PUBLIC HEALTH REPORT

Mortality rates in Somalia: an integrated public health analysis

January 2025 | Somalia

Key Messages

- Overall mortality in early 2024 was below the WHO emergency threshold and appeared lower than during recent years of peak drought. The estimated crude death rate (CDR) is 0.24 deaths per 10'000 people per day (95% CI:0.21-0.27) and an under-five death rate (U5DR) of 0.4 (95% CI:0.27-0.52). The majority (84.6%) of recorded deaths were due to non-traumatic causes.
- The likely key drivers of mortality in Somalia during the first half of 2024 include conflict, localized flooding and previous drought disrupting healthcare, nutrition, and WASH services, compounded by displacement, food insecurity, and disease outbreaks such as cholera and measles. Limited funding for essential public health interventions, poor vaccination coverage, and inadequate access to clean water and sanitation further exacerbated existing vulnerabilities
- Pockets of high concern were found in the northwest and south where mortality estimates exceeded the emergency threshold in Bari and were near-threshold in Nugaal and Mudug. Cholera and diphtheria outbreaks in early 2024 and recent displacement due to conflict likely exacerbated diseases spread and malnutrition in light of poor sanitation and hygiene facilities. While health outcomes seemed less severe in southern Somalia, this region remains at high risk.

0.24
(0.21-0.27)

Crude Death Rate per 10'000 peopeple per day at national level.

0.4
(0.27-0.52)

Under 5 Death Rate per 10'000 children under 5 years per day at national level.

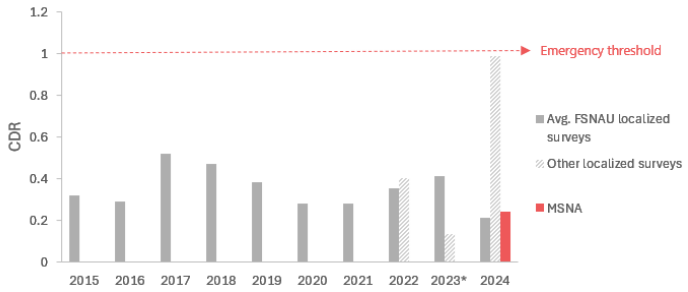
Context

Over the past 30 years, the population in Somalia has faced protracted and complex humanitarian emergencies. The situation is characterized by recurrent droughts exacerbated by flooding and armed conflict, has led to widespread displacement, severe water shortages, and a public health crisis[1]. These co-occurrent challenges have forcibly displaced 3.5 million Somalis. As a result, currently, two in five Somalis were in need of humanitarian assistance in 2024[2], including 4.4 million Somalis facing acute food insecurity throughout December 2024[3]. Nearly 1.6 million children under the age of five are at risk of acute malnutrition between August 2024 and July 2025[4]. The burden of malnutrition is a significant concern, where the health system remain poorly resourced, and inequitably distributed[5].

Rationale

In light of the multiple needs observed in Somalia, REACH collected population mortality data within the 2024 Multi-Sectoral Need Assessment (MSNA). The primary goal of this mortality assessment is to inform humanitarian actors on the overall severity of the crisis to better plan and prioritize the required assistance and services. The findings of this mortality survey provide recent and accurate data on the crude death rate (CDR) and the under-five death rate (U5DR), along with the main causes of death, both trauma and non-trauma related. Mortality data can be of use to government and humanitarian actors to guide programming and inform analytical and policy frameworks such as the Ministry of Health's planning and monitoring mechanisms, the Humanitarian Needs Overview, the Joint and Intersectoral Analysis Framework, the Integrated Phase Classification (IPC) to understand the severity and drivers of needs to support vulnerable populations. The findings are intended to support advocacy efforts for the resources needed for humanitarian programs, and guide prioritization decisions, thereby strengthening the country's Health Cluster Public Health Information Systems.

Figure 1: Mortality Rates in Somalia (2015-2024)[13]



Main Findings

The recall period for the mortality data was between the 1st of January 2024 and the day of the survey (approximately 156 days). During the survey, 319 deaths were recorded, including 48 of children under 5 years old. The sampling reached for the present assessment allows reporting of findings on a regional level (admin1), except for 7 regions where sufficient sampling wasn't met[6]. In Bakool, Hiraan, and Nugal regions, the sampling requirements weren't met and data was aggregated at the state level to calculate mortality estimates. Findings are presented for Southwest state, Hirshabelle state, and Puntland state, respectively, for both mortality estimates and contributing factors. The sample for Banadir region didn't meet the requirements and was left out of the analysis.

Crude and Under-5 Death Rates

The estimated CDR is 0.24 deaths per 10'000 people per day (95% CI:0.21-0.27) and an U5DR of 0.4 (95% CI:0.27-0.52). The survey results suggest that the overall mortality in Somalia is below the emergency level, as both the CDR and U5DR are below the World Health Orgaization (WHO) emergency thresholds[7]. The broader confidence interval for the U5DR, suggests that mortality may still be elevated compared to baseline levels (if no crisis was occurring). This signals the need for intensified monitoring and proactive measures to address potential risks and prevent the situation from reaching critical levels.

Even though the CDR in both sex groups is below the WHO emergency threshold, men had a significantly higher death rate 0.31 (95% CI: 0.26-0.36) at 1.71 times greater than women 0.17 (95% CI: 0.14- 0.21) in Somalia (p.value 1.5 x 10^-5). Similarly, the U5DR among boys and girls is 0.44 (95% CI: 0.27-0.61) and 0.35 (95% CI: 0.18-0.53) respectively.

Host community populations had a significantly higher mortality rate of 0.3 (95% CI: 0.25-0.36), 1.45 times higher than IDP populations 0.18 (95% CI: 0.15 – 0.22) in Somalia (p-value = 0.002881). The U5DR in the host community 0.51 (95% CI: 0.3-0.73), and in the IDP population 0.29 (95% CI: 0.16 – 0.43), are both also under the emergency thresholds and higher among the former than the latter.

Populations in Bari had a significantly higher crude mortality rate 1.21 (95% CI:0.89-1.53) at 4.6 times higher than the national level (0.24) in Somalia (p-value = 2.2 x 10^-16), and an under-5 mortality rate of 3.58 (95% CI:1.66-5.58), both exceeding WHO emergency thresholds. Estimates in Nugaal [based on Puntland state-level data], CDR is of 0.83 (95% CI: 0.64-1.02) and U5DR 1.7 (95% CI: 0.93 - 2.47) and in Mudug region, the CDR of 0.61 (95% CI: 0.34-0.87) and U5DR of 1.27 (95% CI: 0-2.26) are the second and third highest estimates from the present survey.

Since 2015, the highest estimates are observed in 2017-18 and 2022-23, are explained by demographic growth and drought conditions that affected most Somalis between 2016-2018 and 2020-2023[8]. Mortality during those years was higher in Bay, Lower and Middle Shabelle and Banadir regions, but also Central and North-East Somalia (Puntland) were heavily affected[9]. The MSNA 2024 mortality estimate (CDR 0.24) is broadly aligned with the median CDR based on 2024 Food Security and Nutrition Analysis Unit of Somalia (FSNAU) data (median CDR 0.21) of the same season. Nonetheless, different regional or localized assessments capture varying severities according to methodologies and population groups of interest. In 2022, surveillance estimates from 7 IDP sites in Bay, Mudug, Lower Juba, Gedo and Banadir regions among the displaced population, show a steady decrease between July 2022 (CDR 0.9), August 2022 (CDR 0.6) until November 2022 (CDR 0.4)[10]. In 2023, a SMART survey conducted in Bulo Burte district in Hiraan region indicated a CDR 0.13 (0.04-0.40)[11], while a more recent SMART survey conducted in 2024 in Bardheere district, Gedo region among displaced and non-displaced populations estimated a CDR of 0.99 (95% CI: 0.49-2.02).[12]

Causes and Places of Death

Overall, the majority of deaths recorded are due to non-traumatic causes (78.7%), the others (19.4%) were due to traumatic causes (accident, injury, intentional violence), while for a small percentage (1.9%) the cause is reportedly unknown. The respondent-reported main cause of death is due to chronic illnesses (cancer, heart disease, etc.) for less than half of the cases (39.2%), followed by acute illnesses (malaria, fever, diarrhea, etc.) for about a third of cases (31%) and a low percentage died during pregnancy delivery (4.7%). Acute diseases were the leading causes of reported deaths in Gedo (80%), Middle Shabelle (72.2%), and Lower Shabelle (51.6%), while chronic diseases were the main reported causes in Lower Juba (67%), Galgaduud (58.8%) and Nugal (55%) regions. In Bari, the main causes of reported deaths were either chronic illnesses (33%) or acute diseases (30%), followed by trauma-related causes (28%).

The majority of reported deaths happened in the area of residence of the individual (62.1%), outside of a health facility. A smaller share of deaths took place at a health facility (17.9%) and about a tenth (11.3%) of deaths occurred at a health facility in a previous location of residence.

Barriers to Health Care

Over half of individuals (53.3%) sought healthcare 2 weeks before their death (table 1), out of which 2 out of 5 people were accessing government hospitals (37.1%), and one

out of five a government health center (21.8%) or a private hospital (17.1%). Others accessed healthcare facilities including private clinics (7.8%) or other governmental or NGO-run facilities (14%).

The main reported reason why individuals didn't access healthcare was their immediate death (61.7%). For others, the main barriers to accessing healthcare were either financial (13.5%) or physical (11.4%). Few couldn't reach healthcare services for being too sick (7.1%), or because one was not feeling sick enough (5%). Some indicative differences according to displacement status or gender can be observed. Displaced individuals faced greater financial barriers (19.4%) than non-displaced individuals (8.9%), who faced more often physical barriers (17.8%) than IDPs (3.2%). Women were reportedly accessing less health services (18.4%) than men (7.7%).

Table 1: Summary Results Table

Disaggregation	CDR (CI95%)	U5DR (CI95%)	% of deaths who sought health care 2 weeks before death	Most common reason for not seeking health-care before death
Host population	0.3 (0.25-0.36)	0.51 (0.3-0.73)	51.76%	Immediate death 60.8% (n=48); too far 17.7% (n=14)
IDPs	0.18 (0.15-0.22)	0.29 (0.16-0.43)	48.24%	Immediate death 62.9% (n=39); too expensive 19.4% (n=12)
Awdal + Togdheer	0.27 (0.17-0.37)	0.1 (0-0.28)	46%	Immediate death 55% (n=6)
Bakool [**South West state**]	0.15 (0.04-0.26)	0.25 (0-0.54)	67%	Immediate death (63% (n=12)
Banadir	-	-	-	-
Bari	1.21 (0.89-1.53)	3.58 (1.66-5.49)	45%	Immediate death 56.8% (n=21)
Bay	0.13 (0-0.26)	0.24 (0-0.57)	38%	Immediate death 33.33% (n=1); too sick 33.33% (n=1); too far 33.33% (n=1)
Galgaduud	0.25 (0.1-0.41)	0 (0-0)	47%	Immediate death 62.5% (n=5)
Gedo	0.09 (0.04-0.15)	0.07 (0-0.21)	80%	Immediate death 87.5% (n=7)
Hiraan **[Hirshabeele state]**	0.35 (0.17-0.53)	1.21 (0-2.58)	0%	-
Lower Juba	0.04 (0-0.08)	0 (0-0)	33%	Immediate death 100% (n=1)
Lower Shabelle	0.27 (0.12-0.42)	0.44 (0-0.93)	47%	Immediate death 64.3% (n=9)
Middle Shabelle	0.32 (0.13-0.5)	1.54 (0-3.45)	61%	Immediate death 100% (n=11)
Mudug	0.61 (0.34-0.87)	1.27 (0.29-2.26)	50%	Immediate death 50% (n=12); too far 25% (n=6)
Nugaal **[Puntland state]**	0.83 (0.64-1.02)	1.7 (0.93-2.47)	25%	Immediate death 53% (n=36); too far 18% (n=12); too expensive 15% (n=10)
Sanaag	0.32 (0.32-0.16)	0.14 (0-0.42)	53%	Immediate death 60% (n=6)
Sool + Woqooyi Galbeed	0.2 (0.06-0.33)	0.21 (0-0.62)	43%	Immediate death 60% (n=3)
National	**0.24 (0.21-0.27)**	**0.4 (0.27-0.52)**	**53.29%**	

Discussion

Overall results and interpretation against other mortality estimates should be considered keeping in mind the objective of the assessment to produce higher, crisis-level results as well as methodological differences including a much longer time period of interest for mortality (about 156 days) compared to other methods such as SMART surveys which focus on shorter, 3-month recall periods. As mentioned previously, the sampling reached for the present assessment allows to report of findings on a regional level (admin1), except for 7 regions where the minimal estimated sample for crude mortality rate was not achieved.

Mortality Rates over Time

The overall trends in Figure 1 show that the severity of the crisis might be decreasing since the peak of the drought in 2022. The lower estimates from the present survey than previously could suggest that the elevated "new normal" mortality baseline observed between the 2011 famine, and the 2016-2018 and 2020-2023 droughts could be decreasing[14].

FSNAU Post-Gu 2024 survey (June-July) findings indicate that CDR and U5DR are low in most assessed locations, with the exception among IDPs in Mogadishu (Banadir), Baidoa (Bay), Kismayo (Lower Juba) and Bardhere (Gedo) IDPs and Urban non-displaced population, which showed Serious levels of both CDR (0.5 to <1/10 000/day) and U5DR (1 to 1.9/10 000/day)[15]. The regional differences in severity compared to the MSNA findings could be attributable to different sampling methodologies designed for different levels of representativity. Notably, while the MSNA estimate for the Bari region corresponds to a CDR 1.21, FSNAU Post-Gu survey reports estimates of CDR 0.1 for IDPs and a CDR 0.3 for urban populations in Bosasso (Bari). The FSNAU surveys apply a 90-day recall period as per SMART methodology, which may explain the differences with the MSNA which likely captured deaths related to a cholera outbreak in the first quarter of 2024 in the region.

Public Health Domains

To explore potential drivers and contributing factors to mortality and under-5 mortality, the conceptual framework of Checchi et al.[16] (see Figure 2) describes how the public health of the population (including baseline and excess mortality of the population) is impacted by risk factors in crises (displacement; direct exposure to armed conflict leading to increased risks to public health; natural or industrial disaster, etc.). In crises, "baseline" mortality levels represent a scenario without a crisis occurring, whereas "excess" mortality levels are directly or indirectly attributable to a crisis. Below, five public health domains, possible risk factors and public health services are studied in the Somalian context to understand their role and contribution to the situation observed according to this present study.

Public Health Outcomes

Key public health outcomes include nutritional status and morbidity, along with public health impacts such as mental health and mortality.

Physical Health

Crude mortality results are in part driven by the burden of infectious diseases within Somalia, particularly for under-5 children. According to the 2024 MSNA, overall only 3% of the assessed population reported unmet healthcare needs and 12.1% of children under 5 years were reported sick.

Figure 2: Conceptual Framework of Public Health Information Domains in Crises[17]

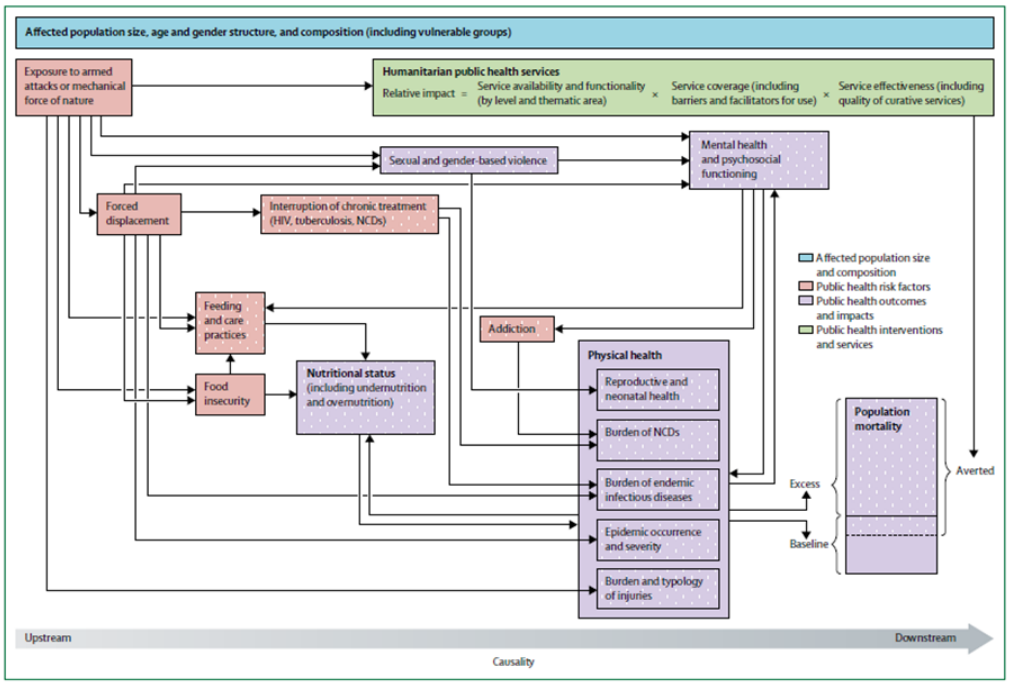


Figure: **Conceptual framework of public health information domains in crises**
Dotted boxes are public health risk factors or public health outcomes (disease or injury) and impacts (mortality or mental health problems) that humanitarian public health action can mitigate. Arrows indicate causal effects. NCDs=non-communicable diseases.

The highest proportion of the population who did not access health care when needed were in Puntland state (8.9%), in Hirshabelle state (4.9%), and in Lower Shabelle and Bari regions (3.5%). In two-thirds of cases (59%), individuals needed (multiple needs could be reported) healthcare to consult because of an acute illness (fever, cough, diarrhea, also second leading cause of death) and about a quarter were seeking a preventive consultation (24%) or a consultation for a chronic illness (24%).

Among caregiver-reported sick children under 5 years, the most frequent symptoms included fever (72%), cough (45%), diarrhea (43%), or vomiting (28%). In 2024, at least three disease outbreaks were active in Somalia, including cholera, measles, and diphtheria, mainly among children under 5 (76.2% of cases), with higher case numbers in Middle Shabelle and Mudug regions[18], where the third and fifth-highest crude death rates are observed. This corroborates MSNA findings for Mudug where 12.9% of children under-5 are reported sick, while the highest prevalence of child morbidity is observed in Galgaduud region (20.5%) and in Southwest state (20.4%).

Fever and cough can be associated with symptoms of measles, of which about 209 suspected cases were reported by July 2024 mainly in the regions of Banadir (46), Lower Shabelle (25), Mudug (25), and Bay (21)[19]. Diarrhea can be indicative of Acute Watery Diarrhea (AWD) and/or cholera, a waterborne disease that increasingly spread in 2024, disproportionately affecting children under the age of 5[20]. While cholera is endemic to some regions (central and southern Somalia), it has been spreading to Somaliland and Puntland early 2024 resulting in 1.2 million people at risk of cholera infection (Aug-24)[21]. In the first quarter of 2024, the highest number of cases (n=351) and deaths (n=23) were reported in Puntland state (including Bari region) due to limited access to safe water sources, and lack of sanitation facilities, especially in IDP sites[22]. In Bari, the prevalence of child morbidity from the present assessment is concerning (14.6%), while only a low percentage of the population reported not receiving healthcare when sought (3.5%) are reflective of conditions before data collection rather than the first quarter of the year. By July 14th, 16'569 new AWD/cholera cases were reported overall, mainly among children under 5 (59%), resulting in 134 cumulative deaths, likely precipitated by high malnutrition[23]. The cholera outbreak is a likely driver of the high mortality estimates found in the region and state.

Mental Health and Psychosiocial Functioning

The risk of mental health and psychosocial disorders increases with the incidence of hazards, (gender-based) violence, or forced displacement, which can lead to poor feeding and care practices or health-seeking behaviors that can directly contribute to poor physical health and indirectly contribute to increasing excess mortality. Mental disorders are commonly under-reported in Somalia due to stigma and are not extensively researched[24]. Latest WHO estimates indicate that low to no capacity of health services to care for mental health needs is a significant barrier[25]. Earlier literature does suggest that outcomes of conflict compounded by the consequence of natural hazards and displacement have led to serious mental health and psychosocial problems within the population[26]. Those challenges could have a serious impact on the ability of individuals to access care or to care for others in ways to protect life.

Nutritional Status

The physical health of an individual can directly impact their nutritional status, interlinked between feeding practices and food consumption gaps. In turn, poor nutritional status can have an impact on one's physical health status and increase (excess) mortality. In Somalia, malnutrition is subject to seasonal patterns, whereas higher negative outcomes are expected during the dry seasons (December-March) after the main rainy seasons (including Gu: April-June), and flooding, conducive to diseases.

The burden of acute malnutrition corresponds to an estimated 1.6 million children (6-59 months) who are expected to suffer from acute malnutrition and be in urgent need of treatment between August 2024 and July 2025 according to the lates IPC Acute Malnutrition (AMN) analysis conducted for the Post-Gu 2024 period[27]. About a quarter of children are likely to suffer from severe acute malnutrition (SAM). More than two-thirds (66%) of the burden is expected to be concentrated in southern Somalia. The burden of acute malnutrition among the IDPs represents 27% of the country's estimate[28]. In Bari region, for instance, the IDP (and urban non-displaced) populations in Bossasso district were facing critical malnutrition (IPC AMN phase 4) during July-Sept 2024, the highest severity observed in the northern part of Somalia[29]. The overall median Global Acute Malnutrition (GAM) (by Weight-for-height - WHZ) for the region (14.9%) could have contributed to, but also be a result of child morbidity that likely led to the high levels of child mortality estimated in Bari (U5DR 3.58). Similarly, the highest GAM (by WHZ) rate in the Post-Gu period was among IDPs in Galkacyo, Mudug region (GAM 24.7%) could contribute to the (fourth highest) child mortality rate (U5DR 1.27) in the same region interacting with then recent flooding (see section 'Exposure to attacks/hazards"), limited wash services (see section) and child morbidity.

Gender-Based Violence

Similarly to mental health issues, gender-based violence (GBV) can often result from the exposure to hazards or violence, and consequent forced displacement with a direct impact on mental and physical health. Through both pathways, GBV can contribute to (excess) mortality. Such violence is often under reported in Somalia which decreases the understanding of the situation and scale of the needs. Between 2017-2022, reported cases were mainly against women and the main risk factors to women protection were drought induced displacement, trafficking of women and girls by armed groups[30]. Consequently, women and girls are more at risk in IDP settings of GBV directly impacting their health. A study conducted in IDP camps in a Mogadishu district, Banadir region, found that any form of violence would impact the survivor with physical injury, psychological trauma, or communicable diseases as the

main reported impacts[31].

The diseases and acute malnutrition burdens are high in Somalia, likely driven by cholera/AWD, measles, and other illnesses. Mental health issues, compounded by displacement and violence, hinder care-seeking behaviors, while GBV, especially in camps, further impacts survivors' physical and psychological health. Regions like Bari, Mudug, Bay, and Galgaduud are particularly worse off, with critical malnutrition, high child morbidity, and inadequate healthcare access driving severe outcomes.

Public Health Risk Factors

Public health risk factors include natural hazards and conflicts that not only disrupt the availability and accessibility to services but can lead to the displacement of affected populations, reducing the impact of potential mitigating factors. These shocks can affect food security and feeding practices while also interrupting health treatments for chronic diseases.

Exposure to Armed Attacks or Natural Hazards

Key drivers of inadequate public health services, forced displacement, food insecurity, poor health contributing to population mortality (see Forced Displacement) are often either natural hazards and/or conflict impacting the population and infrastructures. Since January 2024, the reported number of conflict events in Somalia remained high (between 40 to 60 events weekly) but stable, except for notable increased conflict activity (battles, explosions, or violence against civilians) in February, June, and July 2024[32]. Armed groups' activity against civilians and Somali armed forces is active mostly in the southern regions, with a noticeable expansion to Puntland state. Inter-communal clashes equally fuel conflict dynamics, which were particularly violent in Mudug and Galgaduud regions between June and July 2024[33], where nearly half of the clashes were recorded in Mudug forcing 26'000 people to displace in the region. The higher mortality rate among men (CDR 0.31) can be linked to the different risks and challenges faced by men in contexts of conflict. Nonetheless, coverage of the MSNA data collection isn't expected to fully align with areas of heightened conflict in inaccessible areas, as a result, the scale of trauma-related deaths might not be fully reflected in the MSNA 2024 results. For instance, between February and March 2024 ACLED recorded the highest number of reported violence-related fatalities in Lower Shabelle region[34], where MSNA findings indicates only 0.6% of reported deaths were due to trauma-related causes.

While most Somalis recovers from the most severe drought in decades (2020-2023), rains and flooding in 2024 affected about 268,359 people and killed 10[35]. These extreme weather conditions destroyed public health infrastructure, affected livelihood assets and activities, and forcibly displaced about 81'000 people, mainly in riverine and adjacent urban areas in Hiraan, Gedo, Middle Shabelle, and lower Shabelle regions[36]. Flood water is one of the key vector for water-borne diseases (such as cholera), which had already increasingly spread following the Deyr flooding (October-December) in 2023. In 2024, the increase of AWD/cholera was in part due to contaminated water sources submerged by flood water[37] increasing complications of the malnutrition burden, poor sanitation and limited healthcare accessibility.

While it's important to note that rains can also beneficial at the right moment for agropastoral and pastoral livelihood activities by increasing soil moisture for crop planting and fodder production, the impacts of flooding and drought complicated by conflict dynamics are key drivers of public health gaps in affected communities in Somalia by destroying infrastructure, forcibly displacing people but also isolating populations in areas limiting physical access to services.

Forced Displacement

Displaced populations in Somalia has mainly been pushed away from their area of origin as a result of conflict or natural hazards or shocks leading them to improved or worsened accessibility of services, but also to loose livelihood opportunities or expose them to increased risks. According to the International Organization for Migration (IOM)[38], the majority of displaced households (59%) reside in IDP sites and less than half (40%) reside in host communities. Among the overall displaced households (53%) during the 2024 MSNA, the main reported reasons forcing them to flee their area of origin were conflict in their community (33%), lack of food or water (31%), loss of livestock (26%), drought (25%) or lack of livelihood opportunities (25%), and importantly most of them (90%) had already been displaced more than a year ago. Findings indicate that only the assessed population in the regions of Banadir, Lower Shabelle, Gedo, Lower Juba, and Middle Shabelle is mainly displaced (over 50%), including households displaced less than a year ago, corroborating IOM estimates[39]. The only exception is in Mudug where the assessed population is mainly non-displaced (58.7%) but includes a small percentage of newly displaced households (8.9%). It's worth noting that the key pull factors for all assessed displaced populations to a certain destination were the absence of conflict (50%), availability of water (37%), and the presence of shelter (31%) or income opportunities (31%).

This coverage can partially explain better-off results and estimates in some regions where the displaced population has been assessed by others as much worse off than host communities, but in fact, less represented in the present assessment.

Interruptions of Chronic Treatment

The MSNA findings indicate that chronic illnesses are the lead cause of mortality (39.2% of cases) among reported cases. Between 2017 and 2019, WHO observed similar trends (40% and 42% respectively)[40]. Excess mortality risk factors thereby are likely to increase if treatment of non-communicable diseases (NCDs) and other chronic health treatments are interrupted. Nationwide data on NCDs are relatively scarce, in 2022 the prevalence of diabetes overall was of 12.7% and only 30% of patients were

receiving treatment[41]. A recent nationwide study found that the prevalence of cardiovascular diseases (CVDs) is of 7.1%, significantly associated to the region and type of residence, and more prevalent among men and individuals in urban areas[42]. Since almost half of the 2024 MSNA assessed population is located in urban areas (47.3%), this relation can support findings on main causes of reported deaths. The risk factors for CVDs are made worse by displacement, poor sanitation and shortage of clean water. The interruption of health services and treatments due to conflict or extreme weather events, along with insufficient resources for the healthcare system contribute directly to the negative outcomes of chronic diseases on the lives of the Somali population.

Food Insecurity

In 2011, the combined effects of drought and protracted conflict devastated livelihoods, resulting in severe food consumption gaps, compounded by inadequate public health services, ultimately culminating in a famine and emergency levels of excess mortality. Communities' capacities, humanitarian public health services and favourable climatic conditions mitigated risks of famine during the peak of the droughts of 2017 and 2022, particularly in rural areas of Bay and Bakool regions and within IDP camps[43]. According to the present survey, displaced households are reporting worse food consumption gaps than non-displaced populations (see table 2). As per the latest IPC AFI analysis[44], the highest shares of food-insecure households (classified in AFI phase 3+) are in Bay region (37%), Hirshabelle state (27%), and Galgaduud region (27%). Areas or population most in need were crop-reliant areas where flooding led to lower crop production, such as Middle Shabelle, Lower Juba, Bay, and Gedo regions, and IDP populations reliant on food assistance were worse-off at the time of data collection with more severe food consumption outcomes. In a context of drought recovery, flooding and the agricultural lean season (May-June), the frequency of consumption of diverse foods (Food Consumption Score - FCS) is generally low across most regions (in Lower Shabelle regions less than 20% report a poor FCS). A higher share of households used consumption-based coping strategies (rCSI) when not enough food could be accessed in Bari, Puntland state and Lower Shabelle region (high rCSI among 32.3% and 21.5% of households respectively), which could indicate recent food consumptions gaps among a better-off population group in such protracted context. Food security assistance was provided to about 1.3 million people monthly between June and August 2024, corresponding about 35-40% of estimated population in need[45]. The assistance most likely mitigated further deterioration (low to no severe experiences of hunger reported – HHS), although declining levels of assistance since March 2024 due to funding shortages indicate that food insecurity remains a burden. Prolonged and low diversity of foods consumed contribute to poor feeding practices and indirectly to weaken immune systems of people.

Feeding and Care Practices

Infant and young child feeding (IYCF) practices directly affect the health, development and nutritional status of children less than two years of age and, ultimately, impact child survival. Prolonged individual consumption gaps combined with poor care and feeding practices can contribute to increasing malnutrition, and precipitate negative health outcomes if combined with poor Water, Sanitation, and Hygiene (WASH) services and practices[46] (see section 5.2.3.2 below). According to the present survey, IYCF practices across regions remain insufficient with less than 10% of children assessed consuming sufficient diversity of foods (Minimum Acceptable Diet) and less than 40% consuming the Minimum Meal Frequency. The majority of children aged 0-23 years (67%) were reportedly breastfed in the 24 hours prior to the data collection, which is slightly above the WHO-UNICEF threshold of >60% children. Caretakers without sufficient awareness or the capacity to provide recommended breastfeeding and feeding practices for newborns and small children might be facing multiple socioeconomic challenges.

Conflict, natural hazards, displacement, poor access to healthcare, food insecurity, and inadequate care practices are likely driving and contributing to (excess) mortality in Somalia. Armed violence and extreme weather lead to displacement waves and disrupt access and availability to services, worsening food security, treatment of chronic diseases and individual capacities of caring for oneself and for others. Forced displacement exacerbates vulnerabilities, with IDPs facing greater food gaps and limited care, while poor infant feeding practices and rising substance use further undermine health outcomes.

Humanitarian Public Health Services

Conflict dynamics and natural hazards most often impact public health services where the shock occurs by limiting the functionality of the services, decreasing the availability and coverage of services (proportion of the population in need that receive services), and affecting the effectiveness (proportion of people receiving the service treated appropriately) of the provided services. Less than half (43.9%) of funding requirements for the Humanitarian Response Plan were received by the end of 2024 only. None of the public health sectors' funding was fully covered, Nutrition funding requirements were the least covered (33.4%)[47].

Health Services

As funding towards the health response is severely limited (only 35% requirements were met in 2024)[48], in half of the regions (9 out of 17), less than 80% of the assessed population has access to a health facility within an hour. Generally, displaced households reportedly closer to health facilities (9.5% more than 60 min away from health facilities) than households from host communities (18.3%), which might contribute to preventing them from accessing healthcare services. Although in camp settings, displaced population might find health services their functionality and effectiveness might not be sufficient. In Puntland state

the highest share of unmet healthcare needs (8.9%) might be explained by the multiple disease outbreaks (AWD/cholera and diphtheria) and waves of displacement that occurred in the first half of 2024, contributing directly to higher mortality estimates in the state, and Bari and Mudug regions. The compounded challenges include inadequate training of health workers, insufficient medical supplies, poor water and sanitation infrastructure, ineffective child care and referral systems, and weak integration of health and nutrition services[49].

Vaccination coverage for both communicable and non-communicable diseases varies across regions, accessibility of the area, and livelihood systems to which households correspond. More than 1.5 million children have yet to receive a single vaccine dose against polio, tetanus, diphtheria, and measles[50]. Poor vaccination, vitamin A supplementation, and deworming coverage lead children to have poor immune systems with higher chances of contracting common childhood illnesses like measles, AWD, ARTI, polio, and others that contribute to malnutrition. In 2023, barely half of the population received a first dose of diphtheria-tetanus-polio (52%) or a first dose against measles (46%)[51], below the respective 90% and 95% thresholds as per SPHERE standards[52] indicating that measures against disease spread are insufficient. In March 2024, 1.4 million cholera vaccine doses were approved for five districts in Banadir, Middle Shabelle, Bay, and Bari regions with 700,000 vials earmarked for Bossaso (Bari) in Puntland state, which was experiencing the highest case fatality rate (CFR 6.6%)[53]. This vaccination campaign likely mitigated further negative health outcomes in the targeted regions.

Water, Sanitation, and Hygiene

Overall, improved water, sanitation, and hygiene services are essential mitigating factors to disease spread through food and water pathways and to acute malnutrition. Drought and flooding are key deteriorating factors to such services, even more so when funding for emergency interventions is barely meeting their requirements (36.9% covered)[54]. Most assessed populations (72%) have access to improved water sources, although much worse-off conditions in regions, such as Lower Juba (30.2%), highlight important regional differences and higher exposure to water-borne diseases. Similar regional disparities in accessing improved sanitation services, particularly in Lower Juba (27.8%) and in Mudug (45.6%) regions indicate that risks of disease spread via fecal-oral transmission pathways are higher. Such gaps combined with overall poor hygiene practices (9.9% access improved handwashing facilities), including in Mudug region (3.8%) and in Puntland state (5.2%) have likely contributed to higher mortality estimates enabling the transmission of pathogens.

Latrines and other WASH infrastructure were destroyed in Hirshabelle and Puntland states by the 2024 Gu flooding (April-June)[55] increasing the risk of cholera transmission. WASH humanitarian partners reached during the first semester of 2024, 43% of people affected by AWD/cholera received hygiene kits, although the population Bari region wasn't reached which might have contributed to an increased disease spread and partially contributed to the higher mortality estimates measured in the region[56]. In Puntland state, a third of assessed households (30.7%) don't have access to improved water sources or improved sanitation and very few also have access to handwashing facilities with soap (5.2%) which are essential mitigating factors against the spread of waterborne diseases. In other areas, the WASH response might have effectively mitigated risks, such as in Lower Juba where the population mainly relies on surface water (31.4%), affected during the rainy season by overflowing and increased disease spread, and in the dry season of reduced water availability. In Lower Juba, the WASH response had reached 99% of the people targeted by 31st of July indicating that the poor public health conditions might have been mitigated reducing the risks of excess mortality[57].

It should be noted that WASH conditions for displaced population in camp settings (68.5% of IDPs assed in this present assessment) can be notably different. During previous droughts highly concentrated displaced population without adequate sanitation facilities was a key vector in diseases spread, which a remains a high considering only in 5 districts are the sites meeting requirements of having functional latrines for every 50 individuals as of July 2024[58].

Nutrition Services

Poor infant and young child feeding practices, high diseases burden, combined with poor WASH services can lead to severe malnutrition situation, especially in absence or limited availability and access to nutrition services. Integrated management of acute malnutrition services such as Outpatient Therapeutic Programme, stabilization centers and Targeted Supplementary Feeding Programs are key services required to mitigate acute malnutrition among children and caregivers. The regional and humanitarian responses face funding shortages that hinder efforts to address acute malnutrition, including the training of (community) health workers for effective management.

These gaps result in inadequate community-based screening, referrals, and awareness programs, compounded by malnutrition treatment supply shortages and insufficient training of women and caretakers in MUAC screening. According to the latest IPC AMN analysis, both nutrition-sensitive and nutrition-specific responses have declined in 2024[59]. As of June 2024, 260,639 children with severe acute malnutrition had been reached, representing 60% of the children estimated as the burden of malnutrition for 2024 and less than a third of children in need (27%) with moderate malnutrition were reached[60]. Vitamin A supplementation coverage reached only 16% of the targeted children, largely below the 95% threshold as per SPHERE standards, which is an essential supplementation to support growth and help combat infections among small children[61].

Excess mortality in Somalia is closely tied to limited availability and functionality of public health services Funding shortages decreased health service coverage and

Table 2: Integrated Analysis Table

	Impact on Population (Health Outcomes)		Direct Contributing Factors											Contrib-uting factor
Disaggregation	Mortality (95% CI)	% non-trauma deaths*	Children under-5 sick in last two weeks	Unmet Healthcare Needs	*Median GAM (whz or MUAC) (%) - IPC AMN Aug-24 to Jul-25*	*Population in IPC AFI Phase 3+ - July to September 2024*	% of HHs with poor FCS score	% of HHs with high rCSI score	% of HHs with (very) severe HHS score	% of HHs with access to Improved Water Sources	% of HH without access to a sufficient quantity of drinking water (often and always)	% of HHs with access to improved Sanitation	% of HHs with access to handwashing facilities	Time to health facility per usual transportation (>60 min)
Host population	0.3 [0.25 - 0.36]	79.3%	11.9%	3.2%			30.1%	11.7%	0.5%	59.8%	2.3%	70.6%	10.2%	18.3%
IDP population	0.18 [0.15 - 0.22]	82%	9.9%	2.5%			39.1%	20.5%	0.7%	61.4%	2%	74%	11.6%	9.5%
Bari	1.21 [0.89 - 1.53]	87.8%	14.6%	3.5%	14.9%	17%	38.7%	32.3%	1.3%	67.6%	0.4%	83.5%	7.5%	21.5%
Nugaal (Puntland)	0.83 [0.64- 1.02]	79.2%	14.5%	8.9%	-	9%	27.6%	21.5%	1.4%	65.6%	1.8%	69.3%	5.2%	17.6%
Mudug	0.61 [0.34 - 0.87]	70.9%	12.9%	2.8%	16.2%	23%	24.9%	20%	0.1%	75.5%	0.6%	45.6%	3.8%	28.9%
Hiraan (Hirshabeele)	0.35 [0.17 - 0.53]	65%	11.2%	4.9%	-	27%	32.8%	16.8%	0.6%	77%	1.5%	92.1%	23.5%	3.9%
Middle Shabelle	0.32 [0.13 - 0.5]	91.1%	4.7%	1.3%	17.6%	22%	32.4%	14.3%		88.2%	1.2%	67.7%	15.3%	16%
Sanaag	0.32 [0.16 - 0.47]	71.3%	8.5%	3.2%	12.2%	10%	23.1%	6.8%	0.2%	41.7%	1.2%	44.9%	4.6%	36.2%
Awdal*	0.27 [0.17 - 0.37]	93.3%	12.9%	2.5%	9.5%	16%	13%	10.6%		64.7%	0.9%	44.9%	1.3%	45.2%
Togdheer*		71.1%	4.7%	2.6%	9%	15%	31.6%	8.3%		36.6%	0.4%	67.7%	0.9%	23.3%
Lower Shabelle	0.27 [0.12 - 0.42]	99.4%	17%	3.5%	17.6%	13%	13.5%	21.7%	0.1%	88.8%	1.5%	73.1%	16.2%	22.1%
Galgaduud	0.25 [0.1 - 0.41]	84.9%	20.5%	3.4%	14.4%	27%	44.7%	10.8%	1.1%	81.9%	0.4%	54.8%	11.3%	16.1%
Woqooyi_galbeed**	0.2 [0.06 - 0.33]	100%	14%	4%	10.8%	17%	44.8%	6.6%	0.7%	57.6%	1%	52.8%	1.5%	45.9%
Sool**		28%	7.2%	2.3%	9.8%	21%	26.2%	31%		20.2%		54.6%	3%	45.3%
Bakool (South West)	0.15 [0.04 - 0.26]	100%	20.4%	0.4%	-	12%	32.2%	14.2%	0.6%	68%	1.1%	75.6%	10.9%	12.2%
Bay	0.13 [0 - 0.26]	100%	12.1%	2.6%	24.6%	37%	26.4%	17.2%	0.8%	71.5%	0.8%	56.5%	2.6%	9%
Gedo	0.09 [0.04 - 0.15]	85.1%	11.1%	2.1%	12.9%	21%	50.5%	14.8%	0.1%	69.8%	9.6%	52.2%	19.8%	17%
Lower Juba	0.04 [0 - 0.08]	100%	16.7%	1.6%	13%	16%	65.1%	17.1%	0.1%	30.2%	0.6%	27.8%	19.7%	25.9%
Banadir	-	-	6.4%	1.5%	14.4%	16%	32.3%	18.4%		95.8%	10.2%	81.9%	14.4%	8.4%
National	0.24 [0.21 - 0.27]	84.6%	12.1%	3%	-	-	32.8%	17.4%	0.5%	75.1%	4.5%	65.5%	9.9%	19%

Conclusions

The mortality levels in Somalia reveals regional and demographic disparities. While national mortality rates remain below WHO emergency thresholds (CDR0.24), regions like Bari and Nugaal exceed these levels, reflecting localized public health crises. Chronic and acute diseases dominate as leading causes of death, with acute illnesses affecting children and displaced populations. Healthcare barriers, including financial and physical constraints, are prevalent, particularly among women and displaced individuals. Most deaths occur outside health facilities, underscoring systemic gaps in healthcare accessibility and coverage. Regional variability in causes and places of death highlights the need for tailored interventions addressing diverse health challenges.

The higher mortality estimates observed in Bari and Mudug regions, as well as across Puntland state, can be attributed to a convergence of systemic and acute public health challenges. These regions faced disruptions to healthcare services, exacerbated by conflict, waves of displacement, and multiple disease outbreaks, such as AWD, cholera, and diphtheria. Insufficient funding for health, nutrition, and WASH interventions has further constrained service availability and efficiency, with inadequate vaccination coverage, malnutrition treatment gaps, and poor access to clean water and sanitation compounding vulnerabilities. In Hirshabelle and South West states, flooding in 2024 destroyed critical infrastructure, while overcrowded IDP sites with poor WASH conditions facilitated the spread of waterborne diseases. The interplay of these factors underscores the urgent need for targeted and integrated public health responses to mitigate excess mortality in these regions.

Recommendations

Based on the evidence presented, likely risk factors and drivers of public health gaps should be addressed to mitigate further the risk of excess mortality in Somalia. In the short term, food consumption and livelihood gaps should be addressed in areas with an important share of the population in IPC AFI phase 3 and above, such as Bay or Galgaduud regions. Simultaneously, nutrition services for children with severe and moderate acute malnutrition should be continued or scaled up as needed in areas with a higher burden of malnutrition such as Bay, Lower and Middle Shabelle regions. Reducing the risks of gender-based violence and improving hygiene practices and services through any relevant quick solutions are strongly recommended. In the medium term, increased access to functional health services should be addressed, especially in areas where disease outbreaks (cholera, measles, diphtheria) are active and immunization among children and adults is insufficient. WASH services should also be a key priority, to ensure sufficient water is available in areas such as Gedo and Banadir, but also improved water sources are accessible in areas such as Lower Juba. In the long term, mitigation measures to the impacts of flooding and drought should be elaborated in at-risk regions to minimize or mitigate future impacts of extreme weather events, especially considering upcoming La Niña conditions likely to create drought conditions throughout 2025. Initiatives to tackle root causes of conflict are necessary to reduce forced displacement, along with public health and protection measures to better serve displaced populations.

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ABOUT REACH

REACH Initiative facilitates the development of information tools and products that enhance the capacity of aid actors to make evidence-based decisions in emergency, recovery and development contexts. The methodologies used by REACH include primary data collection and in-depth analysis, and all activities are conducted through inter-agency aid coordination mechanisms. REACH is a joint initiative of IMPACT Initiatives, ACTED and the United Nations Institute for Training and Research - Operational Satellite Applications Programme (UNITAR-UNOSAT).

Methodology

The retrospective mortality survey conducted as part of the MSNA in Somalia from June 1st to July 14th, 2024, included all household members and recorded events (births, deaths, joiners, and leavers) within the recall period from January 1st to the moment of the data collection (173 days on average). Using a 2-stage cluster approach, with the statistical parameters of 90% confidence level, 10% margin of error, and a minimum cluster size of 4, the samples were first generated for all accessible districts per population group (Host Communities, Protracted IDPs and New IDPs). Then, using the same parameters, target sample sizes were calculated for each of Somalia's 19 livelihood zones. In order to achieve a 95% confidence level and a 5% margin of error, the data from the mortality level was analysed and reported on at the regional level (i.e. Admin 1). A bare minimum sample size of 592 households was applied per strata for crude mortality rates assuming a CDR of 1, a precision of 4%, a design effect of 2, an average household size of 5.2, and a non-response rate of 3%. In regions where this minimum sample size wasn't met, a higher level of aggregation was reported for CDR and U5DR. Prior to the launch of data collection, ethical approval was obtained through the National Institute of Health and verbal consent was obtained from respondents prior to each survey. CDR was reported in deaths per 10,000 people per day, and U5DR was reported in deaths under five years of age per 10,000 children under five years of age per day. The Terms of Reference for the 2024 Somalia MSNA are available **here**.

Table 3. Technical Summary Table

Disaggregation	Start Date DC	End Date DC	MSNA target per area	Total House-holds Reached	% achieved	Non-response	Total Individ-uals	Total Deaths	Total Under-5 Children	Total Under-5 Deaths
Host	5/14/2024	7/16/2024	6670	6443	97%	0%	31733	169	3178	28
IDP	6/3/2024	7/17/2024	5138	5790	113%	0%	27923	150	2788	23
Awdal (awdal + togdheer)	6/3/2024	6/25/2024	923	952	103%	0%	5137	22	688	1
Bakool (SW State)	5/14/2024	7/16/2024	448	2672	596%	0%	12788	42	1245	6
Banadir (not representative)	6/4/2024	7/2/2024	472	592	125%	0%	2276	-	232	-
Bari	6/11/2024	7/3/2024	747	1437	192%	0%	4032	83	375	22
Bay	6/4/2024	7/7/2024	779	2113	271%	0%	3847	8	521	2
Galgaduud	6/8/2024	6/30/2024	712	780	110%	0%	4056	17	155	0
Gedo	6/3/2024	6/26/2024	1372	952	69%	0%	6512	10	882	1
Hiraan (Hirshabeele)	6/5/2024	7/17/2024	523	1437	275%	0%	5343	33	533	5
Lower Juba	6/4/2024	7/4/2024	974	971	100%	0%	4440	3	450	0
Lower Shabelle	5/14/2024	7/16/2024	1502	1394	93%	0%	6809	31	412	3
Middle Shabelle	6/9/2024	7/11/2024	807	890	110%	0%	3055	18	109	3
Mudug	6/4/2024	6/30/2024	800	878	110%	0%	4906	48	551	11
Nugaal (Puntland)	6/4/2024	7/8/2024	392	2113	539%	0%	11294	160	1254	36
Sanaag	6/4/2024	6/25/2024	380	688	181%	0%	3621	19	437	1
Sool (Sool + Woqooyi Galbeed)	6/3/2024	6/25/2024	977	780	80%	0%	4189	13	393	1
Togdheer (Togdheer + Awdal)	6/3/2024	6/25/2024	923	952	103%	0%	5137	22	688	1
Woqooyi Galbeed (Woqooyi Galbeed + Sool)	6/3/2024	6/25/2024	977	780	80%	0%	4189	13	393	1
National	**5/14/2024**	**7/17/2024**	**11808**	**12233**	**104%**	**0%**	**59656**	**319**	**9318**	**94**

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