REPUBLIC OF KENYA

NATIONAL MULTI-SECTORAL CHOLERA ELIMINATION PLAN (NMCEP)

2022 – 2030

MINISTRY OF HEALTH

MINISTRY OF WATER, SANITATION AND IRRIGATION

REPUBLIC OF KENYA

NATIONAL MULTI-SECTORAL CHOLERA ELIMINATION PLAN (NMCEP)

2022 – 2030

TABLE OF CONTENTS

FOREWORD

Cholera remains an issue of major public health importance in Kenya. Kenya has in recent years experienced outbreaks affecting different parts of the country. Prevention of cholera is dependent on access to safe water, adequate sanitation, and basic hygiene needs. Cholera infection results in acute watery diarrhea that can cause severe dehydration and death if untreated even in previously healthy individuals. Prompt treatment of cases with appropriate antibiotics and fluid therapy is essential in averting cholera related deaths.

During the 71st World Health Assembly in May 2018, a resolution to implement cholera prevention and control Global Roadmap was introduced by Governments of Zambia and Haiti with Kenya supporting the resolution. The 2022 -2030 National Multisectoral Cholera Elimination Plan is aligned to **'Ending cholera – A Global Roadmap to 2030'** that envisions a ninety percent reduction in cholera deaths by 2030.

The 2022 -2030 multisectoral plan outlines key interventions structured across the six key pillars of: Leadership, Surveillance, Case management, Risk communication, Water Sanitation and Hygiene (WASH) and Oral Cholera Vaccine (OCV).

The successful implementation of the plan is dependent on political goodwill, a multisectoral approach and coordination at both the National and County levels of Government. The plan emphasizes the need for multisectoral engagement. To guarantee seamless coordination of the relevant sectors, the plan is to be anchored at the Office of The President. The Ministry of Health together with the Ministry of Water, Sanitation and Irrigation is committed to the implementation of this multisectoral plan and to elimination of local cholera transmission by 2030.

SEN. MUTAHI KAGWE, EGH

Cabinet Secretary,
Ministry of Health

JAMES MACHARIA, EGH

Ag. Cabinet Secretary,
Ministry of Water, Sanitation and Irrigation

ACKNOWLEDGMENT

The Ministry of Health together with the Ministry of Water, Sanitation and Irrigation wishes to sincerely thank all those who contributed to the development of the 2022 -2030 National Multisectoral Cholera Elimination Plan. Special appreciation to the technical team that worked tirelessly to ensure that Kenya has a revised plan. They Include: Dr. Francis Kuria (MoH), Dr. Daniel Langat (MoH), Dr. Emmanuel Okunga (MoH), Dr. Nolluscus Ganda (WHO – Kenya), Eunice Mugera (MoWSI), Joan Brunkard (US CDC), Dr. Eric Osoro (WSU – GH Kenya), Dr. Catherine Kiama (WSU – GH Kenya), Annastacia Muange (MoH) and Doris Marwanga (WSU – GH Kenya). The full list of contributors is provided in the annex.

We also take this opportunity to appreciate the technical and financial support from the US Centers for Disease Control and Prevention (US CDC) and Washington State University (WSU – Global Health Kenya). In addition, we sincerely thank the following institutions for the technical support provided: Division of Disease Surveillance and Response, County departments of Health, Ministry of Water, Sanitation and Irrigation, WHO – Kenya, Global Task Force on Cholera Control, UNICEF, AMREF - Health Africa and WASH Alliance Kenya.

We invite our stakeholders and partners to continue supporting the Ministry of Health and the Ministry of Water, Sanitation and Irrigation in implementation of planned activities as we focus on Cholera elimination in our country.

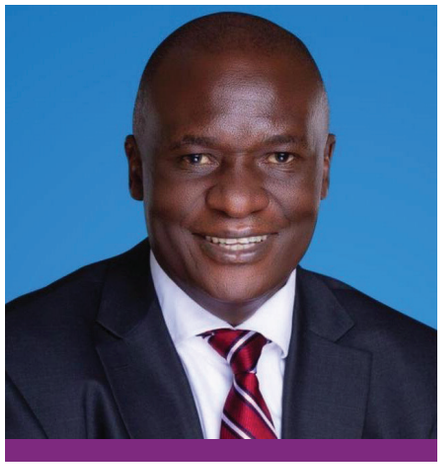
SUSAN MOCHACHE, CBS

Principal Secretary,
Ministry of Health

DR. (ENG.) JOSEPH NJOROGE, CBS

Ag. Principal Secretary,
Ministry of Water, Sanitation and Irrigation

EXECUTIVE SUMMARY



The Kenya National Multisectoral Cholera Elimination Plan 2022 - 2030 will guide implementation of cholera related activities and interventions for Kenya to achieve cholera elimination by 2030. Following a review of the previous 2013 – 2018 plan, a cholera risk assessment, proposed coordination structures at both national and county levels, and deployment of Oral Cholera Vaccines are timely additions in the revised plan.

The revised plan highlights the specific country goals which are to reduce; cholera annual incidence to zero per 100,000 population, number of deaths by 90% by 2027 and Case Fatality Ratio to less than 1% by 2027. The plan also elaborates the cholera situation in Kenya with mapped high disease burden areas that will be prioritized for targeted interventions.

The implementation matrix will follow 6 key pillar areas. **1) Leadership & coordination:** outlines the key stakeholders that will form the coordination structures at both national and county levels. **2) Case management and Infection Prevention Control:** focus on activities that will better the outcomes of patient management and contribute to averting cholera related deaths. **3) Surveillance and laboratory services:** focus on prompt cholera case detection, investigation and reporting at various levels. **4) Water, sanitation and Hygiene (WASH):** aims to bring together various WASH actors to invest in the WASH infrastructure, improve water quality, provide safe water, WASH packages as part of response to cholera outbreaks as well as integration of WASH with other interventions. **5) Risk communication with community engagement:** messaging for social behavior change to reduce occurrence and transmission. **6) Oral Cholera Vaccine (OCV):** highlights the prerequisite planning for deployment of the vaccination as a new intervention. The circumstances under which OCV will be deployed are outlined in the Plan.

Additionally, a detailed monitoring framework for each of the pillars is outlined with targets and key indicators for evaluation at various years of implementation.

DR. PATRICK AMOTH, EBS

Ag. Director General,
Ministry of Health

ENG. SAO ALIMA

Water Secretary,
Ministry of Water, Sanitation and Irrigation

ACRONYMS AND ABBREVIATIONS

AFDB	Africa Development Bank
AMR	Antimicrobial Resistance
AST	Antimicrobial Susceptibility Testing
AUC	African Union Commission
AWSR	Annual Water Sector Report
CCTTs	Cholera Contact Tracing Teams
CDC	Centers for Disease Control and Prevention
CFR	Case Fatality Rate
CHUs	Community Health Units
CHVs	Community Health Volunteers
CLTS	Community-Led Total Sanitation
COG	Council of Governors
CORPs	Community Own Resource Persons
CTCs	Cholera Treatment Centers
CTUs	Cholera Treatment Units
DDSR	Division of Disease Surveillance and Response
DEH	Department of Environmental Health
DPHK	Development Partner for Health in Kenya
DRM	Disaster Risk Management
EAC	East Africa Community
EBS	Evidence Based Surveillance
ECSA-HC	East, Central and Southern Africa Health Community
EMCA	Environmental Management and Coordination Act
EWARS	Early Warning Alert and Response System
FBO	Faith Based Organization
FELTP	Field Epidemiology and Lab Training Program
FSM	Fecal Sludge Management
GAVI	Global Alliance for Vaccines and Immunization
GIZ	German Agency for International Cooperation
GTFCC	Global Task Force on Cholera Control
HCWs	Health Care Workers
HENNET	Health NGOs Network
HPACK	Health Promotion Advisory Council of Kenya
HWTS	Household water treatment and safe storage

ICT	Information and Communication Technology
IDSR	Integrated Diseases Surveillance and Response
IEC	Information Education and Communication
IGAD	Inter Governmental Authority on Development
IHR	International Health Regulations
IPC	Infection Prevention and Control
IRP	Independent Review Panel
JICA	Japan International Cooperation Agency
JMP	Joint Monitoring Program
KDHS	Kenya Demographic Health Survey
KEMRI	Kenya Medical Research Institute
KEMSA	Kenya Medical Supplies Agency
KENITAG	Kenya National Immunization Technical Advisory Group
KHIS	Kenya Health Information System
KNBS	Kenya National Bureau of Statistics
KRCS	Kenya Red Cross Society
M&E	Monitoring and Evaluation
MAI	Mean Annual Incidence
MCA	Member of County Assembly
MDAs	Ministries, Departments and Agencies
MoH	Ministry of Health
MoWSI	Ministry of Water, Sanitation and Irrigation
MSF	Médecins Sans Frontières
NA	Not Applicable
NDMA	National Drought Management Authority
NDMU	National Disaster Management Unit
NEMA	National Environment Management Authority
NG-CDF	National Government Constituencies Development Fund
NMCEP	National Multisectoral Cholera Elimination Plan
NPHLS	National Public Health Laboratory Services
NR	No Record
NVIP	National Vaccines Immunization Program
O&M	Operation and Maintenance
OCV	Oral Cholera Vaccine

OD	Open Defecation
ODF	Open Defecation Free
OJT	On Job training
OR	Operational research
ORPs	Oral Rehydration Points
ORS	Oral Rehydration Solution
PHEOC	Public Health Emergency Operations Centre
PPE	Personal Protective Equipment
PSB	Public Service Board
PSC	Public Service Commission
RCCE	Risk Communication and Community engagement
RDT	Rapid Diagnostic Test
RF	Results Framework
RTMIS	Real Time Monitoring Information System
SDG	Sustainable Development Goals
SIDA	Swedish International Development Cooperative Agency
SODIS	Solar disinfection
SoPs	Standard Operating Procedures
TG	Technical guidelines
TWGs	Technical Working Groups
UN	United Nations
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WASH	Water, Sanitation, and Hygiene
WASH FIT	WASH Facility Improvement Tool
WESCOORD	Water Environment Sanitation Coordination
WHA	World Health Assembly
WHO	World Health Organization
WiS	WASH in Schools
WRA	Water Resources Authority
WSU	Washington State University

DEFINITION OF TERMS

Basic hand washing facilities: Availability of a handwashing facility with soap and water at home.

Basic sanitation: Use of improved facilities which are not shared with other households.

Basic water: Drinking water from an improved source, provided collection time is not more than 30 minutes for a roundtrip including queuing.

Cholera elimination: Any country that reports no confirmed cases with evidence of local transmission for at least three consecutive years and has a well-functioning epidemiologic and laboratory surveillance system able to detect and confirm cases.

Cholera hotspot: A geographically limited area where environmental, cultural and/or socioeconomic conditions facilitate the transmission of the disease and where cholera persists or re-appears regularly (as defined by the Global Task Force on Cholera Control).

Improved drinking water sources: Water sources that have the potential to deliver safe water by nature of their design and construction, and include: piped water, boreholes or tube wells, protected dug wells, protected springs, rainwater, and packaged or delivered water.

Improved sanitation: Sanitation facilities designed to hygienically separate excreta from human contact, and include: flush/pour flush toilets connected to piped sewer systems, septic tanks or pit latrines; pit latrines with slabs (including ventilated pit latrines), and composting toilets.

Mean annual incidence (MAI): An average of the annual incidence over the 5-year period.

Open defecation: Disposal of human faeces in fields, forests, bushes, open bodies of water, beaches and other open spaces or with solid waste.

Percentage persistence: The number of weeks in which cholera cases were reported out of the total 260 weeks expressed as a percentage.

Proportion of households with access to improved sanitation: Percentage of households with connection to main sewers, septic tank, ventilated improved pit latrines, pit latrines with slabs, biodigesters or cess pools.

Proportion of households with access to improved water source: Percentage of households whose main source of drinking water was piped household water, a public tap or standpipe, tube-well or borehole, protected dug well, protected spring, collected rainwater or bottled water.

Safely managed sanitation: Use of improved facilities that are not shared with other households and where excreta are safely disposed of in situ or removed and treated offsite.

Safely managed water: Drinking water from an improved water source that is accessible on premises, available when needed and free from faecal and priority chemical contamination.

Unimproved water: Drinking water from an unprotected dug well or unprotected spring.

LIST OF FIGURES

LIST OF TABLES

OVERVIEW

A. BACKGROUND INFORMATION

Kenya is located in the Horn of Africa at Latitudes of 4.21^{0}North and 4.28^{0}South, longitudes of 34^{0}East and 42^{0}East. The country is bordered by the Indian ocean, Tanzania, Uganda, South Sudan, Ethiopia and Somalia. Approximately 80% of the land area of Kenya is arid and semi-arid and only 20% is arable. Following the Kenya Constitution 2010, the country was divided into 47 administrative counties as illustrated in Figure 1.

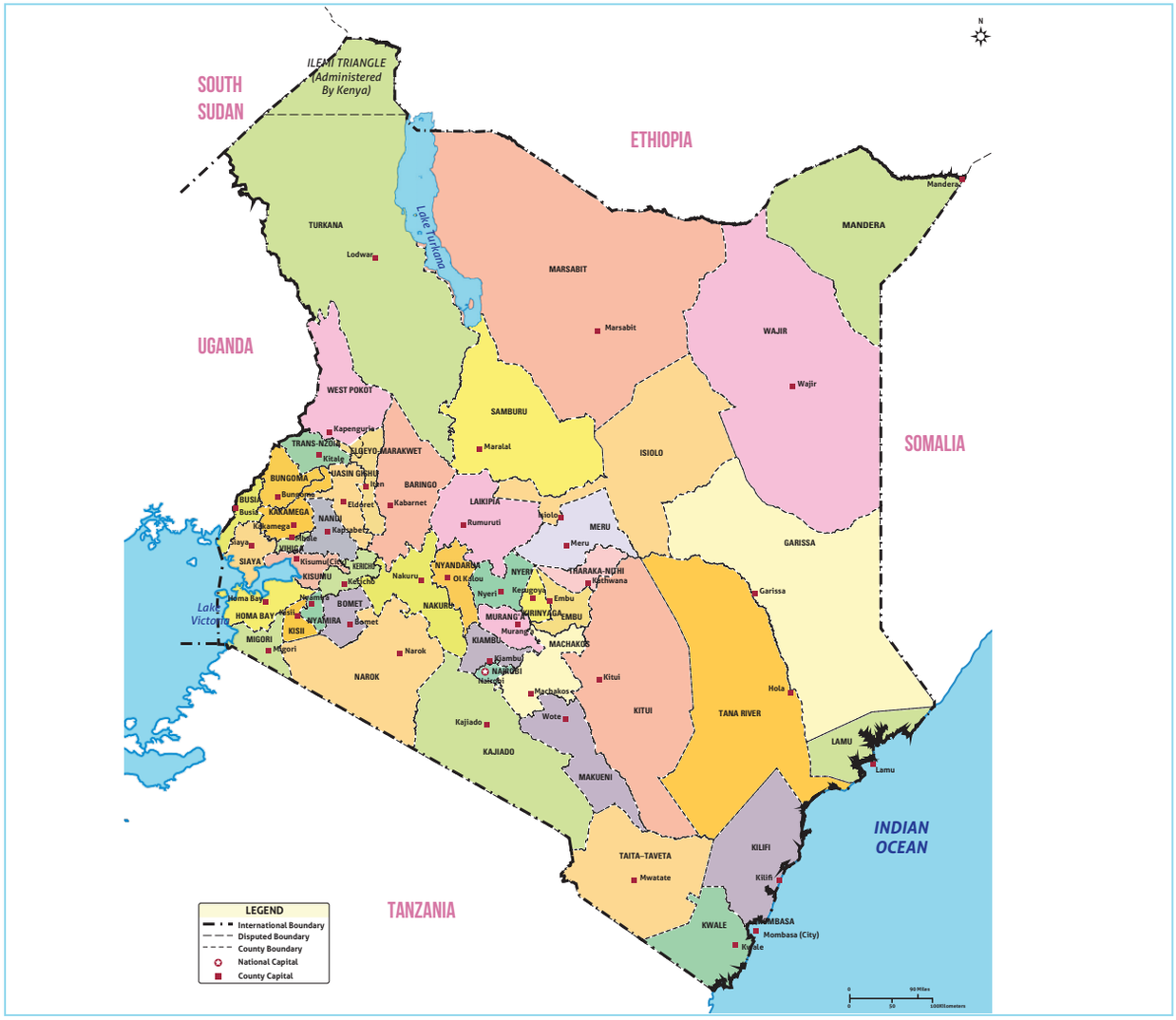


Figure 1: Map of Kenya administrative units 2019
(Source: Ministry of Interior)

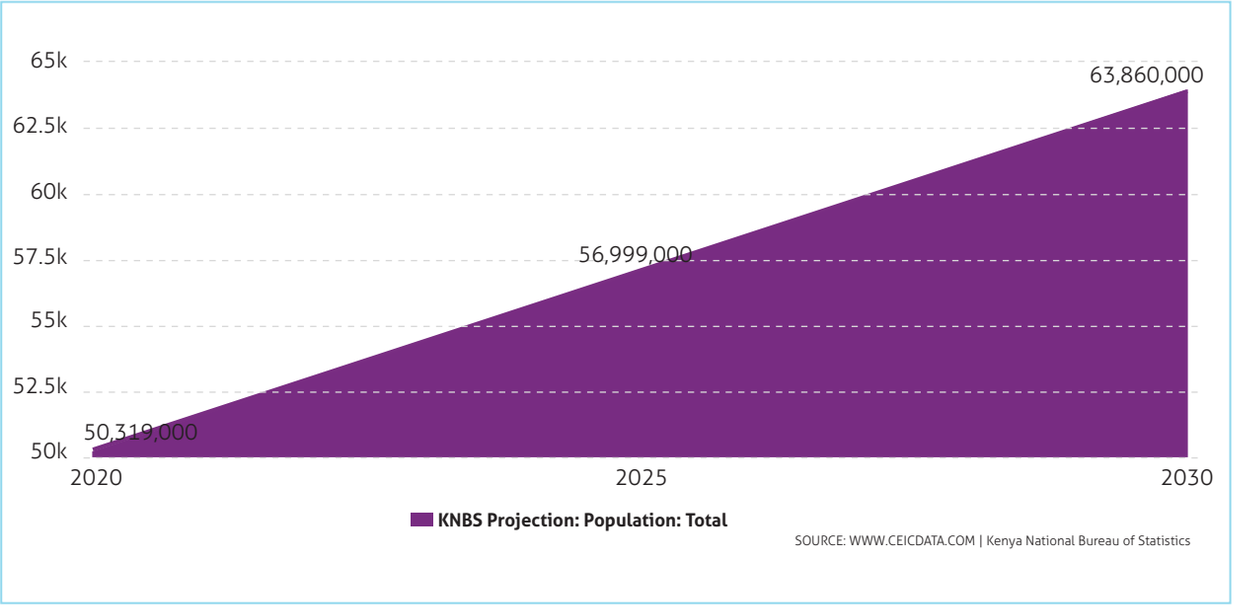
B. DEMOGRAPHIC INFORMATION

The total population of Kenya as enumerated during the 2019 census was 47.6 million with an almost equal number of males and females (KNBS,2019). The population had increased by 2.2% annually from 37.7 million in 2009. The total population as at 2022 is projected at 53 million and is expected to increase to 63 million by 2030.

Table 1: Basic demographic indicators, Kenya

Demographic characteristic	Value
Total population (2019)	47, 564,296
Sex ratio (Number of males per 100 females)	98.1
Population density (pop/Km2)	82
Total fertility rate (Births per woman)	3.9
Percent in urban areas (%)	32.3
Life expectancy at birth (years)	58.0
Crude birth rate (%)	35.0
Crude death rate (%)	10.4
Maternal Mortality Ratio (per 100,000 live births)	362
Infant mortality rate (per 1,000 live births)	39.0

Data sourced from KNBS 2019 (population statistics) and KDHS 2014 (health indicators)



About one third of the population lives in urban areas with Nairobi County being the most populous. The average population density is 82 per km2 and varies greatly across the counties with urban counties being more densely populated than the rural counties as shown in Figure 2. The average household size has declined from 4.2 (2009) to 3.9 (2019).

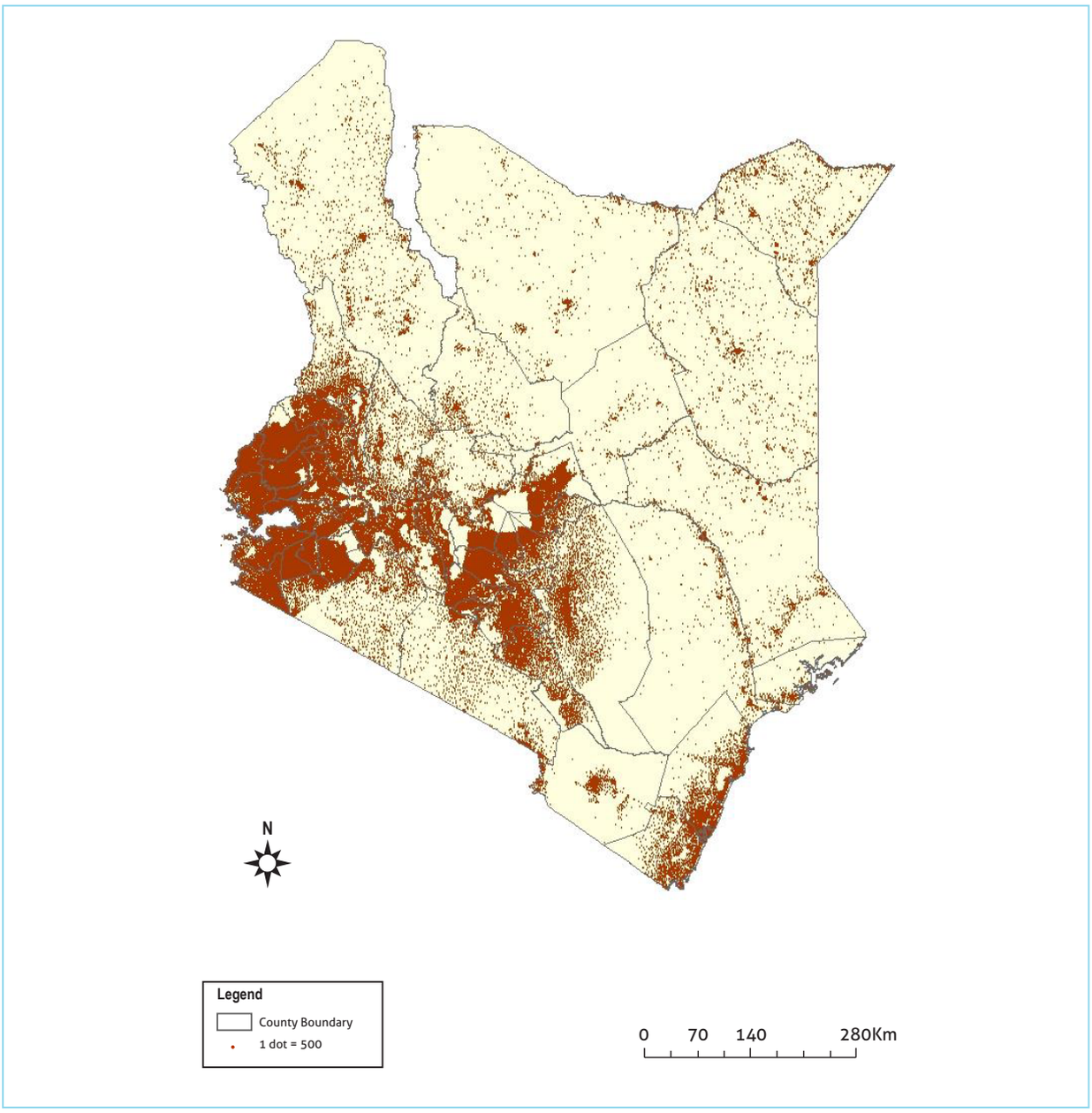


Figure 2: Map of Kenya showing population distribution by County
Source: KNBS, 2019

C. EPIDEMIOLOGY OF CHOLERA IN KENYA

Cholera remains a disease of major public health concern in the list of priority diseases under Kenya's Integrated Disease Surveillance and Response (IDSR) strategy, 2021. The disease was first reported in Kenya in 1971 in Turkana County and was associated with a cholera pandemic originating in South East Asia in the 1960s. The country has experienced an upsurge of cholera cases affecting various counties, with large cyclical epidemics occurring approximately every five to seven years.

Kenya continues to experience cholera outbreaks each year with exception of a few years based on data available from the Ministry of Health. The highest number of cases were reported in 1997. Widespread cholera outbreaks occurred between 1997-1999, 2007-2010 and recently between 2015-2019 as illustrated in the epi curve (figure 3). A total of 711 cases (CFR 1.8%) were reported in 2020 while 38 cases (zero deaths) were reported in 2021. The 2021 outbreak was reported in Dadaab and Kakuma refugee camps.

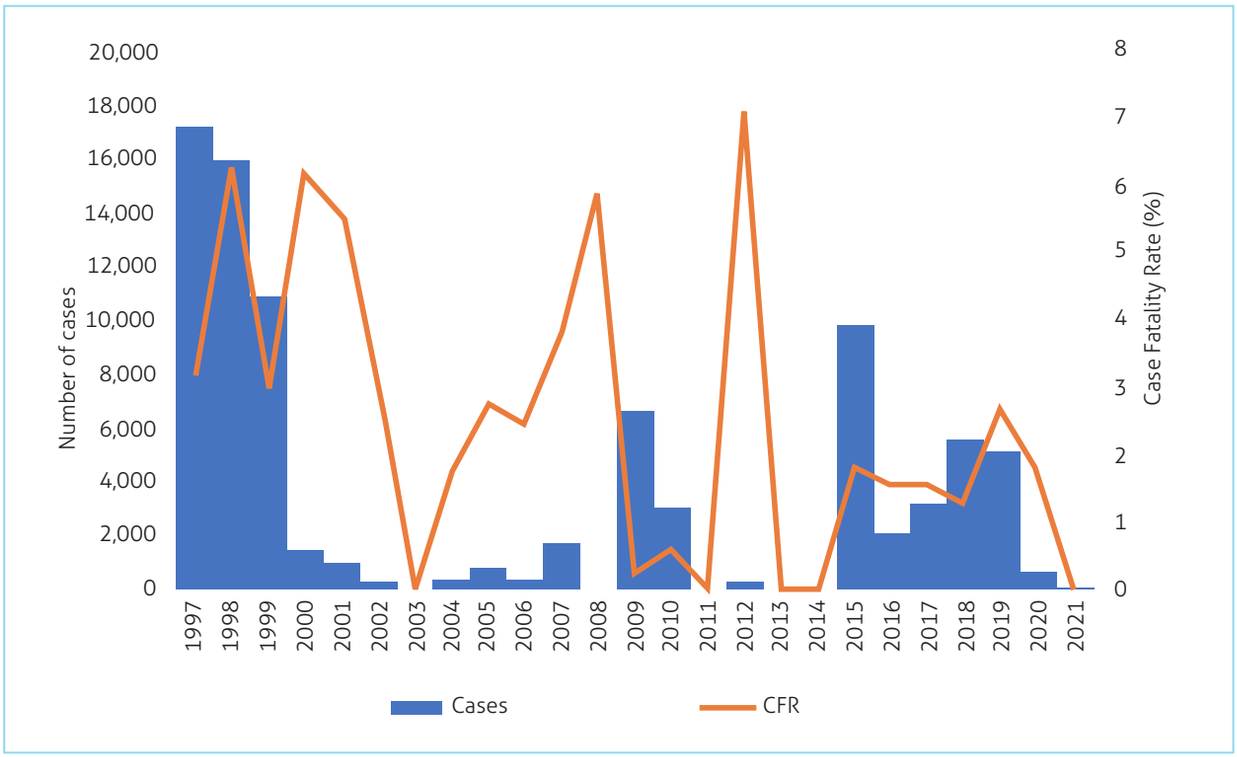


Figure 3: Number of annual cholera cases and case fatality rate, Kenya, 1997 – 2021

Cholera outbreak line list data submitted to Ministry of Health between 1997 and 2021 is summarized in Table 2 below.

Table 2: Number of reported cholera cases, number of deaths and case fatality rate — Kenya, 1997–2021

Year*	Number of cases	Number of deaths	Case Fatality Rate (%)
1997	17,200	555	3.2
1998	15,937	994	6.2
1999	10,964	368	3.4
2000	1,509	93	6.2
2001	1,001	55	5.5
2002	319	10	3.1
2004	392	7	1.8
2005	828	23	2.8
2006	402	10	2.5
2007	1,756	67	3.8
2008	68	4	5.9
2009	6,678	19	0.3
2010	3,122	19	0.6
2012	338	24	7.1
2013	41	0	-
2015	9815	180	1.8
2016	2103	33	1.6
2017	3228	51	1.6
2018	5638	74	1.3
2019	5208	141	2.7
2020	711	13	1.8
2021	38	0	-
Total	87,296	2,740	3.1

Data source: Ministry of Health

*No cholera cases reported in 2003, 2011 and 2014

D. IDENTIFIED RISK FACTORS FOR CHOLERA OUTBREAKS IN KENYA

Various studies and outbreak investigations conducted in Kenya in recent years have shown the following to be the factors associated with cholera outbreaks;

1. **Open defecation;** areas with higher prevalence of open defecation identified as being at higher risk of cholera outbreaks.[1]

2. **High population density in urban slums;** population growth in slums and urban areas without adequate expansion of safe drinking water infrastructure.[1,2]

3. **Cross border movement of persons** from neighbouring countries that experience complex emergencies and large cholera outbreaks. Areas that border neighbouring Somalia were found to have the highest mean annual incidence for Cholera between 2015 and 2018.[3]

4. **Transmission in crowded settings and amongst refugees and internally displaced persons.** The refugee camps in Kenya continue to experience multiple prolonged outbreaks. In 2017, transmission in camp settings occurred mainly within Garissa and Turkana counties, accounting for 23% of the total reported cases. Both counties host big refugee camps, namely Dadaab and Kakuma. Refugees in these camps come from neighbouring countries.[3]

   Civil unrest with massive displacement of persons following the disputed 2008 presidential elections saw an increase in cases reported in 2008-2010 with unusually high mortality.[4]

5. **Mass gathering events** in institutions, restaurants and hotels. In 2017, 7% of cases occurred in institutions and mass gathering events, where a number of people got infected from a point source.[3] In June 2017, a cluster of cases of acute diarrhoeal illness was reported amongst attendees at an international conference in a hotel in Nairobi County. Following field investigation, the outbreak was confirmed as a point source outbreak with 146 cases having consumed Chicken from the hotel. Culture confirmed Vibrio Cholerae serotype Ogawa.[5] Between 10 and 12 July 2017, 136 cholera cases with one death were reported during a Trade fair held in Nairobi County.[3]

6. **Changes in rainfall patterns.** Increased rainfall from October to December, and decreased rainfall from April to June were all significantly associated with an increased risk of cholera in Kenya.[6]

[1] Cowman, G. (2017). Factors associated with cholera in Kenya, 2008-2013. PAMJ.

[2] World Bank. (2015).

[3] World Health Organization. (2017).

[4] Mutonga, D. (2013). National Surveillance Data on the Epidemiology of Cholera in Kenya, 1997-2010. The Journal of Infectious Diseases.

[5] Mwenda, V. (2017). Cholera Outbreak During a Scientific Conference at a Nairobi Hotel, Kenya 2017. Pubmed.

[6] JD, S. (2014). Interaction between climatic, environmental, and demographic factors on cholera outbreaks in Kenya. Infectious Diseases of Poverty.

ESTABLISHMENT OF A MULTISECTORAL APPROACH

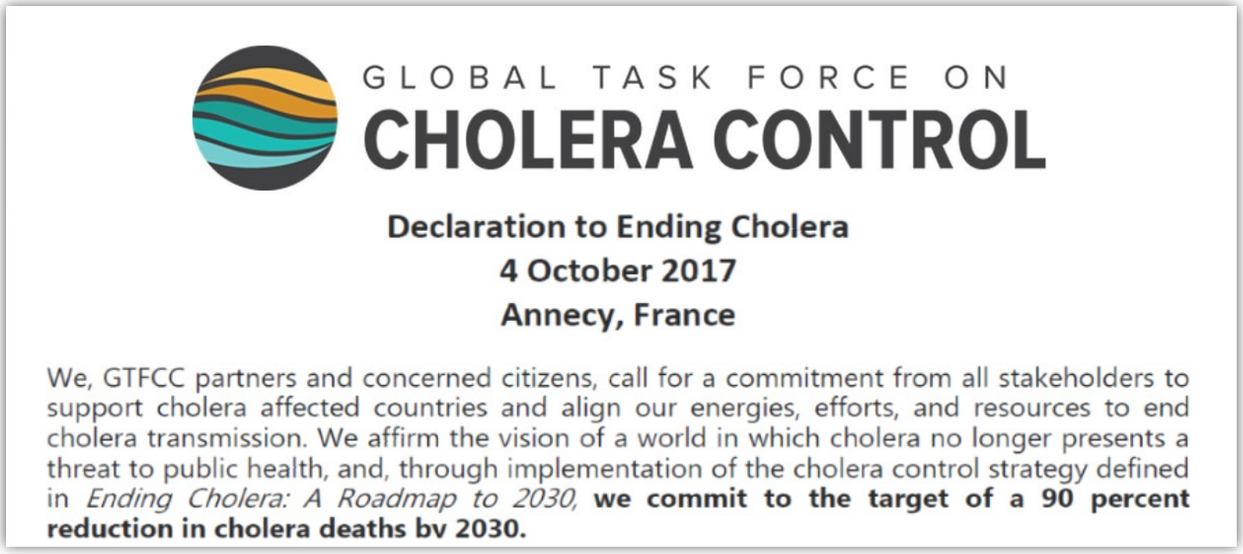
Validation of the Kenya NMCEP with representatives drawn from National government, County governments, WASH actors and partners

ESTABLISHMENT OF A MULTISECTORAL APPROACH

E. POLITICAL COMMITMENT

Cholera control and elimination requires a multisectoral approach due to the multiplicity of factors contributing to recurrence of outbreaks. Various actors i.e. Ministry of Health in collaboration with other ministries, County governments, partners and communities play an important role in the prevention and containment of cholera outbreaks.

To kickstart the multisectoral engagement, the Ministry of Health, in collaboration with line ministries and partners convened a national task force forum in July 2018. This was in conformity with the WHA 71.4 resolution of May 2018 for the global cholera elimination where Kenya was in support of the resolution.



GLOBAL TASK FORCE ON
CHOLERA CONTROL

Declaration to Ending Cholera
4 October 2017
Annecy, France

We, GTFCC partners and concerned citizens, call for a commitment from all stakeholders to support cholera affected countries and align our energies, efforts, and resources to end cholera transmission. We affirm the vision of a world in which cholera no longer presents a threat to public health, and, through implementation of the cholera control strategy defined in *Ending Cholera: A Roadmap to 2030,* **we commit to the target of a 90 percent reduction in cholera deaths by 2030.**

F. NATIONAL LEVEL COORDINATION MECHANISM

To operationalize the multisectoral plan, a national coordination structure will be established. Overall coordination of the implementation of the NMCEP will be at the level of the ***Office of The President of Kenya***.

A ***Council of Ministers*** (Ministry of Health, Ministry of Water, Sanitation and Irrigation, Ministry of Education, Council of Governors, Ministry of Finance, Ministry of Urban Development, Ministry of Interior and coordination of National Government, Ministry of Defence, Ministry of Environment and Forestry) with responsibilities related to cholera, water and sanitation will be formed and convened to oversee the National Cholera Elimination Plan implementation, including advocacy for adoption of the Plan by the highest level of government and for resource mobilization.

A ***National technical task force*** comprised of the Ministries and technical partners including the Inter-Faith Council will be established to lead the implementation process of the NMCEP. The secretariat to the National technical task force will be housed at the Ministry of Health. The National task force will be organised with membership from the different ministries, agencies and partners into 6 pillar groups namely: ***leadership &coordination, surveillance & laboratory services, case management & IPC, Risk Communication and Community Engagement (RCCE), WASH*** and ***OCV***. Each pillar group will channel their feedback through the secretariat at the Ministry of Health. The secretariat will convene meetings, act as a communication channel and monitor progress of implementation of activities towards elimination.

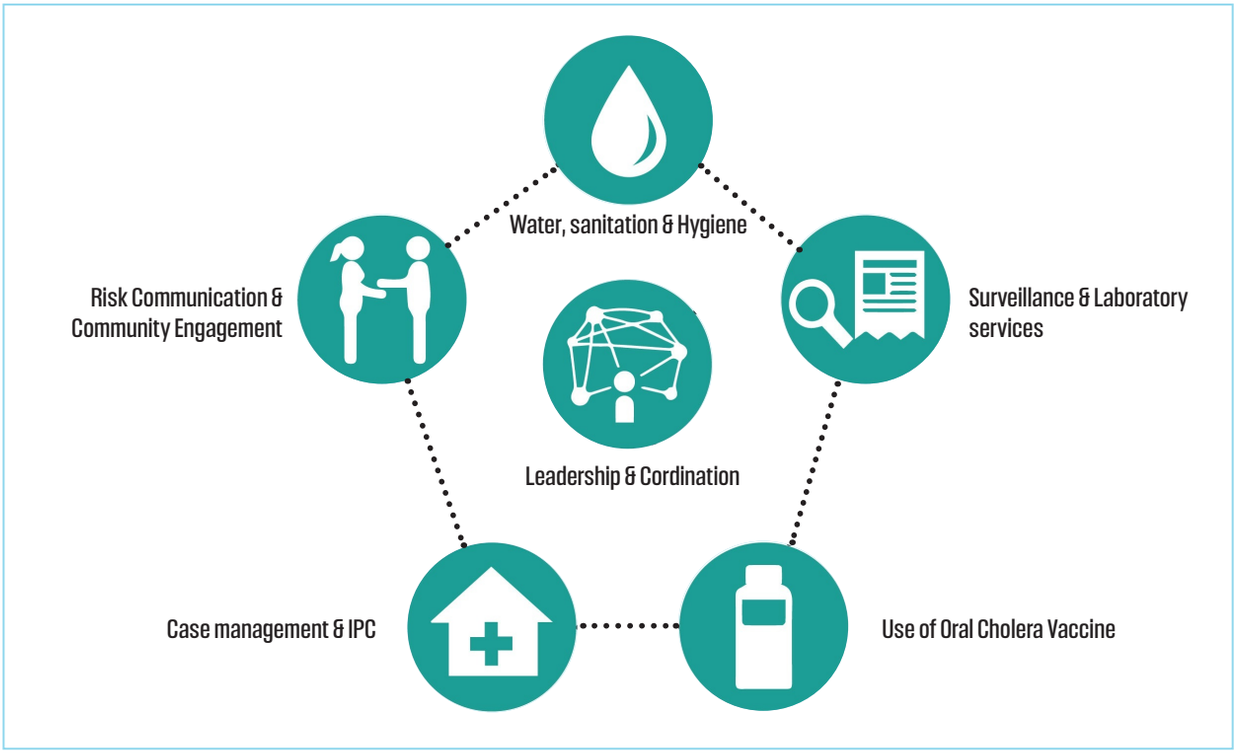


Figure 4: Pillars of Cholera Elimination

An organogram of the national leadership and coordination structure and proposed composition of the coordination teams is as shown in figure 5. The key stakeholders to steer the cholera elimination agenda are outlined in Tables 3 and 4.

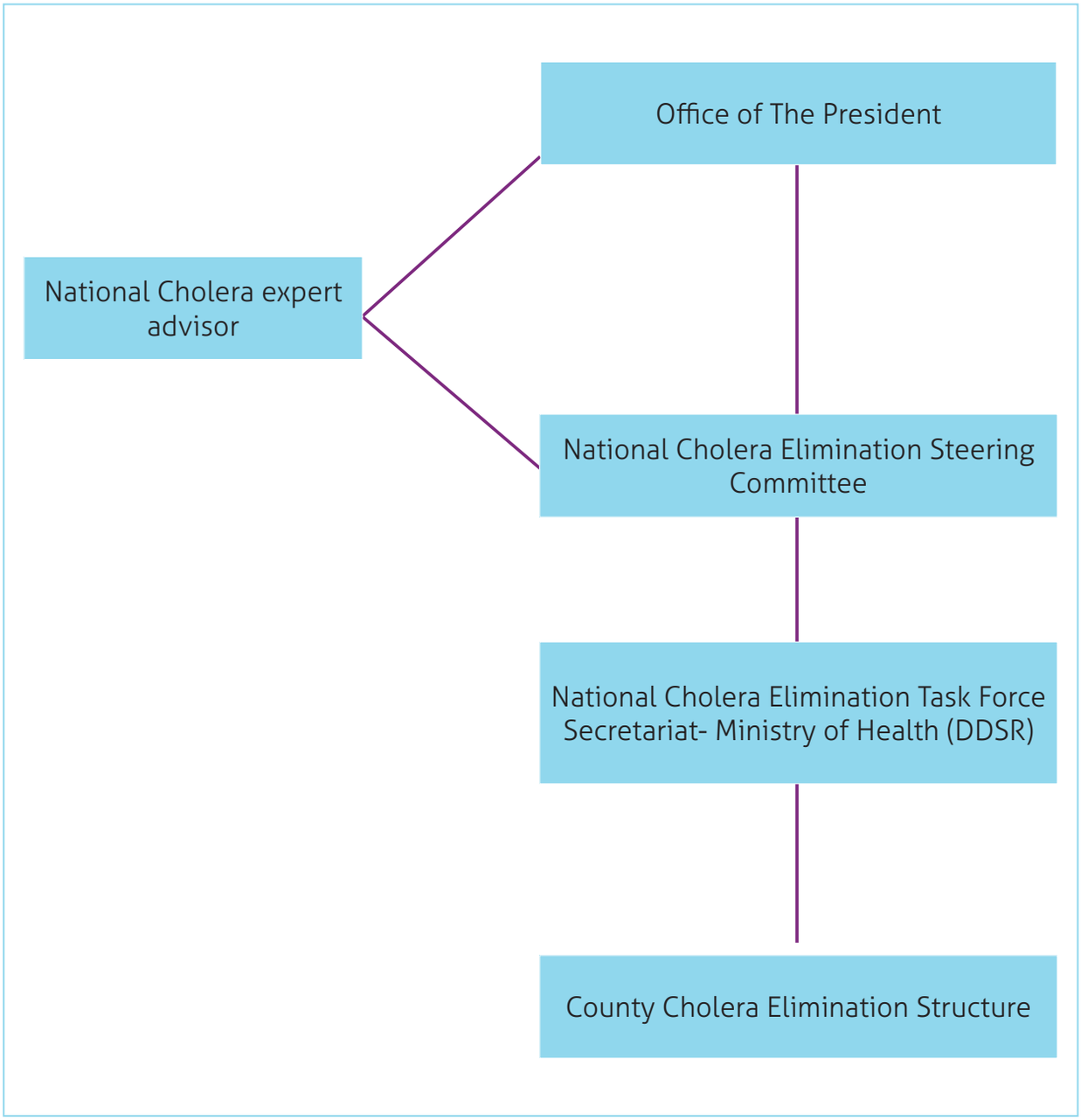


Figure 5: NMCEP National coordination structure

Table 3: Composition of the coordination teams at the National level

National Cholera Expert advisor	Roles and responsibilities
Appointee	• Make a case for Cholera elimination • Advocacy for funding (domestic and external) • Establish a strong M&E Unit to monitor progress towards elimination
National Cholera Elimination Steering Committee (NCESC) membership	**Roles and responsibilities**
Ministries Ministry of Health Ministry of Water, Sanitation and irrigation Ministry of Environment and forestry Ministry of Education Ministry of Devolution Ministry of ICT Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works Ministry of Defence Ministry of interior The National Treasury **Council of Governors (COG)** Chair of Health, Chair of Water, Chair Finance **Development Partners** World Bank DPHK NGO Council of Kenya **UN and Partner Agencies** UNDP WHO UNICEF UNOCHA US CDC	• Provide overall high-level stewardship in implementation of the Kenya NMCEP • Enhance adoption and mainstream the NMCEP at national and county level • Develop a resource mobilization plan and mobilize resources for the Kenya NMCEP • Monitor financial expenditure and implementation of the Kenya NMCEP • Stakeholder and partner engagement at local and international levels • High level advocacy with various cadres of leadership (Political, religious, Community, legislators) to raise the profile of Cholera elimination and the Kenya NMCEP • Enhance cross-border and intercountry collaboration and coordination of cholera elimination in the region • Mobilize resources to respond to outbreaks

National Cholera Elimination Task Force membership	Roles and responsibilities
Ministries Ministry of Health Ministry of Water, Sanitation and irrigation Ministry of Environment and Forestry Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works The National Treasury Ministry of Education (School Health) **State Corporations** Kenya Medical Supplies Agency (KEMSA) Kenya National Bureau of Statistics (KNBS) Water Resources Authority (WRA) **Public Service Commission** **Research & Academic Institutions** Kenya Medical Research Institute (KEMRI) Health training institutions **Partners** World Health Organisation (WHO) Centers for Disease Control and Prevention (CDC) Washington State University – Global Health Kenya United Nations Children's Fund (UNICEF) Kenya Red Cross Society (KRCS) MSF AMREF HENNET NGOs (international and local) World Bank AFDB GIZ JICA SIDA EU **Religious leaders and Key opinion leaders**	• Provide technical support to the steering committee in implementation of the NMCEP • Coordinate with county teams in Cholera preparedness and response activities • Establish a monitoring and evaluation team to periodically review progress towards cholera elimination • Establish working groups across the 6 pillars • Ensure adequate staffing of Health care workers at the national level • Ensure surge capacity to respond to outbreaks • Establish a mechanism to provide surge capacity, expertise and technical assistance to counties experiencing cholera outbreaks • Research & academic institutions will support implementation of activities outlined to respond to research priority needs in each pillar • Map existing initiatives and programs (with attendant funding) that are already under implementation • Regularly update the cholera treatment guidelines

G. COUNTY COORDINATION STRUCTURE

All 47 counties will require a coordination mechanism since there is risk of cholera introduction given the free movement of persons across counties due to economic reasons, search for pasture and water (nomad population) and major transport corridors. The leadership of the counties will be expected to form the cholera coordinating mechanism at the County level (figure 6) with similar composition as the National coordination structure (figure 5). Counties will be required to submit reports and requests for support to the National Task force through the secretariat at the Ministry of Health.

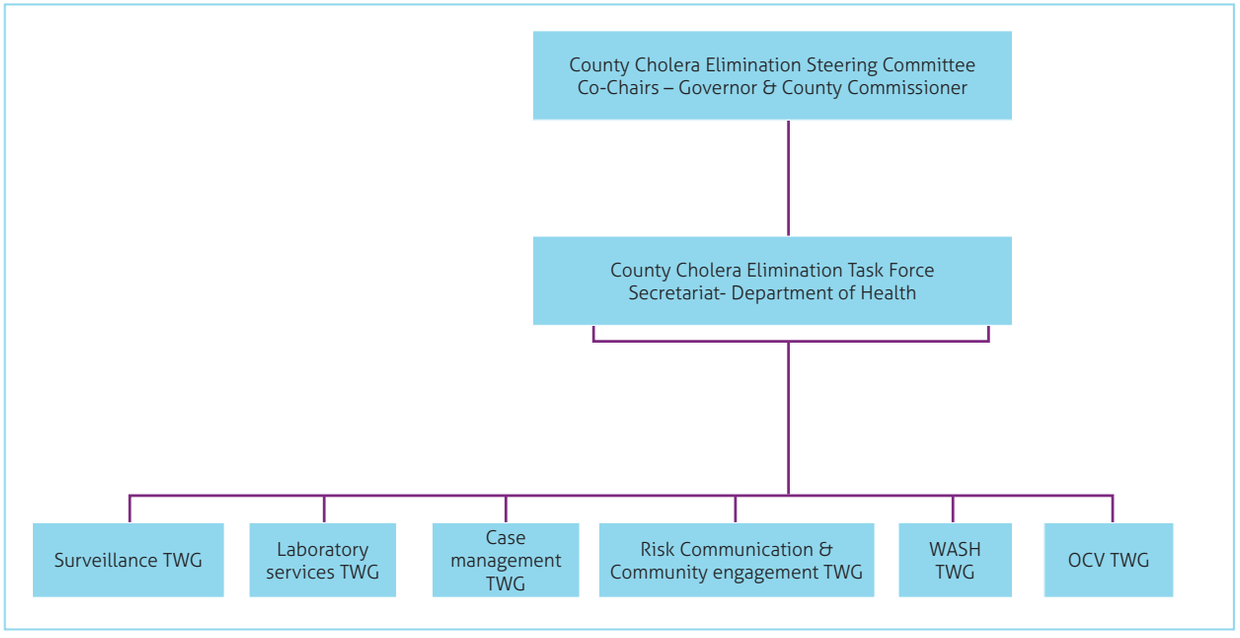


Figure 6: County Cholera Coordination Structure

Table 4: Composition of the various teams at County level

County Cholera Elimination Steering Committee (CCESC) membership	Roles and responsibilities
Governor County Commissioner County secretary Executive Committee members of Health, Water, Environment, Education, Agriculture, Finance Members of Parliament County Assembly Chair Health, Budget and Water/ WASH Committees WESCOOD Water Resources Authority Representatives of the Water and sewerage companies	• Governor and County commissioner to convene the committee meeting and co-chair the meeting • Provide overall county oversight of implementation of the NMCEP • Resource mobilization for NMCEP implementation • Provide linkage to the national NMCEP leadership • Communication and advocacy • Provide leadership in both county and cross county cholera investigation and response
County Cholera Elimination Task Force membership	**Roles and responsibilities**
Heads of Department of Health, Department of Water Department of Environment Department of Education Department of Agriculture Department of Culture and social services Interior and coordination of NG Bilateral Partners (UN, USAID, other agencies) International and Local NGOs – KRCS, World vision Faith Based Organizations Community organizations Religious leaders Key opinion leaders Private health facilities representative County Public Service Boards Civil societies	• Develop county specific emergency response plans that includes potential sites for cholera treatment centres (CTCs) /oral rehydration points (ORPs), IPC, ambulance services, treatment and lab supplies, identification and training of surge staff • Map existing county initiatives and programs (with attendant funding) that are already under implementation • Provide oversight and coordination of TWGs • Linkage to the national level • Resource mobilization • Advisory services to the Governor and County Commissioner • Coordinate capacity building • Ensure adequate staffing of health facilities within the counties • Monitoring and evaluation of the NMCEP • Carry out advocacy and communication • Provide cross county and cross-country investigation and response coordination • Documentation and data management

County Cholera Elimination Task Force membership	Roles and responsibilities
	• Partner mapping • Monitoring of budget allocation and expenditure • Oversee sub-county and ward level coordination and implementation of county NMCEP • Understand the local context in relation to cholera, and develop appropriate NMCEP concept (local context based) • Conduct periodic operational research

H. COUNTRY'S ROADMAP GOALS

Ending Cholera—A Global Roadmap to 2030 operationalizes the global strategy for cholera control at the country level and provides a path towards a world where cholera is no longer a threat to public health. By implementing the strategy, the GTFCC partners will support 20 cholera affected countries (Kenya included) to reduce cholera deaths by 90% and eliminate Cholera transmission by 2030. Achieving these global objectives requires effective implementation at the country level through a multisectoral coordination mechanism that aligns government, national actors, GTFCC partners and key stakeholders towards a shared strategy and common practices along three axes:

Axis 1. *Ensuring early detection and response to contain outbreaks*

Axis 2. *Adopting a multisectoral approach to prevent and control cholera in hotspots*

Axis 3. *Establishing effective coordination mechanisms for technical support, resource mobilization and collaboration at national and global levels*

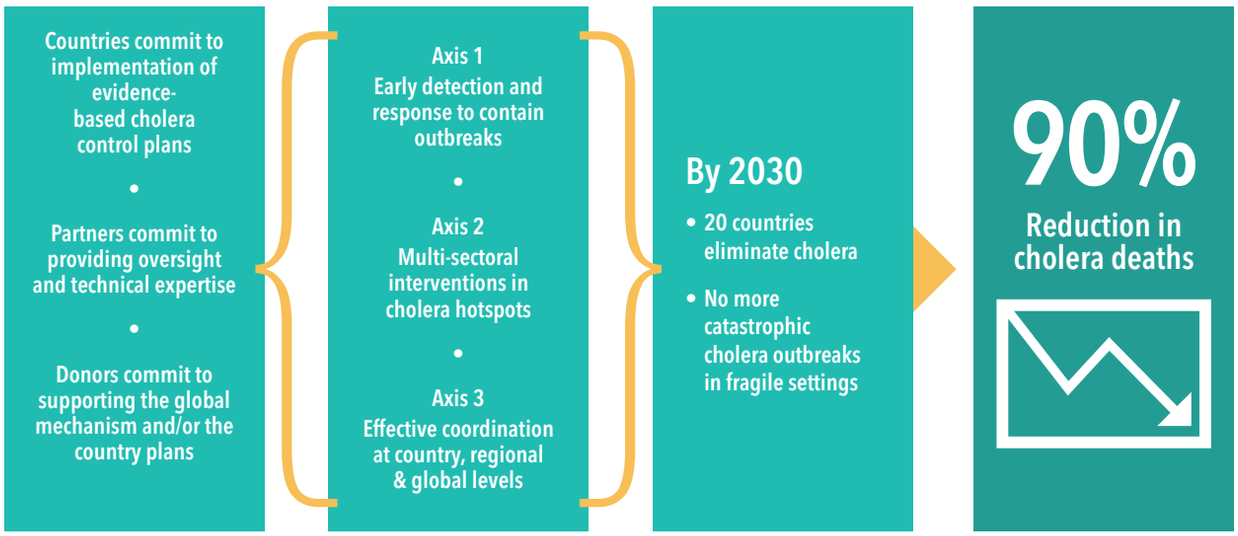


Figure 7: Theory of change of the Global Roadmap

Kenya is targeting a **reduction of the cholera annual incidence to 0 per 100,000 by 2027** with an aim of elimination by 2030. The specific goals are outlined below;

Specific Goal	Baseline*	2025	2027	2030
To reduce cholera annual incidence rate (excluding importations)	25 per 100,000	12 per 100,000	0 per 100,000	0 per 100,000
To reduce number of deaths reported by 90%	97 deaths	50% reduction	90% reduction	100% reduction
To reduce cholera case fatality rate to less than 1%	1.8%	0.9%	0.4%	0%

**Baseline calculated as Average of 5 years (2015-2019)*

SITUATIONAL ANALYSIS

Community members ferrying water on donkey carts in an arid area

SITUATIONAL ANALYSIS

I. CHOLERA RISK ASSESSMENT TO IDENTIFY HOTSPOTS

Steps in identification of cholera hotspots

Step 1. Administrative units

Counties and subcounties were used as the unit of analysis for the identification of hotspots. A subcounty is defined as a decentralized unit through which County governments of Kenya will provide functions and services. Kenya is administratively divided into 47 counties and further subdivided into 290 constituencies/electoral units. The risk assessment will be based on the 47 counties and 290 subcounties (constituencies equivalent).

Step 2. Data sources

Surveillance data was sourced from the Ministry of Health, Division of Disease Surveillance and Response for five complete years (2015 – 2019). Line list data was cleaned and aggregated for each area for the respective years. Population statistics and WASH data was sourced for each area from the Kenya National Bureau of Statistics Census of 2019.

Data entry involved populating the Microsoft Excel GTFCC tool with line list aggregates, population data and WASH data with each row representing an area. GTFCC's Guidance and tool for countries to identify priority areas for intervention (September 2019) that provides guidance on identification and ranking based on epidemiological indicators was used.

Step 3. Use of Epidemiological indicators: Mean annual incidence (MAI) and Persistence

The GTFCC recommends use of Mean Annual Incidence and Persistence to quantify the historical incidence of cholera cases (typically suspected cases) and the persistence of cholera in an area.

Mean annual incidence (MAI) was defined as an average of the annual incidence over the 5-year period. The annual cholera incidence in an area was first calculated by dividing the number of suspected and confirmed cholera cases reported by the population in the area in a given year. Next, the annual incidence for each of the 5 years was averaged to calculate the MAI. Out of the total 290 sub-counties, 130 (45%) did not report any cholera case during the five-year period.

Among the 160 sub-counties reporting cholera cases, the mean number of cases was 180 cases while the mean MAI was 25 cases per 100,000 population (range 0.09 – 531 cases per 100,000 population). Among the 35 counties reporting cases the mean number of cases was 615.5 cases while the mean MAI was 18 cases per 100,000 population (range 0.03 – 151 cases per 100,000 population).

Percentage persistence was defined as the number of weeks in which cholera cases were reported out of the total 260 weeks for the period 2015 to 2019 expressed as a percentage. Among the 160 subcounties reporting cholera cases, the mean percentage persistence was 6.9% (range 0.38 – 56.5%). Among the 35 counties reporting cases, the mean percentage persistence was 10.51 (range 0.38 – 58.8%)

Step 4. Epidemiological indicators ranking as High or Low

Areas were ranked as either High or Low for both MAI and Persistence. Cut off point at mean values was used for both indicators with values equal to or greater than the mean ranked as High while values less than the mean were ranked as Low.

Step 5. Priority levels by Epidemiological indicators

To determine the priority level by use of the epidemiological indicators, the subcounties were then categorized as High, Medium, Low and Very Low priority according to the following criteria.

Priority level by use of Epidemiological indicators

PRIORITY LEVEL	INTERPRETATION
HIGH	Areas with high incidence and high persistence of cholera
MEDIUM	Areas with high incidence and low persistence AND Areas with low incidence and high persistence of cholera
LOW	Areas with low incidence and low persistence of cholera
VERY LOW	Areas with no reported cholera cases

A total of 7 (out of 47) counties and 25 (out of 290) subcounties were mapped as High priority based on high incidence and high persistence while 12 counties and 130 subcounties did not report any case over the 5-year period and were categorised as Very Low (tables 5 & 6). Areas prioritized by use of epidemiological indicators are as outlined in the country maps (figures 8 & 9). Areas categorised as high priority due to incidence and persistence will be prioritised for activities across all pillars to ensure reduction in occurrence of outbreaks.

Table 5: MAI & Persistence priority for County & subcounty level

MAI	Persistence	MAI& Persistence Priority	Number of counties	Number of subcounties
High	High	High	7	25
High	Low	Medium	4	12
Low	High	Medium	9	24
Low	Low	Low	15	99
Very Low	Very Low	Very Low	12	130

Very Low = no cases reported for the 5-year period

Table 6: List of High priority areas by County and Subcounty based on Epidemiological indicators

Area (Number)	Names of high priority areas
Counties (7)	Garissa, Kajiado, Mandera, Migori, Tana river, Turkana, Wajir
Subcounties (25)	Wajir South, Turkana West, Garsen, Wajir East, Mandera South, Sigor, Bura, Iisolo North, Madera East, Daadab, Moyale, Kajiado West, Nyatike, Suna West, Tharaka, Alego Usonga, Gachoka, Kisauni, Maragwa, Mavoko, Mwea, Embakasi West, Embakasi South, Embakasi East, Kasarani

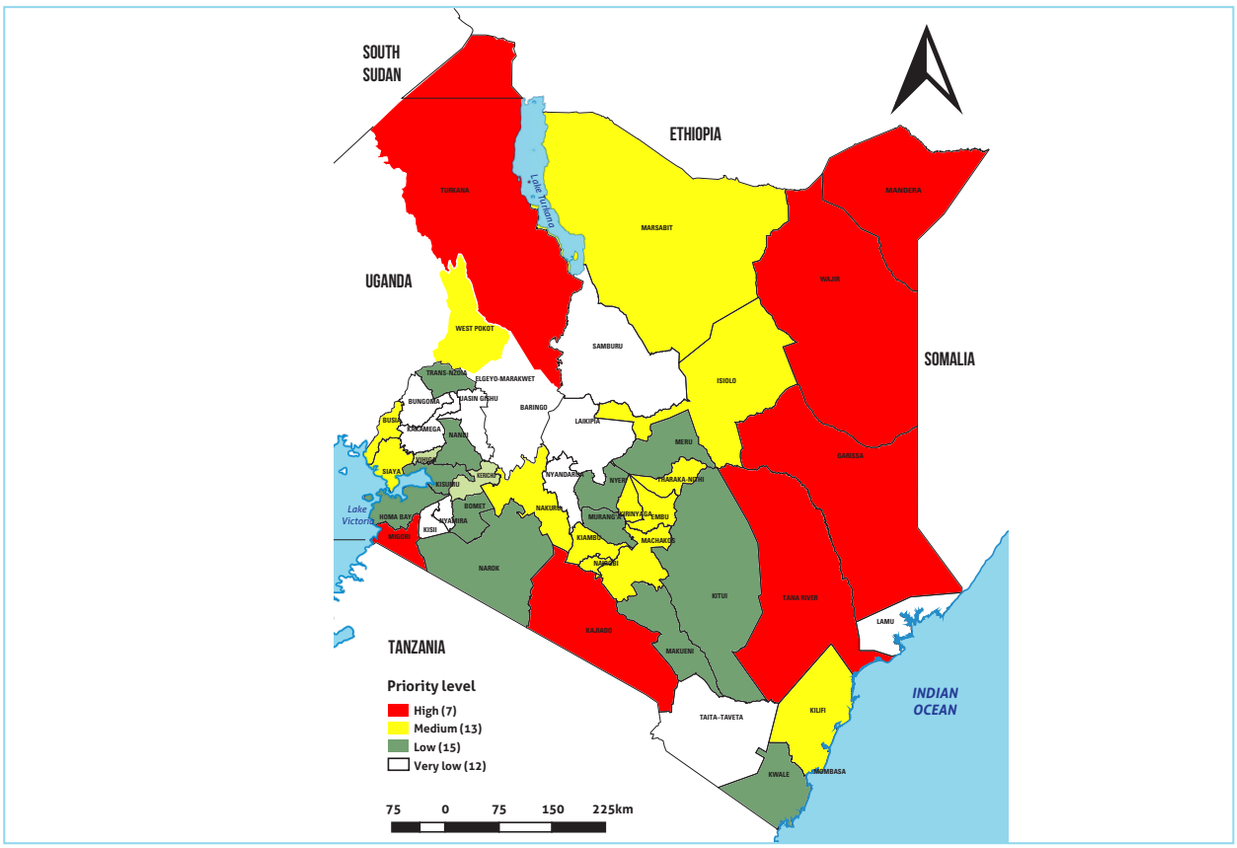


Figure 8: Priority Counties based on both MAI & Persistence, 2015-2019, Kenya

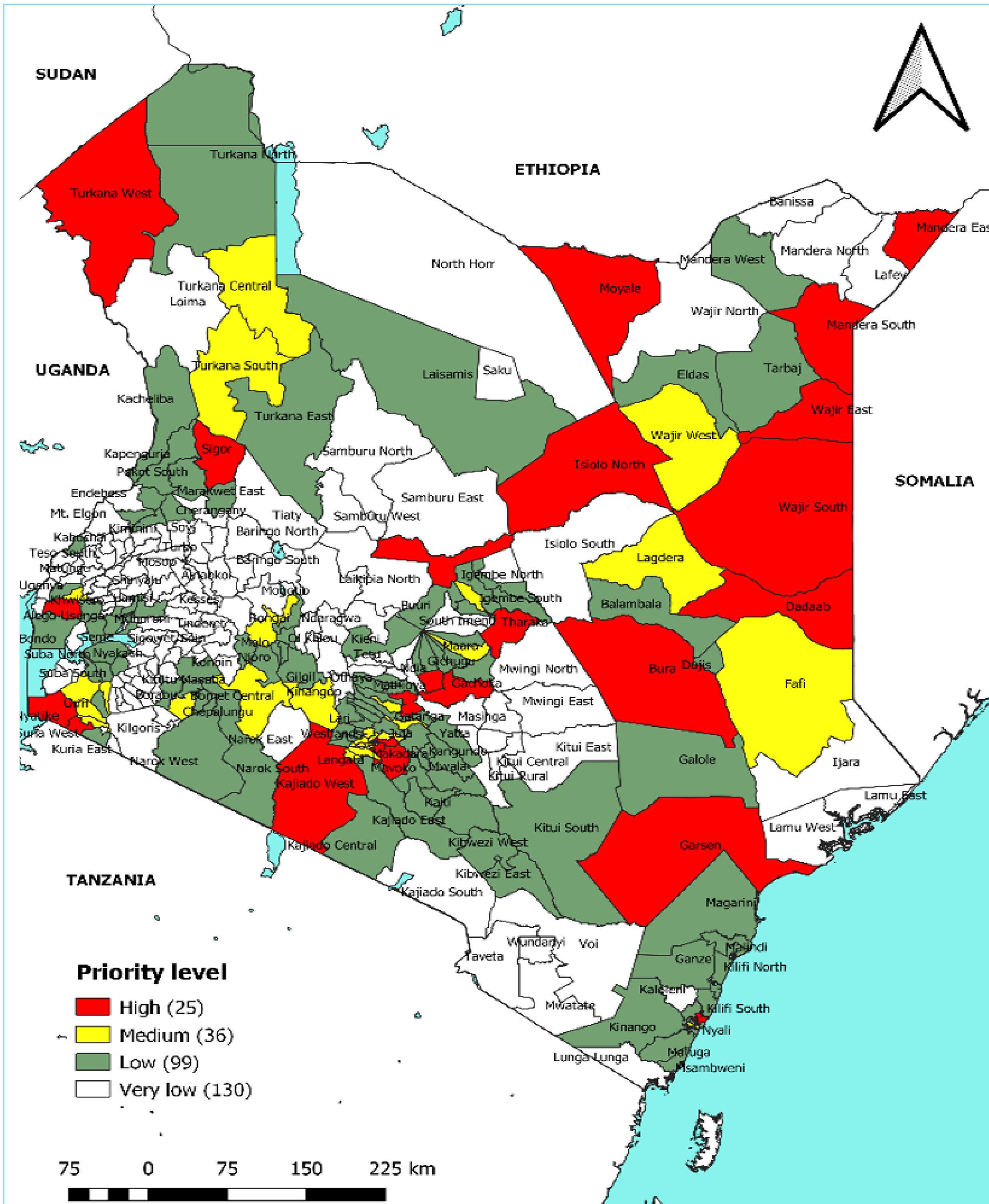


Figure 9: Priority subcounties based on both MAI & Persistence, Kenya, 2015-2019

Step 6. Use of WASH indicators

Two WASH indicators were applied i.e. Proportion of households with access to improved water and Proportion of households with improved sanitation. A summary of these two indicators was extracted from the census data for each area (see summary table: Identification of Cholera hotspots in Kenya, 2015-2019 on page 124).

Step 7. WASH ranking as either High or Low

Subcounties were ranked as either High or Low for both Proportion of households with access to safe water and Proportion of households with improved sanitation. Cut off point at mean values was used for both indicators with values equal to or greater than the mean ranked as High while values less than the mean were ranked as Low.

Step 8. Priority levels by WASH indicators

To determine the priority level by use of WASH indicators, the areas were then categorized as high, medium and low priority according to the following criteria.

Priority level by use of WASH indicators

PRIORITY LEVEL	INTERPRETATION
HIGH	Areas with low access to safe water and low access to improved sanitation
MEDIUM	Areas with low access to safe water and high access to improved sanitation AND Areas with high access to safe water and low access to improved sanitation
LOW	Areas with high access to safe water and high access to improved sanitation

A total of 12 counties and 78 subcounties were considered high priority for WASH due to low access to safe water and low access to improved sanitation (tables 7 & 8). The areas categorised as high priority for WASH will be targeted for WASH infrastructure expansion and WASH specific interventions.

Table 7: WASH priority for County & subcounty level

Proportion of households with access to safe water	Proportion of households with access to improved sanitation	WASH Priority	Number of counties	Number of subcounties
High	High	High	12	78
High	Low	Medium	3	17
Low	High	Medium	12	62
Low	Low	Low	20	133

Table 8: List of High priority areas by County and Subcounty based on WASH indicators

Area (Number)	Names of high priority areas
Counties (12)	Baringo, Elgeyo Marakwet, Garissa, Kwale, Mandera, Marsabit, Narok, Samburu, Tanariver, Turkana, Wajir, West Pokot
Subcounties (78)	Dujis, Turkana North, Turkana East, Pokot South, Kacheliba, Tarbaj, Wajir South, Eldas, Lagdera, Wajir West, Mandera West, Balambala, Turkana West, Kinango, Sigor, Turkana Central, Narok West, Ganze, Bura, Magarini, Galole, Marakwet East, Mandera East, Narok South, Moyale, Kajiado West, Kapenguria, Ndhiwa, Nyatike, Suna West, Uriri, Tharaka, Kuria West, Kitui South, Loima, Tiaty, Samburu North, North Horr, Banissa, Samburu East, Laikipia North, Mandera North, Ijara, Wajir North, Samburu West, Lunga Lunga, Isiolo South, Baringo South, Kitui East, Kilgoris, Mt. Elgon, Narok East, Mwingi East, Endebess, Mogotio, Laikipia West, Bobasi, Baringo North, Suba South, Mwingi North, North Mugirango, Kitutu Chache North, Bomachoge Borabu, Sigowet/Soin, Nandi Hills, Tinderet, Emurua Dikirr, Marakwet West, Bomachoge Chache, Saku, Kaloleni, Nyaribari Masaba, Keiyo South, South Mugirango, West Mugirango, Suba North, Kabondo Kasipul, Kuresoi South

Areas prioritized by use of WASH indicators are as outlined in the country maps below *(refer to figures 10 & 11)*.

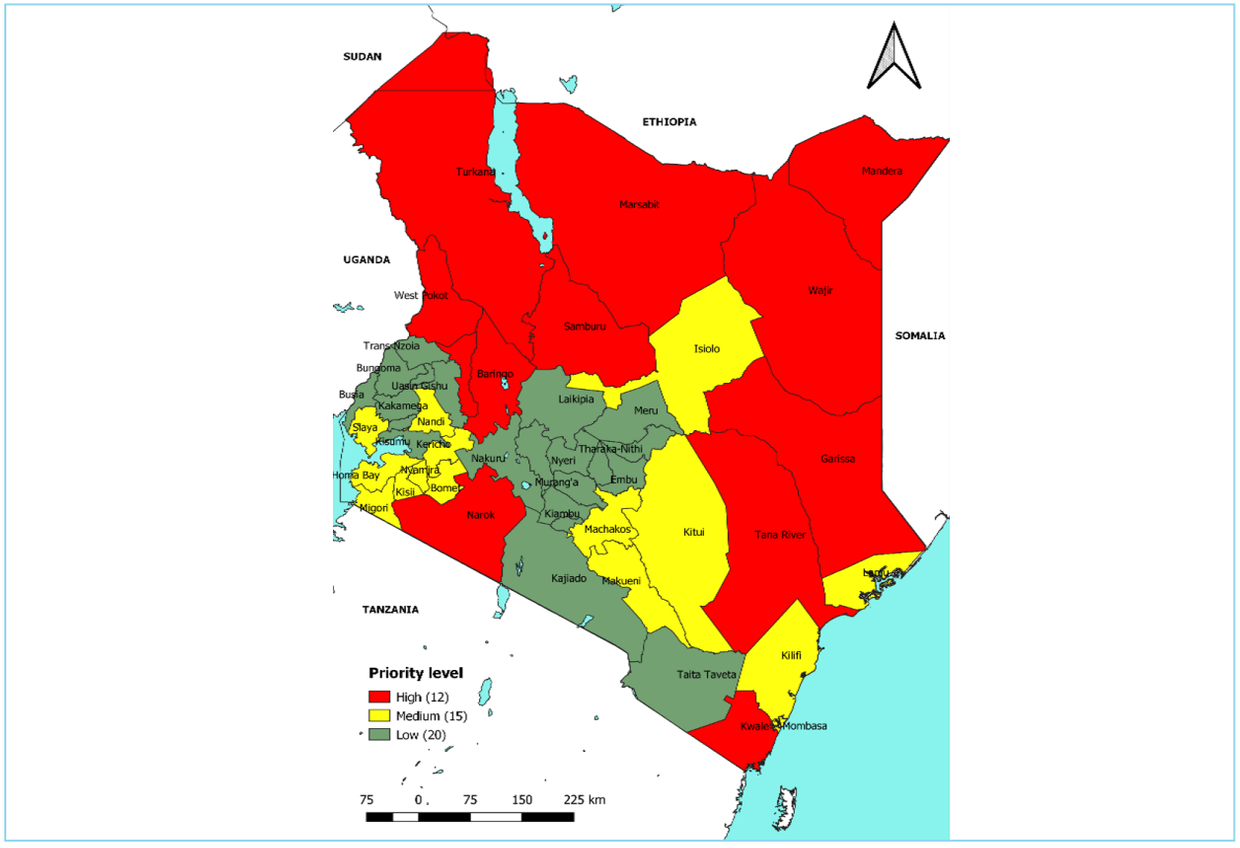


Figure 10: Priority Counties based on WASH indicators, Kenya, 2015-2019

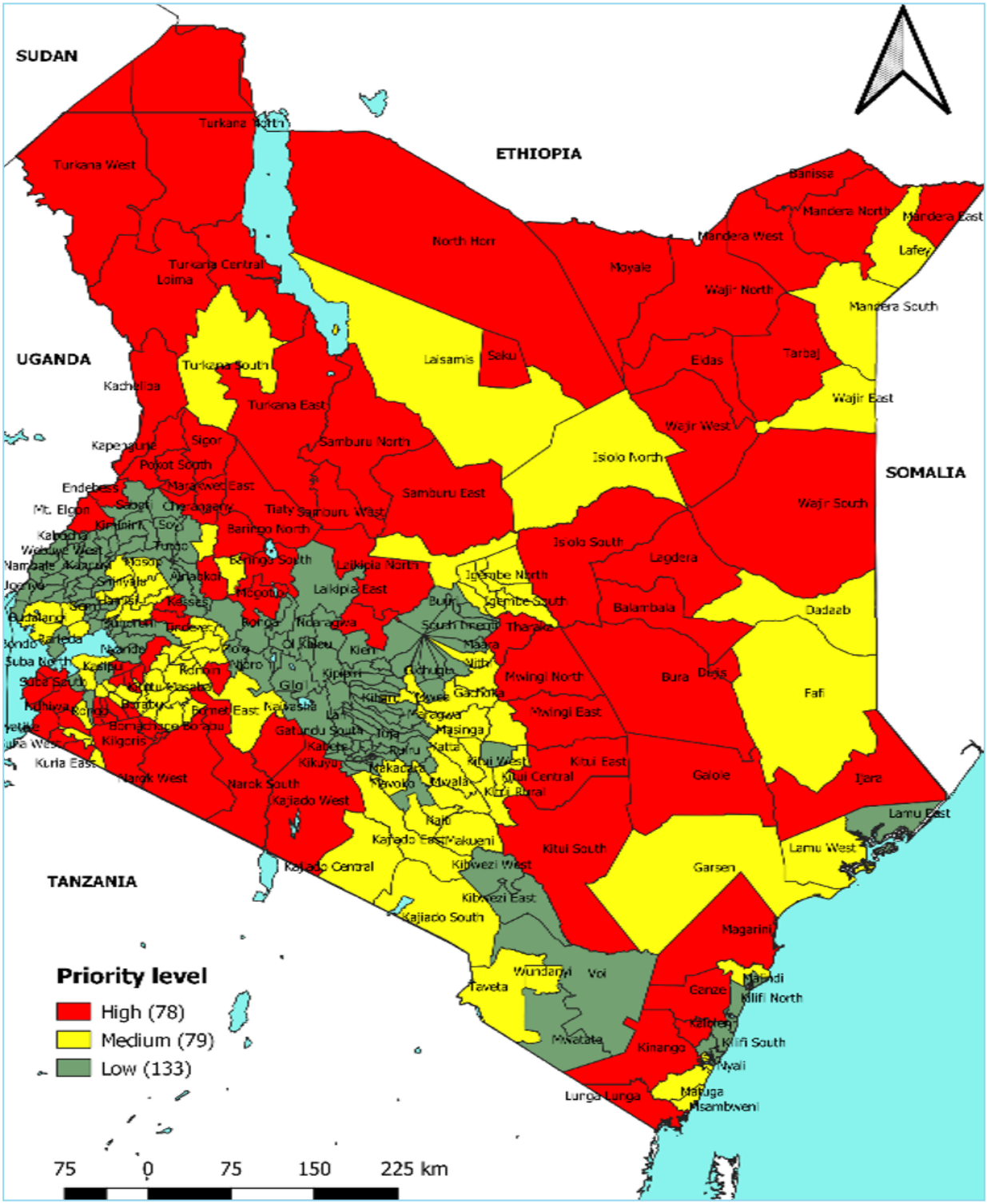


Figure 11: Priority subcounties based on WASH indicators, Kenya, 2015-2019

Step 9. Risk scoring: Applying the WASH indicators on the Epidemiological indicators for prioritization of hotspots

This step involved applying a combination of the prioritization by epidemiological indicators (step 5) and the WASH prioritization (step 8) with 12 possible outcomes for each area (table 9 below). The various combinations were then used to score the various areas for risk from 12 (highest risk score) to 1 (lowest risk score).

Table 9: Prioritization and Risk scoring for cholera hotspots – County & Subcounty level

Priority by MAI &Persistence	Priority by WASH indicators	*Priority after combination of Epi & WASH factors	Risk score	Number of counties	Number of subcounties
High	High	HH	12	5	10
High	Medium	HM	11	1	8
High	Low	HL	10	1	7
Medium	High	MH	9	2	5
Medium	Medium	MM	8	5	8
Medium	Low	ML	7	6	23
Low	High	LH	6	3	19
Low	Medium	LM	5	5	32
Low	Low	LL	4	7	48
Very Low	High	VLH	3	2	44
Very Low	Medium	VLM	2	4	31
Very Low	Low	VLL	1	6	55

*H = High, M= Medium, L= Low, VL= Very Low

Step 10. Refining Cholera hotspots: Priority level after combining Epidemiological indicators and WASH indicators

The areas were finally categorised as either High, Medium or Low by using the risk scores as outlined.

PRIORITY LEVEL	INTERPRETATION	NUMBER OF COUNTIES	NUMBER OF SUBCOUNTIES
HIGH	Areas with a risk score of 9 - 12	9	30
MEDIUM	Areas with a risk score of 5 - 8	19	82
LOW	Areas with a risk score of 1 - 4	19	178

Following combination of epidemiological and WASH indicators, 9 (19.2%) out of 47 counties were classified as high priority, 19 (40.4%) were classified as medium priority while 19 (40.4%) were classified as low priority. The 47 counties by priority based on combination of epidemiological and WASH indicators are listed in table 10 & Figure 12.

Table 10: List of High, Medium and Low priority Counties in Kenya after combination of Epidemiological indicators and WASH indicators, 2015-2019

Priority Level	Number of Counties	Name of County
High	9	Garissa, Turkana, Wajir, Kajiado, Migori, Tana River, Mandera, West Pokot, Marsabit
Medium	19	Kiambu, Nakuru, Elgeyo-Marakwet, Kwale, Narok, Bomet, Homa Bay, Kilifi, Kitui, Machakos, Makueni, Nandi, Siaya, Isiolo, Mombasa, Nairobi, Tharaka Nithi, Embu, Kirinyaga
Low	19	Busia, Kisumu, Murang'a, Nyeri, Trans Nzoia, Vihiga, Baringo, Laikipia, Samburu, Kericho, Kisii, Lamu, Nyamira, Bungoma, Kakamega, Meru, Nyandarua, Taita Taveta, Uasin Gishu

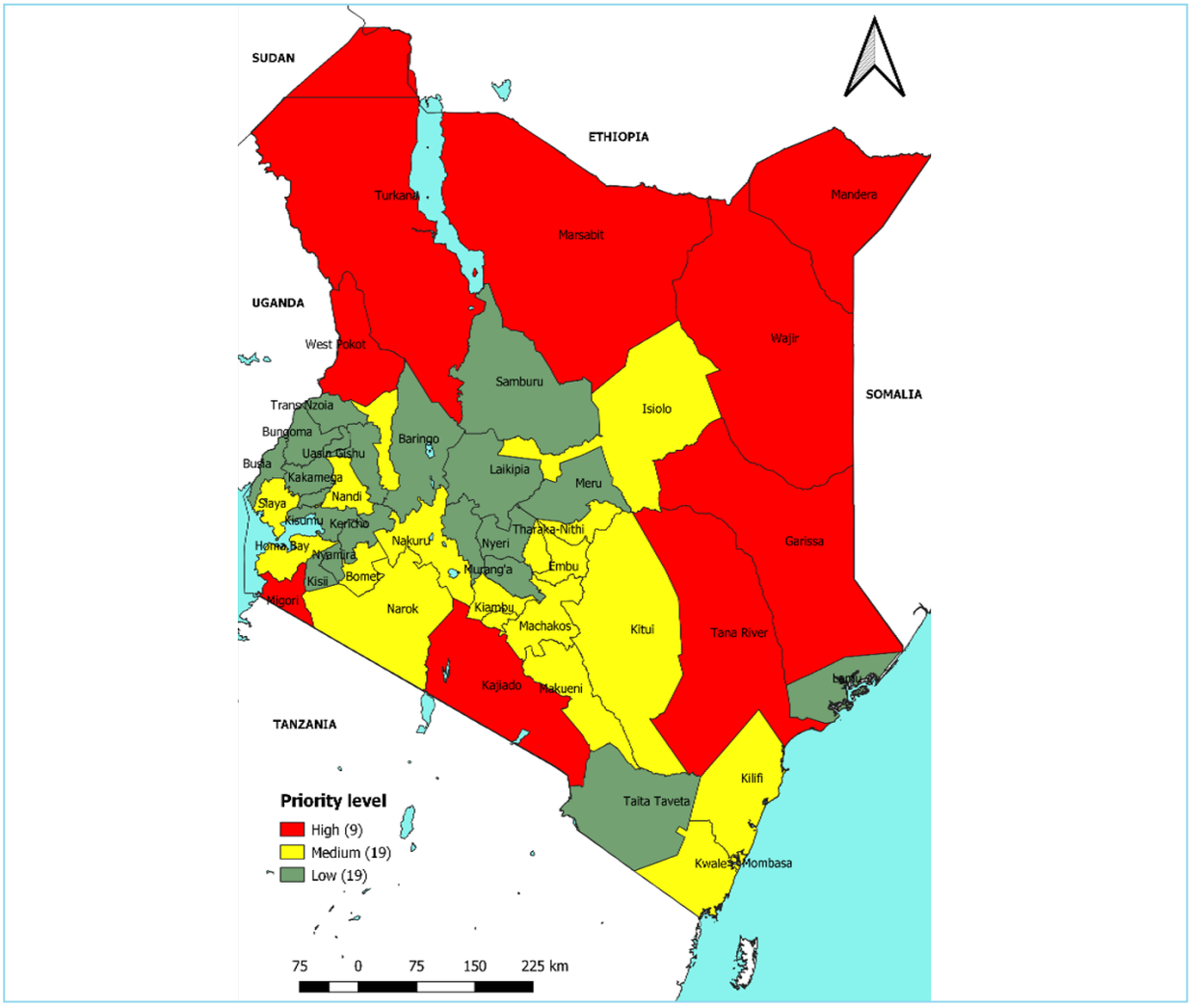


Figure 12: Priority Counties based on combined epidemiological & WASH indicators in Kenya, 2015-2019

Following combination of epidemiological and WASH indicators, 30 (10.3%) out of 290 subcounties were classified as high priority, 82 (28.3%) were classified as medium priority and 178 (61.4%) classified as low priority. The high and medium priority subcounties are listed in table 11 & figure 13.

Table 11: List of High and Medium priority subcounties in Kenya after combination of Epidemiological indicators and WASH indicators, 2015-2019

Priority Level	Number of sub counties	Name of subcounty
High	30	Wajir South, Lagdera, Wajir West, Turkana West, Garsen, Wajir East, Mandera South, Sigor, Turkana Central, Bura, Isiolo North, Mandera East, Daadab, Moyale, Kajiado West, Ndhiwa, Nyatike, Suna West, Uriri, Tharaka, Alego Usonga, Gachoka, Kisauni, Maragwa, Mavoko, Mwea, Embakasi West, Embakasi South, Embakasi East, Kasarani
Medium	82	Pokot South, Laisamis, Turkana East, Turkana North, Dujis, Kinango, Balambala, Mandera West, Turkana South, Eldas, Tarbaj, Kacheliba, Rangwe, Bondo, Malindi, Kitui South, Kitui West, Msambweni, Matuga, Kajiado Central, Kapenguria, Narok South, Marakwet East, Galole, Magarini, Ganze, Narok West, Fafi, Ruaraka, Roysambu, Kiharu, Westlands, Langata, Embakasi Central, Embakasi North, Starehe, Kiambu, Ruiru, Mathare, Mvita, Kandara, Thika Town, Kamkunji, Dagoretti North,Dagoretti South, Makadara, Kibra, Kajiado North, Kajiado East, Changamwe, Naivasha, Rongai, Siakago, Jomvu, Aldai, Konoin, Tigania West, Hamisi, Likoni, Sotik, Ugunja, Igembe Central , Chepalungu, Kilome, Igembe South, Mbooni, Mwala, Kaiti, Rongo, Kathiani, Bomet Central, Gem, Makueni, Yatta, Krachuonyo, Suna East,Awendo, Nithi, Seme, Tigania East , Bomet East, Narok North

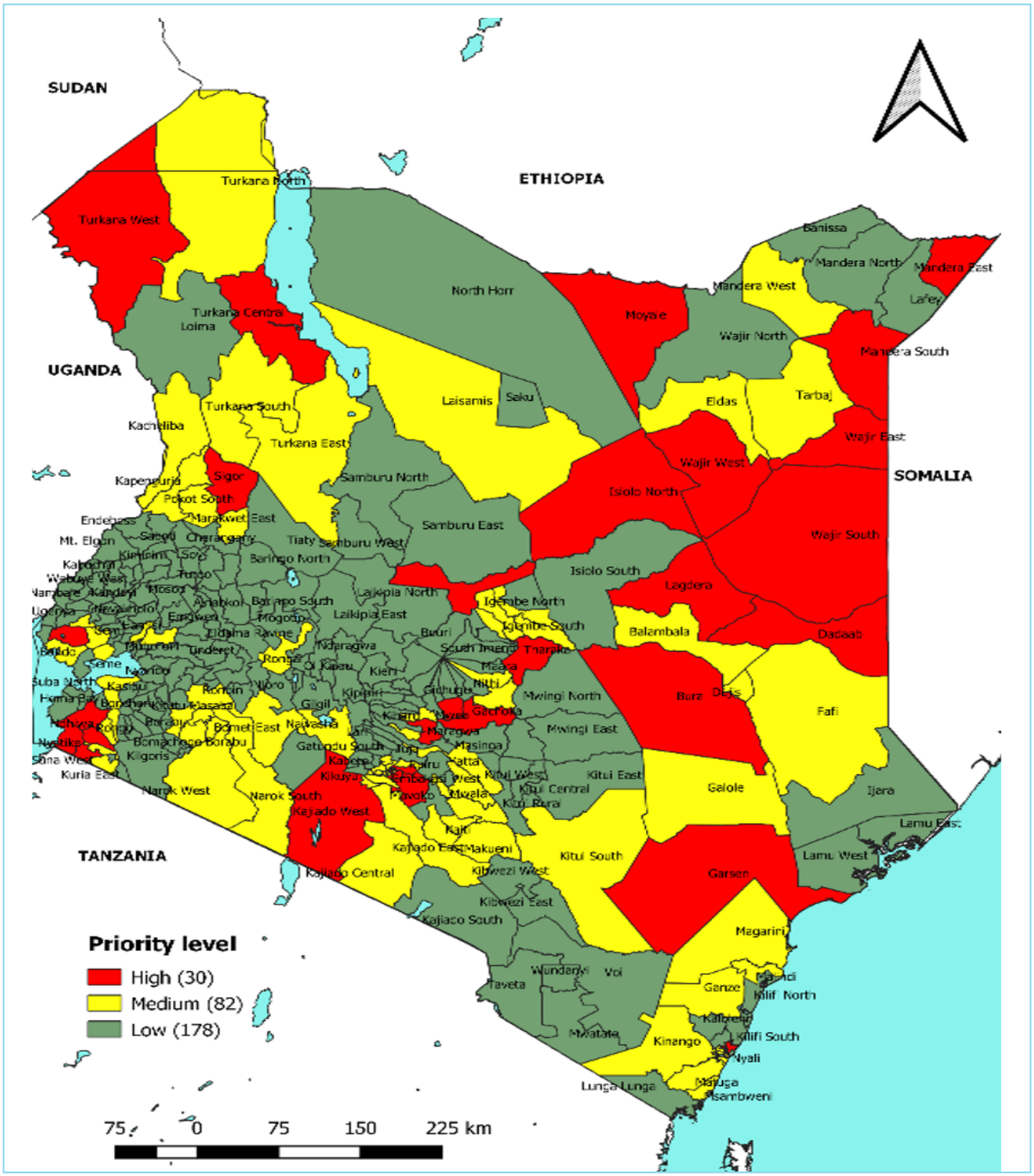


Figure 13: Priority subcounties based on combined epidemiological & WASH indicators in Kenya, 2015- 2019

Step 11. Population living in Priority areas

Population living in priority areas by County

The total population living in the 9 High priority (hotspots) counties in Kenya was determined as 5,846,470 (10.9%) as illustrated in the table 12 below. The population living in the Medium priority areas was 27,360,410 (50.9%) while those in Low priority areas was 20,543,360 (38.2%).

Table 12: Population living in High, Medium and Low Priority Counties

Priority level	Risk score	Priority after combination of Epi & WASH factors	Number of counties	Population size	Cumulative population	Proportion (%) contribution to the total Population
High	12	HH	5	3,142,541	3,142,541	5.8
	11	HM	1	1,130,380	4,272,920	7.9
	10	HL	1	717,896	4,990,816	9.3
	9	MH	2	855,653	5,846,470	10.9
Medium	8	MM	5	6,012,017	11,858,487	22.1
	7	ML	6	12,992,513	24,851,000	46.2
	6	LH	3	1,839,373	26,690,373	49.7
	5	LM	5	6,516,507	33,206,880	61.8
Low	4	LL	7	8,786,427	41,993,307	78.1
	3	VLH	2	984,233	42,977,540	80.0
	2	VLM	4	3,662,215	46,639,755	86.8
	1	VLL	6	7,110,485	53,750,240	100.0

*H = High, M = Medium, L = Low, VL = Very Low

Population living in priority areas by subcounty

The total population living in the 30 High priority (hotspots) subcounties in Kenya was determined as 4,892,015 (9.1%) as illustrated in the table 13 below. The population living in the Medium priority areas was 17,634,859 (32.8%) while those in Low priority areas was 31,223,366 (58.1%).

Table 13: Population living in High, Medium and Low Priority subcounties

Priority level	Risk score	Priority after combination of Epi & WASH factors	Number of Subcounties	Population size	Cumulative population	Proportion (%) contribution to the total Population
High	12	HH	10	1,513,535	1,513,535	2.8
	11	HM	8	1,236,414	2,749,949	5.1
	10	HL	7	1,394,275	4,144,224	7.7
	9	MH	5	747,790	4,892,015	9.1
Medium	8	MM	8	1,392,213	6,284,228	11.7
	7	ML	23	7,252,298	13,536,526	25.2
	6	LH	19	2,677,740	16,214,266	30.2
	5	LM	32	6,312,608	22,526,874	41.9
Low	4	LL	48	9,838,639	32,365,513	60.2
	3	VLH	44	6,310,940	38,676,453	72.0
	2	VLM	31	5,228,360	43,904,813	81.7
	1	VLL	55	9,845,426	53,750,240	100.0

*H = High, M = Medium, L = Low, VL = Very Low

Step 12. Assessment of potential drivers of outbreaks in high priority areas

From the risk mapping exercise, potential reasons for high cholera burden in some areas include but are not limited to the following:

1. Connecting hub – Nairobi County being the capital of the country with potential for introduction (and transmission) of Cholera from other counties and countries
2. Rural-urban migration leading to expansive informal urban settlements with poor WASH infrastructure and inadequate sanitation facilities – Nairobi, Mombasa
3. Areas bordering other countries with high cholera transmission – Turkana, Migori, Wajir, Mandera, Marsabit, Garissa
4. Major transport corridors that connect to other countries – Kajiado, Migori
5. Areas around the large water bodies & Irrigation schemes – Migori, Siaya, Turkana, Mombasa, Mwea
6. Areas prone to flooding – Mombasa, Tana River
7. Communities that host refugee camps – Garissa, Turkana
8. Nomadic/ pastoralist communities
9. Cultural practices such as communal sharing of meals - Mombasa
10. Unregulated water vending with possible vending of contaminated water especially in urban areas – informal urban settlements in Nairobi, Mombasa

Step 13: Prioritization of hotspots

The risk assessment results at subcounty level will be applied for prioritization of interventions for the following reasons;

i. the subcounty analysis is more granular
ii. the county analysis includes subcounties that aren't hotspots
iii. to better target resources to a lower administrative level
iv. more cost effective

High priority subcounties will be considered as cholera hotspots. The hotspot subcounties will be prioritized for activities across all pillars, especially use of OCV as an additional preventive strategy. Where resources are available, prioritization will include both High and Medium priority areas.

Counties are encouraged to undertake the risk assessment to lower administrative units i.e. subcounty level then ward level. The county specific risk assessment will provide a better understanding of disease burden at the lowest administrative units and help identify hotspots within hotspots to guide further prioritization within counties.

Step 14: Re-prioritization of hotspots

Risk assessment and reprioritization of hotspots is to be redone every 3 years at both national and subnational levels to factor in recent outbreaks that may have occurred.

In the event that incidence and persistence of Cholera cases is so low as the country nears elimination, prioritization of areas will be dependent on evaluation of contextual factors from historical experience. The factors (amongst others that may not be listed) to be considered during reprioritization include:

i. refugee camps
ii. communities that host refugee camps
iii. displaced populations
iv. migrant populations
v. informal urban settlements
vi. areas with low access to safe water and low access to safely managed sanitation

J. CAPACITY ASSESSMENT BY PILLAR/ SWOT ANALYSIS

Table 14: Strengths Weakness Opportunity Threat (SWOT) analysis by pillar

Pillar 1. Leadership and Coordination

Strength

Support from partner organizations and other institutions

Existing disease surveillance coordination structures from the national, county and the community level and its integration with other health activities

Existence of technical support and guidance from the Global Task Force for Cholera Control (GTFCC)

Existence of National Public Health Emergency Operations Centre (PHPHEOC)

Opportunity

Register commitment of the country leadership in implementation of the multisectoral Cholera plan

Stakeholder mapping and engagement in drafting the multisectoral plan

Gazettement of stakeholders of the coordinating team

Devolution of health services

Riding on existing COVID coordination structures/ mechanisms

Weakness

Inadequate commitment from the leadership on cholera control

Lack of Cholera specific coordinating structure

Nonfunctional Cholera Country multisectoral plan i.e. Lack of implementation and linkage within the multisectoral players)

Limited resources (human, financial and material) to support Cholera control

Current cholera treatment guidelines are outdated (last update 2012)

Threat

High technical staff turnover at both national and county levels

Pillar 2. Surveillance and Laboratory services

Strength

- Established and well-defined IDSR structures
- Presence of surveillance focal persons at all levels of service delivery
- Developed IDSR technical guidelines and re-porting tools
- Availability of laboratory services at the national, county and sub county levels
- Available capacity for molecular characterization at the national level
- High level commitment to support cholera elimination
- Presence of rapid response teams at the national, county and sub county levels of service delivery

Weakness

- Insufficient funding for surveillance and response activities
- Inadequate human resource for surveillance
- Sub optimal use of technology in reporting
- Weak cross border surveillance and information sharing
- Inadequate supply of laboratory commodities and supplies
- Shortage of human re-source for laboratory services
- Weak linkage between surveillance and laboratory data systems
- Weak quality control system for cholera rap-id diagnostic test
- Lack of a sample referral network/system
- Limited budgetary allocation for surveillance and laboratory support
- Devolved management of surveillance
- Suboptimal reporting by private health service providers in surveillance
- Weak routine water quality monitoring and food safety surveillance
- Existence of other vertical surveillance programs
- Weak food handler's medical examination system

Opportunity

- System of community health strategy in place for surveillance
- Expansive Mobile phone network coverage and phone ownership to embrace technology in reporting at all levels
- Presence of partners, stakeholders and agencies that can be mobilized to support cholera elimination
- Existing sample referral system for other program areas such as in Acute Flaccid Paralysis, Measles, TB/HIV
- Existence of clinical and research regional laboratories
- Existence of a national map of laboratory services
- Devolution of human resources for health
- Adaptation of IDSR TG 3rd Edition
- Implementation of event-based surveillance

Threat

- Overdependence on donor sup-port for surveillance

Pillar 3. Case Management & IPC

Strength

Good initiation of appropriate case management at Levels 2 and 3

Emerging PHEOCs at both National and County level enhancing outbreak response including case management

County Governments have increased the health workforce by recruiting more health care workers

Strong IDSR and capacity to detect/suspect cholera cases at levels 2 and 3 HFs

Opportunity

Devolution of health services

Public awareness of cholera

Goodwill for support community health strategy by partners that empowers CHVs on cholera management at community level & referral

Collaboration with research institutions and institutions of higher learning (Universities & Colleges)

Weakness

Ability to conduct and interpret cholera RDT at all levels

High turnover of CHVs leading to weakness to initiate prompt referral

Lack of Oral rehydration solution (ORS) and Oral rehydration Points (ORP) at the community level hence delayed start of rehydration

Level 4, 5 and 6 weakness in selection of appropriate infusion for cholera fluid replacement

Knowledge of when to wean from Intravenous fluids to oral rehydration

Inadequate IPC measures at all healthcare levels e.g. lack of water and soap in some health facilities

Lack of appropriate cholera isolation facilities

Weak triage systems for cholera/AWDs (Acute Watery Diarrhea) especially at level 4, 5 and 6 HFs

Low stocks of cholera kits at level 2 and 3 HFs

Recurrent industrial action by HCWs

Staff attrition/ transfers

Newly recruited staff not trained on cholera clinical case management

Threat

Inadequate political goodwill

Poor retention of CHVs

Suboptimal surveillance and response to cross border/ cross county outbreaks

Inadequate resource allocation from treasury

Pillar 4. Risk Communication/ Community engagement

Strength

Existing health promotion officers, Community Health Assistants and Community Health Volunteers who support RCCE activities at the community level

Technical structures within the MOH DHP, DCHD and DDSR at national and county levels in place to coordinate RCCE activities

Existing Health promotion advisory committees including Technical Working Groups

Technical capacity to develop targeted cholera messaging for RCCE messaging

Increased presence of development partners to implement RCCE activities

Availability of RCCE structure for responding to emergencies

Opportunity

Increased penetration of communication technology infrastructure

Wide availability of communication channels e.g. interpersonal communication, mass media, social media

Enhance existing National curriculums for CHAs and CHVs to incorporate Cholera RCCE prevention and control modules

Advanced packaging and wide array of dissemination mechanisms of RCCE messaging

Presence of School Health Program to promote messaging in schools

Ride on the COVID-19 RCCE efforts to contain Cholera

Weakness

Limited investment and lack political good will to strengthen Cholera prevention and control efforts despite it being a priority disease

Lack of continuous year- round health promotion campaigns for sustained behavior change amongst community members

Lack of collaboration between MoH and implementing partners in planning and implementation of RCCE efforts

Lack of assessment of contextual factors during hotspot mapping

Limited contextualization of RCCE strategies to meet the local needs

Weak coordination of RCCE activities at the county level

Weak advocacy for the need for RCCE activities

Weak recognition on the role of RCCE in Cholera prevention and control

Weak monitoring and evaluation of RCCE efforts

Threat

Limited budgetary allocation for RCCE activities

Other competing priorities at national and sub national levels e.g. emerging and re-emerging epidemics

Over reliance on community owned resource persons

Political climate might not be conducive for RCCE efforts

Pillar 5. WASH

Strength

Existing coordination mechanism in place with participation from line ministries, donor community, NGOs, CBOs and academia

Existing enabling environment for WASH – expansion of WASH infrastructure by both levels of government

Government commitment to implement WASH activities e.g. Constitution recognizes Sanitation as a right, International agreements e.g. SDGs

Adequate man power to implement and monitor WASH services

Adequate National policy and regulatory framework on WASH

There is Government commitment to implement WASH activities

Adoption of Community-Led Total Sanitation (CLTS) strategy & commitment to eliminate open defecation (OD)in Kenya

Existing WASH coordination fora (WESCOORD, EHS - ICC)

Availability of WASH related disease trend data

Active School WASH Technical Working Group at the national level

Active different WASH Technical Working Groups (Hygiene promotion, sanitation promotion, household water safety, policy, research and advocacy)

Opportunity

Many WASH actors ready to support WASH interventions

Existing community structures (CHVs and Community leaders)

Existing WASH related Government initiatives (e.g. Kazi Kwa Vijana, NG-CDF, Ward development fund, WASH in Schools)

Existing global WASH advocacy initiatives (e.g. SWA, SDG)

Emerging PPB initiatives (MBS, SanMark, WASHFIN)

Availability of locally made water treatment supplies

Weakness

Weak coordination especially at County level

Inadequate Political will to implement WASH at county level

Inadequate supplies and commodities for water quality monitoring

Inadequate funding to implement WASH interventions

Not all rural areas are covered by functional Community Units

Gaps in CLTS implementation i.e. only 25/47 counties are implementing CLTS activities

Weak WASH Coordination structure at sub-national/county level

Weak linkages from national to county

Lack of vote-head & prioritization of sanitation & hygiene

Weak WASH data management system at both National and Sub-national level.

Low prioritization & commitment on priority WASH interventions by actors

Threat

Duplication of coordination mechanisms

Weak harmonization of WASH policies regulations, guidelines and standards

Adverse weather events (e.g. floods, drought)

Contamination of water sources

Lack of willingness to fund WASH activities

Many Counties have no legislation or policies to fund WASH intervention

Pillar 6. Oral Cholera Vaccine (OCV)

Strength

The country has capacity to successfully introduce new vaccines and Kenya conducted multiple immunization campaigns with good coverage

Mapping of Cholera hotspots for the Country is already complete with high priority areas identified

Robust cold chain capacity and equipment at national and sub national level

Existing decision-making structures on new vaccines introduction at national and sub national (KENITAG, Immunization TWG)

Opportunity

OCV distribution to ride on existing immunization structures established from national to health facilities

Availability of OCV in the private sector

OCV to be co-financed with GAVI during implementation of mass vaccination campaigns

Cholera vaccine introduction to be included in the Immunization 5 Year strategic plan

Weakness

Inadequately funded KENITAG cholera working group to generate evidence and inform the country on implementation strategies

Weak WASH data to inform OCV introduction strategies

Threat

Global limited OCV stock

Sporadic health care workers industrial actions

Availability of funding once the country has entered the self-financing phase

Limited funding for OCV implementation activities

IMPLEMENTATION PLANS

Cholera treatment centre with a handwashing station

IMPLEMENTATION PLANS

K. LEADERSHIP & COORDINATION

The cholera coordination mechanism will ensure effective inter-government, inter-ministerial and inter-agency coordination and multi-sectoral engagement of all partners towards implementation of the Plan. The overall coordination of the implementation of the Kenya NMCEP will be at the level of the Office of The President with a coordination mechanism at both national and county levels of government.

Coordination Objectives and Key Activities

Objective 1: To raise the profile and implications of cholera within and beyond the health sector by engaging other Ministries and sectors in implementation of the NMCEP, including resource mobilization for NMCEP budget

- Conduct sensitization meetings with other relevant stakeholders on NMCEP (e.g. other ministries, Partners, Political leaders, religious leaders, communities)
- Advocacy to the top national leadership of line Ministries and partners to implement interventions in the NMCEP
- Advocacy to the presidency, governors and partners for budget support for implementation of NMCEP interventions
- Engage high level Cholera expert advisor to the Presidency

Objective 2: To strengthen information sharing across line Ministries involved in cholera prevention, control and elimination

- Develop quarterly multisectoral evidence-based briefs (including water and sanitation, water quality information and cholera situation) to the National steering committee, Office of The President and the Council of Governors

Objective 3: To establish a functioning multisectoral cholera coordination mechanism at all levels of implementation of the NMCEP
• Map relevant partners and stakeholders • Conduct national cholera task force and technical working group meetings quarterly • Sensitize and support counties to adopt the cholera elimination plan • Develop M&E plan across the six pillars • Conduct annual stakeholders meeting
Objective 4: To strengthen cross border coordination for cholera control
• Liaise with and leverage on existing structures (i.e. EAC, AUC IGAD, ECSA-HC) for heightened intercountry and cross border collaboration for cholera elimination activities
Objective 5: To ensure adequate staffing for health facilities at national and county level
• Conduct human resource needs assessment for all health facilities • Ensure all health facilities are adequately staffed with all cadres of health care workers • Establish a database for surge staff to support outbreak response for both national and county teams

L. SURVEILLANCE AND LABORATORY SERVICES

Surveillance is critical for contributing to the early detection and response to cholera and other acute threats to local communities. Integrated Diseases Surveillance and Response (IDSR) is the framework whereby Kenya is implementing IHR (2005) requirements for surveillance and has been adopted to strengthen the multi-disease surveillance, laboratory and response systems in the country. This framework assists in ensuring, among other things, that all necessary functions and capacities have been identified when plans of action are developed.

In the IDSR framework, activities for conducting disease surveillance are specified for each level of the health system. These activities include the core functions of IDSR which are:

- *case and event identification*
- *reporting suspected cases, conditions or events to the next level*
- *analysing and interpreting data*
- *investigating and confirming suspected cases, outbreaks or events*
- *ensure preparedness for prevention and control of public health threats*
- *respond to public health events*
- *communicate and provide feedback and*
- *ensure consistent monitoring and evaluation of the disease surveillance system*

The country has an established laboratory network with regional labs to support counties in conducting certain tests beyond their capacity. All laboratories in level 4 and 5 health facilities are expected to at least do culture and Antimicrobial Susceptibility Testing (AST). Laboratories in level 2 and 3 facilities are capable of using Rapid Diagnostic (RDT) Kits.

Surveillance Objectives and Key Activities

Objective 1: To strengthen integrated disease surveillance systems to promptly detect 100% of the cholera outbreaks by 2030

- Align the IDSR Technical Guidelines with the NMCEP
- Print and distribute the IDSR and EBS guidelines, hand books, case definitions charts, reporting tools, and job aids
- Finalize, validate and disseminate community event-based surveillance (EBS) guidelines
- Print and distribute community event-based surveillance (EBS) guidelines and tools
- Train public health managers, health workers and the community on IDSR
- Support cross border surveillance activities and information sharing
- Integrate IDSR indicators in existing support supervision checklists in the counties and sub-counties

- Establish community event-based surveillance in all the cholera hot spot counties / sub counties
- Enhance cross border surveillance by Screening of immigrants into the Country at points of entry
- Procure IT equipment (Laptops)
- Customization of existing tools into KHIS
- Develop an online training module for data analysis
- Procure and distribute RDTs to hotspot subcounties

Objective 2: To improve the laboratory capacity to confirm suspected cases of cholera within 24 hours by 2030

- Conduct a needs assessment for county and sub county labs including HR, infrastructure and equipment
- Strengthen technical capacity for the lab staff to do stool cultures and anti-microbial susceptibility testing and prompt dissemination of findings
- Procure and preposition essential cholera lab equipment, commodities and supplies
- Support Total Quality Management in the labs for the implementation of lab quality management systems
- Strengthen and maintain a sample referral system e.g. use of available sample referral networks, motorbike riders for sample transport
- Strengthen referral mechanism for cholera isolates to the NPHLS isolate banks for further analysis and archiving
- Print, disseminate and distribute the cholera confirmation SOPs for all county and sub county laboratories
- Validation of the cholera rapid diagnostic test kits in the Kenyan market
- Routine food hygiene and water quality surveillance

Objective 3: To report all cases (suspected and confirmed) to the national level within 24 hours by 2030

- Procure airtime (internet bundles) to facilitate timely notification in IDSR
- Develop a web based national lab information system and reporting tools for cholera
- Develop a linkage between LIMS and MOH 502,503 and 505
- Develop a linkage between LIMS and KHIS2
- Develop and roll out a mobile phone-based reporting systems-M-dharura
- Support national, county and sub county PHEOCs for reporting cholera events

Objective 4: To improve the capacity for rapid response to all cholera outbreaks within 48 hours by 2030

- To initiate subcounty and county response within 24hrs and 48hrs respectively
- Train rapid response teams (RRTs) at the national, county and sub county levels on cholera preparedness and response
- Strategic stock piling of essential commodities and supplies for cholera response
- Provide the sub national level with technical support during cholera outbreaks
- Conduct outbreak investigations for all cholera outbreaks

Objective 5: To undertake active case finding following confirmation of all outbreaks by 2030
• Train cholera contact tracing teams (CCTTs) at the national, county, sub county and community levels • Develop digital contact listing and follow up tools • Procure and prepositions household infection prevention and control (IPC) supplies for use by CCTTs and CHVs • Develop budgetary line items for active case finding
Objective 6: To implement an EWARS
• Develop cholera outbreak prediction model for use in the country • Disseminate the cholera outbreak prediction model for use in the country • Strengthen EWARS through information management
Objective 7: To generate evidence for improvement of surveillance and response to cholera outbreaks
• Conduct biannual data quality audits for IDSR • Periodically update cholera hotspot mapping for the country with current surveillance data to advise on vaccination/revaccination in hotspots • Conduct operational research • Initiate cholera Molecular epidemiology • Molecular characterization of cholera isolates • Surveillance on the AMR trends of the cholera isolates • Training of IDSR surveillance focal points on basic field epidemiology
Objective 8: To undertake regular monitoring and evaluation of the surveillance and response
• Conduct biannual data quality audits for IDSR • Hold quarterly review meetings at national and sub national level • Hold quarterly cholera surveillance TWG meetings at national and sub national level • Hold multisectoral post outbreak review meetings at national and sub national level

M. CASE MANAGEMENT & INFECTION PREVENTION CONTROL (IPC)

Case management interventions should be rapidly implemented as soon as there is an indication of cholera to reduce mortality and limit the spread of the disease. The role of the national level in case management is to:

- *Disseminate case management and IPC guidelines*
- *Develop the training materials*
- *Support training at the national and subnational levels*
- *Resource mobilisation in support for adequate commodities for case management*
- *Provide technical support to subnational levels*

To ensure prompt case management as soon as cholera is suspected, all counties are required to have:

- *Trained integrated outbreak response teams*
- *Healthcare workers (HCWs) trained on case management including laboratory staff and Community Health Volunteers (CHVs)*
- *Cholera Treatment Centres (CTCs) and Cholera Treatment units (CTUS) that are adequately stocked with Cholera kits*
- *Updated cholera treatment and IPC guidelines, SOPs, and job aides*
- *Laboratory and sample referral networks*
- *Infection prevention and control measures in health care settings*

Case management Objectives and Key Activities

Objective 1: To strengthen the level of preparedness to respond to cholera outbreaks at all levels by 2030
• Ensure procurement and pre-positioning of cholera kits at national and county levels. There is need to preposition supplies in the high burden counties that are classified as major hotspots at the subcounty level. The other counties with medium and low burden can position the supplies at the county level depot
• Develop Cholera specific emergency response Plans
• Conduct a training needs assessment across all cadres to inform a training strategy
• Continuous training of healthcare workers (HCWs) at the counties on cholera case management
Objective 2: To improve cholera case management to reduce mortality by 90% by 2030
• Update the national guidelines on cholera clinical case management
• Disseminate guidelines on cholera clinical case management
• Update, print, and distribute the cholera treatment guidelines, SOPs, and job aids
• Training of HCWs should be carried out routinely in the hotspots targeting at least 60% of all health workers at the facility level. A blended approach of both on site and web-based training could be utilised
• Train Community Health Volunteers (CHVs) on community cholera management in the respective community units identified as hotspots in the county
• Provide ORS to the CHVs for home-based care management. (The CHVs should be trained on preparation and giving of ORS)

- Integrate cholera indicators in existing supervision plans for community health workers (CHWs), primary health centres and hospitals

Objective 3: To reduce nosocomial infections in health facilities

- Review and update the guidelines, SOPs, and job aids on cholera infection prevention and control
- Train health care workers on cholera infection prevention and control
- Identify an IPC focal person in every facility
- Training of HCWs, morticians, key community leaders on handling of dead bodies
- Training of the support staff (cooks, cleaners & drivers) on IPC
- Procurement of disinfectants, soap, & sprayers, waste bins
- Procurement of PPEs and body bags
- Train Health care workers and CHVs on preparation of the various concentrations of chlorine solution for use at the household level
- Designated waste management bins

Objective 4: To improve quality of care through evidence-based strategies

- Conduct operational research and publish evidence on cholera
- Review cholera case management guidelines to incorporate Antimicrobial Resistance patterns
- Conduct quality of care surveys
- Conduct dissemination meetings to share data on operational research

N. RISK COMMUNICATION AND COMMUNITY ENGAGEMENT

Risk Communication plays a central role in the successful prevention, preparedness, and response of cholera. Risk communication aims to raise awareness and adequately engage communities through tailored approaches and messages. Knowledge, Attitudes, Beliefs, and Practices contributing to cholera outbreaks, especially in hotspot subcounties, must be well analyzed and understood to effectively engage the communities in cholera prevention.

Risk Communication Objectives and Key Activities

Objective 1: To generate evidence on behavioral contextual factors to inform RCCE strategy/ plans development for cholera elimination

- Conduct periodic surveys to identify contextual factors such as social cultural factors, risk behavior, behavioral barriers for Cholera prevention and control measures, best practices, etc. associated with Cholera transmission
- Multi-sectoral development of RCCE strategy for Cholera elimination
- Sensitize stakeholders across sectors, implementing partners and other actors at national and sub national levels on the RCCE strategy
- Generate social data on the behavioral and social drivers of cholera transmission using epidemiological and field investigation data

Objective 2: To strengthen RCCE coordination mechanisms and planning for cholera elimination at national and at county level

- Establish a multi-sectoral TWG for RCCE planning and coordination at national and county levels
- Develop SOPs and guidelines for roll out of RCCE strategy and activities
- Develop RCCE plans and budgets for Cholera elimination targeting hotspots, cross-border areas, vulnerable populations, and risky behaviors. The plans will capture context specific key messages on various sector intervention areas such prevention and control, WASH, case management (aspects on early treatment seeking for cholera and building trust in cholera treatment centres etc.) and Oral Cholera Vaccine (OCV)
- Advocacy for RCCE activities at all levels including the launch and implementation of the Cholera elimination strategy
- Appoint a national Cholera Ambassador
- Resource mobilization for operationalization of the plans
- Strengthen coordination mechanism at National and subnational levels for risk communication through health promotion advisory councils at county and subcounty levels (HPACK)

Objective 3: To strengthen RCCE capacity for Cholera elimination at national and at county levels

- RCCE gap analysis among multi sector stakeholders
- Review and update the existing RCCE training package and job aids to meet the Cholera elimination training needs of various actors
- Employ a cascade approach in rolling out the Cholera elimination training package and job aids through face to face, OJT, and virtual training - National, county, schools, CORPs, community etc.
- Support supervision to assess progress in RCCE efforts
- Provide remedial training as necessary to address emerging issues
- Carry out an inventory assessment of communication equipment at the county level
- Procure communication equipment e.g. megaphones, laptops, camera etc.

Objective 4: To enhance social mobilization and communication engagement activities for Cholera elimination

- Review and update targeted Cholera messages for various audiences taking into consideration behavioral contextual factors (include early treatment seeking for cholera and building trust in cholera treatment centres)
- Production of Information, Education and Communication (IEC) materials to be delivered through multiple channels approach to reach all groups including marginalized and vulnerable groups
- Disseminate the messages through multi channels e.g., mass media, social media and other innovative technologies
- Facilitate RCCE efforts through community dialogue, action days, community conversations for cholera elimination in hot spot areas using community actors such as CORPs, CHVs etc.
- Conduct periodic campaigns for sustained positive behavior change in hotspot areas
- Integrate Cholera elimination RCCE efforts in school health programs and other relevant institutions

Objective 5: To monitor progress towards achievement of RCCE strategy objectives

- Establish a mechanism for continuous feedback on behavioral contextual factors to assess effectiveness of the RCCE efforts
- Participate in information sharing platforms/forums to promote learning and facilitate generation of periodic bulletins and manuscripts for learning purposes

0. WATER SANITATION AND HYGIENE (WASH)

Approximately 35 percent of the Kenyan population (17 million) require assistance to access safe drinking water and sanitation services (Annual Water Sector Report, 2021). Lack of adequate WASH services, including disruption of basic water and sanitation services, contaminated water sources, inability to treat sewage due to non-functional wastewater treatment plants, and the absence of garbage collection systems has resulted in cholera outbreaks in various parts of the country. Presently, the rate of increase in population has out grown the initial planned water and sewerage/sanitation infrastructure. This calls for expansion and initiation of new basic water supply, sanitation and hygiene (WASH) infrastructure to meet the required demand of the increasing population as we collectively work towards elimination of cholera in the country.

For successful elimination of cholera in the country, a multisectoral cholera elimination plan is developed with Water, Sanitation and Hygiene (WASH) interventions prepared and aligned to the Constitution of Kenya 2010, Water Act 2016, Agenda 2063, Sustainable Development Goals (SDGs) No. 6, the Kenya Vision 2030 and the Third Medium Term Plan (MTP III) 2018-2022. These laws and policies give the citizens the right to clean and safe water in adequate quantities and access to adequate sanitation. Actions targeting the implementation of long-term sustainable WASH solutions to ensure access to safe water, basic sanitation and good hygiene practices in cholera hotspots among other areas are well spelt out in the cholera elimination plan. The actions are planned to be implemented by the Ministry of Water, Sanitation and Irrigation, the Ministry of Health, UN-Agencies, Development Partners and other WASH actors.

The plan is also aligned to the Public Health Act (CAP 242) and Food, Drugs and Chemical Substances Act (CAP 254) that provide the guidelines on protection of public water supplies and food hygiene and protection of foodstuff. The laws also provide for universal access to improved sanitation and a clean and healthy environment for all by 2030.

Implementation of WASH in Kenya as a key component in cholera prevention is anchored in the following documents;

1) The Kenyan Constitution, 2010
2) Kenya Vision 2030
3) The Public Health Act (CAP 242)
4) The Food, Drugs and Chemical Substances Act (CAP 254)
5) The Health Act
6) The Water Act, 2016 (CAP 372)

7) Kenya Sanitation Management Policy
8) Kenya Environmental Sanitation and Hygiene Strategic Framework (KESSF), 2016–2020
9) Ministry of Water and Sanitation Strategic Plan 2018–2022
10) National ODF Kenya 2020 Campaign Framework 2016–2020
11) The WHO guidelines on Sanitation and Health, 2018)
12) Sustainable Development Goals Number 3.9 and 6, target 1 -2

Communities with ongoing cholera outbreaks require immediate emergency WASH interventions: cholera risks assessment by WASH professionals to identify and neutralize sources of contamination, community hygiene promotion, chlorinated water points at point of use or point of collection, environmental decontamination if informed by evidence; and elimination of excreta risks. WASH actors should also be active in cholera outbreak response teams) who are implementing the immediate CATI package (case area targeted intervention). should support ORP partners with safe water close to population, and include hygiene promotion during OCV campaigns.

Water tower in Wajir County

WASH Objectives and Key Activities

Objective 1: To increase the proportion of people with access to basic water services from 61.6% in 2020 to 100% by 2030
• Carry out maintenance, rehabilitation of water infrastructure, expand and construct new ones in cholera hotspot counties • Promote Water harvesting (including roof catchment), rock catchment and sand dams in cholera hotspot counties • Carry out training of WASH staff on Cholera preparedness and response • Rehabilitation and protection of Water Catchments
Objective 2: To increase the proportion of people with access to safely managed water services from 51.8% to 80% by 2030
• Develop, review & Implementation of Water safety plans • Set up Community water quality surveillance in areas without conventional water treatment • Supply Water treatment commodities to all water treatment works, boreholes, protected dams/ wells and distribute effectively and safely to all households within the catchment area • Establish a multisectoral information sharing mechanism that links water quality data and cholera surveillance data at all levels
Objective 3: To increase the proportion of people with access to basic sanitation services from 32.7% in 2020 to 80% by 2030
• Carry out Community-Led Total Sanitation (CLTS) activities in all hot spot Counties • Support establishment of functional sanitation promotion TWGs at all levels • Enhance environmental sanitation through safe disposal of animal, domestic and agricultural waste in homesteads in hot spot counties
Objective 4: To increase the proportion of people with access to safely managed sanitation from 29.5% in 2020 to 80% by 2030
• Develop and disseminate guidelines on safely managed waste • Carry out WASH interventions during drought, floods and waterborne disease outbreaks • Conduct Capacity building to WASH actors on cholera outbreak response and mitigation measures
• Enhance Monitoring systems through web-based real time monitoring systems to monitor status of ODF and Improved sanitation, especially in hot spot counties
Objective 5: To increase the proportion of people with basic hygiene services from 26.8% in 2020 to 100% by 2030
• Carry out Promotion of hand washing with soap and water in all schools and health facilities through implementation of WASH in Schools (WIS) and HF WASH FIT guidelines • Support school health clubs with learning tools, guidelines and kits • Promote safe food hygiene handling practices/ and enforcement of the Public health Act (CAP 242) & Food Drugs and Chemical Substances Act (CAP 254) • Carry out hygiene promotion activities during drought, floods and waterborne disease outbreaks • Carry out capacity building through trainings, dissemination of guidelines for WASH in schools, Health care facilities and market places • Strengthen hygiene promotion TWGs at all levels

Objective 6: To increase the capacity of the County authorities to manage 100% of Solid and Liquid Waste by 2030

- Enforce Public health, Water, EMCA Acts in all Cholera hot spot Counties
- Empowering the county enforcement teams through training and logistical support
- Appropriate placement of trained staff
- Expansion and maintenance of sewerage infrastructure in urban cities of cholera hot spot Counties

Objective 7: To respond to all cholera outbreaks by 2030 through supporting communities with emergency WASH interventions during outbreaks or crises

- Conduct cholera risks assessment in all cholera hot spot counties to identify and neutralize sources of contamination
- Enhance coordination of all WASH actors at all levels in cholera mitigation and response
- Provide emergency safe drinking water services during outbreaks including water trucking, water reservoirs, sinking boreholes
- Support household water treatment and safe storage through provision of water disinfectants, water filter and SODIS in all cholera hot spot counties
- Intensify community hygiene promotion including during OCV campaigns
- Provide hygiene kits to displaced persons, cholera hot spot counties
- Decontaminate infected households and means of transport

Objective 8: To establish a comprehensive cholera WASH-Based M&E system with capacity to evaluate the program by 2030

- Review CLTS real-time system
- Conduct Capacity building on WASH Data management - disseminate and train on use of WASH tools
- Strengthen WASH coordination platform mechanism at all levels
- Organize annual WASH conferences for cholera hot spot counties
- Mobilize WASH actors to participate in cholera planning and mitigation meetings/forums at all levels

P. ORAL CHOLERA VACCINE (OCV)

Kenya is one of the few countries that regularly declare cholera outbreaks but has not used OCV. WHO recommends use of OCV in emergency settings (humanitarian crises and outbreak situations) and as part of cholera prevention in hotspots. The Oral Cholera Vaccines are effective in preventing cholera for at least 3 years, effectively bridging emergency response and long-term cholera control. OCV administration will complement other long-term interventions as one of the key pillars. Areas mapped as cholera hot spots (preventive campaigns) and those experiencing outbreaks and humanitarian crises (reactive campaigns) will be prioritized for the OCV targeted campaigns.

The Kenya National Immunization Technical Advisory Group (KENITAG) recommends the introduction of Oral Cholera Vaccine for use in Kenya in mass campaigns for:

a) Endemic regions (hotspots) as part of a preventive control strategy
b) Outbreaks as part of a reactive control strategy
c) Humanitarian emergencies as part of a pre-emptive control strategy

The subcounties considered as hotspots and will be the primary target for mass OCV campaigns are listed in tables 11 and the corresponding populations in table 13.

OCV Objectives and Key Activities

Objective 1: Planning of Oral Cholera Vaccine Deployment to hotspots
• Develop a multi-year vaccine introduction plan for the country using updated risk mapping reports
• Development of a multi-year request to the GTFCC OCV Working Group
• Conduct high level advocacy to stakeholders on OCV
• Develop and disseminate health care workers guidelines on cholera vaccine
• Development of an OCV training plan to guide the implementation
• Train vaccinators and supervisors on OCV use and administration
• Integrate community hygiene promotion including during OCV campaigns
Objective 2: To ensure requisition of sufficient supply and prompt distribution of OCV
• Annual forecasting and quantification of required vaccine doses and other logistics
• Estimate other logistics required for the OCV to reach the health facilities e.g. cold chain, transport, distribution etc.
• Annual Cold chain inventory assessment to identify gaps in cold chain capacity at all levels for vaccine storage
• Conduct periodic reviews of Adverse Events following immunization for OCV
Objective 3: To deploy oral cholera vaccine to the population living in cholera hotspots (preventive campaigns)
• Create awareness on OCV to communities living in hotspots
• Conduct mass vaccination campaigns in hotspots
• Conduct post-coverage survey for mass OCV campaigns

Objective 4: To implement mass OCV vaccination campaigns in emergency settings or as soon as a cholera outbreak is confirmed (reactive campaigns)
• Create awareness on OCV to communities during outbreaks • Conduct mass vaccination campaigns during outbreaks • Conduct post-coverage survey for mass OCV campaigns

Q. KEY INDICATORS BY PILLAR

Following the guidance from GTFCC, Kenya will report on the following key indicators each year to monitor progress of implementation of the Cholera Elimination Plan.

Leadership & Coordination

Key Indicators	Target
Proportion of NMCEP budget that is funded	100%
Number of coordination meetings (National Cholera task force meetings) held in a year	4 meetings/year
Number of counties that have held at least 4 technical working group meetings in a year	47 Counties
Number of national/ county stakeholder meetings held each year	1 meeting/year
Presence of endorsed Terms of Reference for the coordination mechanism	2022
Presence of a functional coordination structure	2022
Number of cross border coordination activities	4 meetings/year

Surveillance & Laboratory services

Key Indicators	Target
Proportion of health facilities submitting IDSR weekly reports	80%
Proportion of health facilities submitting IDSR weekly reports on time	80%
Proportion of health facilities (level 2 or higher) with access to laboratory confirmatory testing and AST characterization	100%
Proportion of HFs at Level 2 and 3 with RDT test kits	100%
Proportion of outbreaks with laboratory confirmation (culture)	100%
Proportion of counties that have capacity to confirm cholera outbreaks by culture	100% of counties
Proportion of cholera outbreaks investigated and reported in a year	>90%
Proportion of cholera outbreaks with a nationally recommended public health response within 24 hours of confirmation	80%
Number of cholera cases reported annually	Reduce number of cases by 30% each subsequent year

Case management & IPC

Key Indicators	Target
Number of cholera deaths reported annually	Reduce number of deaths by 90% of deaths reported in the previous year
Case fatality rate (CFR) as a measure of severity of the outbreak	CFR less than 1%
Number of counties with adequate cholera treatment supplies	47 Counties
Proportion of Community Units with adequate supply of ORS	100%
Proportion of healthcare workers in hotspot sub-counties trained in cholera case management	80%
Proportion of health facilities with a trained IPC focal person	80%

Risk Communication & Community Engagement

Key Indicators	Target
RCCE coordination mechanism at all levels in place	100%
Proportion of hotspot areas with social data on the behavioral and social drivers of cholera transmission	100%
Proportion of community networks/platforms (by type) in hotspot areas engaged on key cholera prevention and control measures	80%
Proportion of population in hotspots who recall key cholera prevention and control practices	>80%
Proportion of hotspots with documented/ Shared best practices on cholera communication	100%
Proportion of counties with active health promotion units	100%

WASH

Key Indicators	Target
Proportion of the population in hotspots with access to basic water services *(with a total collection time of 30 minutes or less for a roundtrip including queueing)*	100%
Proportion of households in hotspots with access to basic sanitation *(Use of improved facilities which are not shared with other households)*	100%
Proportion of villages that are Open Defecation Free (ODF)	100%
Latrine Coverage *(Proportion of households with a functional latrine)*	80%
Proportion of health care facilities with appropriate hand washing facilities with water and soap	100%
Proportion of people in hotspot areas with access to a handwashing facility on premises with soap and water	100%

Proportion of target urban centers in hotspot areas with Fecal Sludge Management (FSM) services including safe practices for emptying, transportation, treatment and disposal	50%
Proportion of schools in hotspot areas with improved sanitation facilities	100%
Proportion of schools in hotspot areas with adequate functional handwashing facilities (with water and soap)	100%
Proportion health facilities in hotspot areas with adequate improved sanitation facilities which are single-sex and usable	100%
Proportion of health facilities in hotspot areas with adequate handwashing facilities (with water and soap) that are strategically placed	100%
Proportion of public places in hot spot areas with improved sanitation facilities suitable for persons living with disability	100%

OCV

Key Indicators	Target
Proportion of target hotspot subcounties covered by 1 dose of mass vaccination campaigns	100%
Proportion of target hotspot subcounties covered by 2 doses of mass vaccination campaigns	100%
Proportion of recommended mass vaccination campaigns conducted within 6 months of the outbreak	80%
OCV coverage during mass vaccination campaigns in hotspot subcounties	>90%

ANNEXES

Thiba multipurpose dam in Kirinyaga County to serve communities with clean water as well as support rice irrigation

ANNEXES

R. COUNTY PROFILE (COUNTY QUESTIONNAIRE)

This detailed questionnaire will allow subnational teams (counties/subcounties) to conduct a rapid assessment on preparedness and response activities across the 6 pillar areas. The data collected will form a baseline as we begin implementation of the Cholera Elimination Plan and will be updated from time to time.

County profile	Name, Number or %, Yes/No	Remarks
County name		
Total Population size (date of last census if available)		
Projected populations		
Number of subcounties		
Number of wards		
Number of Health facilities		
Number of Health care workers		
Number of active community health units		
Number of Community Health Volunteers		
Number of villages		
Number of households		
Number of schools and institutions		
Number of markets		
Leadership & Coordination		
Does the county have a multisectoral cholera coordination mechanism (involving key stakeholders) for cholera related activities		
Does the county have an up to date stakeholder mapping of all relevant stakeholders (date of last update)		
Number of stakeholder meetings held in the past one year		

County profile	Name, Number or %, Yes/No	Remarks
Number of county level technical working group meetings held in the past one year		
Does the county have a database for surge staff		
Does the county have a skills database		
Does the county have Rapid Response Teams (RRTs) in place		
What are the county's biggest needs for cholera leadership and coordination?		
How much was allocated to cholera in the last FY		
Surveillance & Lab		
Number of laboratories within the county that have capacity to detect/confirm cholera by PCR or culture		
Number of laboratories within the county that have capacity to perform antibiotic resistance testing		
Number of cholera samples tested by PCR or culture in the county over the last year		
Number of laboratory personnel working within the county in laboratories that have capacity to detect/confirm cholera by PCR or culture		
Number of laboratory personnel trained on cholera identification and antibiotic susceptibility testing		
Are rapid diagnostic tests available/used at health facilities within hotspot communities		
How many weeks in the last year were there stockouts of essential cholera testing reagents/supplies		
Does the county have a functional sample referral system		
Number of laboratories that have capacity to detect/ confirm cholera by PCR or culture reporting using standardized reporting tools		
How often are cholera surveillance trainings conducted and when did the last one take place		
Number of HCWs trained on Integrated Diseases Surveillance and Response (IDSR) in the past 5 years		
Number of community members trained on IDSR in the past 5 years		
Are IDSR forms currently available in the county (please ignore if reporting is now electronic)		
Number of health facilities routinely submitting weekly IDSR reports		

County profile	Name, Number or %, Yes/No	Remarks
Does the county have a functional Event Based Surveillance (EBS) system		
Does the county participate in cross border meetings		
Number of times support supervision to health facilities was conducted within the past one year		
Number of DQAs conducted in the last year		
What are the county's biggest needs for cholera surveillance?		
Case management & IPC		
Does the county have adequate supply of IV fluid, giving sets, ORS and zinc		
Does the county have the capacity to establish cholera treatment centers		
Does the county have a cholera outbreak response team		
Has the county team received training on Cholera outbreak response, if yes, when was the last training?		
Number of health care workers trained on cholera clinical case management		
Does the county have guidance and tools for treating patients with cholera		
Number of health care workers trained on cholera infection prevention and control, and date of last training		
Is antibiotic prevention therapy in use (close contacts, neighborhoods with active transmission)		
Number of cholera outbreaks investigated in the past one year		
Does the community health units currently have ORS available		
What are the county's biggest needs for cholera case management?		
Risk communication & Community engagement		
Number of HCWs trained on cholera prevention communication and date of last training		
Does the county have a budget specific for cholera prevention activities		
Does the county have an active Advocacy, Communication and Social Mobilization (ACSM)working group		
Does the county have advocacy meetings at schools and markets		
Does the county have updated Cholera IEC materials		

County profile	Name, Number or %, Yes/No	Remarks
Does the county engage vernacular radio stations for health promotion		
Does the county have an up to date list of community leaders who can be engaged in cholera prevention		
Are there regular meetings with community leaders and community health workers to discuss cholera prevention		
What are the county's biggest needs for cholera risk communication?		
WASH		
Proportion of villages that are Open Defecation Free (ODF)		
Proportion of households with functional pit latrine		
Proportion of households with private (non-shared) functional pit latrine		
Proportion of households with private (non-shared) functional flush toilet		
Proportion of households with access to basic drinking water		
Proportion of households with access to safe drinking water		
Proportion of health care facilities with appropriate hand washing facilities with water and soap		
Proportion of health care facilities with WASH guidelines		
Number of HCWs trained on the WASH monitoring tools and date of last training.		
Is there a water quality monitoring program in place to test drinking water for free chlorine residual, E. coli or both?		
If so, what proportion of water samples are positive for E. coli?		
If so, what proportion of water samples have detectable free chlorine residual (FCR)?		
Does the county have a WASH coordination platform		
Are there ongoing WASH projects/investments in the county?		
What is the county's biggest need for WASH?		
Oral Cholera Vaccine (OCV)		
Does the county have an existing cold chain system		
Number of times targeted commodity supervision to health facilities was conducted in the last one year		

Has the county recently (past one year) participated in a mass vaccination campaign		
County profile	**Name, Number or %, Yes/No**	**Remarks**
Has the county experienced stock outs of any antigens for routine immunization in the past one year		
How is the coverage for routine vaccination in this county in general		
Would you classify your county as "high risk" for cholera outbreaks		
Would your county benefit from introduction of the OCV		
How many health facilities could be fixed points for OCV in the county		
How many county staff can be mobilized for door to door strategy		
How many villages would you say are "hard to reach" in the county		
Open-ended		
How often does your county experience cholera outbreaks?		
When was the last cholera outbreak in your county?		
What are the county's biggest needs for cholera prevention and control?		
Is there anything else not covered above that you would like to tell us about cholera in your county?		

S. PILLAR IMPLEMENTATION PLANS

Leadership and coordination

GOAL: To promote strong political commitment, effective inter-government, inter-ministerial and inter-agency coordination process and multisectoral engagement of all partners in cholera prevention, control and elimination									
Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	2022 - 2024 (3 yrs)	2025 - 2027 (3 yrs)	2028 - 2030 (3 yrs)	Re-spon-sible Sector/ Agency	Estimated Cost KES
Objective 1: To raise the profile and implications of cholera within and beyond the health sector by engaging other Ministries and sectors in implementation of the NMCEP including resource mobilization for NMCEP budget									
Conduct sensitization meetings with other relevant stakeholders on NMCEP (e.g. other ministries, Partners, Political leaders, religious leaders, communities)	Stakeholder engagement	Proportion of hotspots where sensitization meetings held	0%	100%	100%			MOH	4M
Advocacy to the top national leadership of line Ministries and partners to implement interventions in the NMCEP	Prioritization of NMCEP implementation and funding	Proportion of NMCEP budget funded	0%	100%	20%	50%	100%	NTF/ COM	1M
Advocacy to the presidency and governors for budget support for implementation of NMCEP interventions	Prioritization of NMCEP implementation and funding	Proportion of NMCEP budget funded	0%	100%	20%	50%	100%	COM	20M

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	2022 - 2024 (3 yrs)	2025 - 2027 (3 yrs)	2028 - 2030 (3 yrs)	Re-spon-sible Sector/ Agency	Estimated Cost KES
Engage high level Cholera expert advisor to the presidency	High level advocacy on NMCEP implementation in all line ministries, Counties, partners and the presidency	Proportion of NMCEP budget funded	0%	100%	100%	100%	100%	OP	150M
Objective 2: To strengthen information sharing across line Ministries involved in cholera prevention, control and elimination									
Develop quarterly evidence-based briefs (including water and sanitation, quality information and cholera situation) to the National steering committee and Office of The President and the Council of Governors	Information sharing across Ministries and sectors	Number of briefs/reports developed and shared with COM and Office of the President in a year	N/A	4 Quarterly reports each year	4/year	4/year	4/year	NTF	0
Objective 3: To establish a functioning multisectoral cholera coordination mechanism at all levels of implementation of the NMCEP									
Map relevant partners and stakeholders	Ensure multisectoral engagement in cholera related activities	Stakeholder mapping developed and updated annually	Not updated	Stakeholder map updated annually	Stakehold-er map updated annually	Stakeholder map updated annually	Stakehold-er map updated annually	NTF	0
Conduct national cholera task force and technical working group meetings quarterly	Ensure effective coordination at the national and county level	Number of Quarterly meetings held in a year	Irregular	4 meetings/ year	4 meetings/ year	4 meetings/ year	4 meetings/ year	NTF/ County TWGs	15M
Sensitize and support counties to adopt the NMCEP	Counties are fully onboard with the NCP as implementers	Proportion of counties sensitized on the NMCEP	0%	100%	100%			NTF	15M

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	2022 - 2024 (3 yrs)	2025 - 2027 (3 yrs)	2028 - 2030 (3 yrs)	Re-spon-sible Sector/ Agency	Estimated Cost KES
Develop and implement M&E plan across the 6 pillars	Periodic evaluation to ensure the country is on track for cholera elimination	NMCEP M&E plan developed and implemented	N/A	NMCEP M&E plan developed and implemented	NMCEP M&E plan developed and implemented	NMCEP M&E plan developed and implemented	NMCEP M&E plan developed and implemented	NTF	TBD
Conduct annual stakeholders' meeting	Information sharing/ feedback shared across all stakeholders	Number of stakeholder meeting held each year	N/A	1 meeting/ year	1 meeting/ year	1 meeting/ year	1 meeting/ year	NTF/ COM	16M
Objective 4: To strengthen cross border coordination for cholera control									
Liaise with and leverage existing structures (i.e. EAC, AUC IGAD, ECSA-HC) for heightened intercountry and cross border collaboration for cholera elimination activities	Strengthened intercountry and cross border collaboration	Number of Quarterly communiques to regional bodies each year	N/A	4 reports/ year	4 reports/ year	4 reports/ year	4 reports/ year	NTF	
Objective 5: To ensure adequate staffing for health facilities at national and county level									
Conduct human resource needs assessment for all health facilities	Adequate staffing	Number of counties with HR assessments by health facility	NR	47	25	40	47	MOH, COG, PSC, PSB	
Ensure all health facilities are adequately staffed with all cadres of health care workers	Adequate staffing	Number of counties with adequately staffed health facilities	NR	47	25	40	47	MOH, COG, PSC, PSB	
Establish a database for surge staff to support outbreak response for both national and county teams	Adequate surge staff	Number of counties with surge capacity database	NR	47	25	40	47	MOH, COG, PSC, PSB	

Surveillance

Goal: To strengthen early warning and response (EWAR) mechanisms for cholera outbreaks									
Main Activities	Expected Results	Indicators	Baseline	TARGETS	Responsible Sector/ Agency	2022-2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
Objective 1: To strengthen integrated disease surveillance systems to promptly detect 100% of the cholera outbreaks by 2030									
Align the 3rd Edition of the IDSR Technical Guidelines with the NMCEP	3rd Edition of the IDSR TG aligned to the NMCEP	Endorsed IDSR TG with cholera indicators aligned to the NMCEP	0	1	MoH, WHO, CDC, WSU	100%			20,000
Print and distribute the IDSR and EBS guidelines, hand books, case definitions charts, reporting tools, and job aids	3rd Edition of the IDSR TG printed and distributed	Proportion of Sub Counties with the 3rd Edition of the IDSR Technical Guidelines	0%	100%	MOH, WHO, CDC, WSU	40%	100%	100%	20M
Finalize, validate and disseminate community event-based surveillance (EBS) guidelines	EBS guidelines	Proportion of sites implementing EBS trained on the EBS guidelines	0%	100%	WHO, CDC, WSU	100%			2M
Print and distribute community event-based surveillance (EBS) guidelines and tools	EBS guidelines	Proportion of EBS implementing sites with EBS guidelines	0%	100%	WHO, CDC, WSU	100%	100%	100%	100,000
Train public health managers, health workers and the community on IDSR	Trained health work force	Proportion of sub counties with 80% of health work force trained on IDSR	0%	80%	WHO, CDC	30%	80%	100%	6M

Main Activities	Expected Results	Indicators	Baseline	TARGETS	Responsible Sector/ Agency	2022-2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
Support cross border surveillance activities and information sharing	Improved cross border surveillance	Proportion of cross border zones with active cross border committees	0%	100%	WHO	40%	80%	100%	1M
Integrate IDSR indicators in existing support supervision checklists in the counties and sub-counties	Improved outbreak and case reporting	Proportion of planned counties and sub counties support supervisions undertaken	0%	100%	WHO	50%	80%	100%	400,000
Establish community event-based surveillance in all the cholera hot spot sub counties	Improved reporting in high risk counties	Proportion of hot spot sub counties with functional CEBS	1%	100%	CDC, ACDC, ECSA-HC, WSU	10%	50%	100%	3M
Enhance cross border surveillance by Screening of immigrants into the Country at points of entry	Improved case detection	Proportion of Points of Entry screening for Cholera	20%	100%	MOH	100%			1M
Procure IT equipment (Laptops)	Improved data management	Proportion of counties with laptops for surveillance	0%	100%	WHO, CDC	20%	20%	60%	60M
Customization of existing tools into KHIS	Improved data use	Automated surveillance system in place	0%	100%	WHO, CDC	0%	100%	100%	10M
Develop an online training module for data analysis	Online training module on data analysis is developed	Online training module on data analysis in place	0%	100%	WHO, CDC, MEASURE EVALUATION	0%	100%	100%	5M

Main Activities	Expected Results	Indicators	Baseline	TARGETS	Responsible Sector/ Agency	2022-2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
Procure and distribute RDTs to hotspot subcounties	Prompt diagnosis of cases	Proportion of high priority subcounties with RDTs in stock	NR	100%	MOH, WHO, CDC,	100%	100%	100%	10M
Objective 2: To improve the laboratory capacity to confirm suspected cases of cholera within 24 hours by 2030									
Conduct a needs assessment for county and sub county labs including HR, infrastructure and equipment	Identification of gaps	Needs assessment report conducted every 5 years	0%	100%	GHSA, CDC	50%	50%	100%	150,000
Strengthen technical capacity for the lab staff to do stool cultures and anti-microbial susceptibility testing and prompt dissemination of findings	Trained laboratory work force able to detect and identify AST patterns	Proportion of laboratory personnel trained on cholera identification and antibiotic susceptibility testing	0%	100%	GHSA, CDC, WHO	30%	70%	100%	300,000
Procure and preposition essential cholera lab equipment, commodities and supplies	Improved capacity to detect and confirm; no stockouts	Proportion of budget essential cholera laboratory supplies and equipment procured	20%	100%	WHO, UNICEF, CDC	30%	70%	100%	100M
Support Total Quality Management in the labs for the implementation of lab quality management systems	Improved quality assurance accountability	Proportion of labs testing for cholera that have established quality assurance systems	20%	100%	CDC, AMREF (EAREQAS), MOH	30%	100%	100%	200,000

Main Activities	Expected Results	Indicators	Baseline	TARGETS	Responsible Sector/ Agency	2022-2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
Strengthen and maintain a sample referral system e.g. use of available sample referral networks, motorbike riders for sample transport	Improved sample transport mechanism from point of collection to referral lab	Proportion of counties that have a functional sample referral system	20%	100%	CDC, MOH, COG, WHO	60%	100%	100%	100,000
Strengthen referral mechanism for cholera isolates to the NPHLS isolate banks for further analysis and archiving	Samples archived	Proportion of outbreaks with Vibrio cholerae isolates archived	30%	100%	WHO, CDC, MOH, COG	50%	80%	100%	100,000
Print, disseminate and distribute the cholera confirmation SOPs for all county and sub county laboratories	Cholera SOPs disseminated	Proportion of labs using the cholera SOPs	10%	100%	COG, MOH, CDC, WHO	80%	100%	100%	100,000
Validation of the cholera rapid diagnostic test kits in the Kenyan market	Validated cholera RDT kits	Proportion of health facilities using validated cholera RDT kits	0%	100%	WHO, MOH, CDC, WSU	30%	90%	100%	1M
Routine food hygiene and water quality surveillance	Safe food and potable water	Proportion of listed food outlets and public water sources sampled	10%	100%	WHO, CDC, WFP, MOH, COG	30%	70%	100%	5M
Objective 3: To report all cases (suspected and confirmed) to the national level within 24 hours by 2030									
Procure airtime (internet bundles) to facilitate timely notification in IDSR	Timely & complete reporting of detected cases	Proportion of expected immediate and weekly IDSR reports received on time	60%	100%	WHO, CDC, WSU, Safaricom	80%	90%	100%	1M

Main Activities	Expected Results	Indicators	Baseline	TARGETS	Responsible Sector/ Agency	2022-2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
Develop a web based national lab information system and reporting tools for cholera	Improved lab information sharing	Proportion of labs reporting into national LIMS	20%	100%	CDC, I-TECH, WHO, WSU	60%	100%	100%	1M
Develop a linkage between LIMS and MOH 503,505 and 502	Improved information sharing	Proportion of Sub Counties using MOH 503,502 and 505 linked to LIMS	0%	100%	MOH, I-TECH, CDC, WHO	20%	70%	100%	50,000
Develop a linkage between LIMS and KHIS2	Improved information sharing	LIMS linked to KHIS2	0	1	CDC, I-TECH, WHO, WSU	100%			20,000
Develop and roll out a mobile phone-based reporting systems-M-dharura	mobile phone reporting application	Proportion of CHUs in cholera hot spots using a mobile phone reporting system-M-dharura	1%	100%	CDC, WSU, MOH,	10%	50%	100%	200,000
Support national, county and sub county PHEOCs for reporting cholera events	Airtime for calls and data	Proportions of PHEOCs actively reporting on cholera events	1%	100%	CDC, WHO	10%	60%	100%	100,000
Objective 4: To improve the capacity for rapid response to all cholera outbreaks within 48 hours by 2030									
To initiate subcounty and county response within 24hrs and 48hrs respectively	Timely response	Proportion of Cholera outbreaks responded to within 24 hours	40%	100%	WHO, MOH, COG	80%	100%	100%	1M
Train rapid response teams (RRTs) at the national, county and sub county levels on cholera preparedness and response	Trained RRTs	Proportion of RRTs trained	5%	100%	WHO, MOH, COG	10%	50%	100%	500,000

Main Activities	Expected Results	Indicators	Baseline	TARGETS	Responsible Sector/ Agency	2022-2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
Strategic stock piling of essential commodities and supplies for cholera response	Strategic stock piles	Proportions of sub counties with cholera strategic stock piles	5%	100%	WHO, MOH, COG	20%	60%	100%	1M
Provide the sub national level with technical support during cholera outbreaks	Outbreak response supported	Proportions of outbreak response supported by the national RRT	30%	100%	CDC, MOH, WHO	50%	80%	100%	100,000
Conduct outbreak investigations for all cholera outbreaks	Outbreak investigation reports	Proportions of the outbreaks investigated	30%	100%	CDC, MOH, WHO	50%	80%	100%	200,000
Objective 5: To undertake active case finding following confirmation of all outbreaks by 2030									
Train cholera contact tracing teams (CCTTs) at the national, county, sub county and community levels	Trained CCTs	Proportions of sub county with CCTTs trained	5%	100%	WHO, MOH, COG	20%	70%	100%	500,000
Develop digital contact listing and follow up tools	Digital CCTT tools	Proportions of sub counties using digital CCTT tools	0%	100%	WHO, CDC, MOH	30%	80%	100%	100,000
Procure and prepositions household infection prevention and control (IPC) supplies for use by CCTTs and CHVs	Strategic IPC supplies	Proportions of sub counties with strategic IPC supplies	0%	100%	WHO, CDC, MOH	20%	60%	100%	200,000
Come up with a budgetary line items for active case finding	Budget line	Proportions of sub counties with budget line	0%	100%	MOH	100%	100%	100%	5M

Main Activities	Expected Results	Indicators	Baseline	TARGETS	Responsible Sector/ Agency	2022-2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
Objective 6: To implement an EWARS									
Develop cholera outbreak prediction model for use in the country	Cholera prediction model	Proportion of Sub Counties in cholera hot spots using cholera outbreak prediction model	0%	100%	MOH, WSU, CDC, WHO	0%	80%	100%	2M
Disseminate the cholera outbreak prediction model for use in the country	Dissemination of Cholera outbreak prediction model	Proportion of Sub Counties in cholera hot spots using cholera outbreak prediction model	0%	100%	MOH, WSU, CDC, WHO	1%	80%	100%	1M
Strengthen EWARS through information management	EWARS	Proportion of Sub Counties in cholera hot spots using EWARS	0%	100%	MOH, WSU, GIS	50%	100%		
Objective 7: To generate evidence for improvement of surveillance and response to cholera outbreaks									
Conduct biannual data quality audits for IDSR	Improved data quality	Proportion of planned data quality audits conducted	0%	100%	WHO, CDC, MOH	50%	80%	100%	400,000
Periodically update cholera hotspot mapping for the country with current surveillance data to advise on vaccination/ revaccination in hotspots	Updated risk maps	Number of periodic reviews of cholera risk mapping	3	3	MOH, WHO, County departments of Health, CDC, WSU	1	1	1	1M
Conduct Operational research	Reports	Number of annual operational research by national and county levels	0	48	WHO, CDC, MOH	10%	50%	80%	50,000

Main Activities	Expected Results	Indicators	Baseline	TARGETS	Responsible Sector/ Agency	2022-2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
Initiate cholera Molecular epidemiology	Molecular epidemiology	Number of labs doing molecular epidemiology	0	80%	CDC, MOH	20%	50%	100%	20M
Molecular characterization of cholera isolates	Reports	Proportion outbreaks characterized	0%	100%	WHO, CDC, MOH	20%	60%	100%	50,000
Surveillance on the AMR trends of the cholera isolates	Reports	Proportion of outbreaks with AST done	0	100%	WHO, CDC, MOH	20%	60%	100%	80,000
Training of IDSR surveillance focal points on basic field epidemiology	Use of data for decision making	Proportion of surveillance focal points trained on basic epidemiology	5%	100%	WHO, CDC, MOH	30%	60%	100%	2M
Objective 8: To undertake regular monitoring and evaluation of the surveillance and response									
Conduct biannual data quality audits for IDSR	Improved data quality	Proportion of planned data quality audits conducted	0%	100%	WHO, I-TECH, MOH, COG	50%	80%	100%	400,000
Hold quarterly review meetings at national and sub national level	Reports	Number of quarterly review meetings held	0	4	WHO, I-TECH, MOH, COG	30%	80%	100%	2M
Hold quarterly cholera surveillance TWG meetings at national and sub national level	Reports	Number of quarterly TWG meetings held	0	4	WHO, I-TECH, MOH, COG	50%	100%	100%	10,000
Hold multisectoral post outbreak review meetings at national and sub national level	Reports	Number of multisectoral post outbreak review meetings held	0	100%	MOH and all partners	100%	100%	100%	5M

Case Management

GOAL: The goal is to reduce the cholera case fatality rates to less than 1% by 2030									
Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	2022-2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Objective 1: To strengthen the level of preparedness to respond to cholera outbreaks at all levels by 2030									
Ensure procurement and pre-positioning of cholera kits at national and county levels. Preposition supplies in the high burden counties at the subcounty level. While medium and low burden can position the supplies at the county level depot	No stock-outs of cholera treatment supplies	Proportion of hotspot counties with adequate cholera supplies (at least 3 months stockpile), human resource, laboratory capacity and infrastructure		All hotspot counties	All hotspot counties	All hotspot counties	All hotspot counties	MoH, COG, WHO, UNICEF	960,000
Develop cholera specific emergency response plans	Better preparedness	Proportion of counties with emergency response plans in place	NR	All counties	All hotspot counties	All counties	All counties	County departments of health, County Cholera Task Force	2M
Conduct a training needs assessment across all cadres to inform a training strategy	Better preparedness	Proportion of counties with training needs assessment report	NR	All counties	All counties	All counties	All counties	County departments of health, County Cholera Task Force	
Continuous training of HCWs at all levels on cholera case management	Trained HCWs on cholera case management	Proportion of HCWs trained		All Counties	All Counties	All Counties	All Counties	MoH, COG, and partners	2M

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	2022-2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Objective 2: To improve cholera case management to reduce mortality by 90% by 2030									
Update the national guidelines and SOPs on cholera clinical case management	Improved clinical management of cholera patients	Cholera clinical case management guidelines and SOPs updated	Outdated guidelines and SOPs	Updated guidelines and SOPs	Guidelines and SOPs updated	Guidelines and SOPs in place	Guide-lines and SOPs in place	MoH, COG, WHO, UNICEF & MSF	100, 000
Develop, print and distribute the cholera treatment guidelines, SOPs and job aids	Cholera Treatment Guidelines printed and distributed	Proportion of counties having the cholera case management guidelines		At least 80% of health facilities all hotspot counties	all hotspot counties	60% of health facilities in all hotspot counties	At least 80% of health facilities in all hotspot counties	MoH, COG, WHO, UNICEF & MSF	3M
Training of HCWs should be carried out routinely in the hotspot counties targeting at least 60% of all health workers at the facility level in hotspots in the county (including the performance and interpretation of Cholera RDTs) A blended approach of both on site and web-based training could be utilized	Enhanced capacity of health care workers to manage cholera patients	Proportion of health care workers trained on cholera clinical case management in the hotspot counties	20%	At least 60% of all health care workers in all hotspot counties trained	40% of all health care workers in all hotspot counties trained	50% of all health care workers in all hotspot counties trained	At least 60% of all health care workers in all hotspot counties trained	MoH, COG, WHO, UNICEF & MSF	2M
Train Community Health Volunteers (CHVs) on community cholera management in the respective community units identified as hotspots in the county	Improved management of cholera patients at household and community level	Proportion of CHVs trained on prehospital cholera case management in the hotspot counties	10%	At least 60% of CHVs trained in the hotspot counties	40% of CHVs trained in the hotspot counties	50% of CHVs trained in the hotspot counties	At least 60% trained in the hotspot counties	MoH, COG, WHO, UNICEF, AMREF & MSF, KRCS, Concern Worldwide	1,500,000

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	2022-2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Provide ORS to the CHVs for home-based care management (The CHVs should be trained on preparation and giving ORS)	Reduction of morbidity through prevention of progression from moderate to severe dehydration in the community	Proportion of CHVs with adequate supply of ORS in the hotspot counties	0	At least 80%	40%	60%	At least 80%	MoH, COG, WHO, UNICEF, AMREF & MSF, KRCS, Concern Worldwide	3M
Include cholera in existing supervision plans for community health workers (CHWs), primary health centres and hospitals	Enhanced capacity of health care workers incl CHVs to manage cholera patients	Proportion of counties with quarterly supervision plans where Cholera is included		50%	70%	80%	100%	County departments of health	-
Integrate cholera indicators in existing supervision plans for community health volunteers (CHVs), primary health centers and hospitals	Improved performance	Proportion of Counties with integrated supervision plans	0	All Counties	All Counties	All Counties	All Counties	MOH, COG and Partners	-
Objective 3: To reduce incidence of nosocomial infections in health care settings									
Review and update the guidelines, SOPs, and job aids on cholera infection prevention and control	Improved IPC practices at health care facilities	Updated guidelines, SOPs, and job aids on cholera infection prevention and control	Outdated guide-lines, SOPs, and job aids	Updated guidelines, SOPs, and job aids	Guidelines, SOPs, and job aids updated	Guide-lines, SOPs, and job aids updated	Guide-lines, SOPs, and job aids updated	MoH, MSF, Red Cross, UNICEF & WHO	100,000
Train health care workers on cholera infection prevention and control	Improved IPC practices at health care facilities	Proportion of health care workers trained on cholera infection prevention and control	20%	At least 60%	40%	50%	At least 60%	MoH, MSF, Red Cross, UNICEF & WHO	2,000,000

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	2022-2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Identify and appoint an IPC focal person in every facility	Improved IPC practices at health care facilities	Proportion of facilities with IPC focal persons		100%	50%	75%	100%	MoH, MSF, Red Cross, UNICEF & WHO	
Training of HCWs, morticians, key community leaders on handling of dead bodies	Enhanced capacity	Number of trained HWs, CHVs, morticians and Community leaders	NR	60%	20%	20%	20%	MOH, COG and Partners	2M
Training of support staff (cooks, cleaners and drivers)	Reduction of cholera transmission among the support staff	Proportion of support staff trained on IPC	NR	At least 60%	40%	50%	At least 60%	MoH, MSF, Red Cross, UNICEF & WHO	1M
Procurement of disinfectants & sprayers	Prevention of infection of health workers and other staff in the facility	Proportion of HFs with adequate disinfectants, soap, and sprayers	NR	At least 80%	40%	60%	At least 80%	MoH, MSF, Red Cross, UNICEF & WHO	5M
Procurement of PPEs (including body bags)	Prevention of infection of health workers and other staff in the facility	Proportion of health facilities having adequate PPEs	NR	At least 80%	40%	60%	At least 80%	MoH, MSF, Red Cross, UNICEF & WHO	5M
Training of Health care workers and CHVs on preparation of the various concentrations of chlorine solution for use at the household and community level	Prevention of cholera transmission in the households and community	Proportion of CHV trained on chlorine solution preparation	0	At least 80%	40%	60%	At least 80%	MoH, MSF, Red Cross, UNICEF & WHO	2M
Designated waste management bins	Improved infection prevention control	Number of designated waste management bins	NR	All counties	All counties	All counties		MOH, COG and Partners	3M

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	2022-2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Objective 4: To improve quality of care in Cholera case management through evidence-based strategies									
To conduct operational research and publish evidence on cholera	Reduction in mortality from cholera	Proportion of planned studies on risk factors conducted per outbreak	NR	At least 1 per outbreak	At least 1 per outbreak	At least 1 per outbreak	At least 1 per outbreak	MoH, MoWS, CDC & WHO	2M
Review cholera case management guidelines to incorporate Antimicrobial Resistance patterns	Updated cholera treatment guidelines	Updated cholera treatment guidelines	NR	Continu-ous with every outbreak	Continuous	Continu-ous	Continu-ous	MoH, NPHL, CDC & WHO	1.5M
Conduct quality of care surveys	Improved quality of care for cholera cases	Number of surveys conducted	NR	All Counties	All Counties	All Counties	All Counties	MOH, COG and Parners	1M
Conduct dissemination meetings to share data on operational research	Improved quality of care for cholera cases	Number of dissemination meetings on OR	NR	All Hot spot counties	All hotspot counties	All counties	All counties		-

Risk Communication and Community Engagement

Goal: To raise awareness and adequately engage communities in cholera prevention through tailored approaches and messages									
Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	Responsible Sector/ Agency	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
Objective 1: To generate evidence on behavioral contextual factors to inform RCCE strategy/plans development for cholera elimination									
Conduct periodic surveys to identify contextual factors such as social cultural factors, risk behavior, behavioral barriers for Cholera prevention and control measures, best practices, etc. associated with Cholera transmission	Evidence based RCCE program-ming	Periodic reports on contextual factors in place	ND	10	MOH, Line Ministries, and Partners	40%	60%	100%	10,000,000
Multi-sec-toral de-velopment of RCCE strategy for Cholera elimination	Multi sectoral RCCE strategy	Multi sectoral RCCE strategy in place	NR	1	MOH, Line Ministries, and Partners	100%			5,000,000

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	Responsible Sector/ Agency	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
Sensitize stakeholders across sectors, implementing partners and other actors at national and sub national levels on the RCCE strategy	Implementing actors sensitized on the strategy	# of implementing actors sensitized	-	376 actors	MOH, Line Ministries, and Partners	20%	50%	80%	5,000,000
Generate social data on the behavioral and social drivers of cholera transmission using epidemiological and field investigation data	Evidence based data on risk factors to inform planning	A framework for identifying social behavioral risk factors in place	20%	100%	MOH, Line Ministries, and Partners	40%	60%	100%	5,000,000
Objective 2: To strengthen RCCE coordination mechanisms and planning for cholera elimination at national and at county level									
Establish a multisectoral TWG for RCCE planning and coordination at national and county levels	Strengthened Multisectoral coordination of RCCE efforts	Multisectoral RCCE coordination TWGs in place	N/A	48 (47 counties and one national TWG)	MOH, Line Ministries, and Partners	100%			50,000.00

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	Responsible Sector/ Agency	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
Develop SOPs and guidelines for roll out of RCCE strategy and activities	Streamlined implementa-tion of RCCE strategy and efforts	SOPs and guidelines in place	ND	5	MOH, Line Ministries, and Partners	100%			50000
Develop RCCE plans and budgets for Cholera elimination targeting hotspots, cross-border areas, vulnerable populations, and risky behaviors.	Successful operation-alization of RCCE strategy	RCCE work plans and budgets	ND	2	MOH, Line Ministries, and Partners	100%			50000

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	Responsible Sector/ Agency	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
The plans will capture context specific key messages on various sector intervention areas such prevention and control, WASH, case management (aspects on early treatment seeking for cholera and building trust in cholera treatment centres etc.) and Oral Cholera Vaccine (OCV)									
Advocacy for RCCE activities at all levels including the launch and implementation of the Cholera elimination strategy	Advocacy strategy in place	# of advocacy meetings held	ND	200	MOH, Line Ministries, and Partners	30%	70%	100%	50000

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	Responsible Sector/ Agency	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
Appoint a national Cholera Ambassador	For advocacy on NMCEP implementation in all line ministries, Counties, partners	A Cholera champion identified	ND	100%	MOH, Line Ministries, and Partners	1	1	1	50000
Resource mobilization for operationalization of the plans	Optimum resourcing for RCCE efforts	% commitment on RCCE budget		100	MOH, Line Ministries, and Partners	20%	50%	80%	20,000
Strengthen coordination mechanism at National and subnational levels for risk communication through health promotion advisory councils at county and subcounty levels (HPACK)	Optimum coordination for RCCE efforts		-	-	MOH, Line Ministries, and Partners	-	-	-	-
Objective 3: To strengthen RCCE capacity for Cholera elimination at national and at county levels									
RCCE gap analysis among multi sector stakeholders	Identified training needs	Gap analysis report in place	-	1	MOH, Line Ministries, and Partners	100%	100%	100%	100,000

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	Responsible Sector/ Agency	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
Review and update the existing RCCE training package and job aids to meet the Cholera elimination training needs of various actors	Harmonized training package for RCCE	RCCE training package	-	2	MOH, Line Ministries, and Partners	50%	100%	100%	50,000
Employ a cascade approach in rolling out the Cholera elimination training package and job aids through face to face, OJT, and virtual training - National, county, schools, CORPs, community etc.	Improved knowledge and skills	# of multisector stakeholders trained	-	376	MOH, Line Ministries, and Partners	50%	100%	100%	100,000
Support supervision to assess progress in RCCE efforts	Effective RCCE imple-mentation across all levels	# of support supervision reports	-	40	MOH, Line Ministries, and Partners	30%	50%	70%	40,000

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	Responsible Sector/ Agency	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
Provide remedial training as necessary to address emerging issues	Continuous updates on training packages to address emerging issues	# of remedial trainings conducted	-	2	MOH, Line Ministries, and Partners	30%	50%	50%	30,000
Carry out an inventory assessment of communication equipment at the county level	Effective communication	Number of counties with an inventory report of communication equipment	NR	47	MOH, COG	100%	100%	100%	-
Procure communication equipment e.g. megaphones, laptops, camera etc.	Effective communication	Proportion of equipment procured	NR	100%	MOH, Line Ministries, and Partners	50%	70%	100%	5M
Objective 4: To enhance social mobilization and communication engagement activities for Cholera elimination									
Review and update targeted Cholera messages for various audiences taking into consideration behavioral contextual factors	Strengthened communication for cholera at county level	Cholera communication package in place	-	1	MOH, Line Ministries, and Partners	70%	85%	100%	50,000

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	Responsible Sector/ Agency	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
(include early treatment seeking for cholera and building trust in cholera treatment centres)									
Production of Information, Education and Communication (IEC) materials to be delivered through multiple channels approach to reach all groups including marginalized and vulnerable groups	Targeted IEC materials in place	# of IEC materials produced	-	10	MOH, Line Ministries, and Partners	70%	85%	100%	50000
Disseminate the messages through multi channels e.g., mass media, social media and other innovative technologies	Effective implementation of the media engagement plan	# of channels used in dissemination	-	10	MOH, Line Ministries, and Partners	1	100%	100%	200,000

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	Responsible Sector/ Agency	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
Facilitate RCCE efforts through community dialogue, action days, community conversations for cholera elimination in hot spot areas using community actors such as CORPs, CHVs etc.	Strengthened communication for cholera prevention at community level	# of community dialogue days/ conversations/ action days held to enhance behavior change for in hotspots	-	6000	MOH, Line Ministries, and Partners	30%	80%	100%	500,000
Conduct periodic campaigns for sustained positive behavior change in hotspot areas	Sustained positive behavior change	# of campaigns conducted	-	40	MOH, Line Ministries, and Partners	20%	70%	100%	200,000
Integrate Cholera elimination RCCE efforts in school health programs and other relevant institutions	Ownership of cholera elimination efforts by schools and other sectors	# of institutions that have incorporated cholera elimination efforts	-	940	MOH, Line Ministries, and Partners		90%	100%	100000

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	Responsible Sector/ Agency	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Estimated Cost KES
Objective 5: To monitor progress towards achievement of RCCE strategy objectives									
Establish a mechanism for continuous feedback on behavioral contextual factors to assess effectiveness of the RCCE efforts	Timely identification of behavioral contextual factors that could trigger an outbreak	Monitoring feedback mechanism in place	0	1	MOH, Line Ministries, and Partners	70%	100%	100%	100,000
Participate in information sharing platforms/ forums to promote learning and facilitate generation of periodic bulletins and manuscripts for learning purposes	Informed decision making on RCCE efforts	# of knowledge sharing forums held	0	6	MOH, Line Ministries, and Partners		50%	100%	100,000

WASH

GOAL: Safely managed water and sanitation Services across Kenya by 2030 Objective 1: To increase the proportion of people with access to basic water services from 61.6% in 2020 to 100% by 2030									
Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Carry out maintenance, rehabilitation of water infrastructure, expand and construct new ones in cholera hotspot counties	Increased access to basic (safe drinking) water services	Proportion of the population in hotspots with access to basic safe drinking water services (with a total collection time of 30 minutes or less for a roundtrip including queuing)	61.6% JMP 2020 report 65.5% AWSR, 2021	100%	68%	80%	100%	MOWSI, County governments, WASH development partners	171.B
Promote Water harvesting (including roof catchment), rock catchment and sand dams in cholera hotspot counties	Increased access to safe drinking water	Proportion of households accessing water from water catchment	NR	50%	10%	20%	50%	MOWSI, MOH, WASH development partners	1.2B

Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Carry out training of WASH staff on Cholera preparedness and response	Timely and appropriate response to mitigate water safety	Proportion Counties with trained staff	NR	100%	20%	50%	100%	MOH, MOWSI, Other WASH development partners	550M
Rehabilitation and protection of Water Catchments	Water catchment conservation	Proportion of water sources with appropriate water conservation management	62% JMP 2017 report 33.4% KDHS 2014	90%	62%	72%	90%	MOWSI	7B
Objective 2: To increase the proportion of people with access to safely managed water services from 51.8% to 80% by 2030									
Develop, review & Implementation of Water safety plans	Access to safe drinking water	Proportion of water supplies that have regular water quality testing Proportion of samples from drinking water sources reporting more than 0.5 mg of free residual chlorine	NR	80%	50%	70%	80%	MOWSI & MOH	470M

Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Set up Community water quality surveillance in areas without conventional water treatment	Communities are able to notify authorities when they realize their source is contaminated,	Proportion of communities in hotspot areas not connected to conventional treated water system, testing their water sources	NR	100%	30%	70%	100%	MOH, MOWSI, county governments Other WASH development partners	644M
Supply Water treatment commodities to all water treatment works, boreholes, protected dams/ wells and distribute effectively and safely to all households within the catchment area	Increased access to safe drinking water	Proportion of people accessing safe piped water	51.8% (Rural) And 57.7% (Urban) JMP 2020 report	90%	62%	72%	90%	MOWSI, Other WASH development	16.5M
Establish a multisectoral information sharing mechanism that links water quality data and cholera surveillance data at all levels	Improved multisectoral coordination	Information sharing protocol and mechanism developed and agreed upon for implementation	50%	100%	50%	100%	100%	MOH, MOWSI, Other WASH development partners	94M

Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Objective 3: To increase the proportion of people with access to basic sanitation services from 32.7% in 2020 to 80% by 2030									
Carry out Community-Led Total Sanitation (CLTS) activities in all hot spot Counties	Increased sanitation coverage in hot spot counties through community mobilization	Proportion of villages in hotspots Counties living in ODF villages	32.7% JMP 2020 30% RTMIS -2021	80%	30%	60%	80%	MOH, MOWSI, UNICEF, USAID & Other WASH actors	3.22 B
Support establishment of functional sanitation promotion TWGs at all levels	Sanitation actors jointly plan and implement activities in their respective areas of jurisdiction	Proportion of Counties with active sanitation promotion TWG	50%	100%	50%	100%	100%	MoH, MOWSI, UNICEF, AMREF, KRCS	10 M
Enhance environmental sanitation through safe disposal of animal, domestic and agricultural waste in homesteads in hot spot counties	Clean and healthy living environment (total sanitation) among communities in hot spot counties	Proportion of homesteads and households meeting all the non-negotiable and negotiable parameters in CLTS implementation	30% RTMIS	80%	30%	50%	80%	MoH, MOWSI, UNICEF, USAID & other WASH actors	161 M
Objective 4: To increase the proportion of people with access to safely managed sanitation from 29.5% in 2020 to 80% by 2030									
Develop and disseminate guidelines on safely managed waste	Increased access to safely managed sanitation services	Proportion of the population in hotspots areas with access to safely managed sanitation services	29.5% JMP 2020	28%	40%	50%	80%	MOWSI, MOH, UNICEF, USAID Other WASH actors	30 M

Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Carry out WASH interven-tions during drought, floods and waterborne disease outbreaks	Increased access to sanitation services through access to mobilets, repair of dilapidated, temporary latrines including trenches, control open defecation & use of school and places of worship facilities	Proportion of human-itarian affected communities accessing and using sanitation facilities	NR	80%	60%	70%	80%	MOH, MOWSI, UNICEF, USAID, KRCS & other WASH actors	1.46 B
Conduct Capacity building to WASH actors on cholera outbreak response and mitigation measures	Timely and appropriate WASH based response to waterborne diseases	Proportion of hot spot Counties with trained staff and response plan	NR	100%	60%	80%	100%	MOH, MOWSI, UNICEF, USAID, KRCS & Other WASH actors	69 M

Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Enhance Monitoring systems through web-based real time monitoring systems to monitor status of ODF and Improved sanitation, especially in hot spot counties	Government and hot spot Counties are able to monitor effectively their achievements through verifiable real-time monitoring system.	Proportion of hot spot counties reporting on MoH CLTS real-time monitoring website	40% RTMIS	100%	40%	80%	100%	MoH, MOWSI & UNICEF	26 M
Objective 5: To increase the proportion of people with basic hygiene services from 26.8% in 2020 to 100% by 2030									
Carry out Promotion of hand washing with soap and water in all schools and health facilities through implementation of WASH in Schools (WIS) and HF WASH FIT guidelines	Improved access to appropriate hand washing facilities with soap and water in schools, markets and health facilities	Proportion of health care facilities with appropriate hand washing facilities with water and soap at all critical point of care. Proportion of markets with appropriate handwashing facilities with soap and water at all times	50% KDHS 2014/ 42.8% Kenya baseline WASH survey 2014 JMP	50%	100%	50%	100%	MoH, MOWSI, MOE, UNICEF & other WASH actors	1.61 B

Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
		Proportion of schools with appropriate hand washing facilities with soap and water at all times							
Support school health clubs with learning tools, guidelines and kits	Improved access to appropriate hygiene facilities with soap, water	Proportion of schools with appropriate WASH facilities	30%	80%	30%	60%	80%	MOE, MOH, MOWSI, UNICEF	1.61B
Promote safe food hygiene handling practices/ and enforcement of the Public health Act (CAP 242) & Food Drugs and Chemical Substances Act (CAP 254)	Improved food hygiene practices in all public food outlets (cooked / not cooked) in all cholera hotspots counties	Proportion of public food premises /outlets adhering to safe food handling practices in hotspots counties.	NR	100%	50%	70%	100%	MOH	16.1 M

Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Carry out hygiene promotion activities during drought, floods and waterborne disease outbreaks	Improved access to safe drinking water and soap for personal hygiene during cholera outbreaks	Proportion of outbreaks contained within 6-8 weeks, with appropriate WASH supplies	NR	100%	60%	80%	100%	MOH, MOWSI, UNICEF, KRCS & Other WASH actors	1.61 B
Carry out capacity building through trainings, dissemi-nation of guidelines for WASH in schools, Health care facilities and market places	Improved positive behavior change through access to timely & appropriate WASH information & guidelines	Proportion of health care facilities and schools with guidelines/ SOPS on WASH	NR	100%	50%	70%	100%	MOH, MOWSI, MOE, UNICEF & other WASH actors	46 M
Strengthen hygiene promotion TWGs at all levels	Hygiene promotion actors are able to jointly plan and implement hygiene promotion actions	Proportion of Counties with functional hygiene promotion TWG	NR	100%	60%	80%	100%	MOH MOWSI, UNICEF	32.2 M

Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Objective 6: To increase the capacity of the County authorities to manage 100% of Solid and Liquid Waste by 2030									
Enforce Public health, Water, EMCA Acts in all Cholera hot spot Counties	Improved access to safely managed sanitation services and improved living environment in all cholera hotspots counties	Proportion of hotspots with estab-lished solid waste man-agement & enforcement systems	NR	80%	50%	70%	80%	MOH, MOE(Env.), IS, MOWSI	16.1 M
Empowering the county enforcement teams through training and logistical support	Improved enforcement of Laws of Kenya and local authority (county)by-laws	Proportion of hot spot counties with adequately trained staff and appropriate logistics	NR	80%	50%	70%	80%	MoH,, County Gov't, IS	16.1 M
Appropriate placement of trained staff	Improved service delivery	Proportion of Counties with appropriate staff	NR	80%	50%	70%	80%	MoH, MOWSI & County Gov't	16.1 M
Expansion and main-tenance of sewerage infrastruc-ture in urban cities of cholera hot spot Counties	Improved sewer connectivity in hot spot urban centres	Proportion of urban towns in hot spot counties connected to a functional sewage treatment works		50%	28%	35%	50%	MOWSI & County Gov't	50,B

Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Objective 7: To respond to all cholera outbreaks by 2030 through supporting communities with emergency WASH interventions during outbreaks or crises									
Conduct cholera risks assessment in all cholera hot spot counties to identify and neutralize sources of contamination	Updated risk assessment report with identified sources of contamination and appropriate interventions.	Proportion of hot spot counties with updated cholera risk assessment reports with appropriate intervention measures.	NR	100%	50%	70%	100%	MOH, MOWSI, Other WASH actors	46M
Enhance coordination of all WASH actors at all levels in cholera mitigation and response	Improved coordination and joint implementation of WASH activities/interventions at all levels	Proportion of hot spot counties with multi-sectoral & multi-disciplinary response teams.	NR	100%	50%	70%	100%	MOH, MOWSI, Other WASH actors	46M
Provide emergency safe drinking water services during outbreaks including water trucking, water reservoirs, sinking boreholes	Access to safe drinking water at household level during humanitarian emergencies	Proportion of people accessing safe drinking water during humanitarian emergencies	NR	100%	50%	70%	100%	MOH, NDMA, NDMU, KRCS, MOWSI, Other WASH development partners	3.3B

Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Support household water treatment and safe storage through provision of water disinfectants, water filter and SODIS in all cholera hot spot counties	Increased access safe drinking water at household/ community level	Proportion of people accessing safe drinking water during emergencies through household water treatment	NR	80%	30%	50%	80%	MOH, MOWSI, Other WASH actors	1.4B
Intensify community hygiene promotion including during OCV campaigns	Good hygiene practices	Proportion of people practicing good hygiene	NR	80%	50%	60%	80%	MOH, development partners	10M
Provide hygiene kits to displaced persons, cholera hot spot counties	Affected individuals have access to basic services through provision of household water containers, soap, cups, plates and other hygiene kits.	Proportion of displaced person with appropriate NFI Kits	NR	80%	20%	40%	80%	MoH, UNICEF, WFP, KRCS	1.61B

Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Decon-taminate infected households and means of transport	All house-holds where confirmed or probable cases were reported and means of transport are decon-taminated.	Proportion of houses and means of transport decontami-nated	NR	100%	50%	80%	100%	MoH, KRCS	46 M
Objective 8: To establish a comprehensive cholera WASH-Based M&E system with capacity to evaluate the program by 2030									
Review CLTS real-time system	Improved real-time data avail-ability in all hot spot counties & estab-lish WASH knowledge manage-ment hubs at all levels	Proportion of counties reporting on CLTS portal and proportion of counties with established WASH hubs.	NR	100%	50%	70%	100%	MOH, MOWSI, Other WASH actors	46M
Conduct Capacity building on WASH Data manage-ment -, disseminate and train on use of WASH tools	Improved work force knowledge on WASH monitoring	Number of counties trained on comprehen-sive WASH monitoring tools	NR	100%	50%	70%	100%	MOH, MOWSI, Other WASH actors	46 M
Strengthen WASH coordination platform mechanism at all levels	Improved coordination of WASH activities/in-terventions at all levels	Proportion of counties with a WASH coordination platform mechanism	NR	100%	60%	80%	100%	MOH & MOWSI	16.1 M

Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES
Organize annual WASH conferences for cholera hot spot counties	Counties are able to share emerging best practice and are able overcome challenging field scenarios.	Proportion of cholera hot spot counties attending annual WASH conferences and sharing experiences.	NR	100%	50%	80%	100%	MoH, MOWSI, UNICEF, MOE	46M
Mobilize WASH actors to participate in cholera planning and mitigation meetings/ forums at all levels	WASH interventions are well anchored in all cholera preparedness, response and mitigation plans	Proportion of counties with a comprehensive WASH intervention within their plans	NR	100%	50%	80%	100%	MoH, MOWSI, UNICEF & other WASH actors	46 M

OCV

GOAL: To prevent cholera transmission in hotspots and during outbreaks									
Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES*
Objective 1: Planning of Oral Cholera Vaccine Deployment to Counties									
Develop a multi-year vaccine introduction plan for the country using updated risk mapping reports	Country OCV introduction plan	Country OCV introduction plan in place	NA	1	-	-	-	MOH, DDSR, NVIP, WHO	
Development of a multi-year OCV request to the GTFCC OCV Working Group	Multi-year OCV request in place	Multi-year request for OCV preventive campaigns submitted to GTFCC	NA	1	-	-	-	MOH, DDSR, NVIP, WHO	
Conduct high level advocacy to stakeholders on OCV	Stakeholders awareness	Number of awareness meetings held	-	100%	100%	100%	100%	MOH, County departments of Health, Partners	
Develop and disseminate health care workers guidelines on cholera vaccine	Guidelines developed	Guidelines disseminated to all counties	-	100%	100%	100%	100%	MOH, WHO, NVIP, DDSR	

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES*
Development of an OCV training plan to guide the implementation	OCV training plan developed	OCV training plan OCV training materials	-	100%	100%	100%	100%	MOH, WHO, NVIP, DDSR	
Train vaccinators and supervisors on OCV use and administration	Vaccinators and supervisors trained	Proportion of counties trained	-	100%	20%	70%	100%	MOH, WHO, County departments of Health	
Integrate community hygiene promotion including during OCV campaigns	Community education	Proportion of OCV mass campaigns with integrated community health promotion	-	100%	100%	100%	100%	MOH, WHO, County departments of Health	
Objective 2: To ensure acquisition of sufficient supply and prompt distribution of OCV									
Annual forecasting and quantification of required vaccine doses and other logistics	Accurate estimation of vaccine requirements	Annual commodity report	0	100%	100%	100%	100%	MOH, WHO, County departments of Health	

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES*
Estimate other logistics required for the OCV to reach the health facilities e.g. cold chain, transport, distribution etc.	Accurate estimation of related OCV logistics	Comprehensive OCV budget including other related logistics	0	100%	100%	100%	100%	MOH, WHO, County departments of Health	
Annual Cold chain inventory assessment to identify gaps in cold chain capacity at all levels for vaccine storage	Accurate information on cold chain capacity	Cold chain assessment report	0	100%	100%	100%	100%	MOH, WHO, County departments of Health	
Conduct periodic review of Adverse Event Following Immunization for OCV	Data on AEFI reported	AEFI Reports	0	100%	100%	100%	100%	MOH, WHO, County departments of Health	
Objective 3: To deploy Oral Cholera Vaccine to the population living in cholera hot spots (Preventive Campaigns)									
Create awareness on OCV to communities living in hotspots	Awareness creation on OCV	Number sensitization meetings held in the communities	0	100%	100%	100%	100%	MOH, WHO, County departments of Health	

Outputs/Key Activities	Expected Results	Indicators	Baseline	Target	2022- 2024 (3 yrs)	2025-2027 (3 yrs)	2028-2030 (3 yrs)	Responsible Sector/ Agency	Estimated Cost KES*
Conduct mass vaccination campaigns in hotspots	Ninety percent (90%) OCV coverage in the affected population	Proportion of outbreaks where mass vaccination was conducted during the outbreak	0	100%	100%	100%	100%	MOH, WHO, County departments of Health	
Conduct post – coverage survey for mass OCV campaign	Planned post-coverage surveys	Post coverage survey reports	0	100%	100%	100%	100%	MOH, WHO, County departments of Health	
Objective 4: To Implement mass OCV vaccination campaigns in emergency settings or as soon as a cholera outbreak is confirmed (Reactive Campaigns)									
Create awareness on OCV to communities during outbreaks	Awareness creation on OCV	Number sensitization meetings held in the communities	0	100%	100%	100%	100%	MOH, WHO, County departments of Health	
Conduct mass vaccination campaigns during outbreaks	Ninety percent (90%) OCV coverage in the affected population	Proportion of outbreaks where mass vaccination was conducted during the outbreak	0	100%	100%	100%	100%	MOH, WHO, County departments of Health	
Conduct post – coverage survey for mass OCV campaign	Planned post-coverage surveys	Post coverage survey reports	0	100%	100%	100%	100%	MOH, WHO, County departments of Health	

*Cost of OCV introduction and deployment to be included in the OCV introduction plan

T. MONITORING FRAMEWORK

Indicators by pillar	Target	Numerator	Denominator	Data source
Leadership and Coordination				
Proportion of NMCEP budget that is funded	100%	Amount of funding received that is specific for implementation of Cholera related activities	Total Budget for the implementation of the NCP	Ministry of Health National Cholera Plan Budget
Number of coordination meetings (National Cholera task force meetings) held in a year	4 meetings/ year	Number of task force meetings held in a year	-	Ministry of Health
Number of Counties that have held at least 4 technical working group meetings in a year *terms to change once structure is adopted*	47 Counties	Number of Counties that have submitted at least 4 reports of the technical working group meetings	-	County Technical working group reports
Number of stakeholder meetings held each year	1 meeting/year	Number of stakeholder meetings held in a year	-	Ministry of Health
Presence of endorsed Terms of Reference for the coordination mechanism	By End 2022			
Presence of a functional coordination structure	By End 2022			
Surveillance				
Proportion of health facilities (level 2 or higher) with access to laboratory confirmatory testing and AST characterization	100% in hotspot counties	Number of health facilities (level 2 or higher) with access to confirmatory laboratory testing for Cholera	Total number of health facilities (level 2 or higher) in the Country	County reports Kenya Health Master Facility list
Proportion of cases with laboratory confirmation (culture, PCR, RDT)	100% in hotspot counties	Number of suspected cases in a year with laboratory confirmation by either RDT, PCR or culture	Total number of cases reported in a year	Surveillance/line list data
Proportion of counties that have a functional sample referral system	100% of counties	Number of counties with a sample referral system that is functional and effectively links peripheral facilities to testing laboratories	47 counties	County reports

Indicators by pillar	Target	Numerator	Denominator	Data source
Proportion of counties/ sub counties that have verified rumors and conducted timely investigation for public health events of importance (PHEI)	100% of rumors verified	Number of counties that have investigated and verified rumors within 48 hours of receiving information on PHEI within a year	Number of counties that received rumors on PHEI in that year	County reports
Proportion of outbreaks investigated in a year	>90%	Number of cholera outbreaks where a field investigation was conducted in that year	Total Number of cholera outbreaks reported in that year	Outbreak investigation reports Surveillance/line list data
Case management				
Case fatality rate (CFR) as a measure of quality of case management	CFR less than 1%	Total number of cholera deaths reported by all counties in a year	Total number of cholera cases reported by all counties in a year	Surveillance/linelist data
Proportion of hotspot counties with adequate cholera supplies, human resource, laboratory capacity and infrastructure	100%	Number of counties with adequate cholera supplies, human resource, laboratory capacity and infrastructure	Number of hotspot counties	County reports
Cholera clinical case management guidelines updated	Updated case management guidelines	Guidelines updated	Guidelines updated	MOH
Proportion of counties having the cholera treatment guidelines	At least 80%	Number of counties having cholera case management guidelines	Total number of counties in the country	County reports
Proportion of health care workers in the hotspot counties trained on cholera clinical case management	At least 60%	Number of health care workers trained	Number of health care workers in the hotspot Centers for Disease Control and prevention counties	County reports
Proportion of CHVs trained on prehospital cholera management in the hotspot counties	At least 60%	CHVs trained on Cholera Case Management	Total number of CHVs in the hotspot counties	County reports
Proportion of CHVs in the hotspot counties with adequate supply of ORS	At least 80%	Number of CHVs in hotspot counties with adequate supply of ORS	Total number of CHVs in the hotspot counties	County reports

Indicators by pillar	Target	Numerator	Denominator	Data source
Updated guidelines on cholera infection prevention and control	Updated cholera infection prevention and control guidelines	Guidelines updated	Guidelines updated	MOH
Proportion of health care workers trained on cholera infection prevention and control in the hotspot counties	At least 60%	Number of HCWs trained on cholera IPC	Total number of HCWs	County reports
Proportion of facilities with IPC focal persons in hotspot counties	100%	Number of facilities with IPC focal persons	Total number of health facilities	County reports
Proportion of support staff trained on IPC in the hotspot counties	At least 60%	Number of support staff trained on cholera IPC in the hotspot counties	Total number of support staff in the hotspot counties	County reports
Proportion of HFs with adequate disinfectants and sprayers	At least 80%	No of health facilities with adequate disinfectants & sprayers in the hotspot counties	Total number of health facilities in the hotspot counties	County reports
Proportion of health facilities having adequate PPEs in the hotspot counties	At least 80%	No of health facilities with adequate disinfectants & sprayers in the hotspot counties	Total number of health facilities in the hotspot counties	County reports
Proportion of CHV trained on chlorine solution preparation	At least 80%	Number of CHVs trained on preparation of chlorine in the hotspot counties	Total number of CHVs in the hotspot counties	County reports
Proportion of planned studies on risk factors for mortality conducted annually	At least 1 per year	Proportion of planned studies on risk factors mortality conducted annually	Number of Centers for Disease Control and prevention studies that were planned for the year	MOH
Proportion of outbreaks where cholera antimicrobial sensitivity/resistance tests were performed	At least 80%	Number of outbreaks where cholera antimicrobial sensitivity/ resistance tests were performed	Number of outbreaks reported	MOH

Indicators by pillar	Target	Numerator	Denominator	Data source
Risk Communication				
Periodic reports on contextual factors such as social cultural factors, risk behavior, behavioral barriers for Cholera prevention and control measures etc. associated with Cholera outbreaks in place	100%	One report in place	10 periodic reports in place	Periodic reports
Multi sectoral RCCE strategy in place	1%	Multisectoral RCCE strategy in place	Multisectoral RCCE strategy in place	Multisectoral RCCE strategy
By the end of 2021, have a multi sectoral RCCE strategy in place	100%	One RCCE strategy in place	One RCCE strategy in place	Strategy
A research and learning agenda framework for utilization of social science research in place	1%	One framework in place	One framework in place	Research and learning agenda framework
Proportion of national and county level Multisectoral RCCE coordination TWGs	100%	47 counties and one national TWG	47 counties and one national TWG	TWG minutes and reports
Proportion of counties with Cholera elimination RCCE workplans and budgets	100%	47 counties and one national TWG	47 counties and one national TWG	Workplans and budget
% commitment on RCCE budget at national and county level	75%	All 47 counties and national RCCE strategy with 75% commitment in their RCCE budgets	100 % of total budget values estimated for the national and county RCCE strategies	Budget
Number of RCCE training packages in place	100%	One training package to be developed	One training package	Training package
Proportion of multisector stakeholders trained	100%	100 stakeholders from the national level and 15 from each of the 47 counties trained	100 stakeholders from the national level and 15 from each of the 47 counties trained	Training reports
Proportion of actors sensitized on RCCE efforts	1	112500 County and community level stakeholders from institutions, schools, CORPs etc. identified and sensitized	150000 is total number of County and community level stakeholders from institutions, schools, CORPs etc. targeted for the sensitization activities	Training reports
By end of 2021, Cholera communication package in place	100	1 cholera communication package to be developed	1 cholera communication package to be developed	

Indicators by pillar	Target	Numerator	Denominator	Data source
Proportion of the IEC materials developed produced	100%	100 types of IEC materials to be developed for dissemination through radio, TV, video informercials, Social media content, posters	100 types of IEC materials to be developed for dissemination through radio, TV, video informercials, Social media content, posters	Dissemination channels e.g. Radio's, TV, social media
Proportion of communication equipment procured (megaphones, cameras, laptops etc.)	80%	Procurement of public address systems, laptops, 5 megaphones per county	Procurement of public address systems, laptops, 5 megaphones per county	
Proportion of community members and institutions reached in Cholera elimination RCCE efforts	80%	80% of total community members in all 47 counties reached	Total population being targeted assumed to be 40,000,000	Assessment reports
# of schools that have integrated Cholera elimination messages in the school health programs	80%	19200 (80%) of total schools to be reached	Targeting 18,000 primary schools and approximately 6,000 secondary schools - Total 24,000	Assessment reports
# of Cholera indicators in the KDHS tool	60%	A minimum of 3 cholera indicators to be included in the KDHS tool	5 indicators to be included in the KDHS data collection tool	KDHS tool
Proportion of population in hotspots who recall key cholera prevention and control practices	80%	3,800,000 (80%) community members able to recall key cholera prevention and control practices.	Total population in Cholera hotspots assumed to be 4,800,000 - 35 subcounties out of a total 290 sub counties are Cholera hot spots - Translates to 12% of all sub counties	Evaluation reports
# Monthly reports on RCCE activities	100%	120 monthly report submission in 10 years (2021-2030)	120 monthly submissions expected in 10 years (2021-2030)	Monthly reports through DHIS
# Periodic surveys on behavioral changes due to RCCE efforts	5	Bi-annual (every two years) surveys to be conducted-total 5 surveys	Bi-annual (every two years) surveys to be conducted-total 5 surveys	Survey reports
Proportion of annual knowledge sharing forums held to share experiences and lessons learnt in implementing RCCE activities across 47 counties	80%	A minimum of 8 knowledge sharing forums to be held over the 10 years.	10 knowledge sharing forums to be held over the 10 years	Conference reports
Proportion of Cholera scientific publications produced	100%	A total of 5 survey findings to be published	Publish results of the periodic surveys	Publications

Indicators by pillar	Target	Numerator	Denominator	Data source
WASH				
Proportion of the population in hotspots with access to basic water services *(with a total collection time of 30 minutes or less for a roundtrip including queueing)*	80%	Number of people living in hotspot areas that has access to basic water	Total population living in hotspot areas in that year	WASH Survey Hot spot mapping reports
Proportion of households in hotspots with access to basic sanitation *(Use of improved facilities which are not shared with other households)*	80%	Number of people living in hotspot areas that has access to basic sanitation	Total population living in hotspot areas in that year	WASH Survey Hot spot mapping reports
Proportion of households living in Open Defecation Free (ODF) Environment	100%	Number of households that are in ODF environment	Total number of households registered in that year	County reports WASH Survey
Latrine Coverage *(Proportion of households with a functional latrine)*	100%	Number of households with a functional latrine	Total number of households registered in that year	County reports WASH Survey
Proportion of health care facilities with appropriate hand washing facilities with water and soap	100%	Number of health facilities with handwashing stations that have soap and water throughout the year	Total number of health care facilities in the country in that year	County reports Kenya Health Master Facility list WASH Survey
Number of people in hotspot areas with access to a handwashing facility on premises with water and soap	100%	Number of people living in hotspot areas that have access to hand washing facilities	Total population living in hotspot areas in that year	WASH Survey / Assessment
Proportion of target urban centers in hotspot areas with FSM services including safe practices for emptying, transportation, treatment and disposal	80%	Number of targeted urban centers in hotspot areas with FSM services	Total number of targeted urban centers in the hotspot areas	WASH Survey / Assessment
Proposal of Public schools in hotspot areas with improved sanitation facilities	100%	Number of public schools in hotspot areas with improved sanitation facilities	Total number of public schools in the hotspot areas	WASH Survey / Assessment
Proportion of public schools in hotspot areas with functional handwashing facilities (with water and soap)	100%	Number of public schools in hotspot areas with functional hand washing facilities	Total number of public schools in the hotspot areas	WASH Survey / Assessment

Indicators by pillar	Target	Numerator	Denominator	Data source
Proportion Public health facilities in hotspot areas with adequate improved sanitation facilities which are single-sex and usable	100%	Number of public health facilities in hotspot areas with adequate improved single sex sanitation facilities	Total number of public health facilities in the hotspot areas	WASH Survey / Assessment
Proportion of public Health facilities in hotspot areas with adequate hand sanitization/handwashing facilities (with water and soap) and strategically placed	100%	Number of public health facilities in hotspot areas with hand sanitization/ handwashing facilities	Total number of public health facilities in the hotspot areas	WASH Survey / Assessment
OCV				
Proportion of target hotspots sub counties covered by mass vaccination campaigns	100%	Number of hotspots covered in that year	Number of hotspots targeted for vaccination in that year	Hot reports from vaccination campaigns Hot spot mapping reports
Proportion of mass vaccination campaigns recommended and vaccination conducted	100%	Number of confirmed cholera outbreaks where mass vaccination is recommended and vaccination conducted	Number of confirmed cholera outbreaks where mass vaccination is recommended	Hot reports from emergency vaccination campaigns Surveillance/Line list data
OCV coverage during mass vaccination campaigns in hotspot subcounties	>90%	Number of persons vaccinated during mass campaigns in that year	Total population that was targeted for vaccination in all hotspot areas in that year	Hot reports from vaccination campaigns Hot spot mapping reports

U. SUMMARY TABLE – IDENTIFICATION OF CHOLERA HOTSPOTS IN KENYA, 2015-2019

County	Subcounty	Population size (Year 2020)	Cumulative number of cases (Jan 2015 – Dec 2019)	Mean Annual Incidence (MAI)_	MAI Ranking	Percentage weekly Persistence	Persistence Ranking	Priority Based on MAI & Persistence	% of households with Improved water	Water ranking	% of households with Improved sanitation	sanitation ranking	WASH priority	Risk scoring	Priority after combination
Baringo	Baringo Central	119515	0	0	VL	0.0	VL	VL	43.6	L	80.4	High	M	VLM	L
Baringo	Baringo North	146931	0	0	VL	0.0	VL	VL	17.2	L	64.6	L	H	VLH	L
Baringo	Baringo South	96261	0	0	VL	0.0	VL	VL	30.9	L	54.1	L	H	VLH	L
Baringo	Eldama Ravine	158892	0	0	VL	0.0	VL	VL	61.7	H	88	H	L	VLL	L
Baringo	Mogotio	89619	0	0	VL	0.0	VL	VL	38.8	L	63.3	L	H	VLH	L
Baringo	Tiaty	113518	0	0	VL	0.0	VL	VL	11.5	L	12	L	H	VLH	L
Bomet	Bomet Central	180575	3	0	L	0.4	L	L	36.8	L	84.5	H	M	LM	M
Bomet	Bomet East	171527	8	1	L	0.4	L	L	32.1	L	79.7	H	M	LM	M
Bomet	Chepalungu	219788	251	27	H	0.4	L	M	36	L	87.1	H	M	MM	M
Bomet	Konoin	235245	1	0	L	0.4	L	L	46.2	L	88.6	H	M	LM	M
Bomet	Sotik	229975	2	0	L	0.4	L	L	42.7	L	87.4	H	M	LM	M
Bungoma	Bumula	223093	0	0	VL	0.0	VL	VL	83	H	82.6	H	L	VLL	L
Bungoma	Kabuchai	175399	0	0	VL	0.0	VL	VL	83.9	H	84.9	H	L	VLL	L
Bungoma	Kanduyi	286803	0	0	VL	0.0	VL	VL	87.7	H	89.8	H	L	VLL	L
Bungoma	Kimilili	164900	0	0	VL	0.0	VL	VL	81.4	H	82.5	H	L	VLL	L
Bungoma	Mt. Elgon	230535	0	0	VL	0.0	VL	VL	58	L	59.4	L	H	VLH	L
Bungoma	Sirisia	136644	0	0	VL	0.0	VL	VL	66.9	H	79.1	H	L	VLL	L
Bungoma	Tongaren	229428	0	0	VL	0.0	VL	VL	86.7	H	88.1	H	L	VLL	L
Bungoma	Webuye East	141301	0	0	VL	0.0	VL	VL	84.4	H	90.5	H	L	VLL	L
Bungoma	Webuye West	155746	0	0	VL	0.0	VL	VL	90.9	H	90.4	H	L	VLL	L
Busia	Budalangi	89786	0	0	VL	0.0	VL	VL	64.6	H	79.8	H	L	VLL	L
Busia	Butula	162550	0	0	VL	0.0	VL	VL	78.4	H	80.7	H	L	VLL	L
Busia	Funyula	124173	0	0	VL	0.0	VL	VL	74.9	H	82.7	H	L	VLL	L
Busia	Matayos	137597	0	0	VL	0.0	VL	VL	76.2	H	87.2	H	L	VLL	L
Busia	Nambale	116597	0	0	VL	0.0	VL	VL	80.7	H	84.3	H	L	VLL	L
Busia	Teso North	140378	134	20	L	2.3	L	L	64.2	H	78.8	H	L	LL	L
Busia	Teso South	166810	0	0	VL	0.0	VL	VL	74.9	H	80.3	H	L	VLL	L
Elgeyo-Marakwet	Keiyo North	96855	0	0	VL	0.0	VL	VL	63.3	H	73.6	L	M	VLM	L

*H = High, M = Medium, L = Low, VL = Very Low

County	Subcounty	Population size (Year 2020)	Cumulative number of cases (Jan 2015 – Dec 2019)	Mean Annual Incidence (MAI)_	MAI Ranking	Percentage weekly Persistence	Persistence Ranking	Priority Based on MAI & Persistence	% of households with Improved water	Water ranking	% of households with Improved sanitation	sanitation ranking	WASH priority	Risk scoring	Priority after combination
Elgeyo-Marakwet	Keiyo South	148663	0	0	VL	0.0	VL	VL	53.4	L	73.8	L	H	VLH	L
Elgeyo-Marakwet	Marakwet East	105923	309	61	H	2.3	L	L	16.8	L	47.6	L	H	LH	M
Elgeyo-Marakwet	Marakwet West	133998	0	0	VL	0.0	VL	VL	37.9	L	73	L	H	VLH	L
Embu	Gachoka	181751	266	35	H	12.7	H	H	44.4	L	83.6	H	M	HM	H
Embu	Manyatta	268243	25	2	L	4.2	L	L	88.2	H	92.9	H	L	LL	L
Embu	Runyenjes	247331	10	1	L	1.2	L	L	66.7	H	94	H	L	LL	L
Embu	Siakago	128330	8	1	L	1.9	L	L	56.4	L	89	H	M	LM	M
Garissa	Balambala	46918	3	1	L	0.8	L	L	15.6	L	31.6	L	H	LH	M
Garissa	Dadaab	203123	4026	413	H	56.5	H	H	83.7	H	51.1	L	M	HM	H
Garissa	Dujis	140882	53	8	L	1.5	L	L	15.6	L	6.3	L	H	LH	M
Garissa	Fafi	130003	591	99	H	2.7	L	M	67.3	H	43.1	L	M	MM	M
Garissa	Ijara	73647	0	0	VL	0.0	VL	VL	26.7	L	35.3	L	H	VLH	L
Garissa	Lagdera	66579	95	29	H	5.8	L	M	48.9	L	23.4	L	H	MH	H
Homa Bay	Homa Bay	183805	30	5	L	2.7	L	L	64.2	H	80	H	L	LL	L
Homa Bay	Kabondo Kasipul	207638	0	0	VL	0.0	VL	VL	44.4	L	75.4	L	H	VLH	L
Homa Bay	Karachuonyo	295623	2	0	L	0.4	L	L	56.4	L	82	H	M	LM	M
Homa Bay	Kasipul	210189	1	0	L	0.4	L	L	68.9	H	81.5	H	L	LL	L
Homa Bay	Ndhiwa	303439	353	35	H	5.0	L	M	53.4	L	61.2	L	H	MH	H
Homa Bay	Rangwe	177819	13	2	L	2.3	L	L	54.2	L	77.8	H	M	LM	M
Homa Bay	Suba North	191460	0	0	VL	0.0	VL	VL	33.5	L	75.4	L	H	VLH	L
Homa Bay	Suba South	170194	0	0	VL	0.0	VL	VL	36.1	L	66.5	L	H	VLH	L
Isiolo	Isiolo North	131204	198	31	H	6.9	H	H	73.3	H	47.7	L	M	HM	H
Isiolo	Isiolo South	42626	0	0	VL	0.0	VL	VL	45.4	L	51.9	L	H	VLH	L
Kajiado	Kajiado Central	121813	3	1	L	1.2	L	L	65.8	H	61.9	L	M	LM	M
Kajiado	Kajiado East	94543	37	8	L	6.2	L	L	53.3	L	93.3	H	M	LM	M
Kajiado	Kajiado North	202516	155	16	L	16.2	H	M	80.3	H	93.7	H	L	ML	M
Kajiado	Kajiado South	160153	0	0	VL	0.0	VL	VL	62.9	H	61.3	L	M	VLM	L
Kajiado	Kajiado West	138871	605	89	H	11.5	H	H	57.9	L	59.1	L	H	HH	H
Kakamega	Butere	203422	0	0	VL	0.0	VL	VL	73.4	H	89.1	H	L	VLL	L

*H = High, M = Medium, L = Low, VL = Very Low

County	Subcounty	Population size (Year 2020)	Cumulative number of cases (Jan 2015 – Dec 2019)	Mean Annual Incidence (MAI)_	MAI Ranking	Percentage weekly Persistence	Persistence Ranking	Priority Based on MAI & Persistence	% of households with Improved water	Water ranking	% of households with Improved sanitation	sanitation ranking	WASH priority	Risk scoring	Priority after combination
Kakamega	Ikolomani	168402	0	0	VL	0.0	VL	VL	52.6	L	88.9	H	M	VLM	L
Kakamega	Khwisero	161196	0	0	VL	0.0	VL	VL	72.5	H	89.4	H	L	VLL	L
Kakamega	Likuyani	165730	0	0	VL	0.0	VL	VL	88.3	H	89.2	H	L	VLL	L
Kakamega	Lugari	226778	0	0	VL	0.0	VL	VL	77.6	H	91.3	H	L	VLL	L
Kakamega	Lurambi	225809	0	0	VL	0.0	VL	VL	71.4	H	91.7	H	L	VLL	L
Kakamega	Malava	271991	0	0	VL	0.0	VL	VL	42.6	L	88.5	H	M	VLM	L
Kakamega	Matungu	206453	0	0	VL	0.0	VL	VL	81.2	H	83.8	H	L	VLL	L
Kakamega	Mumias East	156357	0	0	VL	0.0	VL	VL	78.2	H	88.7	H	L	VLL	L
Kakamega	Mumias West	145030	0	0	VL	0.0	VL	VL	82	H	88.4	H	L	VLL	L
Kakamega	Navakholo	185461	0	0	VL	0.0	VL	VL	75	H	87.9	H	L	VLL	L
Kakamega	Shinyalu	249853	0	0	VL	0.0	VL	VL	48.5	L	90.2	H	M	VLM	L
Kericho	Ainamoi	220571	0	0	VL	0.0	VL	VL	46.3	L	88.9	H	M	VLM	L
Kericho	Belgut	195779	0	0	VL	0.0	VL	VL	46.3	L	88.9	H	M	VLM	L
Kericho	Buret	224569	0	0	VL	0.0	VL	VL	40.2	L	87.5	H	M	VLM	L
Kericho	Kipkelion East	176405	0	0	VL	0.0	VL	VL	32.6	L	77.6	H	M	VLM	L
Kericho	Kipkelion West	136955	0	0	VL	0.0	VL	VL	32.6	L	77.6	H	M	VLM	L
Kericho	Sigowet/Soin	136383	0	0	VL	0.0	VL	VL	24.3	L	70.4	L	H	VLH	L
Kiambu	Gatundu North	163063	1	0	L	0.4	L	L	86.7	H	95.3	H	L	LL	L
Kiambu	Gatundu South	186315	3	0	L	0.4	L	L	81.1	H	95	H	L	LL	L
Kiambu	Githunguri	221024	6	1	L	1.9	L	L	83.9	H	97.1	H	L	LL	L
Kiambu	Juja	160529	34	5	L	3.8	L	L	84.9	H	94.6	H	L	LL	L
Kiambu	Kabete	138881	10	1	L	2.3	L	L	84.6	H	96.6	H	L	LL	L
Kiambu	Kiambaa	202487	15	2	L	3.8	L	L	86.2	H	95.6	H	L	LL	L
Kiambu	Kiambu	134302	50	8	L	9.2	H	M	87.7	H	95.4	H	L	ML	M
Kiambu	Kikuyu	181347	26	3	L	6.2	L	L	87.8	H	96.7	H	L	LL	L
Kiambu	Lari	186848	1	0	L	0.4	L	L	80.9	H	95.8	H	L	LL	L
Kiambu	Limuru	189707	2	0	L	0.8	L	L	83.8	H	96.1	H	L	LL	L
Kiambu	Ruiru	115258	49	9	L	8.8	H	M	84.4	H	95.3	H	L	ML	M
Kiambu	Thika Town	204817	126	13	L	6.9	H	M	84.9	H	94.6	H	L	ML	M
Kilifi	Ganze	193452	3	0	L	0.8	L	L	49.7	L	43.3	L	H	LH	M
Kilifi	Kaloleni	186563	0	0	VL	0.0	VL	VL	38.8	L	73.8	L	H	VLH	L
Kilifi	Kilifi North	271971	33	3	L	5.0	L	L	88.2	H	79.1	H	L	LL	L

*H = High, M = Medium, L = Low, VL = Very Low

County	Subcounty	Population size (Year 2020)	Cumulative number of cases (Jan 2015 – Dec 2019)	Mean Annual Incidence (MAI)_	MAI Ranking	Percentage weekly Persistence	Persistence Ranking	Priority Based on MAI & Persistence	% of households with Improved water	Water ranking	% of households with Improved sanitation	sanitation ranking	WASH priority	Risk scoring	Priority after combination
Kilifi	Kilifi South	227248	95	10	L	5.8	L	L	82.6	H	81.6	H	L	LL	L
Kilifi	Magarini	224591	5	1	L	0.4	L	L	41.2	L	46.4	L	H	LH	M
Kilifi	Malindi	230190	11	1	L	3.5	L	L	87.7	H	75.2	L	M	LM	M
Kilifi	Rabai	154394	3	0	L	1.2	L	L	71.4	H	81	H	L	LL	L
Kirinyaga	Gichugu	201173	20	2	L	2.7	L	L	61.1	H	94.6	H	L	LL	L
Kirinyaga	Kirinyaga Central	175086	9	1	L	1.5	L	L	82.1	H	96.8	H	L	LL	L
Kirinyaga	Mwea	191583	514	58	H	15.8	H	H	61.1	H	94.6	H	L	HL	H
Kirinyaga	Ndia	189773	1	0	VL	0.0	VL	VL	46.7	L	94.9	H	M	VLM	L
Kisii	Bobasi	276045	0	0	VL	0.0	VL	VL	58.7	L	64.1	L	H	VLH	L
Kisii	Bomachoge Borabu	151247	0	0	VL	0.0	VL	VL	54.4	L	70.2	L	H	VLH	L
Kisii	Bomachoge Chache	130932	0	0	VL	0.0	VL	VL	56.8	L	73.4	L	H	VLH	L
Kisii	Bonchari	145361	0	0	VL	0.0	VL	VL	57.3	L	78.7	H	M	VLM	L
Kisii	Kitutu Chache North	158098	0	0	VL	0.0	VL	VL	55.4	L	69.4	L	H	VLH	L
Kisii	Kitutu Chache South	145976	0	0	VL	0.0	VL	VL	49	L	82.5	H	M	VLM	L
Kisii	Nyaribari Chache	203038	0	0	VL	0.0	VL	VL	49	L	82.5	H	M	VLM	L
Kisii	Nyaribari Masaba	174462	0	0	VL	0.0	VL	VL	39.8	L	73.8	L	H	VLH	L
Kisii	South Mugirango	215649	0	0	VL	0.0	VL	VL	44.3	L	74	L	H	VLH	L
Kisumu	Kisumu Central	346015	0	0	VL	0.0	VL	VL	81.6	H	91.3	H	L	VLL	L
Kisumu	Kisumu East	197185	48	5	L	2.7	L	L	81.6	H	87.7	H	L	LL	L
Kisumu	Kisumu West	184719	49	6	L	3.5	L	L	71	H	86.9	H	L	LL	L
Kisumu	Muhoroni	220247	0	0	VL	0.0	VL	VL	67.7	H	79.6	H	L	VLL	L
Kisumu	Nyakach	192283	0	0	VL	0.0	VL	VL	63.1	H	81.3	H	L	VLL	L
Kisumu	Nyando	190310	0	0	VL	0.0	VL	VL	76.9	H	83.6	H	L	VLL	L
Kisumu	Seme	147884	68	10	L	4.2	L	L	54.7	L	80.1	H	M	LM	M
Kitui	Kitui Central	204139	0	0	VL	0.0	VL	VL	50.6	L	89.8	H	M	VLM	L
Kitui	Kitui East	150479	0	0	VL	0.0	VL	VL	30.4	L	58.1	L	H	VLH	L
Kitui	Kitui Rural	146239	0	0	VL	0.0	VL	VL	40.6	L	78.9	H	M	VLM	L
Kitui	Kitui South	202398	2	0	L	0.8	L	L	26.4	L	74.3	L	H	LH	M

*H = High, M = Medium, L = Low, VL = Very Low

County	Subcounty	Population size (Year 2020)	Cumulative number of cases (Jan 2015 – Dec 2019)	Mean Annual Incidence (MAI)_	MAI Ranking	Percentage weekly Persistence	Persistence Ranking	Priority Based on MAI & Persistence	% of households with Improved water	Water ranking	% of households with Improved sanitation	sanitation ranking	WASH priority	Risk scoring	Priority after combination
Kitui	Kitui West	158355	0	0	VL	0.0	VL	VL	65.8	H	82.2	H	L	VLL	L
Kitui	Mwingi East	156808	0	0	VL	0.0	VL	VL	41.6	L	61.2	L	H	VLH	L
Kitui	Mwingi North	179314	0	0	VL	0.0	VL	VL	33.3	L	66.9	L	H	VLH	L
Kitui	Mwingi West	179503	0	0	VL	0.0	VL	VL	47.8	L	84.6	H	M	VLM	L
Kwale	Kinango	288844	5	0	L	0.8	L	L	20.5	L	35.4	L	H	LH	M
Kwale	Lunga Lunga	202766	0	0	VL	0.0	VL	VL	30.1	L	47.9	L	H	VLH	L
Kwale	Matuga	216148	2	0	L	0.8	L	L	58.7	H	68.1	L	M	LM	M
Kwale	Msambweni	166623	2	0	L	0.4	L	L	85	H	71.3	L	M	LM	M
Laikipia	Laikipia East	334940	0	0	VL	0.0	VL	VL	70.4	H	90.7	H	L	VLL	L
Laikipia	Laikipia North	112248	0	0	VL	0.0	VL	VL	32.7	L	25.3	L	H	VLH	L
Laikipia	Laikipia West	149219	0	0	VL	0.0	VL	VL	47.8	L	63.7	L	H	VLH	L
Lamu	Lamu East	24955	0	0	VL	0.0	VL	VL	84.4	H	79.5	H	L	VLL	L
Lamu	Lamu West	98317	0	0	VL	0.0	VL	VL	66.2	H	63.8	L	M	VLM	L
Machakos	Kangundo	147956	5	1	L	1.2	L	L	71.1	H	90	H	L	LL	L
Machakos	Kathiani	158055	1	0	L	0.4	L	L	47.3	L	85.5	H	M	LM	M
Machakos	Machakos Town	314873	30	2	L	4.6	L	L	67.9	H	91.3	H	L	LL	L
Machakos	Masinga	179112	0	0	VL	0.0	VL	VL	48.3	L	80.9	H	M	VLM	L
Machakos	Matungulu	169557	24	3	L	3.1	L	L	72	H	86	H	L	LL	L
Machakos	Mavoko	89476	186	43	H	15.4	H	H	56.2	L	94.6	H	M	HM	H
Machakos	Mwala	261481	6	0	L	0.8	L	L	46.8	L	85.8	H	M	LM	M
Machakos	Yatta	212844	42	4	L	4.2	L	L	46.7	L	83.4	H	M	LM	M
Makueni	Kaiti	187572	5	1	L	1.2	L	L	31.3	L	85.7	H	M	LM	M
Makueni	Kibwezi East	180514	4	0	L	0.4	L	L	60	H	81.1	H	L	LL	L
Makueni	Kibwezi West	150765	2	0	L	0.4	L	L	60	H	81.1	H	L	LL	L
Makueni	Kilome	161018	1	0	L	0.4	L	L	57.2	L	86.9	H	M	LM	M
Makueni	Makueni	338198	18	1	L	1.2	L	L	57.4	L	83.9	H	M	LM	M
Makueni	Mbooni	294834	4	0	L	0.4	L	L	19.9	L	86	H	M	LM	M
Mandera	Banissa	117609	0	0	VL	0.0	VL	VL	8	L	22.7	L	H	VLH	L
Mandera	Lafey	38147	0	0	VL	0.0	VL	VL	63.2	H	26.3	L	M	VLM	L
Mandera	Mandera East	150280	1624	303	H	8.1	H	H	25.6	L	48.8	L	H	HH	H
Mandera	Mandera North	126214	0	0	VL	0.0	VL	VL	34.2	L	26.9	L	H	VLH	L
Mandera	Mandera South	90518	283	68	H	9.6	H	H	80.8	H	33.3	L	M	HM	H

*H = High, M = Medium, L = Low, VL = Very Low

County	Subcounty	Population size (Year 2020)	Cumulative number of cases (Jan 2015 – Dec 2019)	Mean Annual Incidence (MAI)_	MAI Ranking	Percentage weekly Persistence	Persistence Ranking	Priority Based on MAI & Persistence	% of households with Improved water	Water ranking	% of households with Improved sanitation	sanitation ranking	WASH priority	Risk scoring	Priority after combination
Mandera	Mandera West	63501	52	18	L	5.0	L	L	6.1	L	31.3	L	H	LH	M
Marsabit	Laisamis	68149	62	20	L	2.3	L	L	59.9	H	14.4	L	M	LM	M
Marsabit	Moyale	89810	271	66	H	10.4	H	H	37	L	57.4	L	H	HH	H
Marsabit	North Horr	73592	365	0	VL	0.0	VL	VL	34.7	L	18.8	L	H	VLH	L
Marsabit	Saku	62506	0	0	VL	0.0	VL	VL	40.8	L	73.5	L	H	VLH	L
Meru	Buuri	149851	15	2	L	1.9	L	L	76.8	H	92.8	H	L	LL	L
Meru	Cental Imenti	226013	0	0	VL	0.0	VL	VL	69.8	H	92.1	H	L	VLL	L
Meru	Igembe Central	224222	2	0	L	0.4	L	L	52.6	L	87.2	H	M	LM	M
Meru	Igembe North	203920	0	0	VL	0.0	VL	VL	42.1	L	84.6	H	M	VLM	L
Meru	Igembe South	175226	23	3	L	2.7	L	L	49.1	L	86.7	H	M	LM	M
Meru	North Imenti	215163	30	3	L	2.3	L	L	81	H	94.6	H	L	LL	L
Meru	South Imenti	266486	0	0	VL	0.0	VL	VL	80	H	93.2	H	L	VLL	L
Meru	Tigania East	225648	90	9	L	6.2	L	L	52.6	L	79.9	H	M	LM	M
Meru	Tigania West	187875	232	26	H	5.8	L	M	57	L	88.1	H	M	MM	M
Migori	Awendo	155481	71	10	L	6.2	L	L	47.8	L	81.3	H	M	LM	M
Migori	Kuria East	101133	0	0	VL	0.0	VL	VL	30.5	L	79.1	H	M	VLM	L
Migori	Kuria West	151453	43	6	L	1.9	L	L	51.3	L	73.4	L	H	LH	M
Migori	Nyatike	182572	382	46	H	12.3	H	H	31.5	L	61.3	L	H	HH	H
Migori	Rongo	135235	652	107	H	1.2	L	M	61.1	H	85.6	H	L	ML	M
Migori	Suna East	131756	94	16	L	8.1	H	M	52.5	L	81.9	H	M	MM	M
Migori	Suna West	118321	298	56	H	8.1	H	H	51.9	L	71.2	L	H	HH	H
Migori	Uriri	154430	60	8	L	6.9	H	M	39.8	L	71.8	L	H	MH	H
Mombasa	Changamwe	269638	78	7	L	9.6	H	M	40	L	91.6	H	M	MM	M
Mombasa	Jomvu	147352	2	0	L	0.8	L	L	45.6	L	88.9	H	M	LM	M
Mombasa	Kisauni	236179	271	25	H	16.9	H	H	76.9	H	88.8	H	L	HL	H
Mombasa	Likoni	213613	32	3	L	6.2	L	L	37.9	L	87.6	H	M	LM	M
Mombasa	Mvita	403462	95	5	L	13.8	H	M	63.3	H	95.2	H	L	ML	M
Mombasa	Nyali	339514	23	1	L	4.2	L	L	63	H	91.5	H	L	LL	L
Murang'a	Gatanga	251023	132	11	L	1.2	L	L	69.7	H	93	H	L	LL	L
Murang'a	Kandara	234436	411	38	H	5.8	L	M	64.1	H	95.2	H	L	ML	M
Murang'a	Kangema	180990	7	1	L	0.8	L	L	74	H	95.7	H	L	LL	L
Murang'a	Kigumo	229282	7	1	L	1.9	L	L	69.8	H	96.3	H	L	LL	L

*H = High, M = Medium, L = Low, VL = Very Low

County	Subcounty	Population size (Year 2020)	Cumulative number of cases (Jan 2015 – Dec 2019)	Mean Annual Incidence (MAI)_	MAI Ranking	Percentage weekly Persistence	Persistence Ranking	Priority Based on MAI & Persistence	% of households with Improved water	Water ranking	% of households with Improved sanitation	sanitation ranking	WASH priority	Risk scoring	Priority after combination
Murang'a	Kiharu	207918	12	1	L	0.8	L	L	55.2	L	97.2	H	M	LM	M
Murang'a	Maragwa	205056	309	33	H	8.1	H	H	59.8	H	92	H	L	HL	H
Murang'a	Mathioya	185375	7	1	L	0.8	L	L	64.6	H	94.8	H	L	LL	L
Nairobi	Dagoretti North	434614	223	12	L	23.8	H	M	74.5	H	94.3	H	L	ML	M
Nairobi	Dagoretti South	280535	69	6	L	13.1	H	M	74.5	H	94.3	H	L	ML	M
Nairobi	Embakasi Central	331445	187	12	L	19.6	H	M	79.8	H	95.8	H	L	ML	M
Nairobi	Embakasi East	160384	887	125	H	42.3	H	H	79.8	H	95.8	H	L	HL	H
Nairobi	Embakasi North	406258	99	5	L	15.8	H	M	79.8	H	95.8	H	L	ML	M
Nairobi	Embakasi South	171935	532	69	H	37.7	H	H	79.8	H	95.8	H	L	HL	H
Nairobi	Embakasi West	282275	510	41	H	35.8	H	H	79.8	H	95.8	H	L	HL	H
Nairobi	Kamukunji	444010	268	14	L	32.7	H	M	88.9	H	94.3	H	L	ML	M
Nairobi	Kasarani	146863	260	40	H	30.8	H	H	92.6	H	96.7	H	L	HL	H
Nairobi	Kibra	490514	502	24	L	32.7	H	M	83.6	H	93.8	H	L	ML	M
Nairobi	Langata	387581	204	12	L	20.8	H	M	87.9	H	96.1	H	L	ML	M
Nairobi	Makadara	401860	268	15	L	29.6	H	M	71.6	H	94.3	H	L	ML	M
Nairobi	Mathare	442589	211	10	L	17.3	H	M	80.6	H	95.3	H	L	ML	M
Nairobi	Roysambu	283192	132	10	L	8.1	H	M	85.2	H	98	H	L	ML	M
Nairobi	Ruaraka	467530	96	5	L	18.1	H	M	85.2	H	98	H	L	ML	M
Nairobi	Starehe	447150	462	24	L	35.4	H	M	89.6	H	95.5	H	L	ML	M
Nairobi	Westlands	397148	65	4	L	8.5	H	M	93.2	H	96.3	H	L	ML	M
Nakuru	Bahati	178713	33	4	L	3.8	L	L	84.9	H	93.8	H	L	LL	L
Nakuru	Gilgil	178299	44	6	L	2.7	L	L	78.8	H	90	H	L	LL	L
Nakuru	Kuresoi North	194051	0	0	VL	0.0	VL	VL	54.1	L	76.8	H	M	VLM	L
Nakuru	Kuresoi South	124077	0	0	VL	0.0	VL	VL	47.3	L	75.7	L	H	VLH	L
Nakuru	Molo	194407	1	0	L	0.4	L	L	63.9	H	87.2	H	L	LL	L
Nakuru	Naivasha	286992	48	4	L	6.9	H	M	66.7	H	90.6	H	L	ML	M
Nakuru	Nakuru Town East	299517	54	4	L	6.2	L	L	91.3	H	96.9	H	L	LL	L
Nakuru	Nakuru Town West	303477	126	10	L	6.5	L	L	91.4	H	93.5	H	L	LL	L

*H = High, M = Medium, L = Low, VL = Very Low

County	Subcounty	Population size (Year 2020)	Cumulative number of cases (Jan 2015 – Dec 2019)	Mean Annual Incidence (MAI)_	MAI Ranking	Percentage weekly Persistence	Persistence Ranking	Priority Based on MAI & Persistence	% of households with Improved water	Water ranking	% of households with Improved sanitation	sanitation ranking	WASH priority	Risk scoring	Priority after combination
Nakuru	Njoro	258400	1	0	L	0.4	L	L	63.2	H	84.6	H	L	LL	L
Nakuru	Rongai	196741	118	14	L	10.4	H	M	63.2	H	89.2	H	L	ML	M
Nakuru	Subukia	159320	20	3	L	1.2	L	L	58.5	H	88.5	H	L	LL	L
Nandi	Aldai	214816	48	5	L	1.2	L	L	29.9	L	88.9	H	M	LM	M
Nandi	Chesumei	175969	0	0	VL	0.0	VL	VL	55.2	L	91.6	H	M	VLM	L
Nandi	Emgwen	179962	0	0	VL	0.0	VL	VL	51.5	L	87.6	H	M	VLM	L
Nandi	Mosop	176354	0	0	VL	0.0	VL	VL	42.4	L	88.3	H	M	VLM	L
Nandi	Nandi Hills	168691	0	0	VL	0.0	VL	VL	36.4	L	71.5	L	H	VLH	L
Nandi	Tinderet	133301	0	0	VL	0.0	VL	VL	36.4	L	71.5	L	H	VLH	L
Narok	Emurua Dikirr	109795	0	0	VL	0.0	VL	VL	28.5	L	72.4	L	H	VLH	L
Narok	Kilgoris	192706	0	0	VL	0.0	VL	VL	22.9	L	59	L	H	VLH	L
Narok	Narok East	96983	0	0	VL	0.0	VL	VL	25	L	59.4	L	H	VLH	L
Narok	Narok North	190603	113	13	L	8.8	H	M	42.6	L	77.9	H	M	MM	M
Narok	Narok South	191968	83	9	L	4.2	L	L	22.6	L	49.1	L	H	LH	M
Narok	Narok West	177921	4	1	L	0.4	L	L	33.8	L	43.1	L	H	LH	M
Nyamira	Borabu	156576	0	0	VL	0.0	VL	VL	55.9	L	85.8	H	M	VLM	L
Nyamira	Kitutu Masaba	296084	0	0	VL	0.0	VL	VL	48.5	L	78.7	H	M	VLM	L
Nyamira	North Mugirango	168824	0	0	VL	0.0	VL	VL	42.9	L	67.7	L	H	VLH	L
Nyamira	West Mugirango	225990	0	0	VL	0.0	VL	VL	51.6	L	74.2	L	H	VLH	L
Nyandarua	Kinangop	179209	0	0	VL	0.0	VL	VL	88.3	H	93.3	H	L	VLL	L
Nyandarua	Kipipiri	202663	0	0	VL	0.0	VL	VL	73.6	H	91.1	H	L	VLL	L
Nyandarua	Ndaragwa	151483	0	0	VL	0.0	VL	VL	65.2	H	93.8	H	L	VLL	L
Nyandarua	Ol Jorok	190614	0	0	VL	0.0	VL	VL	74.9	H	90.8	H	L	VLL	L
Nyandarua	Ol Kalou	65714	0	0	VL	0.0	VL	VL	73.9	H	96.4	H	L	VLL	L
Nyeri	Kieni	248742	2	0	L	0.8	L	L	78.9	H	91.3	H	L	LL	L
Nyeri	Mathira	254001	0	0	VL	0.0	VL	VL	69.9	H	93.2	H	L	VLL	L
Nyeri	Mukurweni	142762	0	0	VL	0.0	VL	VL	68.1	H	91.9	H	L	VLL	L
Nyeri	Nyeri Town	176227	0	0	VL	0.0	VL	VL	95.2	H	95.8	H	L	VLL	L
Nyeri	Othaya	146453	0	0	VL	0.0	VL	VL	68.1	H	91.9	H	L	VLL	L
Nyeri	Tetu	131737	0	0	VL	0.0	VL	VL	88.9	H	96	H	L	VLL	L
Samburu	Samburu East	62166	0	0	VL	0.0	VL	VL	41.3	L	23.3	L	H	VLH	L
Samburu	Samburu North	85560	0	0	VL	0.0	VL	VL	27.2	L	17.6	L	H	VLH	L

*H = High, M = Medium, L = Low, VL = Very Low

County	Subcounty	Population size (Year 2020)	Cumulative number of cases (Jan 2015 – Dec 2019)	Mean Annual Incidence (MAI)_	MAI Ranking	Percentage weekly Persistence	Persistence Ranking	Priority Based on MAI & Persistence	% of households with Improved water	Water ranking	% of households with Improved sanitation	sanitation ranking	WASH priority	Risk scoring	Priority after combination
Samburu	Samburu West	111772	0	0	VL	0.0	VL	VL	37.8	L	37.5	L	H	VLH	L
Siaya	Alego Usonga	281576	378	29	H	13.1	H	H	55.7	L	82.4	H	M	HM	H
Siaya	Bondo	205049	27	3	L	1.2	L	L	42.4	L	76.7	H	M	LM	M
Siaya	Gem	233740	53	5	L	3.5	L	L	50.5	L	84.3	H	M	LM	M
Siaya	Rarieda	195094	0	0	VL	0.0	VL	VL	60.6	H	78.5	H	L	VLL	L
Siaya	Ugenya	167094	139	18	L	2.3	L	L	65.7	H	82.4	H	L	LL	L
Siaya	Ugunja	124112	265	46	H	5.0	L	M	64.1	H	87.3	H	L	ML	M
Taita Taveta	Mwatate	115450	0	0	VL	0.0	VL	VL	59.6	H	85.9	H	L	VLL	L
Taita Taveta	Taveta	94654	0	0	VL	0.0	VL	VL	74.2	H	74.1	L	M	VLM	L
Taita Taveta	Voi	124678	0	0	VL	0.0	VL	VL	79.4	H	89.8	H	L	VLL	L
Taita Taveta	Wundanyi	99005	0	0	VL	0.0	VL	VL	51.4	L	89.3	H	M	VLM	L
Tana River	Bura	134763	768	122	H	15.0	H	H	46.4	L	44.5	L	H	HH	H
Tana River	Galole	90743	10	2	L	3.8	L	L	53.1	L	47.2	L	H	LH	M
Tana River	Garsen	117928	571	109	H	18.5	H	H	66.7	H	32.7	L	M	HM	H
Tharaka-Nithi	Maara	167268	2	0	L	0.4	L	L	79.5	H	88.9	H	L	LL	L
Tharaka-Nithi	Nithi	178953	315	37	H	4.2	L	M	27.4	L	81.3	H	M	MM	M
Tharaka-Nithi	Tharaka	148144	460	67	H	7.3	H	H	20.2	L	71.9	L	H	HH	H
Trans Nzoia	Cherangany	260037	6	1	L	1.9	L	L	79.3	H	82.2	H	L	LL	L
Trans Nzoia	Endebess	110268	0	0	VL	0.0	VL	VL	53.2	L	62.8	L	H	VLH	L
Trans Nzoia	Kiminini	241808	6	1	L	1.5	L	L	86.9	H	90.9	H	L	LL	L
Trans Nzoia	Kwanza	202352	3	0	L	1.2	L	L	77.5	H	84.7	H	L	LL	L
Trans Nzoia	Saboti	231368	77	7	L	4.6	L	L	68.1	H	88.3	H	L	LL	L
Turkana	Loima	168000	0	0	VL	0.0	VL	VL	34.6	L	6.1	L	H	VLH	L
Turkana	Turkana Central	128170	591	65	H	5.4	L	M	55.4	L	38.9	L	H	MH	H
Turkana	Turkana East	44171	46	25	H	1.2	L	L	19.8	L	12.5	L	H	LH	M
Turkana	Turkana North	129606	85	14	L	3.1	L	L	38.8	L	6.6	L	H	LH	M
Turkana	Turkana South	83597	333	86	H	4.2	L	M	60.7	H	22.9	L	M	MM	M
Turkana	Turkana West	259222	715	54	H	21.2	H	H	55.4	L	31.8	L	H	HH	H
Uasin Gishu	Ainabkoi	138501	0	0	VL	0.0	VL	VL	81.8	H	86.6	H	L	VLL	L
Uasin Gishu	Kapseret	156580	0	0	VL	0.0	VL	VL	87.4	H	93.6	H	L	VLL	L
Uasin Gishu	Kesses	181745	0	0	VL	0.0	VL	VL	72.9	H	82.6	H	L	VLL	L
Uasin Gishu	Moiben	172653	0	0	VL	0.0	VL	VL	81.7	H	91.1	H	L	VLL	L

*H = High, M = Medium, L = Low, VL = Very Low

County	Subcounty	Population size (Year 2020)	Cumulative number of cases (Jan 2015 – Dec 2019)	Mean Annual Incidence (MAI)_	MAI Ranking	Percentage weekly Persistence	Persistence Ranking	Priority Based on MAI & Persistence	% of households with Improved water	Water ranking	% of households with Improved sanitation	sanitation ranking	WASH priority	Risk scoring	Priority after combination
Uasin Gishu	Soy	269606	0	0	VL	0.0	VL	VL	78.8	H	90.3	H	L	VLL	L
Uasin Gishu	Turbo	261191	0	0	VL	0.0	VL	VL	85	H	92.9	H	L	VLL	L
Vihiga	Emuhaya	137059	0	0	VL	0.0	VL	VL	67.5	H	87.7	H	L	VLL	L
Vihiga	Hamisi	231099	128	12	L	1.2	L	L	52.5	L	87.7	H	M	LM	M
Vihiga	Luanda	139717	0	0	VL	0.0	VL	VL	72.1	H	89.7	H	L	VLL	L
Vihiga	Sabatia	206730	0	0	VL	0.0	VL	VL	82.3	H	93	H	L	VLL	L
Vihiga	Vihiga	141051	2	0	L	0.8	L	L	71.1	H	90.5	H	L	LL	L
Wajir	Eldas	58508	13	7	L	1.2	L	L	41.7	L	22.9	L	H	LH	M
Wajir	Tarbaj	111120	7	2	L	1.2	L	L	36.1	L	16.8	L	H	LH	M
Wajir	Wajir East	140838	2609	531	H	24.2	H	H	65.6	H	33.1	L	M	HM	H
Wajir	Wajir North	147587	0	0	VL	0.0	VL	VL	6.9	L	37.1	L	H	VLH	L
Wajir	Wajir South	185698	193	25	H	10.8	H	H	18.4	L	21.1	L	H	HH	H
Wajir	Wajir West	95172	209	66	H	6.2	L	M	52.6	L	23.7	L	H	MH	H
West Pokot	Kacheliba	111314	36	7	L	4.2	L	L	34.4	L	16.2	L	H	LH	M
West Pokot	Kapenguria	183337	100	12	L	5.4	L	L	32.7	L	59.3	L	H	LH	M
West Pokot	Pokot South	161090	166	22	L	4.6	L	L	31.3	L	16.2	L	H	LH	M
West Pokot	Sigor	105856	294	60	H	7.7	H	H	27.4	L	36.9	L	H	HH	H

*H = High, M = Medium, L = Low, VL = Very Low

V. BIBLIOGRAPHY

The Constitution of Kenya
http://www.kenyalaw.org/lex/actview.xql?actid=Const2010

Kenya Vision 2030
https://vision2030.go.ke/

The Public Health Act (CAP 242)
http://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/PublicHealthActCap242.pdf

The Food, Drugs and Chemical Substances Act (CAP 254)
https://leap.unep.org/countries/ke/national-legislation/food-drugs-and-chemical-substances-act-cap-254

The Health Act
http://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/HealthActNo.21of2017.pdf

The Water Act, 2016 (CAP 372)
http://kenyalaw.org/kl/fileadmin/pdfdownloads/RepealedStatutes/WaterAct_Cap372_.pdf

Kenya Environmental Sanitation and Hygiene Policy
https://www.wsp.org/sites/wsp/files/publications/Kenya

Kenya Environmental Sanitation and Hygiene Strategic Framework (KESSF), 2016–2020
https://www.wsp.org/sites/wsp.org/files/publications/Kenya

Ministry of Water and Sanitation Strategic Plan 2018–2022
https://africacheck.org/sites/default/files/Ministry-of-Water-Kenya-Strategic-Plan-2018-2022-Final-Version-Dec2018.pdf

National ODF Kenya 2020 Campaign Framework 2016–2020
http://www.health.go.ke/wp-content/uploads/2018/04/NATIONAL-ODF-KENYA-2020-CAMPAIGN-FRAMEWORK.pdf

The WHO guidelines on Sanitation and Health, 2018)
https://www.who.int/publications-detail-redirect/9789241514705

Sustainable Development Goals Number 3.9 and 6, target 1 -2.
https://www.un.org/waterforlifedecade/waterandsustainabledevelopment2015/open_working_group_sdg.shtml

Interim guiding document to support countries for the development of their National Cholera Plan
https://www.gtfcc.org/wp-content/uploads/2020/11/gtfcc-interim-guiding-document-to-support-countries-for-the-development-of-their-national-cholera-plan.pdf

Declaration to Ending Cholera 4 October 2017 Annecy, France
https://www.who.int/cholera/task_force/declaration-ending-cholera.pdf

Guidance and tool for countries to identify priority areas for intervention
https://www.gtfcc.org/wp-content/uploads/2019/11/guidance-and-tool-for-countries-to-identify-priority-areas-for-intervention.pdf

Cholera prevention and control - WHO
https://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_R4-en.pdf

Kenya National Bureau of Statistics, 2019. Kenya Population and Housing Census. Volume I: Distribution of Population by county and subcounty. December 2019
https://www.knbs.or.ke/?wpdmpro=2019-kenya-population-and-housing-census-volume-i-population-by-county-and-sub-county

Kenya National Bureau of Statistics, 2019. 2019 Kenya Population and Housing Census. Volume IV: Distribution of Population by Socio-Economic Characteristics. December 2019
https://www.knbs.or.ke/?wpdmpro=2019-kenya-population-and-housing-census-volume-iv-distribution-of-population-by-socio-economic-characteristics

Kenya Population: Projection: Kenya National Bureau of Statistics
https://www.ceicdata.com/datapage/charts/o_kenya_knbs-projection-population-total/?type=area&from=2020-12-01&to=2030-12-01&lang=en

Kenya political map
https://images.mapsofworld.com/kenya/kenya-political-map.jpg

Delimitation of electoral units
https://www.klrc.go.ke/index.php/constitution-of-kenya/171-chapter-seven-representation-of-the-people/part-2-independent-electoral-and-boundaries-commission-and-delimitation-of-electoral-units/256-89-delimitation-of-electoral-units

W. LIST OF CONTRIBUTORS

Abdi Maalim	**Mandera County**
Absolom Kuya	**Turkana County**
Adam Mohammed	**MoH – DEH**
Amadiva Kibisu	**MoH – FELTP**
Annastacia Muange	**MoH – DDSR**
Awino Bob	**Siaya County**
Ben Nyang'oma	**Graphics Consultant**
Bonface Waweru	**MoH – DDSR**
Carol Ngunu	**NMS**
Caroline Maina	**MoH – DDSR**
Catherine Kiama	**WSU – GH Kenya**
Cherotich Rono	**MoH – NVIP**
Daniel Langat	**MoH – DDSR**
David Kareko	**MoH – DDSR**
David Kurao	**AMREF Health Africa**
Dennis Azaria	**Tana River County**
Doris Marwanga	**WSU – GH Kenya**
Emmanuel Okunga	**MoH – DDSR**
Eric Osoro	**WSU – GH Kenya**
Eunice Mugera	**MoWSI**
Eunice Oreri	**Siaya County**
Evans Solitei	**Kajiado County**
Florence Yonga	**MoH – DDSR**
Gilchrist Lokoel	**Turkana County**
Hassan Elmi	**Garissa County**
Ian were	**MoH**
Isaac Matheka	**Machakos County**
Isabella Njeri	**MoH**
Jackline Kiarie	**AMREF Health Africa**
Jackson Njoroge	**MoH - DDSR**
Jafar Oyugi	**Wajir County**
Jared Ayiemba	**WSU – GH Kenya**
Jedidah Kahura	**MoH – NPHLS**
Joan Brunkard	**US CDC**

John Obisa	**UNICEF**
Joseph Njau	**MoH – DDSR**
Josephine Odanga	**UNICEF**
Judy Kabathi	**MOH – DRM**
Judy Kimuyu	**Machakos County**
Kadondi Kasera	**MoH – PHEOC**
Kazuki Shimizu	**WHO – Kenya**
Kennedy Ombogo	**Migori County**
Lyndah Makayotto	**MoH – DDSR**
Mikali Waswa	**MoH – NPHLS**
Mohammed Hassan	**Mandera County**
Mohammed Hassan	**Wajir County**
Mohammed Masoud	**Mombasa County**
Mohammed Salat	**Garissa County**
Nolluscus Ganda	**WHO – Kenya**
Oscar Okong'o	**Tana River County**
Peter Okello	**Migori County**
Philip Ngere	**MoH – DDSR**
Prisca Njiru	**MoH – DDSR**
Raphael Mwanyamawi	**Mombasa County**
Rosalia Kalani	**MoH – DDSR**
Rose Jalang'o	**MoH – NVIP**
Samuel Kadivane	**MoH – DDSR**
Silvester Mungai	**MoH – DDSR**
Sophia Setia	**Kajiado County**
Susan Mahero	**NMS**
Tobias Omufwoko	**WASH Alliance**
Waqo Boru	**MoH – FELTP**
Wellington Oduol	**MoH – DDSR**
Wycliffe Matini	**MoH – DDSR**
Zephania Irura	**MoH – DDSR**

REPUBLIC OF KENYA

MINISTRY OF HEALTH

The Ministry of Health
Afya House, Cathedral Road
P. O. Box 30016 Nairobi 00100
Email: info@health.go.ke
http://www.health.go.ke