/01/2023). Water contamination may occur at the point of access, during transportation, or in storage containers, making water treatment an effective preventive measure.

Destruction of WASH facilities

Both natural and man-made hazards affect WASH facilities. Flood-prone areas experience the repeated destruction of WASH facilities and recurring cases of waterborne diseases, including cholera (KII 05/01/2024). This has been the case in Gabi (Zone 3) of Afar and in Somali region (STC 30/11/2023; Ethiopia Insider YouTube 01/01/2024). Although cholera cases are reported as controlled in some previously affected woredas, an increase in open defecation given the destruction of latrines coupled with a lack of access to clean water and the continuous risk of flooding means that another cholera or other waterborne disease outbreak occurs, including Afar (Ethiopia Insider YouTube 01/01/2024; KII 10/01/2024). Conflict has also resulted in the destruction of WASH facilities in different parts of the country. The northern Ethiopia conflict between November 2020 and November 2022 destroyed and disrupted WASH services in Tigray and parts of Afar and Amhara regions (WASH Cluster 08/11/2023; EPHI accessed 22/1272023; KII 05/01/2023).

Limited ability of health facilities for treatment and diagnosis

The increase in the number of countries experiencing cholera outbreaks has resulted in a global shortage of cholera vaccines (MSF 19/10/2022; Reuters 22/05/2023). In Ethiopia, there are reports of shortages of medical commodities, including laboratories for diagnosis and OCV. The OCV provides 60–70% protection against cholera after the first dose (WHO 20/11/2023 a; WHO 20/11/2023 b). A single shot is only effective for 3–6 months; without the root causes of the disease being addressed, people will remain at risk. A few regions, including Addis Ababa, Amhara, Oromia, and Tigray, have laboratories to diagnose cholera cases, but most regions rely on a laboratory in Addis Ababa as they do not have their own (KII 10/01/2024).

There are around 850 cholera treatment centres, cholera treatment units, and oral rehydration points across the country. Cholera treatment centres are mostly makeshift tents or spaces provided in a place deemed convenient to handle cholera patients (GOE 07/02/2023; EPHI accessed 10/01/2024; KII 10/01/2024). The number of centres is small compared to the population and given the fast spread of the disease (EPHI accessed 03/01/2024; UNICEF YouTube 31/03/2023; KII 05/01/2023). There is a critical shortage of fully functioning cholera treatment centres, as most of them are not functional given a shortage of resources. Most of the time, cholera treatment centres are established near health facilities and require the provision of WASH facilities, which is not always possible, leading to the closure of the centres (KII 05/01/2024; KII 09/01/2024). A shortage of test kits also means that health facilities are not able to collect stool samples for testing, affecting the monitoring of the disease (KII 05/01/2023).

People in rural areas, including pastoral, semipastoral, and agrarian communities often located in areas with limited access to health facilities, are also likely to be affected by cholera (KII 05/01/2024; KII 10/01/2024; GOE 07/02/2023). The impact of the disease might be worse in these areas given reduced access to timely medical care and time-bound prevention medicine, such as the OCV.

Destruction of health facilities

Natural and man-made hazards, such as floods and conflict, also limit access to and the functionality of health facilities, resulting in their closure and leaving communities without healthcare services (Health Cluster 29/12/2023; OCHA 01/12/2023; WHO 04/09/2023). The frequent staff turnover of healthcare professionals has been observed in areas experiencing natural and man-made hazards, resulting in a shortage of professionals in these areas (KII 09/01/2024). Damage to health facilities because of flooding has been reported in Afar, Gambela, Oromia, Somali, and Southern Ethiopia regions (Health Cluster 29/12/2023). At the same time, conflict has limited the functionality of health facilities in Amhara region with reported destruction and supply chain disruptions. As a result, there is a lack of essential medication and testing and treatment kits. An increase in the number of cases is expected in the region given people's limited access to potable water and cholera treatment supplies (OCHA 01/12/2023; USAID 03/11/2023; EHRC 30/10/2023). In Tigray, the northern Ethiopia conflict has damaged health facilities and limited their ability to provide services. A WHO HeRAMS report that collected data from May–June 2023 revealed that among the 853 health service delivery units assessed, 86% endured varying degrees of damage to infrastructure and equipment, while 3% were fully damaged, affecting healthcare service delivery (WHO 04/09/2023).

Movement of people

The national and cross-border movement of people is also a driver of cholera as it risks the spread of the disease. According to the latest publicly available IOM data collected between August–September 2023, over 3.4 million people were displaced nationally. Conflict was identified as the primary cause of displacement (64.7%), followed by drought (17.7%) and social tension (9.4%). Most of the displaced population was concentrated in Oromia, Somali, and Tigray regions. Amhara region was mostly not covered because of conflict (IOM 20/12/2023). The numbers are expected to have increased, as flooding between October–December 2023 displaced more than 600,000 people, and the conflict in Amhara is also expected to have displaced a significant number of people (OCHA 18/12/2023). Such movement of people and the concentration of people in displacement sites are expected to increase the spread of the disease to new areas.

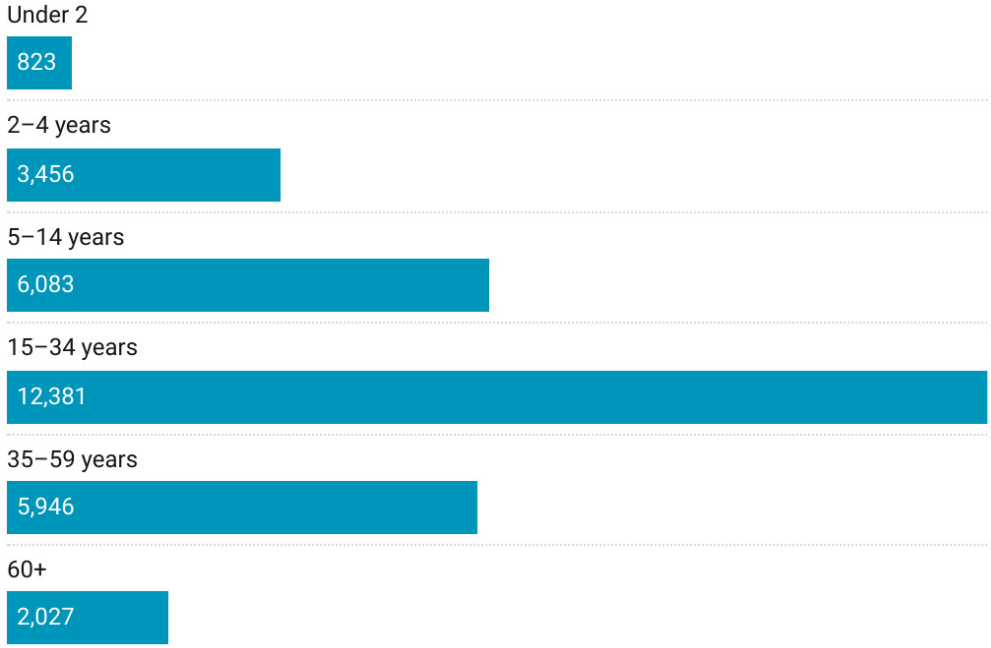
People going on pilgrimages to holy sites and seasonal labourers who move across the country to work on commercial farms and mines contribute to the spread of cholera (KII 05/01/2024; KII 10/01/2024). During the 2017 cholera outbreak, seasonal labourers and religious pilgrimages contributed to the spread of outbreaks in Afar, Amhara, and Tigray regions (GOE 07/02/2023).

There has also been an influx of people from neighbouring countries into Ethiopia. As at 30 November 2023, over 950,000 refugees and asylum seekers mainly from Eritrea, Somali, South Sudan, and Sudan were being hosted in Ethiopia. Most were hosted in Gambela (40.2%), Somali (32.2%), Benishangul Gumz (8.3%), and Addis Ababa (8%) (UNHCR accessed 02/01/2024; UNHCR 14/12/2023). The outbreak in southeastern and southern Ethiopia is possibly associated in part with cross-border cholera transmission given the dynamic population movement in the border areas between Ethiopia, Kenya, and Somalia (Science Africa 10/02/2023). These include the border town of Belet Hawa in Somalia adjacent to Dolo Ado in Somali region, Ethiopia, and Mandera and Marsabit counties in Kenya, which border Borena zone in Oromia region and Dawaa and Liban zones in Somali region (GAAC 21/07/2023; Science Africa 10/02/2023).

GROUPS AT HEIGHTENED RISK OF CHOLERA AND ITS IMPACTS

As per the EPHI data, since August 2022, the 15–34 age group has made up the majority of cholera patients in the country, accounting for 40.31% of the total, followed by the 0–14 (33.73%) and 35–59 (19.38%) age groups (EPHI accessed 02/01/2024). These figures account only for those who have actively sought treatment for cholera in a health facility.

Figure 2. Cholera case by age category



Source: ACAPS using data from EPHI (accessed 05/01/2023)
Note: total number of people is 30,716. Figures as at 1 January 2024 and represent only those who sought treatment in health facilities across the country.

People who are malnourished

Malnutrition worsens the effects of cholera as it increases people's vulnerability and compromises their resilience to cope with the disease (Medical Teams 07/09/2023; KII 09/01/2024; STC 02/02/2023). The combination of cholera and malnutrition will significantly compromise the immunity of the individual, reducing the body's ability to deal with the disease (KII 05/01/2023; KII 09/01/2024; KII 10/01/2024).

Acute malnutrition persists across Ethiopia, with over 30 zones in 8 regions recording cases. Food insecurity caused by extreme weather events, conflict, and disease outbreaks causes malnutrition across the country (OCHA 01/12/2023). Around 4.2 million children are estimated to be acutely malnourished, of whom 1.2 million suffer from severe acute malnutrition (SAM). Between January–July 2023, there were over 18,000 more SAM cases, a 5% increase as compared to last year (WHO 13/11/2023; ENCU accessed 20/12/2023). The drought may also increase malnutrition cases, depleting people's resistance to diseases and exposing

communities to the severe effects of the current cholera outbreak. Harvest will be affected in areas experiencing drought in northern and eastern Amhara and eastern and southern Tigray. As a result, these areas will face extreme difficulty in accessing food, and a lean season anticipated to begin earlier than usual. Crisis (IPC Phase 3) and Emergency (IPC Phase 4) outcomes are expected through at least mid-2024 (FEWS NET 06/01/2024 and 01/10/2023; USAID 03/11/2023).

Children

Out of the suspected cholera cases, one out of four involve children under the age of five (KII 05/01/2024). Even though cholera affects all age groups, children are particularly vulnerable to poor health outcomes, with malnutrition in children worsening the impact of cholera (IRC 03/10/2017; UNICEF 24/03/2023; IFRC 17/02/2023). As at June 2023, the reported deaths affected children mostly between 0–14 years old (26% of whom were under five) (Health Cluster et al. 20/06/2023).

Given the similarity of symptoms of cholera and SAM in children, including diarrhoea, persistent skin fold, sunken eyes, lethargy, and shock, it is often difficult to distinguish between the two, and both can also be present simultaneously (MSF accessed 09/01/2024 b; KII 05/01/2023). Malnourished children are at heightened risk of being severely ill from cholera and developing health complications (IRC 03/10/2017; KII 09/01/2024). Acutely malnourished children are also three times more likely to die from cholera because of their weakened immune systems (STC 22/12/2022; KII 05/01/2023). Drought and flooding caused by El Niño in different parts of the country will likely worsen severe malnutrition, subsequently increasing mortality and morbidity from disease outbreaks, such as cholera, dengue, malaria, and measles (Health Cluster 01/12/2023; KII 05/01/2023).

Women and girls

Women and girls are at increased risk of exposure to cholera through their traditional domestic roles of fetching and handling water, cleaning latrines, and taking care of sick family members exposed to cholera (UNICEF/WHO 05/07/2023; UNHCR 31/10/2022). Cholera also presents a risk of foetal complications in pregnant women, including spontaneous abortion, pre-term labour, and intrauterine foetal death (MSF accessed 12/01/2024). Despite these, EPHI data shows that more men (16,700) have been recorded as cholera patients than women (14,000) (EPHI accessed 03/01/2024). This may be because of the EPHI data only recording cases and deaths reported through health facilities (Health Cluster 02/11/2023). The actual number of female patients is likely higher given the low health-seeking behaviour of women compared to men (KII 05/01/2024).

IDPs

The living conditions in IDP camps are a risk factor for the contraction and spread of disease outbreaks such as cholera (GOE 07/02/2023; Protection Cluster 04/12/2023; EPHI accessed 21/12/2023; KII 05/01/2024). IDPs across the country are hosted in collective sites, camps, and schools or integrated with host communities (FEWS NET 01/10/2023; GOE 07/02/2023). Most camps and sites are overcrowded given the high number of IDPs, are not well designed, and lack hygienic latrines and garbage disposal areas (KII 09/01/2024).

There is no publicly available data showing the number of cholera cases across IDP centres and sites in the country. There are, however, reports of cholera at different IDP sites. As at June 2023, these included the Dubluk IDP site in Borena zone, Oromia, IDP and refugee sites in Dollo Ado woreda, Somali region, and at the Kumer site in North Gondar zone, Amhara region (Health Cluster et al. 20/06/2023; USAID 03/11/2023; RD 12/09/2023; Addis Standard 02/09/2023). Other affected areas, such as East and West Hararge in Oromia region, also host IDPs in collective sites.

Refugees

In September 2023, cholera was confirmed at the Kumer site in North Gondar zone, Amhara region, which was hosting around 10,000 refugees and asylum seekers from Sudan (OCHA 07/09/2023; Addis Standard 02/09/2023). The Kumer site was hosting refugees and asylum seekers beyond its maximum capacity. The latrine-to-user ratio as at October 2023 was 1:164, surpassing the minimum emergency standard of 1:50 (OCHA 09/10/2023; Addis Standard 02/09/2023). Overcrowding in sites risks the contraction and spread of diseases such as cholera, while the relocation of refugees and asylum seekers from the entry point to sites may pose an additional risk of spread because of movement.

Missing data

Although there is no data on the impact of cholera on people with disabilities, they remain at high risk as they are less likely to access health services and experience greater health needs, which may be worsened by an outbreak, such as cholera (UNCERF 20/04/2021; KII 10/01/2024).

There is also no publicly available data on the impact of cholera on people with low immunity given chronic diseases, such as diabetes, cancer, and heart disease, and other infectious diseases, such as HIV/AIDS. Given their compromised immunity, those affected may also develop complications and have worsened health outcomes.