



**Ministry of Local Government and Rural Development
Ministry of Health**

REPORT

Cholera Prevention and Control: Lessons Learnt 2014 – 2015 and Roadmap

(Project Activity Codes: WASH PCR 10 / IR 35: A system for effective WASH sector coordination, knowledge management and evidence-based decision-making is operational and resilient at national level and in 5 most deprived regions by the end of 2016)

Submitted By

Stephen Ntow and Yvan Grayel

March 2016

Table of Contents

Contents

Abbreviation and Acronyms	3
Section One (1): Introduction and Objective of the assignment	4
1. Introduction	4
1.1 Background	4
1.2 Purpose	5
1.3 Objectives	5
1.4 Approach	5
1.5 Methods	5
1.6 Process	5
Section Two (2): Key Findings	7
2. Introduction	7
2.1 Institutional Arrangements	7
2.2 Coordination and Monitoring	8
2.3 WASH in Outreach Communities	8
2.4 Communication and Social mobilization	9
2.5 Infection Prevention and Control (IPC)	9
2.6 Surveillance	9
2.7 Cross-Border	10
2.8 Advocacy, Resource Mobilization and utilization	10
Section Three (3): Recommendations	11
3.1 Coordination and Monitoring	11
3.2. Emergency WASH Interventions for Outreach Communities	13
3.3 Communication and Social Mobilization	14
3.4. Infection Control	15
3.5 Surveillance	15
3.6 Cross-Border Issues	15
3.7 Advocacy and Resource Mobilization	16
Section Four (4): The Ghana 2016-2020 Road Map	18
List of Appendixes	18

Abbreviation and Acronyms

AI	- Appreciative Inquiry
CBO	- Community-Based Organization
CTU	- Cholera Treatment Unit
CWSA	- Community Water and Sanitation Agency
EHSD	- Environmental Health and Sanitation Directorate
EPRP	- Emergency Preparedness and Response Plan
FBO	- Faith-Based Organization
GHS	- Ghana Health Service
GRCS	- Ghana Red Cross Society
GWCL	- Ghana Water Company Limited
HPU	- Hygiene Promotion Unit
IFRC/GRCS	- International Federation of Red Cross / Ghana Red Cross Society
MDG	- Millennium Development Goal
MLGRD	- Ministry of Local Government and Rural Development
MMDAs	- Metropolitan, Municipal and District Assemblies
MoH	- Ministry of Health
MWRWH	- Ministry of Water Resources, Works and Housing
NADMO	- National Disaster Management Organization
SOP	- Standards Operations Procedures
ToR	- Terms of Reference
UNICEF	- United Nations Children's Fund
USAID	- United State AID
WD	- Water Directorate
WASH	- Water Sanitation and Hygiene
WinE-TWG	- WASH in Emergency Technical Working Group
WCARO	- West and Central Africa Regional Office.
WHO	- World Health Organization

Section One (1): Introduction and Objective of the assignment

1. Introduction

This report contains a summary of lessons learnt and a Road Map for the implementation of recommendations endorsed at the validation workshop. This is a part of an assignment titled “*Cholera Prevention and Control: Lessons Learnt 2014 – 2015 and Roadmap*” in a bid to address the almost yearly outbreak of cholera by the Government of Ghana, with support from key partners such as UNICEF. Ultimately, the outcome should lead heightened state of preparedness and response measures. Nevertheless, there is the need for enhanced capacity for cholera preparedness, emergency response, risk reduction and resilience in the country, hence the proposed assignment. This section provides a brief background on the persistent prevalence of cholera in Ghana and an overview of the assignment.

1.1 Background

A review of the Terms of Reference (ToR) and some of reference materials indicate that Ghana is amongst the most challenged countries in the world as a result of limited access to improved sanitation. The 2014 Joint Monitoring Program Report on the Millennium Development Goal (MDG) for access to improved sanitation indicates that only about 15% of Ghanaians have access to improved sanitation¹. The health risks associated with this poor sanitation situation were exacerbated by extremely low reported handwashing rates of 12%². In addition, only 46% of households in urban areas have soap and water, compared with 29% of rural households³.

It is estimated that there are 1.4 to 4.3 million cases, and 28 000 to 142 000 deaths worldwide⁴ due to cholera every year. Up to 80% of cases can be successfully treated with oral rehydration salts. Provision of safe water and sanitation is critical to control cholera and other waterborne diseases. West and Central African cholera outbreak as of January 25, 2015 claimed 1,683 registered deaths and over 91,361 reported cases with a reported case fatality rate (CFR) of 2% in 11 countries, which is 3 times more than in 2013. The case fatality ratio is high in the Sahelian area, equal or greater than 2%, especially in Nigeria, Chad, Cameroun and Niger, Nigeria, Ghana and the Democratic Republic of Congo being the most affected countries with Ghana reporting its worst outbreak since 1982. It is reported that outbreaks in Nigeria and Ghana are directly impacting neighbouring countries in Lake Chad basin and along the gulf of Guinea.

Reports suggest that the unfortunate sanitation and hygiene conditions are significant contributory factors in the series of cholera outbreaks in Ghana in 2011 and 2012, each resulting in about 10,000 cases and nearly 100 deaths. The 2014 outbreak, with over 28,000 cases and more than 240 deaths, was the worst in the country's history. Concerted efforts by government in 2015 have dramatically reduced the weekly case load. Although, the situation seems to have further improved, the country recorded 644 cases and 8 deaths by 26 July 2015⁵, reaching a total of 690 cases in 2015. At the time of the Inception Report, there has been no cholera case in the country for a few weeks. However, the risk factors responsible for the outbreak of Cholera persist in many parts of the capital, Accra, which recorded most cases.

¹ WHO/UNICEF 2014 *Progress on Drinking-Water and Sanitation 2014*

² Statistical Service 2012. *Multiple Indicator Cluster Survey with an enhanced Malaria Module and Biomarker 2011*

³ Ghana Demographic Health Survey 2014.

⁴ Cholera outbreak in the West and Central Africa: Regional Update, 2014 - WEEK 52

Indeed, since 2011 and 2012, the epidemic has almost become an all year-round phenomena, instead of a seasonal event which follows the peak rains⁶.

It is in the light of the above that the Government of Ghana with support from UNICEF procured the services of two Consultants; one National Consultant and an International Cholera Specialist, to provide an objective assessment of the existing cholera preparedness and response situation from an independent, expert's standpoint.

1.2 Purpose

The purpose of the assignment is to provide country specific perspectives on information and identify key lessons on cholera preparedness and response in Ghana based on data gathered during the preceding assessments, including the periods 2014 – 2015. This exercise should lead to the development of a roadmap aimed at further enhancing systems and capacities to respond to future emergencies and ultimately lead to preparation and implementation of a cholera elimination plan.

1.3 Objectives

The objectives of the assignment include the following:

- To assess the cholera response in the years 2014 and 2015 and identify key lessons learnt regarding “what has worked well”, “what has not worked well” and “what could be improved”.
- To highlight recommendations.
- Draw a roadmap with key steps for the improvement of cholera preparedness, emergency response and long-term prevention and control, within the short and middle-term (3-5 years) in respect of the above.
- The study should also gather scientific evidence from previous and ongoing epidemiological studies for more effective targeting of on-going preparedness activities and long term intervention in cholera prone areas, particularly in Accra and other regularly affected regions.

1.4 Approach

The Appreciative Inquiry (AI) was the main approach used to design the assessment. Specific methods of inquiry included: Critical Moments (Reflective Learning Methodology); Using images to capture/represent critical moments in outbreaks and responses; and Role plays – Identifying the “unspoken” (including attitudes) behind the actions and reactions and inactions during interventions.

1.5 Methods

Three broad methods were adopted: (i) Desk review, (ii) Consultations including primary data gathering and (iii) Learning workshop. A list of documents reviewed is attached as Appendix 1 and the list of persons contacted for primary data and a participants lists at the stakeholder and validation forums as well as the list of persons represented the validation workshop has been attached at Appendix 2 (a-c).

1.6 Process

a. Inception meeting and stakeholder forum

An inception meeting and a stakeholder consultation meeting was held ahead of the assessment between the two Consultants, WASH Specialists at the UNICEF Ghana and all major stakeholder institutions. The aim of

⁶ Cholera Epidemiology and Response Factsheet Ghana, UNICEF & ECHO

the meeting was to introduce the Consultants to the stakeholders, to agree on the methodology and to confirm timelines and the logistic outlay. These were achieved in full with maximum cooperation pledged by the key agencies. In addition to all the processes outlined in this report, the methodology proposed is in line with the regional cholera prevention and control strategy developed by UNICEF, West and Central Africa Regional Office (WCARO).

b. Sources of data and Data collection instruments

Primary data was gathered mostly from major sector actors and persons living in affected communities in Accra. The data collection matrix has been attached as Appendix 3. They include representatives of key implementing and development agencies, Non-governmental organization, Community and political leaders.

c. Data collection tools

Structured/Unstructured Interview Guide Intrusive and non-intrusive observation, Focus group Discussions (FGD), Key Informant Interviews (KIIs), Field trip and transect walks.

d. Data analysis and triangulation

Data gathered from both primary and secondary sources were synthesized, summarized and compared with global best practices. The list of references are attached as Appendix - 1

e. Presentation of preliminary results and validation workshop

Preliminary findings were presented to stakeholders at a validation workshop during which additional information and clarification were offered to the Consultants. These were used to update and finalize the report.

Section Two (2): Key Findings

2. Introduction

In this section you will find the major outcomes of the study presented from a learning point of view. This is a slight departure from the classical presentation of findings which does the “exceptional reporting” from the stand point of “what did not go right?” The aim is to present the key issues appreciating the least effort exerted by key sector actors rather than putting them down for what went wrong and to avoid apportioning blame. Indeed, since the protracted cholera outbreak of 2014-2015 several lessons have been learnt. These led to instituting and implementing new and innovative changes by government agencies with support from key partners such as UNICEF. It is worth noting that several lessons have been learnt and led to a general commitment to effect changes to improve the situation. Among the new lessons documented is the review and revision the health sector cholera standard operations manual.

2.1 Institutional Arrangements

A rapid review of the institutional network after a brief mapping exercise reveals an extensive network of agencies across multiple networks. However only those found to be very active and necessary to directly impact on cholera preparedness and rapid response measures have been mentioned. They include:

2.1.1 Health Sector

- Ministry of Health (MOH) / Ghana Health Service (GHS)
- Health Promotion Department (HPU),
- Seconded EHSD staff

2.1.2 WASH Sector

- Environmental Health and Sanitation Directorate (EHSD) of Ministry of Local Government and Rural Development (MLGRD).
- Water Directorate of the Ministry of Water Resources, Works and Housing (MWRWH).
- Relevant Metropolitan, Municipal and District Authorities (MMDAs).
- Ministry of Water Resources Works and Housing (MWRWH).
 - Ghana Water Company Limited (GWCL).
 - Community Water and Sanitation Agency (CWSA)
- I/NGOs: Ghana Red Cross Society (IFRC/GRCS), Rural Water Development Project of the Church of Christ, Plan, Care International.

2.1.3 Coordination

- National Disaster Management Organization (NADMO)

2.1.4 Community Based Organisations (CBOs) and Faith-Based Organisations (FBO).

- Religious leaders and organisations
- Healing centres

2.1.5 Communication and Community Mobilization

- Television and Radio stations.

2.1.6 Finance

- Ministry of Finance

2.1.7 Corporate Ghana and Private Sector Businesses.

2.2 Coordination and Monitoring

There are mechanisms outlined for ensuring that arrangements and processes for ensuring Cholera preparedness and response plans are effectively implemented in the WASH Sector EPRP and the Health Sector Cholera – Standards Operations Procedures (SOP). There is a regular review and update of relevant documents guiding Cholera preparedness capacity building including a long term plan for elimination cholera. However, none of the stakeholders including the key implementing agencies were satisfied with the implementation of coordination of such mechanisms. Scheduled meetings of the relevant coordination structures are not held regularly. The few meetings held were not documented. Where some documentation took place, dissemination of decisions was overly delayed thus making it possible for the sector to be overtaken by cholera outbreaks. Inadequate resources have been blamed for this state of affairs although the situation may also be due, significantly to the lack of capacity to plan and coordinate effectively within organisation and institutional frameworks available to all line Ministries and agencies. Another limitation is the absence of key implementing NGOs whose inclusion in decision-making forums would have been essential (Refer list of participating agencies mentioned as in WASH Sector ERSP and Health Sector Cholera SOP and who are reported as actively participating in coordination meetings). There are lessons on overlaps resulting in avoidable duplication in the area cholera prevention education, community mobilization and of hygiene promotion. Another example is that the Ghana Red Cross Society's Sword and Shield (S&S) volunteers perform contact tracing, disinfection and also carryout preventive education in facilities where staff members of EHSD are deployed in health facilities including hospitals to carry out the same functions.

Intra-sectoral monitoring has been reported but there was no evidence of a comprehensive multi-sectoral M&E activity. Although no reports and learning products emerging from such monitoring activities were shared, most respondents gave the impression these existed.

Strategic indicators for cholera preparedness and response do not seem to be understood by all sectors at levels; district, regional and national. A partial or inadequate appreciation of the indicators does take away the motivation to perform according to set standards, systematically assess progress and learn to improve future outcomes as expected within a comprehensive monitoring and evaluation framework across sectors.

Although a management information system is mentioned in the cholera preparedness and response plans, the practice according to information obtained during the assessment reveals little about timely release of cholera alerts and effective utilization of information on coordination of various aspects cholera preparedness and facilitation of rapid response.

2.3 WASH in Outreach Communities

Key among WASH outreach activities include; a revised list of contingency stocks; refresher training for essential WASH and health staff; training and deployment of "Shield & Sword" team in high-risk areas as part of preparedness and rapid response strategy following the protracted cholera outbreak. Massive campaigns were launched to ensure food vendors complied with minimum hygiene conditions. Efforts have been made during and after the recent cholera outbreak to ensure supply of adequate safe drinking water (with acceptable FRC levels) in high risk areas; through piped supply and water tanker/trucking services but this has been limited by inadequate water storage containers/ capacity in the affected/ at-risk areas; regular monitoring of water quality is conducted by GWCL but the results are not published and not generally available.

Water treatment agents are such as Aquatabs are distributed during outbreaks but efforts to maintain a sustainable level of distribution has been hampered by a lack of social marketing capacity. The safe handling of water sachet has come under scrutiny and found to be inadequate. Contamination through human fingers

has been reported in and comparative assessment study commissioned by the Ghana Health Service (*E. Dzotsi et. al. 2014*). Emergency sanitation measures have been reported to be in place during outbreaks. However, the number and monitoring of its use have not been documented.

2.4 Communication and Social mobilization

A variety of messages and communication materials have been produced and reported during the assessment. There is also knowledge and experience in the design and dissemination of messages. There also exist innovative messages aired on some TV and radio platforms but these were inadequate and untimely until recent programmes directly supported by UNICEF Ghana. The delivery of print messages and materials tailored for specified audiences were seldom seen in the “hotspots” visited. There is very little community based education implemented in the affected areas during the period of this assessment. There is very little coordination among the various implementing agencies leading to duplication in some areas and under representation in others. Although resources are generally inadequate, the proportion of resources allocated for community mobilization has been reported as woefully inadequate or simply negligible according the Health Promotion Department (HPD) of the Ghana Health Services (GHS) relative to the scope of work.

Community education is minimal after outbreaks and may not be enough to ensure sustained behaviour change. EHSD efforts at distributing Aquatabs using the social marketing approach did not fare well due to lack of capacity in this specialized area.

2.5 Infection Prevention and Control (IPC)

Conscious efforts have been put into providing structures, equipment and logistics. Although the review took place at a time when there were no active cholera cases, it was reported that efforts aimed at ensuring strict adherence to infection prevention and control measures stipulated in the SOP are not often complied with. Particular reference is made to poor compliance to bleach barriers. Also not all discharges from cholera cases especially human excreta are disinfected. Although ambulances are disinfected, taxis are not easily tracked-down and disinfected. The combined efforts of the Ghana Red Cross Society (GRCS) and the EHSD resulted in intensive disinfection of affected areas using the contact list. They also compiled georeferenced locations of cholera cases although these were not analysed and the results used to aid effective planning. The management of deceased bodies and the control of traditional practices or rituals associated with burial of the dead have been reported as effectively carried out. To improve this measure, a socio-cultural study is currently under way to yield lessons and adoption of location-specific cholera control measures.

2.6 Surveillance

It was reported that all reported diarrhoea cases were subjected to Rapid Diagnostic Tests (RDTs) for detecting the presence of Cholera. Samples which tested positive immediately trigger cholera treatments and the results forwarded to a reference laboratory for confirmation. An RDT positive test results takes less than a few minutes and thus triggers the despatch of Rapid Response Teams which are reported to exist in all Health facilities, in affected areas, districts, regions and at the national levels. These are comprised of the following experts: Clinician or physician, Microbiologist/Laboratory personnel, Information, communication and Health Education expert, Epidemiologist/Disease Control Officer, Water expert (Water Quality Engineer) and an Environmental Health Officer (sanitation expert). The teams conduct follow-ups and compile geo-referenced line-lists for both cases and contact with details necessary to monitor changes in serotypes, antibiotic sensitivity patterns of *Vibrio Cholerae* and cessation of outbreak. Alerts are issued through the hierarchy; health facility, district, region, national and finally to WHO in Ghana. There is however, no reference to data so compiled for further analyses and planning purposes. There is little evidence in support of existence of any horizontal dissemination of alerts among stakeholders beyond health facility levels. The

reported role of designed district “Whistle Blowers” in the persons of District NADMO officials has not been put to test yet. Weekly Cholera bulletins are issued but these are often delayed and have become irregular during the period under review. According reports it takes a much longer time between the detection and reporting of the index case thus resulting in preventable cholera outbreaks.

2.7 Cross-Border

According to information made available to the Consultants during the assessment, formal cross-border cooperation existed in the past. This is no longer pursued as most of the cases are believed to have been generated from within the borders of Ghana. There is however, a realization to alert neighbouring countries as part of the learning emerging from the health and WASH sectors of Ghana. The lessons learnt from the successful outcome of cross-border activities between Togo and Benin in 2014 also lends credence to this new learning. Currently, the Ghana health sector cholera SOP does not have any provision or information on cross-border responsibilities but a decision has been reached to include the subject as a provision in the SOP at the validation workshop held in February 2016 to facilitate its implementation.

2.8 Advocacy, Resource Mobilization and utilization

There are multiple sources of funds and other resources for cholera preparedness and response activities but these are scanty and erratic. Some major actors perceive the resources and fund disbursement as well as utilization processes are opaque. They called for proper documentation and greater transparency. Key sources of resources include:

- ❖ Government (Regular subvention and emergency funds received during cholera outbreaks).
- ❖ United Nations agencies particularly, UNICEF and WHO
- ❖ Civil Society organizations (CSOs) including Faith-Based and Community Based Organizations: (FBOs and CBOs).
- ❖ Bilateral/multilateral agencies including Diplomatic Missions and USAID among others
- ❖ Individual citizens and Corporate Ghana.

A review and analysis of data gathered suggests a need for a well-orchestrated communication and advocacy programmes over a medium to long term period. The fact that cholera outbreak is not seen as a priority public health menace by political, administrative and traditional leaders is a worrying development. Cholera is yet to be perceived as an indicator for poor development, an outcome of a failing sanitation policy and a sign of poor performance of multiple sectors of the economy including local government. Indeed many persons living in affected areas have ceased to perceive cholera as a potential or a real threat to public health.

The fight against cholera will not be beneficial if efforts are only limited to curbing outbreaks without addressing the long term sanitation, hygiene and water supply challenges.

Section Three (3): Recommendations

The quality of cholera preparedness and response interventions in Ghana has improved since the protracted 2014 - 2015 cholera outbreaks. Following key findings and lessons learnt as described in the previous section, recommendations have been presented in this section to further enhance system capacity. This should be built on best practices and the lessons learnt. Key elements requiring special attention have been selected and translated in the Cholera Prevention & Control Road Map, as presented in the Appendix 4.

In terms of timing and in the light of the potential outbreaks, as well as the current momentum that the Cholera Lessons Learnt exercise has generated, there is need for immediate actions to begin in order to ensure adequate preparedness capacity is fully installed. Key among other priorities is the need for coordination within and between sectors and all stakeholders under proactive leadership. Some of these have been highlighted in the Cholera Prevention & Control Road Map.

3.1 Coordination and Monitoring

3.1.1 Strengthen general coordination through NADMO's leadership

The most significant lessons which prompted the need for change occurred around coordination and related issues. Drawing from the lessons learned, it is recommended that frequent and structures and coordination meetings be organized as prescribed in the SOP: quarterly (preparedness) and weekly (response). The outcome of such meetings should be:

- a. Documented and disseminated within days
- b. Action points should be clearly marked showing persons/agencies
- c. All action points should be time bound, and
- d. A mechanism for follow-up should be evolved (examples include follow-up calls by various leaders).

3.1.2 WASH technical coordination meetings should be results-oriented

While a new updated health sector SOP recommends the creation of National and Provincial 'Public Health Emergency Management Committees', it is suggested that the WASH Emergency Technical Working Group, which is co-chaired by MLGRD and MWRWH with technical support from UNICEF, should also play a core technical coordination role including generation of relevant agenda for regular and extra-ordinary technical coordination meetings on cholera-related interventions. To mitigate the risks of working within a technical 'silo' and/or of lack of field and funding capacity, an integration of cross-sectoral issues in those meetings is recommended. A continued involvement of local and international NGOs and Health and C4D cholera-related actors should attend those meetings. Technical dialogues and increased sector coordination and monitoring of integrated cholera-related WASH issues should be given more space. This is especially so given the potentially volatile environment due to poor sanitation in the affected areas commonly referred to as "hotspots". Learning points should be also developed or adopted at such meetings for timely intervention at all levels – community, district, regional and national levels. These must lead to effective collaboration and greater advocacy at all levels.

Efforts should focus on early and targeted preparedness and response to prevent and control cholera outbreak than is currently provided. WASH sector coordination should place a high emphasis on the need for long-term WASH initiatives beyond rapid response interventions in cholera hotspots. This will require conscious planning with long-term outcomes towards cholera eradication in the country (*see Paragraph 3.7 Advocacy*).

3.1.3 Financing Coordination Mechanisms

An important lesson emerging from the study is the inadequate, uncoordinated and erratic funding arrangements for cholera prevention and control efforts. This may not be an isolated event but could be a reflection of general financial difficulty of the country.

- a. It is therefore suggested that key Development Partners (DPs) including UNICEF, WHO and USAID would continue to support the sector financially and technically. Apart from directly funding technical and general coordination platforms, there is also a need to fund capacity building activities meant to stimulate effective leadership and coordination skills at all levels.
- b. The need to develop an implementation plan and to cost the SOP has also been agreed among sector players.

3.1.4 Assessment of cholera preparedness and response

As a matter of urgency, it is suggested that a comprehensive review of the sector's capacity of preparedness and responsiveness to cholera outbreak be implemented through simulation exercises. Considering the high potential of new cases or outbreak, there should be collective efforts to step-up preparedness capacity including:

- Identification and involvement of active Governmental and NGO actors;
- Detailed list of existing and potential resources needed in each location: prepositioning of contingency stocks, human capacity and emergency funds available). Other approaches such as cash-based interventions should be considered.

It is necessary to develop a detailed capacity mapping (with regular updates) of all actors & their related capacity to avoid possible duplication and/or gaps. These should be done as a part of, and outcomes of simulation exercises (through the coordination group) that will inject additional dynamism into preparedness capacity among actors (WHO 2004⁷).

3.1.5 Conduct regular and Complete Sector Monitoring and Evaluation

It is essential to conduct regular monitoring and evaluation M&E activities for increased interactions, timely adjustments, increased accountability, learning and introduction of strategic changes. For purposes of ensuring accurate documentation and timely dissemination, the coordination group should ensure that reporting mechanisms are in place and used for quality interventions. It is also important to benchmark planned actions through carefully selected indicators (Suggested indicators have been provided below as part of the Cholera Road Map). The essential role of coordination and regular monitoring of the Road Map's implementation and producing periodic updates are implied. These should lead to improved cholera prevention and control. Also, improved learning processes emerging from project implementation and evaluations should be systematically implemented after cholera outbreaks thus leading to future preparedness and responsiveness.

The need to track new cholera cases and adjusting promptly according to targeted approaches in the Shield & Sword strategy is recommended. The outcomes of investigations, mapping and line-listing should be shared at operational levels on a daily basis, between health and wash actors for field joint interventions.

⁷ WHO (2014) Cholera Out-Break: Assessing the outbreak response and improved preparedness. Geneva: global Task Force on Cholera Control.

3.2. Emergency WASH Interventions for Outreach Communities

3.2.1 WASH contingency items should be updated and stacked

The revised draft SOP outlines essential requirements for preparedness and it is necessary to regularly update and adhere to these requirements. This is in line with the above-mentioned other recommendations mentioned above for immediate WASH preparedness capacity review. Contingency stocks must be available or close to affected locations (at local level) and in sufficient quantities based on the most likely scenario. Investigations should identify specific community needs such as Water tankers; Chlorine Pool Testers and Aquatabs (or other disinfection products). The need to deploy rapid cash-based interventions should also be considered under this circumstance.

3.2.2 Ensure adequate supply of safe drinking water to high-risk areas

It is suggested that affected communities selected based on systematic risk-informed assessments should remain a key strategy by the GWCL and other sector players, especially MWRWH (quality assurance and monitoring). This may be further enhanced by drawing parallel mapping assessment of GWCL piped water supply system coverage and locations cholera cases. This will lead to the identification of vulnerable communities with no regular supply of piped water and who should be prioritized to receive adequate storage capacity (community water tanks). Bacteriological quality of water should be regularly monitored through Free Residual Chlorine tests including GWCL reports and random water quality tests by Ghana Standards Authority (GSA). While high-risk areas can rapidly be evolved in the course of an outbreak, such assessments should be frequently updated (on a weekly basis) based on the outcome of case mapping.

The need to provide sufficient resources and to build capacity of key implementing partners on regular monitoring of chlorinated water supply is highly recommended to ensure that minimum values of Free Residual Chlorine are maintained. During emergencies, it is recommended communities should be regularly supplied with alternative water disinfection products, such as Aquatabs or any other relevant Household Water Treatment (HWT) technology.

EHSD should continue with bucket chlorination at community standpipes and also disinfection of water storage tanks (poly-tanks) placed within affected communities. Drinking water practices in high-risk and affected communities must be assessed (rapid KAP survey) and appropriate priority actions taken promptly. Apart from ensuring that water sachets continue to be produced under strict public health conditions, it is important to focus on training and mass-media communication on the need for safe handling at the point-of-use or sale.

3.2.3 Prioritize emergency sanitation interventions based on risk-informed analysis

While failure in human waste management, notably the practice of open defecation and inappropriate discharge of sewage and cesspit trucks, is perceived to be one of the main causes of occurrence of regular cholera outbreaks, emergency rapid response approach should remain the key short term strategy with immediate impact for cholera prevention and control measures. It is therefore crucial to ensure that emergency sanitation actions are informed by specific outcomes of field investigations which must confirm specific local cholera transmission through unhealthy living conditions. Specific risk-informed actions provide benefits in stopping contact-to-contact transmission.

3.2.4 Disinfection at household levels

The sector actors in Ghana are urged to continue with household disinfection while promoting effective

individuals and families requires considerable efforts including the adherence to ridged timelines. While a specific study looking at scientific evidences is about to be undertaken at regional level, efforts should be continued and extended as much as possible to neighborhood households, as this also brings much benefits in understanding local pathways and increasing awareness among others. To mitigate potential lack of timely disinfection by field teams and for longer-term benefits, promotion of disinfection practices among families and households should be reinforced and support systematically.

3.2.5 Disposal of deceased cholera afflicted bodies

It is of utmost importance to verify, and adopt relevant measures to dispose bodies that succumb to cholera as stipulated in the SOP. Evidence exist that this aspect of cholera control measures are complied with but a lot more needs to be done to regarding burial practices in different communities with various socio-cultural groups. Even as, study has been commissioned to learn more about the different cultural practices related to grieving and burial of the dead, the ETWG should proactively validate and / or advocate corresponding changes in the SOP on technically recommended measures.

3.3 Communication and Social Mobilization

3.3.1 Continue the engagement of local actors and maintaining good media balance

Mass-media communication has been successfully deployed during the cholera outbreak. This should continue and must be timely implemented using appropriate combination of media channels of communication. The messages should be targeted at specific and must be location-specific. For greater impact, activities meant to create awareness should also occur at local levels with the support of existing local structures such as community leaders and Red Cross volunteers.

3.3.2 Compile a catalogue of various communication materials and share within actors

It will be necessary to catalogue and regularly update sector actors on the range of appropriate communication materials. Whereas new and updated materials will be useful, relying on existing communication materials has proven to be less expensive and easily made available (reproduced) during emergencies. It is recommended that messages disseminated by different actors need be synchronized although this may not be immediately easy to carry out.

3.3.3 Behavior Change Communication (BCC) interventions must be research-informed

The development and dissemination of messages should continue to be adapted to local contexts based on findings from formative studies. The need for messages to meet the specific needs of audiences and their priority needs should remain essential.

3.3.4 Develop social marketing programs for long-term access of HWTS products

Water purification products such as Aquatabs and other chlorine products should be distributed through local markets and shops using social marketing approaches. Achieving the desired outcome of creating sustained demand will require intensive training, supervision, monitoring and maintaining reliable stock levels. This activity must be implemented as soon as possible, with adequate allocation of resources and focus on small-scale businesses and entrepreneurship. The specific detail of this approach is already gaining attention in the WASH sector of Ghana with support from UNICEF and WHO as part of the national strategy for Household Water Treatment and Storage (Republic of Ghana 2014)⁸.

3.4. Infection Control

3.4.1 Strict adherence to infection control protocols in CTCs

Strictest adherence to infection control (disinfection activities which are typically related to WASH) protocols in cholera treatment centres (CTCs) is strongly recommended. This can be achieved through regular monitoring and simulations. Any gaps or short falls should form the basis for capacity building and not reprisal. Regular monitoring visits from supervising authorities (joint Governmental and implementing NGO partners), during and after outbreaks will assist hospital or health facility management teams in providing optimal infection control measures.

3.4.2 Disinfection and monitoring of effluents from CTCs

Even if human waste are disinfected with 2% chlorine solution, the discharge of effluent from hospital cesspits should be disinfected, regularly monitored for seepage and appropriate infection control measures taken and adjusted according to risk-informed assessments.

3.5 Surveillance

3.5.1 Promote and scale-up implementation of Shield & Sword strategy

The adoption of the Sword and Shield strategy was found to be effective and sustainable measure. This should include systematic data collection, analyses, data-led, evidence-based shared experiences agencies such as EHSD and Ghana Red Cross Society and deployment of joint field teams. The Shield & Sword Strategy should continue to focus on both (i) early and targeted emergency response in affected areas based on preparedness and transmission context, case mapping, population and high risk practices and (ii) integrated prevention activities in high-risk areas, but not yet affected. This approach should be promoted among all actors through appropriate capacity building activities. Risk mapping approach (WASH services, situations at markets and schools are undertaken by the IFRC/GRCS project and EHSD/MLGRD interventions illustrate one of its practical implementation.

3.5.2 Generate and issue timely cholera alerts

The absence of timely alerts (as part of the Early Warning System) along the vertical and horizontal reporting lines is perceived to have contributed to the protracted cholera outbreak. The lesson learnt is to strengthen capacity in order to provide timely alerts to appropriate agencies and communities for effective response to outbreaks considering key actors at the horizontal axis (stakeholders at the same levels) and the vertical reporting requirements (to persons/officials at the higher/national levels).

The need to ensure completeness and timeliness of weekly reports is another important lesson learnt. Sharing information between GHS and supporting UN agencies, such as number of new cholera cases and deaths should be enhanced in order to keep index cases under control and to prevent potential outbreaks.

3.6 Cross-Border Issues

3.6.1 Re-activate cross-border cooperation

The desire to re-activate cross-border collaboration was kindled during the assessment among key government implementing agencies. The successful outcome of cooperation between Togo and Benin in 2014 provides some motivation. It is expected that with support from the UNICEF Regional Cholera Project and WHO country offices, coordination between countries may resume (at different levels), with specific focus

on sharing “cholera alerts” about new suspected and/or confirmed cases. It is recommended that a workshop be organized for neighboring countries along the West Africa coastline to strengthen cross-border collaboration and define modalities and frequency of coordination/exchanges. On-going bio-molecular scientific study should be used to better predict outbreaks, including linkages between countries with support from the UNICEF Regional Cholera project Team.

It is also recommended that this element be included in the revised health sector SOP and the document disseminated among all sector actors.

3.7 Advocacy and Resource Mobilization

3.7.1 Increase resource mobilization and efficient utilization

In response to the reported inadequacy and erratic financial resources from government sources, the following have been recommended;

- a. Develop an implementation plan drawing heavily from the health sector SOP and the “Road-Map”.
- b. Develop a cholera eradication plan to identify and implement key activities and cost these for purposes of preparing the budget for resources mobilization /fundraising beyond regular sources of funds including central government and local government sources.
- c. Encourage open dialogue and discussions on financial requirements for implementing cholera prevention and control activities.
- d. Initiate open and transparent disbursement of funds and demanding open and transparent accountability.
- e. Streamline fundraising efforts from the Private Sector and civil society sources. This will require new and transparent accountability processes largely alien to public sector actors but the benefits are enormous.

3.7.2 Raising the profile of cholera as a public health priority

Considering that current resources are below the levels for effective & sustainable prevention and control of cholera of outbreak, advocacy should be an important part of the collective action in the ensuing years, starting from now. Soliciting support and promoting Cholera at highest political, institutional and community levels requires an orchestrated strategy that cannot be developed as part of this report. However it is strongly recommended that stakeholders organize a working session to clearly identify the best process together. Advocacy actions should develop:

- (i) More coordinated efforts and a common platform to speak out in favor of cholera prevention and control benefits
- (ii) Best practices and studies (such as scientific studies; mainstreaming epidemiological and anthropological findings; case study in hotspots) can generate evidence-based impacts that can be effectively duplicated with proper resources and considerations for WASH sector policy.
- (iii) Investment cost study can illustrate the actual financial of regular outbreak response while more focused actions in preparedness and response will bring much higher cost-effectiveness.
- (iv) By perceiving cholera as a ‘blessing in disguise’, its prevention and control will significantly strengthen sector/system capacity and promote successful innovative approaches. Eventually it should provide stronger preventive conditions to reduce the potential susceptibility of Cholera-prone areas.
- (v) In relation to improved urban planning and governance, advocacy should draw attention to the poor living conditions of populations living precariously on the fringes of most cities especially in the Greater Accra Region. While the main problem remains the public service deficit, especially

sanitation and drinking water, supplying water to affected areas (hot-spots) is reported to have had a major impact on the dynamics of cholera epidemics in Accra positively. It is however, essential to initiate advocacy with Ghana Water Company Limited, to improve water supply and increased vigilance on water quality to the deprived communities.

3.7.3 Bridging the Gap between WASH Emergency and Development in Cholera Hotspots

As long as water, sanitation and hygiene coverage remains so low in affected areas, the eradication of cholera will not be realistically achieved in Ghana. While great preparedness and response capacity will positively mitigate any potential outbreak, long-term efforts should focus in ensuring sustainable water and sanitation services in high-risk areas with safe drinking water, improved sanitation, ensuring treatment and safe disposal of sewage and promotion of hygiene and appropriate among others. This constitutes an integrated WASH package suggested for cholera prone communities (Hotspots) beyond increased implementation of the Shield & Sword strategy which provides relevant epidemiological data on most vulnerable areas.

Section Four (4): The Ghana Cholera 2016-2020 Road Map

A Ghana 2016-2020 Road Map for Cholera Prevention & Control (*refer to appendix 4*) seeks to indicate what is required for addressing priority needs in a timely manner. As an evolving tool, it should be regularly updated and ignite further discussion of the “Road Map” to assist the sector identify financial needs as well as develop a funding strategy based on gaps & and the interests of potential donors (Including national and decentralized governmental budget lines, international donors and corporate entities among others).

Increased coordination, better mapping of preparedness capacity needs, production of evidence-based learning documents and better implementation of the Shield & Sword strategy should lead to effective prevention and control measures. It will also be necessary in promoting adequate allocation of financial resources, in both preparedness and response phases of cholera prevention and control measures. Enhanced capacity and monitoring of interventions should result in satisfactory levels of accountability in resource utilization. The top five priorities have been presented in the below.

Topic	TOP 5 Priority
1. Coordination & Monitoring	<i>Organize Quarterly meetings of WASH ETWG in no-cholera periods, including attendance of Health & C4D actors</i>
2. Emergency WASH interventions for outreach communities	<i>Conduct refresher training and simulation exercises</i>
3. Communication & Social Mobilization	<i>Deliver audience and location-specific messages that address high-risk practices</i>
4. Surveillance & Cross-Border Collaboration	<i>Build and Utilize Capacity for mapping tools and risk-informed response</i>
5. Advocacy & Resources Mobilization for long-term Cholera Prevention & Control	<i>Develop and Implement a Multi-Sector Cholera Prevention & Control Plan for the next 5-10 years</i>

List of Appendixes

- *Appendix 1: List of Documents / Frameworks reviewed to Guide Consultants (References)*
- *Appendix 2: List of Stakeholders contacted for Primary Data*
- *Appendix 3: Data Collection Matrix*
- *Appendix 4: Ghana 2016-2020 Road Map for Cholera Prevention & Control*