Report for the identification of Priority Areas for Multisectoral Interventions for Cholera control in Somalia

April 2025

Mogadishu

Table Contents

(i) Glossary

Acute Watery Diarrhoea	A person having three or more loose stools in a 24-hour period
Cholera alert	A person aged 2 years and above is dying of severe dehydration resulting from Acute diarrhoea
Suspected Cholera case	A person aged 2 years and above with acute watery diarrhea and severe dehydration, or who has died from acute watery diarrhea
Confirmed cholera case	• *Vibrio cholerae* O1 or O139 is isolated from a clinical specimen, such as stool, through culture. • A suspected cholera case that has been tested positive using Rapid Diagnostic Test (RDT)
Cholera death	A fatality caused by severe dehydration resulting from cholera.
Cholera outbreak	This is a geo unit where a cholera outbreak has been declared, or cholera cases confirmed by RDT or stool culture
Cholera Treatment Center	A designated facility where inpatient care for cholera cases is conducted by qualified health workers
Oral Rehydration Point	A community-level facility that provides first-line treatment for dehydration, particularly in the context of cholera. It offers a place where individuals can receive and learn how to administer oral rehydration solutions (ORS) to combat dehydration.
Integrated Disease Surveillance and Response	A disease surveillance strategy that is used in resource limited settings to conduct all disease surveillance activities under one platform using the same frontline health workers, data collection and analysis mechanism and well as resources.
Rapid Response Team	A team composed of multi skilled health workers usually at district level deployed to validate an alert
Administrative Unit 1	The geographic unit (region)comprising of many districts from which cholera data was collected for the analysis period
Administrative Unit 2	The lowest geographic unit of which cholera epidemiologic and laboratory data is collected. In this document, admin level 2 is the district
Vulnerability	The state of being exposed to cholera infection
Risk	The possibility of a person exposed to cholera contracting cholera
Priority Index	Unweighted sum of the score of each indicator included in the PAMI analysis for each unit over the analysis period

(ii) List of Abbreviations and Acronyms

Abbreviation	Meaning
AWD	Acute Watery Diarrhea
CFR	Case Fatality Rate
CHW	Community Health worker
CTC	Cholera Treatment Centre
DHIS-2	District Health Information System
FMOH	Federal Ministry of Health
GFTCC	Global Task Force for Cholera Control
IDSR	Integrated disease surveillance and Response
NCP	National cholera control plan
OCV	Oral Cholera vaccination
ORP	Oral Rehydration Point
ORS	Oral Rehydration Salt
PCR	Polymerase Chain Reaction
RDT	Rapid Diagnostic Test
RRT	Rapid Response Team
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
WASH	Water Sanitation and Hygiene
WHO	World Health Organization

1.0 Background

- Somalia is one of the cholera endemic countries in the world that has reported uninterrupted cholera transmission since the drought period of 2016/17. The repeated cholera outbreaks are a result of a combination of risk factors mainly attributed to a high proportion of displaced communities with limited access to safe water and proper sanitation. Displacement of the communities is a result of both conflict and sustained climatic shocks of floods, drought and cyclone that have affected the country in quick succession. The protracted conflict has also contributed to the weakening of the health system that has led to a large proportion of the population with limited access to safe water , proper sanitation and limited access to primary health care.

  1.1 Previous prioritization activities

- In 2017, Somalia developed a National Cholera plan (NCP) that was used to coordinate implementation of response interventions in prioritized districts. The plan was developed using only available cholera epidemiological data from each of the regions at the time. This prioritization was limited in scope because it did not factor in other risk factors, especially IDPs and access to water and sanitation indicators.

  In 2023 following floods, a hotspot mapping was conducted in consultation with health partners to identify districts of interventions during the floods (fig 1). This exercise was also limited in scope for it did not include all administrative units in the country. Neither of these exercises were aligned to the Global Task Force for cholera control (GTFCC) guidelines.

1.1 AWD/Cholera epidemiology in Somalia

- From January 2018 to December 2024, a total of 78,244 suspected cholera cases and 394 deaths (CFR 0.5%) were reported from 52 out of the 118 districts. A total of 7,424 suspected cases were tested using Rapid Diagnostic Test (RDTs) of which 1,883 cases were tested positive (*positivity rate* of 25.4%). The highest case load was recorded in 2024 in which 21, 944 cases and 137 deaths (Fatality Rate 0.6%) were reported (Table 1). Surveillance records show that children <5 years are disproportionately affected more than other age groups due to the high levels of malnutrition among this age category that lower their immunity to cholera infections.

Table 1: Cholera case load in Somalia 2018-2024					
Years	Female	Number of cases among children <5 years	Total cases	Total deaths	CFR(%)
2018	3,113	5,131	6,448	45	0.7
2019	1,514	3,533	3,100	4	0.1
2020	3,226	5,246	6,589	33	0.5
2021	3,087	5,108	6,170	39	0.6
2022	7,775	9,797	15,688	88	0.6
2023	9,432	11,455	18,305	47	0.3
2024	11,364	13,388	21,944	137	0.6
Total	39,511	53,658	78,244	393	0.5

- Cholera outbreak seasonality in Somalia coincides with the two rainy seasons, the highest peak in April-June (*Gu* rains) while a shorter rainy season occurs in October to December (*Dyre* rains) (figure 1). For all the years, over 60% of the total case load is reported among districts located in the basins of the Juba and Shabelle rivers (Fig 1), that are prone to flooding during the rainy seasons that leads to contamination of water sources. In between the rainy seasons, there are episodes of drought that also lead to water scarcity leading to reduced access to safe water.
- Kenya and Ethiopia which share borders with Somalia to the West and North respectively are also cholera endemic. With the high levels of population movements among the three countries, an outbreak in one country always leads to importation of cases to Somalia.

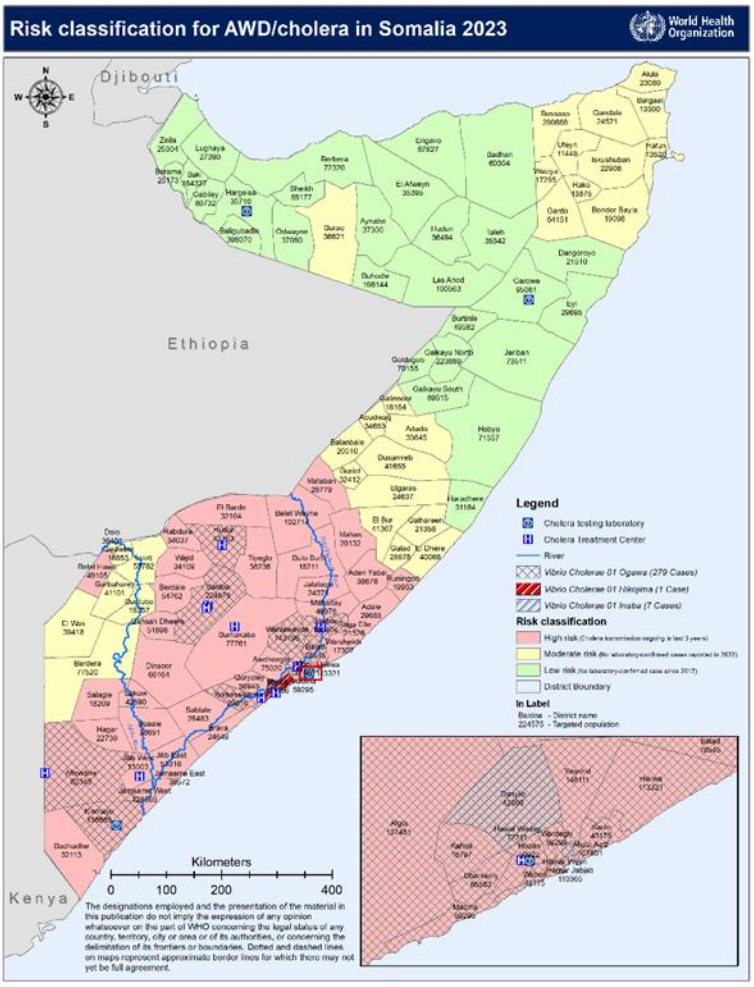
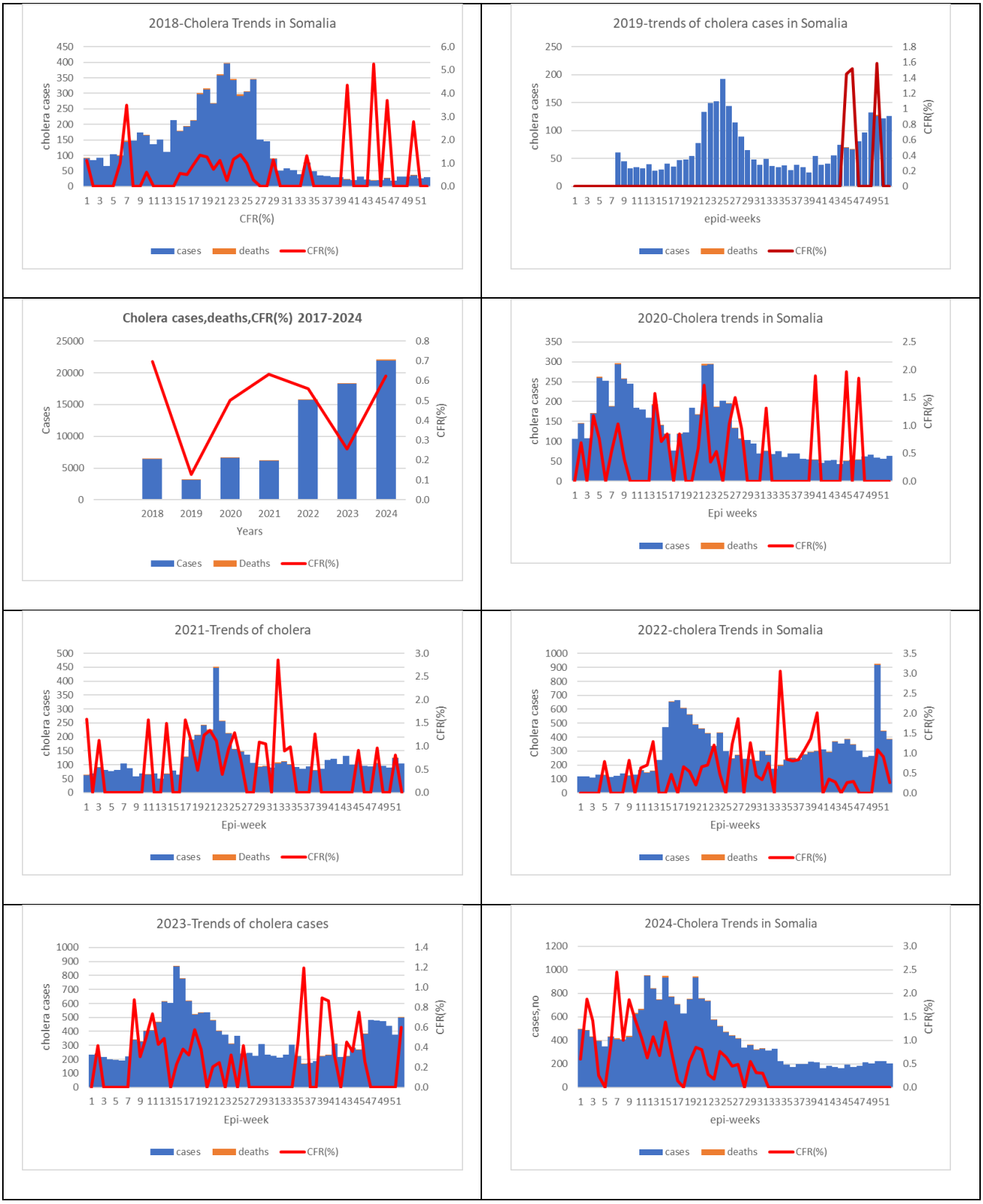

Risk classification for AWD/cholera in Somalia 2023
World Health Organization
Djibouti
Ethiopia
Kenya
Legend
Cholera testing laboratory
Cholera treatment Center
River
Vibrio Cholerae 01 Ogawa (279 Cases)
Vibrio Cholerae 01 Hikojima (1 Case)
Vibrio Cholerae 01 Inaba (7 Cases)
Risk classification
High risk
Moderate risk
Low risk
District Boundary
In Label
Baidoa - District name
224575 - Targeted population
Kilometers
0 100 200 400
The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its 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.

figure 1: Epidemic curves showing AWD/cholera trends in Somalia 2018-2024



2.0 Cholera response in Somalia

2.1 Coordination and leadership for cholera

The cholera response interventions are coordinated at national and state levels by a multisectoral technical working committee (TWC) composed of MOH technical officers, Ministry of Water and representatives from Health and WASH clusters. During an outbreak, area-based coordination is conducted at the district level with support from the United Nations Office for Humanitarian Coordination Affairs (UNOCHA). The TWC is responsible for developing contingency plans, mobilizing resources for cholera control, conducting monitoring and supervision visits and identifying gaps required for the response interventions for cholera. Despite the existence of coordination mechanisms in some of the high risk districts, there is need to strengthen Area Based Coordination mechanisms in all states for effective cholera response.

2.2 Cholera surveillance system

Cholera surveillance in Somalia is conducted under the Integrated Disease Surveillance and response strategy (IDSR) from community to national level. An adaptation of GTFCC guidelines for cholera surveillance and testing was adopted for Somalia in 2018[1]. At community level, the community health workers detect alerts of AWD using community case definition and submit reports to the districts surveillance officer who triages the information to initiate a field investigation. In the health facilities cholera alerts are detected by the health worker and data reported in DHIS-2 using a standard case definition.

In the health facilities suspected cases are tested using Rapid Diagnostic Kits. Cholera related data is compiled at state and national level, descriptive epidemiology conducted, and information disseminated through a weekly epidemiologic bulletin published by FMOH. Periodically, WHO supports the Federal Ministry to conduct water quality surveillance to identify contaminated water sources which are treated by the WASH cluster partners. However the quality of data received from high-risk districts is low, attributed to limited capacity of staff due to high turnover. Despite the adoption of IDSR as the strategy to strengthen surveillance, timely reporting and response to cholera alerts is still a challenge.

2.3 Cholera testing strategy

- There is an inconsistent application of the testing strategy. In principle cholera testing should be conducted by district based Rapid Response Teams (RRT) using RDTs. At the cholera treatment facilities, all cases reporting at the facility every day are screened using RDTs and a proportion of positive RDTs are shipped to the state-based laboratories for culture and sensitivity studies. Only cases with no history of using antibiotics in the past 24 hours are subjected to the RDT test. Due

[1] https://www.gtfcc.org/resources/public-health-surveillance-for-cholera/

to capacity gaps among the frontline health workers and limited stock levels of RDTs, the testing of strategy is not applied in a uniform pattern by all stakeholders leading to a possibility of over reporting in some of the districts

2.4 Cholera case management

- In Somalia, cholera cases are managed in communities at designated Oral Rehydration Points (ORPs) manned by community health workers using Oral Rehydration solutions (ORS) and referral of severe cases to established CTCs. At the health facilities, during an outbreak, CTCs are constructed within the health facility and dedicated for management of severe cases of cholera using intravenous infusion and anti-biotics following the GTFCC guidelines[2]. Health partners provide cholera case management kits through the Ministry of Health to these established CTCs in each of the affected districts. Despite the reduction in case fatality ratios over the years, case management of mild cases, especially at community level is still weak. There is no standard cholera treatment centre in Somalia which also compromises the quality of treatment received by the severe cases of cholera.

2.5 WASH interventions

Implementation of WASH interventions in districts reporting cholera cases is coordinated by the WASH cluster in collaboration with WASH department of Federal and state based MOH and Ministry of Water and environment. Implementation of WASH interventions is informed by the epidemiologic data collected in the district where affected villages/IDPs are identified for targeted interventions. The following activities are implemented by the WASH cluster

- Water trucking to affected communities
- Water treatment using Aqua tabs
- Construction or rehabilitation of pit latrines
- Distribution of soap for hand washing and other hygienic kits

However, in 2025, there has been a shift from implemented emergency WASH interventions to long term development of piped water systems in Baidoa, Kismayo and Banadir which are traditionally cholera hot spots.

2.6: Implementation of reactive oral cholera vaccination campaigns

Somalia started the implementation of reactive Oral cholera vaccination campaigns in 2017 to contain the spread of the cholera outbreak that was attributed to drought. From 2017 to 2022 a total of 2.7 million people aged one year and above including pregnant women received two doses of cholera vaccine. In 2023 and 2024, one round of reactive cholera vaccination campaign was conducted in districts with confirmed cholera outbreaks and 4.6 million people received one dose of OCV. Re-active cholera

[2] https://www.choleraoutbreak.org/book-page/section-7-case-management-treatment-facilities.html

vaccination campaigns in Somalia are implemented as one of the strategies to contain cholera spread in addition to strengthening WASH interventions, enhanced surveillance for timely detection and response to cholera alerts, case management and risk communication. The campaigns are implemented by the EPI/Polio vaccination teams as a house-to-house campaign for seven days.

3.0 Justification for using the method "PAMIs for cholera control "

Somalia had not conducted identification of PAMIs for cholera control using standard tools and guidelines from the GTFCC. For the period of 2020-2024, a total of 49 districts (42%) out of 118 districts reported cholera outbreaks. Identification of PAMIs for cholera control was therefore undertaken to support the development of the National control plan (NCP) to enable targeted and focused implementation of preventive and control interventions in line with the 2030 global cholera vision, and the WHO (EMR) 2025-2028 regional cholera strategy.

4.0 Methods

4.1 Inception

The disease surveillance unit in Ministry of Health constituted a PAMI exercise committee that was composed of the national cholera surveillance officer, laboratory manager and data manager. These were supported by technical staff in the states that had adequate knowledge about cholera surveillance in Somalia since 2018. The national team was supported by an epidemiologist and data manager based in WHO country office. The national team was supported by technical officers in WHO's regional office for the East Mediterranean region and WHO headquarters in Geneva. The committee was tasked to select the geographic level of PAMIs, determine the PAMI analysis period, and collect the population data, epidemiological data, laboratory data and information on the presence/absence of vulnerability factors.

PAMIs were identified at the district level (Administrative 2 level). These were considered because these are the units that have reliable population figures and availability of standardized cholera epidemiologic and laboratory information. All districts of Somalia (N=118) were included in the analysis.

The PAMI analysis period was 7 years (2018-2024). This is because standard case definition for cholera and standardized decentralized cholera surveillance was started in Somalia in 2018 to date.

4.2 Data collection

The national team collected and compiled retrospective epidemiological data for each year for the period 2018-2024 from the standard cholera line lists kept in the Federal Ministry of Health and respective states. The data collected was based on epidemiological indicators to calculate cholera incidence, persistence and mortality. The epidemiological data for each of the geographic units was collected from retrospective surveillance records in cholera line lists in each of the districts and the surveillance division of MOH. Data collected included weekly cholera case counts, weekly cholera deaths and number of

weeks with at least one reported cholera case for the period 2018-2024. For each of the administrative units, population data for the analysis period was obtained from the polio population census data for the Somalia national Polio program[3].

The laboratory data for the same period was collected from the national reference laboratory which keeps records of all the cholera diagnostics either by Rapid diagnostic Test (RDT) or bacteriology. The team compiled the retrospective laboratory data from the cholera Line list and laboratory records in the national public health laboratory for each geographical unit for the period 2018-2024; number of weeks with at least 1 tested cholera case, number of weeks in a year with suspected cases tested and number of cases of Acute Watery Diarrhoea tested positive for cholera.

4.3 Data management

The data was entered into the GFTCC data input template and cleaned, checked for quality, consistency and completeness using R studio software. Missing data were retrieved by contacting the district level. Missing data for each of the geo units was successfully retrieved from historical records in the disease surveillance division of FMOH. Data that was inconsistent was also corrected using historical surveillance records kept either in the district, national level, or even the laboratory. The cleaned data was then imported in the GFTCC PAMI Excel tool to calculate the priority index for each of the geographical units using epidemiological and laboratory data for the seven-year analysis period.

4.4 Vulnerability factors

Information about the presence/absence of vulnerability factors from the GTFCC indicative list were collected from survey reports and published reports by different clusters.

The factor “population received oral cholera vaccine more than three years ago (two-doses campaign with a coverage for both round >70%)” was not retained because the data compiled indicated a coverage <70% since targeted vaccination was implemented in specific communities.

As a result, the following vulnerability factors were considered:

- Location adjacent to cross-border cholera-affected areas or identified PAMIs
- Location along major travel routes with transportation hubs
- Major population gatherings
- Areas with high population density or overcrowded settings (e.g., urban slums, refugees/IDP camps)
- Areas with high-risk populations (e.g., seasonal workers/fishermen/miners in informal settlements)

[3] https://somalia.unfpa.org/en/news/somali-population-and-housing-census-2024-historic-opportunity-transformative-impact-somalia

- Hard-to-access populations
- Areas at high risk for extreme climate and weather conditions (e.g., heavy rains, floods, droughts)
- Areas affected by complex humanitarian emergencies
- Areas with more than 30% of the population using unimproved water facility type
- Areas with more than 50% of the population using unimproved sanitation facility type
- Areas with more than 50% of the population with no handwashing facility on premises

However, it was acknowledged that -except for WASH vulnerability factors-, the data sources available on the presence/absence of the other vulnerability factors lacked reliability. This was mitigated by correcting some data at the workshop based on local knowledge of representatives from the different States.

4.5 Priority index

The representativeness of cholera testing was assessed as insufficient because testing for cholera was inconsistently implemented (i.e., weekly testing coverage above 0 in 76% of the districts). As a result, no indicator on cholera tests was included in the calculation of the priority index.

The priority index was calculated using three epidemiological indicators (incidence, mortality, and persistence). Each epidemiological indicator was scored on a 3 points scale in accordance with the GTFCC recommended scoring scale based on distribution parameters (median & 80th percentile) as automated in the GTFCC PAMI Excel tool. As a result, priority index values ranged from 0 to 9.

4.6 Stakeholder validation

Participants

Through a consultative process with the Federal and state Ministries of Health, a three-day stakeholders' workshop was convened in Mogadishu (28-30 April 2025). The stakeholders were selected from the following organizations (List of participants attached in Annex):

- Technical officers from Federal level (i.e. emergency department, disease surveillance division, Health information management unit, Laboratory department),
- Technical officers from state Ministries of Health,
- Technical officers from the Ministry of water,
- Technical officers from the Ministry of Environment,
- Technical officers from WASH and Health cluster,
- Technical officers from WHO, UNICEF and other UN agencies

A team of experts with experience in supporting countries identifying PAMIs was drawn from WHO regional office and headquarters. The team was supported by in-country epidemiologists and data managers to conduct the three-day workshop.

5.0 Results

5.1 Selection of initial PAMIs (priority index threshold)

To assess the balance between feasibility and impact and determine the priority index threshold, the participants were divided into three groups based on states represented.

The groups that were formed represented the following states: Banadir (**Group 1**), Galmudug (**Group 2**), SouthWest (**Group 3**), Jubaland (**Group 4**) and Hirshabelle (**Group 5**). Each of the groups was composed of technical people that supported the analysis of the data that was presented to them. To support the discussion, each group elected a chair and a rapporteur who presented the group position to the audience in plenary session.

Three scenarios were shared with each of the groups for discussion as shown in table 2 below.

Table 2: Summary of scenarios used to determine the priority index threshold

	Priority Index	Feasibility	Impact
Scenario 1	≥6	• 15 districts are PAMIs (13% of the districts) • 2,755,045 people live in PAMIs (13% of the population)	• 67% of the cases in PAMIs • 61% of the deaths in PAMIs
Scenario 2	≥5	• 24 districts are PAMIs (20% of the districts) • 4,904,079 people live in PAMIs (24% of the population)	• 86% of the cases in PAMIs • 77% of the deaths in PAMIs
Scenario 3	≥4	• 33 districts are PAMIs (28% of the districts) • 6,440,435 people live in PAMIs (32% of the population)	• 92% of the cases in PAMIs • 84% of the deaths in PAMIs

These three scenarios were selected for discussion as they were considered to represent the best potential balance between feasibility and impact (as shown in the copy of sheet R3 of the PAMI Excel tool provided below).

Priority index values	Number of geographic units	Cum. number of geographic units	Rel. % of num. of geographic units	Total population	Rel. % of population	Cum. % of population	Num. of cases	Rel. % of num. of cases	Cum. % of num. of cases	Num. of deaths	Rel. % of num. of deaths	Cum. % of num. of deaths
9	5	5	4.2%	740,758	3.6%	3.6%	20,493	26.2%	26.2%	108	27.4%	27.4%
8	2	7	1.7%	569,059	2.8%	6.4%	17,461	22.3%	48.5%	77	19.5%	47.0%
7	5	12	4.2%	818,707	4.0%	10.4%	1131100.0%	14.4%	62.9%	32	8.1%	55.1%
6	3	15	2.5%	626,521	3.1%	13.5%	344300.0%	4.4%	67.3%	25	6.3%	61.4%
5	9	24	7.6%	2,149,034	10.5%	24.0%	1481600.0%	18.9%	86.2%	60	15.2%	76.6%
4	9	33	7.6%	1,536,356	7.5%	31.5%	435800.0%	5.6%	91.8%	28	7.1%	83.8%
3	12	45	10.2%	4,737,809	23.2%	54.7%	565800.0%	7.2%	99.0%	63	16.0%	99.7%
2	5	50	4.2%	2,466,724	12.1%	66.8%	767	1.0%	100.0%	1	0.3%	100.0%
0	68	118	57.6%	6,775,407	33.2%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
Grand Total	118		100.0%	20,420,374	100.0%		78,307	100.0%		394	100.0%	

Each of the groups discussed the three scenarios in detail and made a plenary restitution based on the consensus of the group members.

Except for one group representing Jubaland region (which selected scenario 1), all other groups selected Scenario 2 (priority index threshold ≥5) as representing the best balance between operational feasibility and impact in the context of Somalia.

Following discussions in plenary session, all groups and participants reached a consensus on setting the priority index threshold ≥5. Table 3 below summarizes the list of initial PAMIs.

Table 3. List of Initial PAMIs as determined by the priority index threshold

SN	Region	District	Population	Priority index	Sum of vulnerability factors	Final PAMI Status
1	Banadir	Abdul Aziz	56,478	5	4	Initial PAMI
2	Banadir	Danyile	162,472	9	7	Initial PAMI
3	Banadir	Dharkenly	159,894	9	7	Initial PAMI
4	Banadir	Kahda	108,161	9	6	Initial PAMI
5	Banadir	Hamar Jabjab	247,246	6	4	Initial PAMI
6	Banadir	Hawal Wadag	154,886	7	4	Initial PAMI
7	Banadir	Hodan	120,262	9	5	Initial PAMI
8	Banadir	Madina	101,965	7	4	Initial PAMI
9	Banadir	Shangani	189,969	9	7	Initial PAMI
10	Banadir	Wardegly	140,037	7	4	Initial PAMI
11	Bari	Gardo	126,234	5	7	Initial PAMI
12	Bay	Baidoa	643,401	5	7	Initial PAMI
13	Bay	Burhakaba	313,866	5	4	Initial PAMI
14	Gedo	Belet Hawa	116,209	7	8	Initial PAMI
15	Hiran	Belet Weyne	316,673	6	8	Initial PAMI
16	Hiran	Bulo Burti	99,092	5	5	Initial PAMI
17	Hiran	Jalalaqsi	62,602	6	5	Initial PAMI
18	Lower Juba	Kismayo	305,279	8	7	Initial PAMI
19	Lower Shabelle	Afgoi	263,780	8	4	Initial PAMI
20	Lower Shabelle	Kurtunwaarey	218,183	5	5	Initial PAMI
21	Lower Shabelle	Marka	526,094	5	4	Initial PAMI
22	Middle Shabelle	Adale	64,159	5	6	Initial PAMI
23	Middle Shabelle	Jowhar	305,610	7	6	Initial PAMI
24	Middle Shabelle	Mahaday	101,528	5	4	Initial PAMI

5.2 Selection of additional PAMIs

Lack of reliability of the priority index

Potential lack of reliability of the priority index in districts having a priority index below the selected threshold could not be assessed quantitatively in absence of surveillance performance indicators routinely collected (e.g., completeness of reporting). It was therefore assessed qualitatively in a participative manner.

The same groups formed based on state representation were tasked to identify districts whose priority index was below the threshold (≤5) in which the priority index may have lacked reliability in their State based on local qualitative knowledge and using the following discussion points to assess lack of reliability of the index:

- Any major challenges from the geo unit that may have led to under reporting over the years;
- Geographic units were OCV may have been implemented and remain highly vulnerable for cholera.

Among 94 districts having a priority index <5, 26 (28%) where identified as lacking reliability of the index. Justifications regarding the lack of reliability of the priority index in additional PAMIs are provided in Table 4 on page 18..

Vulnerability to cholera

As a second stage of selection of additional PAMIs, vulnerability to cholera in the 26 districts not selected as initial PAMIs and identified as lacking reliability of the priority index was assessed in group sessions (each group focusing on districts located in the State(s) covered by the group). Groups also corrected some data on the presence/absence of some vulnerability factors at district level based on local knowledge.

Group sessions were followed by plenary restitution and discussions to reach a consensus among all participants on the list of additional PAMIs taking into vulnerability and operational feasibility.

In total, 9 districts (representing 8 % of the districts in Somalia and 6 % of the population) were selected by consensus as additional PAMIs considering their specific vulnerabilities to cholera in addition to lack of reliability of the index (Table 4):

- In Banadir regions, Heliwa, Waberi and Hamar Weyn are in remote areas with limited access to primary health care services, safe water and proper sanitation;
- In Lower Shabelle, Qoryoley is located along the banks of river Shabelle where access to safe water is very low;

- In Gedo, Luuq and Dolo were selected because they are located at the border with Ethiopia and Kenya with a very high movement of people across the three countries;
- In Mudug, South Galkayu was included due to a very high concentration of IDPS with limited access to safe water and proper sanitation;
- In Middle Shabelle, Balad was selected because it is located along the banks of river Shabelle where access to safe water is very low;
- In Bakol, Hudur was selected due to high concentration of IDPs with limited access to safe water and sanitation.

Table 4. List of Additional PAMIs

Region	District	Population	Lack of reliability of the priority index	Vulnerability to cholera
Lower Shabelle	Qoryoley	316,022	Limited surveillance due to security threats	Location along the banks of river Shabelle where access to safe water is very low
Banadir	Heliwa	101,506	Incomplete reporting. The district's infrastructure and healthcare access are major barriers to data collection	Remote area with limited access to primary health care services, safe water and proper sanitation
Banadir	Hamar Weyn	96,646	District's infrastructure is inadequate to the high population density, leading to incomplete surveillance and underreporting	Remote area with limited access to primary health care services, safe water and proper sanitation
Banadir	Waberi	44,393	Inconsistent data collection and reporting due to high influx of IDPs, barriers to accessing healthcare, and limited organizational support for surveillance	Remote area with limited access to primary health care services, safe water and proper sanitation
Mudug	South Galkayu	211,407	Underreporting of cholera cases	Very high concentration of IDPS with limited access to safe water and proper sanitation
Middle Shabelle	Balad	169,759	Under reporting because of location bordering Mogadishu. Patients mostly go to Mogadishu for treatment and those cases get reported under Benadir region	A high proportion of communities living on banks of river shabelle with limited access to safe water and proper sanitation
Gedo	Luuq	130,129	Under reporting. Most cholera cases in Luug are reported from the Kenyana and Ethiopian side	Location at the border with Ethiopia and Kenya with high population movements accross the three countries
Gedo	Dolo	74,818	Under reporting where most cases are reported from the Kenyan and Ethiopian side	Location at the border with Ethiopia and Kenya with high population movements across the three countries
Bakol	Hudur	113,065	Under reporting of cholera cases due to high levels of staff turnover in Hudur	High concentration of IDPs with limited access to safe water and proper sanitation

5.3 Final list of PAMIs

Overall, 33 districts were selected by consensus as PAMIs representing 30 % of the population and 91% of the case load and 79% of the total fatalities, achieving a balance between feasibility and impact of interventions in PAMIs (Table 5, Table 6).

Table 5: Summary figures on PAMIs in Somalia

	Number of districts	% of districts	Population	% of population	Cholera cases	% of cholera cases	Cholera deaths	% of cholera deaths
Initial PAMIs	24	20%	4,904,079	24%	67,524	86%	302	77%
Additional PAMIs	9	8%	1,257,745	6%	3,582	5%	8	2%
All PAMIs	33	28%	6,161,824	30%	71,106	91%	310	79%

Table 6: List of initial PAMIS and additional PAMIs						
SN	Region	District	Mean population	Priority index	Sum of vulnerability factors	Final PAMI Status
1	Banadir	Abdul Aziz	56,478	5	4	Initial PAMI
2	Banadir	Danyile	162,472	9	7	Initial PAMI
3	Banadir	Dharkenly	159,894	9	7	Initial PAMI
4	Banadir	Kahda	108,161	9	6	Initial PAMI
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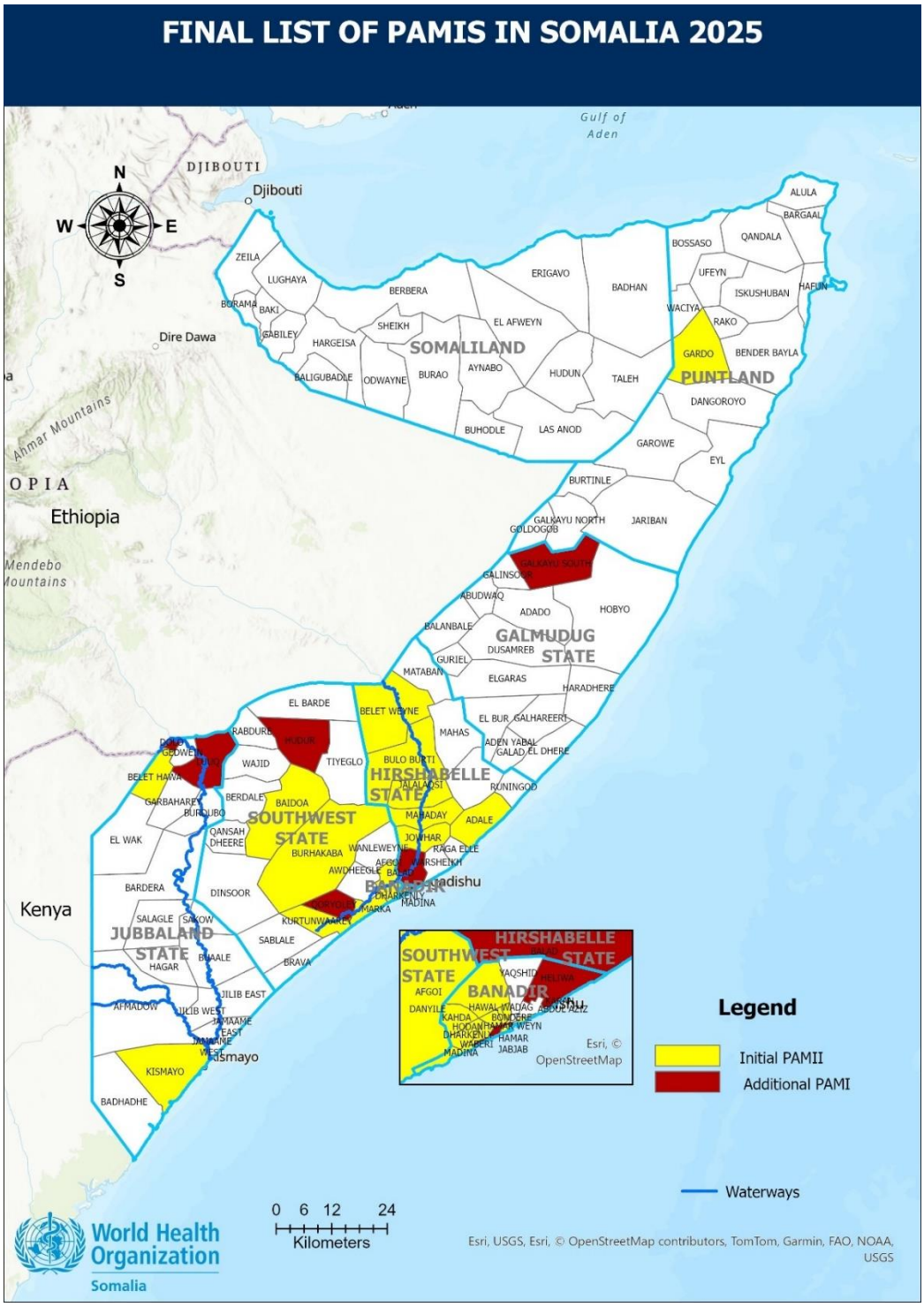
7	Banadir	Hodan	120,262	9	5	Initial PAMI
8	Banadir	Madina	101,965	7	4	Initial PAMI
9	Banadir	Shangani	189,969	9	7	Initial PAMI
10	Lower Shabelle	Qoryoley	316,022	2	5	Additional PAMI
11	Banadir	Wardegly	140,037	7	4	Initial PAMI
12	Bari	Gardo	126,234	5	7	Initial PAMI
13	Bay	Baidoa	643,401	5	7	Initial PAMI
14	Bay	Burhakaba	313,866	5	4	Initial PAMI
15	Banadir	Heliwa	101,506	3	4	Additional PAMI
16	Banadir	Hamar Weyn	96,646	4	4	Additional PAMI
17	Banadir	Waberi	44,393	4	4	Additional PAMI
18	Gedo	Belet Hawa	116,209	7	8	Initial PAMI
19	Mudug	Galkayu South	211,407	2	6	Additional PAMI
20	Hiran	Belet Weyne	316,673	6	8	Initial PAMI
21	Hiran	Bulo Burti	99,092	5	5	Initial PAMI
22	Hiran	Jalalaqsi	62,602	6	5	Initial PAMI
23	Middle Shabelle	Balad	169,759	3	4	Additional PAMI
24	Lower Juba	Kismayo	305,279	8	7	Initial PAMI
25	Lower Shabelle	Afgoi	263,780	8	4	Initial PAMI
26	Lower Shabelle	Kurtunwaarey	218,183	5	5	Initial PAMI
27	Lower Shabelle	Marka	526,094	5	4	Initial PAMI
28	Gedo	Luuq	130,129	4	8	Additional PAMI
29	Gedo	Dolo	74,818	4	7	Additional PAMI
30	Middle Shabelle	Adale	64,159	5	6	Initial PAMI
31	Middle Shabelle	Jowhar	305,610	7	6	Initial PAMI
32	Middle Shabelle	Mahaday	101,528	5	4	Initial PAMI
33	Bakol	Hudur	113,065	3	4	Additional PAMI

5.4 Map of Somalia showing initial and additional PAMIs



Conclusion and way forward

Following a 3-day consultative workshop, the following achievements were accomplished:

- Almost all states with the exception of Somaliland were represented during the consultative workshop, covering all States with the highest cholera burden. Historically Somaliland is not a cholera endemic state and this had limited impact on the scoring of the districts for PAMIs;
- Consensus on initial PAMIs based on priority index threshold ≥5 was reached as well as additional PAMI taking into account both lack of reliability of the priority index and vulnerability to cholera;
- A total of 6 million people (representing 30% of the total population) in 33 geo units (districts) in which 91% of cholera cases and 79% deaths were identified as priority districts for multisectoral interventions;
- Gaps and challenges affecting surveillance (in particular cases definitions and testing strategies applied inconsistently) and the proper implementation of cholera response interventions were identified and will be considered in the next phase of NCP development,

Below is the summary of the next steps to be accomplished.

SN	Next steps	Time frame	Responsibility
1	Drafting and endorsing the PAMI report	4 weeks	WHO CO and FMOH
2	Independent technical review of PAMI identification by the Global Task Force for cholera control	4 weeks	GFTCC
3	Advocacy and communication with senior management in WHO and FMOH	4 weeks	WHO CO and FMOH
4	Mapping of all stakeholders in Somalia for cholera control	4 weeks	WHO CO and FMOH
5	Discussions on the need for preventive oral cholera vaccination campaigns	4 weeks	FMOH, WHO country and regional office
6	Preparation and implementation of preventive OCV campaigns	10-14 weeks	Health, WASH cluster and FMOH
7	Re-activation of cholera control technical working groups	TBD	Health, WASH cluster and FMOH
8	Updating the National Control plan for cholera	TBD	Health, WASH cluster and FMOH
9	Resource mobilization for cholera control	TBD	Health, WASH cluster and FMOH

Annex 1: List of Participants

No	Full Name	Current Title	Organization
1	Mohamed Mohamud Addow	Director Of Health Emergency	MoH
2	Muqtar Abdi Shube	Director of public health	MoH
3	Sahra Isse Mohamed	head IDSR/MOH	MoH
4	Abdirahman Mohamed Abdullahi	Public Health Emergency Officer	MoH
5	Dr Adan Isse Adam	National Surveillance Officer	MoH
6	Falastin Mohamed Abdi	National Surveillance Officer	MoH
7	Aden Hussein Ali	National Surveillance Officer	MoH
8	Abdullahi Mohamed Mohamud	Cholera data Surveillance officer	MoH
9	Dr. Mohamed Abdirahman Omar	Cholera data manager	Banadir
10	Mohamed Mohamed	Banadir DSO- Daynile	Banadir
11	Ayni Muhudin Mohamed	National Public Health lab	NIH
12	Abdifatah Jaley	National Public Health lab	MoH
13	Abdiaziz Ibrahim Hussein	PHEOC Manager	Hirshabele
14	Ahmed Hassan Gomey	Laboratory supervisor	Hirshabelle
15	Abdirahman Mohamed Nor	Director public health	Hirshabelle
16	Nur Moallim Adan	PHEOC Manager	SWS
17	Abdirashid abdulkadir Bujeti	Southwest Public health Director	SWS
18	Farah Mukhtar Sheikh	Disease Surveillance and Response	Jubaland
19	Hikma Osman Omar	Deputy WASH Focal Point	MoH
20	Abdulahi Abtidoon	Director of Public Health	Galmudug
21	Mursal Nur Sudi	surveillance Galmudug state	Galmudug
22	Hassan Sheikh	Head of HMIS	MoH
23	Ibrahim Mohamed Nur	HMIS specialist	MoH
24	Fathi Abkar Mohamed	HMIS OFFICER	WHO
25	Mohamed Farah Mohamud	HIMS Specialist	WHO
26	Sadio Hassan Hussein	WASH Officer	WHO
27	ASHMONY, Hossam	HIMS	WHO
28	Mohamed Abdullahi Hussein	Health Emergency officer	WHO
29	Mohamed Abdikarim	Health Emergency officer	WHO
30	Osman Abdi Mohamed	Health Emergency officer	WHO
31	Naima Abdullahi	Health Emergency officer	WHO
32	Abdiweli Ahmed Ziyad	Health Emergency officer	WHO
33	Abdirahman Sheikh	Laboratory consultant	WHO
34	Mohamed Shukir	UNICEF WASH	UNICEF

35	Abdullahi Mohamed Abdullahi	Cholera data Surveillance officer	MoH
36	Abdisalam Ibrahim	WASH manager	MoH
37	Abdirahman Abdullahi Abdirahman	PHEOC Manager	Banadir
38	Abdulahi Abtidoon	Director of Public Health	Galmudug
39	Fathi Abukar Mohamed	HMIS OFFICER	MoH
40	Eng Ali Mohamud Hirsi	Director Of Water Department	MoH
41	Mohamed Abdirahman Hashi	NPHRL	MoH
42	Abubakar Ali Adan	HMIS Manager	SCI
43	Dr Fadumo Nour	UNICEF Health Officer	UNICEF
44	Begna Edo	WASH Cluster Coordinator	UNICEF
45	Gilbert Nsanjiyumva	Health cluster	WHO
46	Mohamed Shukri Issack|	WASH Cluster Co-Coordinator	HC
47	Henry Gray	WHE/HC	WHO
48	MOHAMMED, Shaza	Technical officer	Regional office
49	DOMINGUEZ, Morgane	Technical officer	HQ
50	ABDELGAWAD, Basma	Data manager	Regional office
51	Yusuf Elmi Mohamoud	WCO	WHO
52	Mutaawe Lubogo	Epidemiologist	WHO

Annex 2. Workshop Agenda

Identification of Priority Areas for Multisectoral Interventions (PAMI) for cholera control in Somalia

28-30 April 2025

Agenda

Day 1

Time	Topic	Speaker
Morning		
Opening		
08:30-09:00	Registration	WHO admin
09:00-09:10	Opening by WHE TL/HC and objectives of Workshop	Henry
09:10-09:15	Emergency coordinator-MoH	Dr. Adow
09:15-09:30	WASH cluster	Bagna
09:30-09:50	Group photo and break	WHE Comms team
Cholera in Somalia		
10:00-10:30	Overview of cholera epidemiology in Somalia	Sahra/Aden Ali Hussein
10:30-11:30	Overview of cholera response activities in Somalia- implementation, Gaps and lessons • Coordination/Leadership • Cholera surveillance • Laboratory capacity • Case management and OCV • WASH and RCCE • Cholera supplies	MOH/HC and WASH cluster
11:30-12:00	Q&A	all
12:00-14:00	Prayer and lunch	
Afternoon		
Introduction to the identification of PAMIs		
14:00-14:30	Method and process for the identification PAMIs for cholera control	Morgane
14:30-15:15	Q&A	Morgane
PAMI identification in Somalia		
15:15-15:30	Process of data driven phase of PAMIs identification	Mutaawe

15:30-16:00	Practicum and display of PAMI excel tool	Basma
16:00-16:15	Q&A	Yusuf Elmi
16:15-16:30	Coffee break and side meetings	
1615 open	Coffee break and side meeting with the proposed group leads	
16:15-16:30	Wrap up of day 1	Yusuf Elmi

Day 2

Time	Topic	Speaker
Morning		
PAMIs based on priority index threshold		
08:30-09:00	Overview of day 2	Yusuf Elmi
09:00-9:15	Introduction to group work	Morgane
09:15-10:15	Group work: Priority index threshold Group 1-Banadir Group 2-SouthWest Group 3-Hirshabelle Group 4-Jubaland Group 5-Other states (Galmudug/PL and SL)	Group leads TBC
10:15-10:45	Coffee break	
10:45-12:00	Group presentations Consensus on priority index threshold	MOH/WHO Chair TBD
12:00-13:30	Prayer and Lunch	
Afternoon		
Reliability of the priority index		
13.30-13:45	Introduction to group work	Morgane
13:45-15:15	Group work: Reliability of the priority index Group 1-Banadir Group 2-SouthWest Group 3-Hirshabelle Group 4-Jubaland Group 5-Other states (Galmudug/PL and SL)	Group leads TBC
15:15-16:15	Group presentations Consensus on areas to be considered for potential additional PAMIs	MOH/WHO Chair TBD or panel? TBD
16:15-16:30	Wrap up of day 2	Yusuf Elmi
16:30-17:00	Coffee and administrative meeting	

Day 3

Time	Topic	Speaker
Morning		
Additional PAMIs		
08:30-09:00	Overview of day 3	Yusuf Elmi
09:00-9:15	Introduction to group work	Morgane
09:15-10:15	Group work: Additional PAMIs Group 1-Banadir Group 2-SouthWest Group 3-Hirshabelle Group 4-Jubaland Group 5-Other states (Galmudug/PL and SL)	Group leads TBC
10.15-10-45	Coffee break	
10:45-12:00	Group presentations Consensus on additional PAMIs	MOH/WHO
12:00-14:00	Prayer and Lunch	
Afternoon		
Wrap up on PAMI identification		
14:00-14:30	Final list of PAMIs	Yusuf Elmi
14:30-15:00	Next steps	Shaza
15.00-15.30	Coffee break	
Closing		
15:30-16:00	Closing	MOH