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<td>AWD</td>
<td>Acute Watery Diarrhoea</td>
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<td>CTC</td>
<td>Cholera Treatment Centre</td>
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<td>CWSA</td>
<td>Community Water and Sanitation Agencies</td>
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<td>EHSD</td>
<td>Environmental Health and Sanitation Division</td>
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<td>EOC</td>
<td>Emergency Operating Centre</td>
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<td>GHS</td>
<td>Ghana Health Service</td>
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<td>GWCL</td>
<td>Ghana Water Company Limited</td>
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<td>HPO</td>
<td>Health Promotion Officer</td>
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<td>ICG</td>
<td>International Coordinating Group</td>
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<td>MoH</td>
<td>Ministry of Health</td>
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<td>IFRC</td>
<td>International Federation of Red Cross and Red Crescent Societies</td>
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<td>MSF</td>
<td>Médecins Sans Frontières</td>
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<td>MLGRD</td>
<td>Ministry of Local Government and Rural Development</td>
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<td>MMDA</td>
<td>Metropolitan, Municipal and District Assemblies</td>
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<td>MWRWH</td>
<td>Ministry of Water Resources, Works and Housing</td>
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<td>NADMO</td>
<td>National Disaster Management Organization</td>
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<td>NCCE</td>
<td>National Civic</td>
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<td>NPHRL</td>
<td>National Public Health and Reference Laboratory</td>
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<tr>
<td>NADMO</td>
<td>National Disaster Management Organization</td>
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<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
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<tr>
<td>OCV</td>
<td>Oral Cholera Vaccine</td>
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<td>ORS</td>
<td>Oral Rehydration Salt</td>
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<td>Acronym</td>
<td>Description</td>
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<tr>
<td>PHD</td>
<td>Public Health Division</td>
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<td>PHEMC</td>
<td>Public Health Emergency Management Committee</td>
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<td>SHEP</td>
<td>School Health Education Focal Person</td>
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<td>RDT</td>
<td>Rapid Diagnostic Test</td>
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<td>RRT</td>
<td>Rapid Response Team</td>
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<tr>
<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
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<td>WASH</td>
<td>Water, Sanitation and Hygiene</td>
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<td>WHO</td>
<td>World Health Organization</td>
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Preface

Cholera is an acute diarrhoeal disease caused by infection of the intestine with the bacterium *Vibrio cholerae*. Both children and adults can be infected. The disease is characterized by sudden onset of profuse painless watery diarrhoea, occasional vomiting and rapid dehydration leading to death if prompt treatment is not given.

Cholera remains a major public health challenge in Ghana. A total of 26,924 cases and 620 deaths were reported in the country from 1999 to 2005. In 2012 most regions in Ghana except for Upper West experienced outbreaks. In 2014, Ghana was hit by a massive cholera outbreak which recorded the highest number of cases in the past 30 years claiming many lives. During that outbreak a total of 28,975 cases including 247 deaths were reported from all the 10 regions of the country.

These recent cholera outbreaks have brought to the fore, the challenges of institutional structures to effectively prevent and respond to outbreaks. The key challenge has been the late detection of the early cases making the surveillance system less sensitive leading to late response. The first edition of the Cholera SOPs were developed in June 2011 and have been used since then. However, the World Health Organization (WHO) has developed new guidelines to assist in the early detection of cholera and containment in least resource settings. To improve on health outcomes, the first edition of the Cholera SOP was reviewed to include this new guidelines to address the challenges of late detection and delayed response.

The aim of the Second Edition of Cholera Standard Operating Procedures (SOPs) is to guide the health personnel from various levels of the health system in the implementation of an enhanced surveillance of Cholera and early implementation of targeted Water, Sanitation and Hygiene (WASH) interventions and a guide as to when to use Oral Cholera Vaccine (OCV). The SOPs are “Must Do” critical activities to prevent and mitigate the impact of outbreaks of cholera in the country. They are by no means exhaustive and will be subjected to regular reviews and updates as and when the need arises.

Hon. Alex Segbefia
Minister of Health
Acknowledgement

We acknowledge the contributions of each person who contributed to development of the Second Edition Standard Operating Procedures (SOPs) for the Prevention and Control of Cholera in Ghana. Our sincere thanks to UNICEF for their financial support in developing the SOPs. We wish to express our sincere gratitude to the Ministry of Health, Ghana Health Service, Ministry of Local Government and Rural Development, Ministry of Water Resources, Works and Housing and all other organisations that contributed to developing this SOPs. Special thanks to Dr. Victor Bampoe (Hon. Dep. Minister of Health), Dr Ebenezer Appiah- Denkyira (Director General, Ghana Health Services), Dr. Badu Sarkodie (Director, PHD, GHS) for their direction and support. We appreciate the contribution of Development partners, the WHO Country Representative and staff for their technical support.

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1.0 Introduction

1.1. Background
Cholera is an acute diarrhoeal disease caused by infection of the intestine with the bacterium *Vibrio cholerae*, either type O1 or O139. Both children and adults can be infected. The disease is characterized by sudden onset of profuse painless watery diarrhoea, occasional vomiting and rapid dehydration leading to death if prompt treatment is not given. Cholera is easy to prevent and treat using fluids (oral or intravenous) with or without antibiotics (e.g. Doxycycline)

Cholera is a disease of poverty, linked to poor hygiene, poor environmental sanitation and lack of safe drinking water.

1.1.1 Rationale for Second Edition Cholera Standard Operating Procedures (SOPs)
Cholera remains a major public health challenge in Ghana. Recent cholera outbreaks have brought to the fore, the challenges of institutional structures to effectively prevent and respond to outbreaks. The key challenge has been the late detection of the early cases making the surveillance system less sensitive leading to late response. The first edition of the Cholera SOPs were developed in June 2011 and have been used since then. However, the World Health Organization (WHO) has developed new guidelines to assist in the early detection of cholera and containment in least resource settings. This involves an algorithm of the use of Cholera Rapid Diagnostic Tests (RDTs) to allow for objective judgment in the early detection of a cholera outbreak in a local setting and targeted responses including Water, Sanitation and Hygiene (WASH) interventions and use of Oral Cholera Vaccine (OCV). To improve on health outcomes, the first edition of the Cholera SOP was reviewed to include this new guidelines to address the challenges of late detection and delayed response.

The aim of the Second Edition of Cholera Standard Operating Procedures is to guide the health and non-health personnel from various levels of the health system in the implementation of an enhanced surveillance of Cholera and early implementation of targeted WASH interventions and a guide as to when to use OCV.

1.1.2 Objectives

**General objective:** To early detect, confirm, and appropriately respond to Cholera epidemics in Ghana

**Specific Objectives**
1. To systematically collect and analyse epidemiological and laboratory data on suspected Cholera cases
2. To conduct rapid laboratory confirmation of suspected cases and early identification of causative pathogens
3. To use this information for immediate public health control measures (case management, WASH and use of OCV if justified) and monitoring the situation throughout the year

1.2 Characteristics of *Vibrio Cholerae*
- A gram-negative bacilli comma shaped
- Usually motile
- Possess two antigen ‘O’ & ‘H’
- Is flagellated
- Can survive at freezing point
- Can survive in variety of foodstuff and water up to 5 days in ambient temperature and up to 10 days at 5-10 degrees centigrade
- Can be destroyed by irradiation and heat above 70 degrees centigrade
- Sensitive to acidity and drying
- Up to one (1) million *Vibrio Cholerae* needed to cause disease.

1.3 Sero-groups of *Vibrio Cholerae*
There are more than 150 sero-groups of *Vibrio Cholerae* but only sero-group O1 and O139 cause cholera epidemics. The sero-group O1 occurs as two biotypes namely Classical and El-Tor. Each biotype occurs as sero-types Ogawa, Inaba and rarely Hikojima. El-Tor bio-type is responsible for most Cholera outbreaks. (Figure 1 and 2).
Figure 1: Microbiologic Characterization of *Vibrio cholera*

Figure 2: Cholera Epidemic Microorganism
1.4 Epidemiology
Repeated pandemics during the 19th century spread from the Gangetic delta of India to most of the world. In all, there have been seven pandemics since 1800, the seventh pandemic from 1961 to 1991 swept through West and East Africa in 1970/71 (Figure 3).

Figure 3: The Seventh Cholera Pandemic

In Ghana, the first case of cholera occurred on 01 September, 1970 following the seventh pandemic that started in Indonesia in 1961 [1]. An infected Togolese national on transit to Conakry, Guinea collapsed at the Kotoka International Airport in Accra, Ghana and was found to have cholera [2]. The epidemic actually began when infected Ghanaian fishermen in Togo, Liberia and Guinea brought the disease to the country. The two worst hit areas were Akplabanya (the then Ada District) and Nyanyano near Kasoa. By July 1971, the Ashanti region began to report cases, indicating that cholera had spread across the country [3]. Since then cholera is becoming endemic in Ghana with cyclical epidemics. This has led to focal outbreaks every 4 to 6 years, however, in recent years outbreaks have become more frequent and protracted. A total of 26,924 cases and 620 deaths were officially reported to the WHO [4, 5] from 1999 to 2005. In 2012 most regions in Ghana except for Upper West experienced outbreaks which were linked to poor socio-economic status, inadequate sanitation and poor access to safe drinking water in many cities of Ghana [6]. In 2014, Ghana was hit by a massive cholera outbreak which recorded the highest number of cases in the past 30 years claiming many lives. During that outbreak a total of 28,975 cases including 247 deaths were reported from all the 10 regions of the country (Figure 4).
1.5 Risk factors

- Over-populated communities (slum and refugees camps) characterized by:
  - Poor sanitation,
  - Unsafe practices regarding drinking water (not disinfecting nor cleaning water sachets bags before opening, storing water in large open containers and not treating it before use)
- Poor personal hygiene (low soap utilization, or handwashing practices)
- Poor food hygiene
- Floods leading to contamination of domestic water sources
- Broken down water and waste disposal systems
- Open defecation
- Funeral rituals (touching the body and not disinfecting hands afterwards)

1.6 Mode of transmission

Cholera transmission is oral-faecal. It is transmitted through the ingestion of:

- Water contaminated with faeces, vomitus of patients and to lesser extent faeces of carriers (at source and at home storage)
• Contaminated foods (milk, cooked rice, lentils, potatoes, beans, eggs, sea foods etc.) Fruits and vegetables – especially those grown by irrigation with waste-water (sewerage garden) and when fruits and vegetables are eaten raw.

• And through direct contact with not cleaned and disinfected hands, contaminated after touching someone affected or who died of cholera, cholera-soiled clothes, or materials. Transmission also occurs through direct contact with not cleaned and disinfected hands, contaminated after touching someone affected or who died of cholera, cholera-soiled clothes, or materials.

1.7 Sources of contamination

• Hands and bodies of asymptomatic cholera patients/carriers.

• Contaminated articles (buckets, cups, cloths, etc.)

• Faecal material infiltrating into wells when latrines are situated less than 30 metres away from wells, over-flooding of wells, etc.

• Open defecation

1.8 Pathogenesis

After ingestion of an infectious dose of *Vibrio Cholerae*, through contaminated water, food or direct contact, the *Vibrio* produce entero-toxin which attaches itself to the lining of the gut, especially the small bowels. The entero-toxin causes the secretion of chlorine (Cl\(^-\)) radicals from the bowels and this leads to reduced re-absorption of water and sodium (Na\(^+\)). Loss of sodium and chlorine is followed by loss of bicarbonate (HCO\(_3^-\)) and potassium (K\(^+\)). This then leads to acidosis and hypokalemia (Figure 5).

**Figure 4: Pathogenesis of V. Cholerae in the bowls**
1.9 Clinical presentation

- Incubation period: 12 – 48 hours (shortest), average: 2 – 3 days
- Watery, painless profuse diarrhoea
- Rice water diarrhoea – result from gut debris
- Effortless vomiting – (not preceded by nausea)
- Severe muscle cramps (e.g. calf muscles) due to hypo-natraemia
- Signs of dehydration
- Circulatory collapse (thin pulse, cold clammy skin, thirst/stupor)

1.9.1 Course of Disease

The development of disease depends on:

1. Hosts immunity
2. Level of gastric acid: a PH of 4.5 or lower inactivates *V. Cholerae*
3. Breast milk provides protection against *V. Cholerae*
4. About 20% of those who are infected develop acute watery diarrhoea with 10-20% of them developing severe watery diarrhoea with vomiting.
5. Case fatality rate in untreated cases may reach 30-50%
6. If treated promptly and appropriately, case fatality rate can be below 1%

Table 1: Infectious dose of toxigenic *V. Cholerae*, O1, Biotype Eltor
<table>
<thead>
<tr>
<th>Inoculum</th>
<th>Symptoms</th>
</tr>
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<tbody>
<tr>
<td>10 x 1,000</td>
<td>Mild Symptoms</td>
</tr>
<tr>
<td>10 x 1,000,000</td>
<td>Severe diarrhoea</td>
</tr>
<tr>
<td>&gt;10 x 1,000,000</td>
<td>Severe diarrhoea</td>
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**2.0 Recommended Cholera Control and Prevention Interventions**

Cholera preparedness and response planning has become necessary in Ghana because the disease is not only becoming endemic in some of the coastal regions, but epidemic cycles in the dry savannah regions are becoming shorter and more pervasive. The epidemics of cholera have been increasing in intensity, duration, and frequency, showing the need for more effective approaches to prevention and control.

As per World Health Organization (WHO) guidelines the effective intervention areas include combining:

1. Improved Surveillance and laboratory diagnosis during pre-epidemic, epidemic and post epidemics periods
2. Case management/patient care
3. Water, Sanitation and Hygiene (WASH) for epidemic control and to prevent cholera from occurring in cholera hotspots
4. Risk Communication and Social mobilization (involve all stakeholders)
5. Oral Cholera Vaccination
6. Effective coordination and cross-border collaboration
3.0 Surveillance and Laboratory Diagnosis, Coordination and Cross Border Collaboration

3.1 Definition of Surveillance

Disease Surveillance is the ongoing systematic and regular collection, collation, analysis and interpretation of data on the occurrence, distribution and trends of a disease with sufficient accuracy and completeness and the dissemination of information to those who need to know to take action (disease control).

Surveillance of cholera is essential for generating information that may lead to:

- Early detection to enable rapid investigation and application of early response measures
- Forecasting cholera outbreaks
- Monitor trends of cholera cases and deaths
- Evaluate control measures that are being instituted
- Determine risk factors in the affected areas

3.2 Sources of Surveillance Information

The following are the sources of surveillance information:

1. Acute watery diarrhoeal cases reporting to health facilities.
2. Reports from community based surveillance workers on outbreak of diarrhoeal diseases
3. Analysis of daily/weekly routine surveillance data on diarrhoeal diseases by health workers in the health facility (both outpatient and in-patient records). (It is critical to have weekly surveillance reporting on acute diarrhoeal diseases)
4. Reports from print and electronic media
5. Rumours from communities

3.3 Acute Watery Diarrhoea Surveillance System

Acute watery diarrhea (AWD) is an illness characterized by three or more loose or watery (non-bloody) stools within a 24-hour period.

The requisite to early detection of cholera is to establish an effective AWD surveillance system. For effective cholera surveillance, regular data collection on AWD cases above 5 years and monitoring of unusual increments should be done.

Health workers at all levels (health facilities, Districts, Region and National) should carry out the following activities:
• Monitor weekly trend analysis of acute watery diarrhoeal cases above 5 years and immediately investigate all clustering or unusual increments.
• Report weekly on all acute watery diarrhoea cases. Refer to second edition of the IDSR Technical Guidelines.
• Monitor reports from community based surveillance workers on outbreak of diarrhoeal diseases
• Monitor reports of AWD cases from mass media: Print or electronic releases
• Investigate all rumours of AWD from communities
• Case investigations should be initiated immediately whenever cholera is suspected.
• All suspected cases should be reported immediately even if cholera is not yet confirmed.

3.4 Cholera Standard Case Definitions
Cholera is an immediate (within 24 hours) notifiable disease in Ghana. The following standard case definitions are used:

3.4.1 Suspected Cholera Case
A case of cholera should be suspected when:
1. In an area where epidemic/outbreak is not known to be occurring, a patient 5 years of age or older, presenting with acute watery diarrhoea and severe dehydration or dies from acute watery diarrhoea (AWD).
2. In areas where cholera is endemic\(^1\), any patient aged 5 years or more presenting with acute watery diarrhoea,
3. In an area where an epidemic/outbreak is occurring, a patient develops AWD, with or without vomiting.

Note: In children under 5 years a number of pathogens can produce symptoms similar to those of Cholera. Children under 5 years are therefore not included in the case definition of Cholera to maintain specificity. However, if Cholera outbreak is established all age groups should be included.

\(^1\) A cholera-endemic area is an area where confirmed cholera cases were detected during 3 out of the last 5 years with evidence of local transmission. The area can be defined as a region, a district or a small locality.
3.4.2 Probable Cholera Case
1. A suspected case testing positive for *Vibrio Cholerae* O1 or O139 by Cholera Rapid Diagnostic Test (RDT).
2. A suspected case that is epidemiologically linked to a confirmed Cholera case.
   
   *Note: Epidemiologically linked refers to the suspected case coming from the same area as a confirmed case within the same specified period.*

3.4.3 Confirmed Cholera Case
A patient of any age with AWD and from whom *V. cholerae* (O1 or O139) was isolated from a faecal sample during the illness by culture or PCR.

3.5 Laboratory Diagnosis of Cholera
Laboratory identification and confirmation of micro-organisms depend on the way specimens are collected, the use of right containers, how they are transported and the time they get to the laboratory. Also the patient should not have initiated antibiotic therapy prior to the sampling.

The information in Table 2 shall apply regarding specimen collection, storage, transportation and laboratory test for confirmation of Cholera:

**Table 2: Specimen collection, storage, transportation and laboratory test for confirmation of Cholera**

| Types of specimen | • Fresh stool (half to three-quarters full of specified specimen container)  
|                   | • Rectal swab.        |
| Who to collect sample | Laboratory personnel, Disease Control Officers, Nurses and Clinicians |
| When to collect the sample | Collect stool sample:  
|                           | • From the first 5 to 10 suspected cholera cases from same area within a specified period.  
|                           | • Preferably within 5 days of onset of diarrhoea.  
|                           | • Before antibiotics treatment are started, but do not delay treatment of dehydrated patients. Samples may be collected after rehydration (ORS or IV therapy) has begun.  
|                           | During outbreaks: |
• 5 to 10 samples should be collected every one (1) week to monitor changes in serotypes, antibiotic sensitivity patterns of *V. Cholerae* and cessation of the outbreak.

**How to collect specimen**

Note: Gloves and other PPEs must be worn during collection of specimen

For Fresh stool sample:

• Provide the patient with a sterile bedpan and scoop at the collection point
• Patient should pass stool into the bedpan provided and scope 5ml into sterile specimen container.
• Laboratorian should supervise the collection procedure

For Rectal swab:

• Position patient on the examination bed to lie on the side with both legs folded to the breast area
• Moisten two swabs in sterile transport medium (Cary-Blair)
• Wear gloves and insert swabs gently into the rectum, 2-3cm beyond the rectal sphincter and rotate to sample anal crypts. Remove swab and check for visible faeces.
• Immediately insert the two swabs into the same Cary-Blair tube, deep enough that the medium covers the cotton tips. Break off top portion of sticks that is protruding and discard. Cover tube, label the sample and send to the nearest referral laboratory.

**How to prepare, store, and transport the sample**

• Place sample (fresh stool) in sterile, leak proof, well-labelled container and transport to referral laboratory within 2 hours.
• If more than 2-hour delay is expected, place rectal swab into Cary-Blair transport medium. See Annex 10.1 for figure of Cary-Blair (*Note: If the rectal swab in the Cary-Blair cannot be transported to the laboratory within 2 hours, store at 4°C to 8°C for a maximum of 48 hours*).
• Transport stool sample in cold box at 4°C to 8°C to the nearest referral laboratory with a completed Cholera case-based investigation form.

*Note: Cary-Blair transport medium is stable and usually good for at least one year after preparation. It does not require refrigeration if kept
sterile and in properly sealed container. If colour changes (medium turns yellow) or shrinks (depressed meniscus), do not use the medium.

| Diagnostic tests | • Perform Cholera RDT (refer to manufacturer’s manual for procedure) on 5 to 10 suspected cases in health facilities, send any positive result to the referral laboratory (e.g. Regional Hospital Laboratory, Public Health Laboratory) for confirmation by culture and antibiotic susceptibility testing.  
  • Isolate *V. cholerae* from stool culture and determine O1/O139 serotype using polyvalent antisera for *V. cholerae* O1/ O139.  
  • If positive for *V. cholerae* O1, confirm identification with Inaba and Ogawa antisera.  
  • If specimen is not serotypable, consider *V. cholerae* O139 (see note in Results column). |
|------------------|--------------------------------------------------------------------------------------------------|
| Results          | • Culture results usually take 3 to 4 days after specimen arrives at the laboratory.  
  • Cholera is confirmed if *V. cholerae is isolated from stool specimen*.  
  • If culture results are not yet available and over 50% of RDT is positive, immediately initiate Cholera control measures. If all the 5 to 10 RDT tests are negative rule out Cholera outbreak. |

### 3.6 Enhancing Cholera Surveillance and Early Response

Good preparedness and response plans are necessary for early detection and effective response to cholera outbreaks. Weaknesses in early detection and containments leading to protracted and widespread outbreaks also bring to the fore the need for effective preparedness planning. Early detection and response to Cholera outbreaks depend on effective implementation of surveillance and other response activities at National, Regional, District, Facility and Community levels.

To ensure early detection of Cholera outbreaks and prompt response, surveillance activities should be carried out during all the three epidemiological phases namely pre-outbreak, during outbreak and post-outbreak.

Specific procedures for preparedness and public health measures are indicated below for each phase:
3.6.1 Pre- Outbreak Phase

A pre-outbreak phase is when there is no confirmed cholera case by culture methods or required criteria using RDTs.

During pre-outbreak phase the following key activities should be conducted:

a. Undertake vulnerability and risk Assessment
b. Monitor early warning signs and triggers
c. Setup Public Health Emergency Management Committee
d. Constitute Rapid Response Teams (RRT)
e. Develop emergency preparedness plan
f. Continue acute watery diarrhoeal surveillance
g. Continue public education on cholera
h. Train health staff

3.6.1.1 Vulnerability and Risk Assessment

The following populations are particularly vulnerable

- Persons living in slums (urban and peri-urban)
- Displaced populations with unsafe water supply and poor sanitation (refugees camps and internally displaced persons)
- Persons living in flood prone areas
- Areas with broken down safe water and waste disposal facilities
- Migrant fishing communities traveling to coastal countries along the Gulf of Guinea
- Traders and bus drivers along the coastal road e.g. Accra - Lagos

Risks Assessment

The following are some of the risk factors:

- Poor environmental Sanitation
- Unsafe drinking water (e.g. Unprotected wells, untreated water from stream and river)
- Poor personal hygiene ( e.g. Poor hand washing)
- Poor food hygiene (e.g. Street food and water vendors)
- Floods leading to contamination of domestic water sources
- Broken down water supply system
- Broken down liquid and solid waste disposal systems
- Open defaecation

All the above risk factors need to be assessed and mapped to provide information to stakeholders for preparedness and action to be taken.
3.6.1.2 Early warning signs and triggers

The following early warning signs and triggers should serve as indicators of potential cholera outbreak and for the initiation of preventive measures:

a. the detection of a cluster of severe acute watery diarrhoea cases (persons age 5 years old or more) from the same area within one week
b. Two-fold increase of acute watery diarrhoea cases (persons age 5 years old or more) compared to the previous week in two consecutive weeks in the same geographical area
c. One death from severe AWD in ≥ 5 years old
d. One positive cholera case by rapid diagnostic test (RDT).
e. Reports of cholera outbreaks in adjacent community/district/country
f. Floods from heavy rains leading to contamination of sources of water
g. Breakdown in water supply systems
h. Breakdown in sanitation
i. Displaced populations with poor sanitation and water supply
j. Breakdown in the health systems

3.6.1.3 Coordination: Public Health Emergency Management Committee (PHEMC)

Setup Public Health Emergency Management Committees at all levels (National, Regional and District Levels) to coordinate Cholera preparedness and response activities.

The composition should include the following key stakeholders

1. Ministry of Health
   a. Ghana Health Service
   b. Teaching Hospitals
   c. Food and Drugs Authority
   d. Ghana Ambulance Service
2. Ministry of Education/Ghana Education Service
3. National Disaster Management Organization (NADMO)
4. Ministry of Local Government and Rural Development
5. Ministry of Water Resources, Works and Housing
   a. Ghana Water Company Ltd
   b. Community Water and Sanitation Agency
6. Ministry of Food and Agriculture
7. Medical Services, Ghana Police Service
8. Medical Services, Military
9. Ghana Red Cross Society
10. Ghana Fire Service
11. UN Agencies (UNDP, WHO, UNFPA, UNICEF, WFP),
12. NGOs
13. Academic and Research institutions

This inter-sectoral and multi-disciplinary committee should be made up of sub-committees namely:

1. Surveillance and Laboratory Diagnosis
2. Case Management
3. Risk Communication and Social Mobilization
4. Resource Mobilization
5. Water, Sanitation and Hygiene (WASH and Food hygiene)
6. Oral Cholera Vaccination

At the national level, the Inter-ministerial (Ministers of the key Ministries listed above) and National Technical Coordinating Committee/EOC should coordinate the national preparedness and response activities. The Regional and District Public Health Emergency Management Committees should coordinate preparedness and response activities at the regional and district levels.

The committee should meet at least once quarterly when there is no outbreak but more frequently during outbreaks:

- to review trends of cholera cases and deaths and updates on preparedness
- Share conclusions and recommendations of these meetings with key stakeholders
- Organize simulation exercises/drills to test the operation plans,
- Present conclusions and recommendations from studies or researches to include evidence and risk analysis into planning.

**Terms of Reference**

The terms of Reference of the Committee should include:

1. Define populations at risks for cholera outbreaks;
2. Plan prevention and control interventions for cholera;
3. Identify important resources needed for rapid epidemic response and update information on these resources at the local and national levels;
4. Partners’ capacity mapping, including NGOs and gap analysis;
5. Estimate the requirements for the control of cholera outbreaks (drugs, vaccines, human resources, transport, financial resources)
6. Establish procedure for assessing funds;
7. Identify and ensure that competent laboratory support is available for the control of cholera outbreaks;
8. Coordinate communication and education of health workers and the general public;
9. Supervise and coordinate implementation and achievement of control measures;
10. Evaluate epidemic containment and advise on strategy (ies) if necessary;

3.6.1.4 Rapid Response Team (RRT)
Set up a multi-disciplinary rapid response teams at national, regional and district levels. The activities of the RRT team should feed into the PHEMC for an effective coordinated response. The team should be made up of:

1. Clinician/physician to verify clinical symptoms and train health workers in good case management
2. Microbiologist/Laboratory personnel to take patient and environmental samples for laboratory confirmation and train health worker on correct sampling procedures
3. Information, communication and education experts to assess community reactions to cholera, define and disseminate health education messages
4. Epidemiologist/Disease Control Officer to assess data collection and surveillance procedures
5. Water quality expert (water engineer) to investigate the possible sources of contamination and start appropriate treatment of these sources
6. Environmental Health Officer/sanitation expert to conduct WASH interventions.

Terms of Reference
- Use clinical/surveillance case definitions and available data to confirm outbreak
- Investigate vehicle of transmission
  - contaminated drinking water, food (during preparation or after)
  - Seafood
  - Fruits and vegetables
- Laboratory: Collect patient and environmental samples and conduct laboratory procedures
- On the spot coaching/training on management of cholera cases using national guidelines
- Describe magnitude of outbreak (person, place - spot maps showing sources of transmission and time - epidemic curves, )
- Implement targeted WASH interventions
- Assess community reactions to cholera, define and disseminate health education messages
- Facilitate safe burial of persons dying of cholera in the community
- Make recommendations for actions
The Findings of investigations should be made available to;

a. All health workers (public and private) who have to take action.
b. Health managers for necessary planning and resource allocation
c. Relevant Community Leaders for initiating certain public health practices or actions in the community

3.6.1.5 Emergency preparedness plan

The purpose of the plan is to strengthen the ability to respond promptly to cholera outbreak.

This plan should:

- Be based on risk assessments, and should specify the resources available for epidemic preparedness and response.
- Provide estimates of the population at risk for cholera outbreak.
- Clearly indicate network of laboratories to be used for cholera confirmation.
- Provide estimates of quantities of logistics (drugs, vaccines and other supplies) for cholera outbreak.

*Note: Plan should be tested before implementation*

**Key sections of the epidemic preparedness and response plan should include:**

1. Designated coordination committees
2. Epidemiology and surveillance including data management
   a. With a specific focus on cross-border collaboration and regular share of epidemiological updates with neighbouring countries through the country office of the WHO (e.g. Cote d’Ivoire, Togo, Benin, Burkina Faso, Nigeria, Cameroon etc)
3. Steps for carrying out a risk communication strategy including social mobilization
4. Operational actions according to expected phases of the epidemic
5. Laboratory: specimen collection, handling, transportation and processing
6. Case management, Treatments (cholera treatment centres, antimicrobial, decontamination, disinfection or others as indicated) & Infection control
7. Immunization strategies (use of oral cholera vaccines)
8. Rapid containment activities and additional methods if rapid containment fails
9. Capacity building including required training, sensitization meetings and simulation
10. Logistics including supply lists
11. Water, Sanitation and Hygiene (WASH) interventions
12. Monitoring of the outbreak or event
13. Budget component

3.6.1.6 Setting up contingency stocks of medicines, vaccines, reagents and supplies
Cholera outbreaks require the rapid mobilization of logistics such as medicines, laboratory supplies and vaccines. It is prudent to establish and preposition stockpiles of materials before the outbreak occurs.
As a follow up to the cholera risk assessment activity, national, regional and districts should set up a contingency stock of medicines and non-medicines, vaccines, reagents and supplies to permit prompt management of the first cases without delay. (See Annex 10.3 for a suggested list of cholera contingency medicines and supplies and a Cholera Logistics and Supplies; Receipt and Distribution Log)

3.6.1.7 Training
Organize regular planned training programmes for all persons involved in cholera surveillance, cases management, public education and environmental control. Persons to be trained should include clinicians, nurses, surveillance workers, laboratory personnel, and environmental health personnel from both public and the private sectors.
Topics in the training programme should include the following:
1. Transmission of cholera
2. Early case detection (surveillance and laboratory)
3. Prevention and control
4. Public education,
5. Early warning and early response systems
6. WASH interventions
7. Case management (protocols and standards)
   a. Cholera treatment centres/camps
   b. Infection prevention: staff protection
8. Standard operating procedures (SOPs) for cholera
3.6.1.8 Continuous public education on cholera
It is important to continuously conduct public education on cholera during non-epidemic period. The objective is to ensure that community members have adequate knowledge on the prevention and control of cholera.

3.6.1.9 Continuous Acute Watery Diarrhoea Surveillance
- Continue and monitor trends of acute watery diarrhoea in persons 5 years old and more using weekly IDSR reporting forms, reports to be shared within the coordination structure on a weekly basis to keep up a high level of awareness,
- Mandatory weekly reporting from all facilities
- Identify and train community workers adapted for community based surveillance
- Test all suspected cholera cases using cholera RDT and send positive samples to referral laboratory for confirmation by culture
- Notify immediately all suspected cases of cholera to higher level

3.6.2 During Outbreak
Most diseases have thresholds for establishing an outbreak. In the case of cholera, a single suspected/probable case is an alert threshold whereas one confirmed case by culture indicates epidemic threshold (an outbreak).

3.6.2.1 Cholera Outbreak Detection
Test all suspected cholera cases using cholera RDT and send positive samples to referral laboratory for confirmation by culture. Figure 6 shows the algorithm for cholera outbreak detection.

Figure 6: Algorithm for Cholera Outbreak Detection
3.6.2.2 Cholera Outbreak Response Measures

A confirmed cholera case should trigger the following responses:

1. Notify Higher levels (Facility ➔ District ➔ Region ➔ National)
2. Activate the emergency preparedness plan
   - At the national level, there should be inter-ministerial, national technical coordinating committee/emergency operation centre (EOC) meetings.
   - At the Regional and Districts level, the Regional and District Directors of health services should convene public health emergency management committee meeting.
   - During outbreaks the committee is expected to meet at least once a week to monitor the evolution and response to the outbreak.
3. Activate the rapid response team
   a. Prompt Outbreak Investigations should be initiated to:
      - Establish the existence of cholera outbreak - use the algorithm of Cholera outbreak detection as per figure 6 above.
      - Determine the magnitude of the outbreak.
      - Describe the outbreak by person, place and time.
      - Obtain information on the sources and routes of transmission of infection.
• Make recommendations to control the outbreak

4. Human resource: Training
   a. In addition to regular planned training programmes, rapid crash training for health workers to be involved in cholera surveillance, cases management, public education and environmental control should be conducted.
   b. Staff to be trained should include clinicians, nurses, surveillance workers and Environmental Health Officers from both public and the private sectors
   c. Topics to be included in the training programme should include: Transmission of cholera, Early case detection (surveillance and laboratory), Prevention, Public education, Hygiene Education, Case management (protocols and standards), Cholera treatment centres/camps, Infection prevention: staff protection

5. Intensify surveillance
   • All health facilities attending to cholera cases should send samples from the first 5-10 initial cases with completed case-based forms and any other case for which sample has been collected to the laboratory for testing.
   • Line-listing of all cases during the outbreak. Daily summaries should be provided.
   • Five (5) to 10 samples should be collected every 1 to 2 weeks to monitor changes in serotypes, antibiotic sensitivity patterns of V. Cholerae and cessation of the outbreak.
   • Surveillance, Disease Control and Data Management officers should promptly analyze the data by person, place (spot maps) and time (epidemic curves).
   • All health facilities within the outbreak catchment area should report number of cases and deaths daily to the districts. The districts should report daily to region for subsequent transmission to the national level. (Cholera Data capture and reporting tools attached see annex 10.2)
   • Folders of patients should be completely filled with all variables and securely stored for easy retrieval of information.

6. Conduct contacts tracing and follow-up (see section 3.7 for details)
   a. When a suspected case is identified, all individuals that had direct contact with the case (since onset of the symptoms) should be listed using the contact listing form (see annex 10.2)
   b. Identify a competent team (comprising of Community-Based Surveillance Volunteers (CBSV) supervised by health workers) to follow up all the contacts on a daily basis
for the next 5 days (Maximum incubation period of cholera) from the day of last exposure using the contact follow-up form (see annex 10.2)
c. Each contact should be assessed for symptoms: passing watery stools with or without vomiting
d. Contacts who develop acute watery diarrhoea should be referred to health facilities for diagnosis and treatment
e. NB: Close contacts should not be given chemical prophylaxis

7. Case management (see section for case management)
   • Establish/refurbish cholera treatment centres (CTC).
   • Isolate and manage Cholera cases at the CTC.
   • Manage all cholera cases at the first reporting site and minimise movement/referral to avert spread.
   • Pre-position cholera logistics at treatment centres.

8. Information Management during outbreaks
   • Designate a focal person to deal with media
   • Ensure open flow of information from the beginning of the outbreak to prevent spread of misleading rumours
   • Plan regular press releases and conferences
   • Provide weekly updates on the outbreak situation to all stakeholders including the media

9. Social Mobilization and Public Education (see section for communication and social mobilization)
   • Intensify Health education using appropriate and culturally acceptable messages
   • Conduct active case finding at communities using Community-Based Surveillance Volunteers to allow early detection of cases
   • Advice family members and community about protecting themselves from contamination

10. Transport
    • It is important to plan for reliable means of transport to convey staff and supplies to cholera camps or treatment centres.
    • Serious cases may also need to be transported to the nearest treatment centres using the National Ambulance Service).

11. Monitor Outbreak Response
• Follow up outbreak through regular epidemiological reports
• Assess impact of activities on epidemiological trends
• Conduct field investigations to identify all possible sources of contamination

3.6.3 Data Management
For all suspected/confirmed cholera cases, some basic patient information should be collected using the Cholera case investigation form and summarized on the line listing form. All the contacts to the cholera cases are captured using the Cholera Contact Listing Form and Cholera Contact Follow-up Forms. The Cholera data capture and reporting tools are annexed (see annex 10.2).

3.6.3.1 Data Reporting
All health facilities should record summary of suspected cases and deaths and transmit weekly to the District Surveillance Officer who will intend submit to the Region for onward transmission to National level (Disease Surveillance Department). Weekly notification should be done throughout the year. Facilities and Districts should report weekly, even when no cases are recorded (“Zero reporting”).

During outbreaks, the reporting of cases and deaths should be done on a daily basis. The line list should be completed at the health facility level, compiled at district level and a copy sent to the regional and national levels, on a daily basis.

For each suspected cholera case with stool specimen, fill the Cholera case investigation form (see Annex 10.2). Provide a unique identifier (Epid. Number: Country code (CCC)-Region code RRR)-District code (DDD)-Year code (YY)-Case Number (NNN): [CCC-RRR-DDD-YY-NNNN] to link the laboratory results with the patient clinical/epidemiological records. Keep a copy of the Cholera case Investigation form at the facility and district level, and send the other copy together with the stool specimen to the referral laboratory (Regional Hospital Laboratory, Zonal Public Health Laboratory or National Public Health and Reference Laboratory. This Epid Number is given by district level Surveillance Officer.

3.6.3.2 Data entry
At District Level
The line listing of Cholera cases should be sent by health facilities to the district which will be entered into a computer programme preferably Microsoft Excel or Epi-Info by the district surveillance officers. They will also enter the laboratory data and tests results on the same database. The completed data base will then be sent to the regional level on a weekly basis.
At Regional Level
The data bases received from the districts will be merged by the regional surveillance officer into a single database and sent to the national level on a weekly basis. The Data Manager at the Regional level should check for data entry flaws and clean the data base on a weekly basis. He/She should make sure that clinical and laboratory data of each patient are linked, before any detailed data analysis.

At National Level
The data bases received from the regions or districts will be merged into a single national database using preferably Excel/Epi-Info before sharing with Health Developmental Partners on a weekly basis.

The Data Manager at the National Surveillance Department should check for data entry flaws and clean the data base on a weekly basis. He/She should make sure that clinical and laboratory data of each patient are linked, before any detailed data analysis.

The data from the National Public Health and Reference Laboratory will be computerized using Excel/epi-info then sent to the Disease Surveillance Department where they will be linked to the clinical data using the Epid-number. The results will then be sent to the regions and districts where the specimen came from.

3.6.3.3 Data analysis
The Disease Surveillance Officers at each level should analyse the data by person, place and time, illustrating with tables, graphs (epi-curves) and spot maps every week. The supervisors at regional and national levels should ensure that all districts keep an up-to-date weekly trend (epi-curve) of cholera cases.

Every week, the Data Manager of the Disease Surveillance Department should make a map showing the distribution of cases by district, as well as the laboratory results by district.

3.6.4 Post-Outbreak Phase
A Cholera outbreak is declared over in an area if there is no confirmed case by culture ten (10) days (twice the maximum incubation period of cholera) after the last case is reported. The following activities should be carried out:

- Conduct post outbreak evaluation to identify lessons learnt and gaps in Surveillance, Case Management and Control measures
- Write end of outbreak report
• Continuous surveillance
• Continue public health education campaign
• Advocacy for sustainable wash intervention in cholera hotspots
• Implement sustainable WASH intervention in cholera hotspots based on scientific evidences

3.7 Cholera Contacts Tracing and Follow-up
Contact tracing is essential for the identification, control, and elimination of Cholera transmission. If even one contact is missed, there is high likelihood for ongoing transmission. It is critical that contact tracing is implemented quickly and managed sufficiently for the Cholera Outbreak response to be effective.

3.7.1 Cholera Contact Definition
Cholera case contact is any person who interacted with a Cholera case and meeting the following criteria:

• Had direct physical contact with the body of the patient (alive or dead) (at the health facility, funeral, home, mortuary etc)
• Touched body fluids of the Cholera case (vomit, saliva, faeces) while ill
• Touched or cleaned the linens, clothes, or dishes of the case
• Slept or ate in the same household with a case

3.7.2 Contacts Identification
The following probing questions should be asked to enable identification of the contacts:

• Persons with direct physical contact
• Persons who lived with the case in the same household
• Persons who visited the case (at home, healthcare facility, funeral/burial, etc.)
• Places the case visited (i.e. work, pharmacy, church, extended family, traditional healers, etc.)
• Health facilities utilized by the case and all health care workers who cared for the case

3.7.3 Contact Tracing
Contact tracing is identification, listing and following-up of everyone who comes in direct contact with a case. For Cholera, the contacts are followed-up during five (5) days (Maximum incubation period) after the date of last contact.
The objectives of Contact Tracing is to:

1. Immediately identify individuals who become symptomatic (having acute watery diarrhea with or without vomiting), and thus, contagious

2. Stop Cholera transmission

3.7.4 Personnel Required for Contact Tracing
For effective contact tracing the following personnel are required:

- Field Supervisor
- Tracing Team
- Data Manager
- Transportation Team

Role and Responsibilities

1. Field Supervisor:

   - Background/Experience: An epidemiologist/Disease Control Officer with prior contact tracing experience
   - Responsibilities:
     - Assign tracers to contacts
     - Handle challenges and questions that arise in the field
     - Activate the investigation team for a symptomatic contact
     - Assess quality assurance measures
     - Collect data on current tracing efforts
     - Quantity: one field supervisor for 5-10 tracers

2. Tracing Team:

   - Background/Experience:
     - Undergone contact tracing training
     - Reliable and responsible, with cultural awareness
     - NOTE: can use Community-Based Volunteers, Community Health Nurses)
• Responsibilities:
  o Visit contacts every day for 5 days
  o Interviewing / inquiring about the contact’s health status
    ▪ Organizing tracing teams by geographic areas may maximize efficiency
    ▪ Include tracers from the specific or nearby communities to increase
      acceptability of contact tracing activities among community residents
  o Quantity: at least two tracers assigned to each team. One (1) team to see 10-20
    contacts a day, or more depending on location

3. **Data Manager:**
• Background/Experience:
  o Prior data management experience and proficient computer skills
  o Knowledge into EpiInfo
• Responsibilities:
  o Ensure all data is entered electronically
  o Send reports to the lead epidemiologist
  o Supervise those doing data entry
• Quantity: minimum of one

4. **Transportation Team:**
• Background/Experience:
  o Understand the terrain and geography
  o Undergone infection prevention and control training
  o Note: can use the National Ambulance Service if available)
• Responsibilities:
  o Transport identified suspect cases and confirmed cases to isolation units and CTUs
  o Equipped with a transportation vehicle that can handle droplet precautions and allow
    for disinfection
• Quantity: minimum of three people on a team: 2 for transport; 1 driver

3.7.5 **Procedures for contact tracing**
Contact tracing is made up of three components: Contact identification, Contact listing and
Contact follow-up.

1. **Contact Identification:**
When a suspected, probable or confirmed cholera case is first detected, the RRT is activated. All contacts must be identified. The contacts are identified by the following procedures:

- Direct interviewing (asking probing questions) of the case if alive or family in the case of death
- Conduct verbal Autopsy if the case is dead
- Visit Households and communities of the cases
- Fill out Contact Listing Form (see annex 10.2)
- **NOTE:** it may require several interviews of the case and family and also require going to other locations the case has been.

2. **Contact Listing:**

Contacts are interviewed by the investigation team. The following status of the contacts are determined:

- Ask last date of contact with the case. If there is a discrepancy, use the most recent date.
- Determine exposure status: ‘High’, ‘low’, or ‘no risk’. ‘High’ and ‘Low’ risk persons will require follow-up.
- Asymptomatic contacts can continue daily activities if they have timely access to Health Care facilities in the event that they fall ill.

Once a contact status is established, the following must occur:

- The contact is notified of their status
- Commence follow-up using **Contact Follow-up form (see annex 10.2)**

Procedure for follow-up:

- Explain to the contacts the follow-up procedure
- Educate them about Cholera
- Give them contact information for the Tracing Team
- Instruct them to notify the team if they move or leave the geographic area

**If a Contact Becomes Ill:**

- Status is changed to SUSPECTED CASE
- Inform the field supervisor immediately
• Inform the RRT (transportation and disinfection teams) to transport to isolation unit/CTC for testing and treatment

**Note: immediately initiate contact identification and contact listing for this new case.**

3. **Contact Follow-Up**

The Tracing Team visits the contacts at their respective homes every day for maximum incubation period of 5 days.

**Procedure of contact follow-up:**

• The Tracing Team to pre-determine contacts location and the time to visit
• Ideally, same team for the duration to ensure continuity and trust
• Identify nuances of contact’s daily routine
• On arrival at contacts home, greet contact politely and ask the following questions:
  - How are you feeling
  - Do you have diarrhoea
  - Record these 2 questions on the **Daily Contact Follow-up Form (see annex 10.2)**
• If some contacts are not found, they should be reported to the field supervisor and record it on the Tracing Summary Form
• The following Guidelines should be followed when Contact Tracers are interacting with contacts:
  - Avoid personal physical contact
  - Do NOT enter the contact’s room
  - DO NOT touch any objects in the residence includes sitting on chairs
  - Do NOT share a meal or drink with the contact
  - Maintain a distance of at least 3 feet (1 meter) from the contact at all times
  - Wear gloves when handling contact
  - Maintain infection prevention and control measures

**Example: Daily Visit Scenarios**

At all visits, evaluate the health status of contacts by asking:
1. How are you feeling? 2. Do you have diarrhoea?

Record these 2 questions on the Daily Contact Follow-up Form

**Scenario 1:** If the contact is **ASYMPTOMATIC**

**Action to take:** continue daily follow-up, fill the Contacts Follow-up Form.

**Scenario 2:** If the contact is **SYMPTOMATIC** (Contact have diarrhoea with or without vomiting)

**Action to take:**

- Immediately inform the field supervisor and investigation
- The investigation team will evaluate the contact
- If fits a suspected case, the field supervisor is again alerted who coordinates with case management team and activates transportation and disinfection teams to transport case to CTC.

**3.7.6 Contact Discharge**

If the following criteria are met on day 5, the contact is discharged from the tracing process:

- Five (5) days of follow-up by the contact team have been performed
- Contact was evaluated on day 5 and had no symptoms
- Educated contact on healthy lifestyle (Prevention of Cholera)
- If not available, discharge cannot occur until evaluated

**3.7.7 Logistics for Contact Tracing**

The following are the list items/logistics required for effective Contact Tracing:

1. Allowances for Overall Supervisor, Field Supervisors, Tracer Teams, Driver (if used) etc
2. Equipment (e.g. spraying machine)
3. Printing forms-Cholera Messages, leaflets, posters etc, Contact listing, contact follow-up, reporting and monitoring forms, guidelines, protocols etc
4. Hand Sanitizer, gloves
5. Mobile Phones, Cost of cellular phone credit, pens
6. Transportation/Communication (for field supervisors, tracers, and investigation team)
7. Taxis (if used)
8. Fuel if using own vehicles/ T&T
3.8 Cross-border collaboration

Research has shown that, outbreaks in Ghana usually spread towards neighbouring countries from the south of Cameroon to Guinea Bissau through migrant fishermen and commercial trade. Indeed, high-risk cholera areas along the coastline are located on a corridor where outbreaks spread from and to neighbouring countries: Benin, Togo, Nigeria and Côte d’Ivoire. In addition, the Central and the Northern regions bordering Burkina Faso can also be affected by cholera outbreaks. This highlights the importance of cross-border activities for coastal regions and to a less extend for districts bordering Burkina Faso.

Therefore, the Ministry of Health/ GHS in collaboration with WHO country office will meet with their counterparts in the countries from the Southern Gulf of Guinea to:

- Develop a joint initiative for a multisectoral participation for prevention and various public health issues in the Southern Gulf of Guinea area;
- Collectively define cross-border epidemiological surveillance reinforcement and regular sharing of epidemiological data regarding cholera in the countries of the region and specifying cross-border alerts
- Designate contact persons to establish a Monitoring Committee and follow up on the decisions and recommendations that will be put forward in the cross-border meetings
- Promote initiatives in the communities focusing on disease prevention, early outbreak detection and water supply, sanitation and hygiene improvement.
- Share information on issues related to cross-border public health, coordination and joint planning, and rapid response to epidemics

4.0 Case Management

4.1 General principles of case management

All cases of cholera should be isolated and treated immediately. If treatment is delayed or inadequate, death from dehydration and circulatory collapse may follow very shortly. Cases with some dehydration (mild to moderate dehydration) would have lost 5-10% of body fluid/kg body weight and those with severe dehydration well over 10%. Patients should be rehydrated within 4-5 hours. The mild to moderate cases can be treated on outpatient basis.

The following key activities need to be performed:

a. Establish Cholera Treatment Centres (CTC) in locality where cases occur or in existing health facilities close to where cases reside. Treat cases onsite rather than asking
patients to go to standing treatment centres elsewhere.
b. Ensure availability and use of flow charts illustrating proper management of cases
c. Isolate all cholera patients from other patients and designate separate latrines for use by the cholera patients
d. Severe cholera cases should be admitted and given IV Fluids whilst moderate and mild cases given ORS at the Oral Rehydration Therapy (ORT) corners of the CTC
e. Provide information to patients and families on preventive measures at household levels
f. Educate health workers on hygienic measures necessary to avoid contamination (hand washing, isolation wards, use of disinfectants etc.)
g. Pre-position drugs and other supplies at CTCs. Emergency stocks of drugs and supplies are calculated based on expected attack rates:
   i. 0.2% in population more than 5000
   ii. 2% in rural populations of 5,000 or less
   iii. 5-8% in refugee camps
Refer to annex 10.3 for a sample of template for calculating medicines and non-medicine consumables based on attack rates.

4.2 Steps in management of Cholera cases
1. Assess dehydration
2. Rehydrate patient, monitor and re-assess hydration status
3. Maintain hydration - replace ongoing fluid loss until diarrhoea stops
4. Give oral antibiotic to patients with severe dehydration
5. Feed the patient
   - Resume feeding with a normal diet when vomiting has stopped.
   - Continue breast-feeding infants and young children

4.2.1 Step1: Assessment of Dehydration Status

Table 3: Guidelines on Assessment of Dehydration Status

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Degree of Dehydration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Dehydration</td>
</tr>
<tr>
<td>Condition</td>
<td>Well, alert</td>
</tr>
</tbody>
</table>

1. LOOK AT
### Assessment

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Degree of Dehydration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Dehydration</td>
</tr>
<tr>
<td>Eyes</td>
<td>Normal</td>
</tr>
<tr>
<td>Tears</td>
<td>Present</td>
</tr>
<tr>
<td>Mouth and Tongue</td>
<td>Moist</td>
</tr>
<tr>
<td>Thirst</td>
<td>Drinks normally, not thirsty</td>
</tr>
</tbody>
</table>

#### 2. FEEL

<table>
<thead>
<tr>
<th>Skin pinch</th>
<th>Goes back quickly</th>
<th>Goes back slowly</th>
<th>Goes back very slowly</th>
</tr>
</thead>
</table>

#### 3. DECIDE

<table>
<thead>
<tr>
<th></th>
<th>The patient has no signs of dehydration</th>
<th>If the patient has two or more signs of above there is some Dehydration</th>
<th>If the patient has two or more signs above there is severe dehydration*</th>
</tr>
</thead>
</table>

*In adults and children older than 5 years, other signs for severe dehydration are absent radial pulse and low blood pressure. The skin pinch may be less useful in patients with marasmus (severe wasting) or Kwashiorkor (severe malnutrition with oedema) or obese patients. Tears are relevant sign only for infants and young children.*

### 4.2.2 Step 2: Rehydrate the Patient, and Monitor Frequently; Reassess Hydration Status

Cholera cases are managed based on the level of dehydration so if:

1. No dehydration use treatment plan A
2. Moderate (Some) dehydration use treatment plan B
3. Severe dehydration use treatment plan C

#### 4.2.2.1 Patients with Severe Dehydration (Plan C)

a. Admit all cases
b. Give IV fluid immediately to replace fluid deficit. Start IV fluid immediately. Use Cholera Replacement fluid (5.4.1) or Ringer’s lactate solution or if not available, normal saline (See Table 4).

Table 4 describes the Electrolyte composition of Cholera stool and of fluids recommended for treatment of Cholera.
Table 4: Electrolyte composition of Cholera Stool and of fluids Recommended for Treatment of Cholera, in mmol/L

<table>
<thead>
<tr>
<th>Cholera Stool/Type of Fluid</th>
<th>Na+</th>
<th>K+</th>
<th>Cl-</th>
<th>Base+ (HCO₃⁻)</th>
<th>Glucose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cholera stool</td>
<td>135</td>
<td>15</td>
<td>105</td>
<td>45</td>
<td>0</td>
</tr>
<tr>
<td>WHO ORS</td>
<td>90</td>
<td>20</td>
<td>80</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Ringers lactate</td>
<td>130</td>
<td>4</td>
<td>109</td>
<td>28</td>
<td>0</td>
</tr>
<tr>
<td>Normal saline</td>
<td>154</td>
<td>0</td>
<td>154</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cholera replacement fluid (5 : 4 : 1)</td>
<td>133</td>
<td>14</td>
<td>99</td>
<td>48</td>
<td>0</td>
</tr>
</tbody>
</table>

c. For patients aged 1 year and older, give 100ml/kg IV in 3 hours, as follows:-
   • 30ml/kg as rapidly as possible (within 30 minutes) then
   • 70ml/kg in the next 2½ hours
d. Monitor the patient very frequently. After the initial 30ml/kg has been given, the radial pulse should be strong (and blood pressure should be normal) if the pulse is not yet strong continue to give IV fluid rapidly (Figure 7).

Figure 7: Intravenous (IV) Rehydration Guide for Severe Dehydration

200 ml/kg or more may be needed in the first 24 hours

The specified quantity of IV fluids should be given to the patient by calculating the number of drops per minute through the giving set or puasimeter using the following formula: 20 drops = 1ml (source: http://nursing.flinders.edu.au/)

How to calculate IV flow rates: drops per minute

Step 1: Write down the 'total volume to be given' (written on the prescription). Use this formula:
Step 2: Write down the time over which this is to be given.

\[
\frac{\text{total volume to be given (in mls)}}{\text{time (in minutes)}} \times \frac{\text{drop factor}}{1} = \text{drops per minute}
\]

NB: Multiply the number of hours by 60 (minutes in an hour) to find the number of minutes:

Step 3: Check the 'drop factor' (determined by the administration set). The drop factor is the 'drops per millilitre' delivered to the patient (commonly 15 drops/ml (Blood giving set), 20 drops/ml (Infusion giving set) or 60 drops/ml).

\[
\frac{\text{total volume to be given (in mls)}}{\text{time (in minutes)}} \times \frac{\text{drop factor}}{1} = \text{drops per minute}
\]

Example: 1500 ml IV Ringers Lactate is ordered over 12 hours. Using a drop factor of 20 drops / ml, how many drops per minute needed to be delivered?

\[
\frac{1500 \text{ (ml)}}{12 \times 60 \text{ (gives us total minutes)}} \times 20 \left(\frac{\text{drops}}{\text{ml}}\right) = 31 \text{ drops / minute}
\]

This means that to give 1,500 mls of fluid to the patient within 12 hours you need to set the giving set to drop at the rate of 31 drops in one minute.

e. If the patient can drink, begin giving oral rehydration salts (ORS) solution by mouth while the drip is being set up.

f. Give Oral Rehydration Salt (ORS) solution (about 5 ml/kg/hr) as soon as the patient can drink, in addition to IV fluid.

g. Reassess the patient after 3 hours (infants after 6 hours) using the following guidelines:
   - If there are still signs of severe dehydration (this is rare) repeat the IV therapy already given.
   - If there are signs of some dehydration, continue as indicated below for some dehydration.
• If there are no signs of dehydration, go on to step 3, maintain hydration by replacing ongoing fluid losses.

4.2.2.2 Patients with Moderate (Some) Dehydration (Plan B)

a. Give ORS solution

b. Administer ORS solution in the amount recommended (see Table 5)

c. If the patient passes watery stools or wants more ORS solution, give more as shown in Table 5

d. Monitor the patient frequently to ensure that ORS solution is taken satisfactorily and to detect patients with profuse ongoing diarrhoea who will require closer monitoring.

Table 5: Approximate amount of ORS solution to give in the first 4 hours

<table>
<thead>
<tr>
<th>Age</th>
<th>Less than 4 months</th>
<th>4-11 months</th>
<th>12-23 months</th>
<th>2-4 years</th>
<th>4-14 years</th>
<th>15 years or older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>Less than 5 kg</td>
<td>5-7.9 kg</td>
<td>8-10.9 kg</td>
<td>11-15.9 kg</td>
<td>16-29.9 kg</td>
<td>30kg or more</td>
</tr>
<tr>
<td>ORS solution in ml</td>
<td>200-400</td>
<td>400-600</td>
<td>600-800</td>
<td>800-1200</td>
<td>1200-2200</td>
<td>2200-4000</td>
</tr>
</tbody>
</table>

NB: Use the patient’s age only when you do not know the weight. The approximate amount of ORS required (in ml) can also be calculated by multiplying the patient’s weight (in kg) by 75.

e. Reassess the patient after 4 hours:

• If signs of severe dehydration have appeared repeat the procedures for severe dehydration (Plan A)

• If there is still some dehydration, repeat the procedures for moderate (some) dehydration and start to offer food and other fluids.

• If there are no signs of dehydration, go on to and maintain hydration of replacing ongoing fluid losses

• Use a naso-gastric tube for ORS solution if the patient has signs of some dehydration and cannot drink or for severe dehydration only if IV therapy is not possible at the treatment facility

• NB: Urine output decreases as dehydration develops, and may cease. It usually resumes within 6-8 hours after starting re-hydration. Regular urine output (every 3-4 hours) is a good sign that enough fluid is being given.

4.2.2.3 No Signs of Dehydration (Plan A)
a. Patients first seen with no signs of dehydration can be treated at home.
b. Give ORS packets to take home. Give enough packets for 2 days.
c. Demonstrate how to prepare and give the solution.
d. The caretaker should give this amount of ORS solution (Table 6)

**Table 6: Dosage of ORS**

<table>
<thead>
<tr>
<th>Age</th>
<th>Amount of solution after each loose stool</th>
<th>ORS packets needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 24 months</td>
<td>50-100ml</td>
<td>Enough for 500ml/day</td>
</tr>
<tr>
<td>2-9 years</td>
<td>100ml-200ml</td>
<td>Enough for 1000ml/day</td>
</tr>
<tr>
<td>10 years or more</td>
<td>As much as wanted</td>
<td>Enough for 2000ml/day</td>
</tr>
</tbody>
</table>

e. Instruct the patient or the caretaker to return if any of the following signs develop:
   - Increased number of watery stools
   - Eating or drinking poorly
   - Marked thirst
   - Repeated vomiting
   Or if any signs indicating other problems develop
   - Fever
   - Blood in stool

**4.2.3 Step 3. Maintain Hydration, Replace Continuing Losses until Diarrhoea Stops**

When a patient who has been re-hydrated with IV fluids or ORS solution, is reassessed, and if no signs of dehydration, continue to give ORS solution to maintain normal hydration. The aim is to replace stool loses as they occur with an equivalent amount of ORS solution.

As a guide, give the patient as described in table 7:

**Table 7: ORS by Age-group**

<table>
<thead>
<tr>
<th>Age</th>
<th>Amount of solution after each loose stool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 24 months</td>
<td>50-100ml</td>
</tr>
<tr>
<td>2-9 years</td>
<td>100ml-200ml</td>
</tr>
<tr>
<td>10 years or more</td>
<td>As much as wanted</td>
</tr>
</tbody>
</table>

The amount of ORS solution actually required for maintaining hydration varies greatly from patient to patient, depending on the volume of stool passed. The amount required is greatest in the first 24
hours of treatment, and is especially large in patients with severe dehydration. In the first 24 hours, the average requirement is 200ml of ORS solution per kg of body weight, but some may need as much as 350ml/kg.

4.2.3.1 Oral Rehydration Therapy (ORT) Corners
All health facilities should establish ORT corners - A place in the facility with ORS, a measuring jar, drinking cups, source of safe water and a sitting place for patients to take the ORS under observation by health workers.

4.2.4 Step 4: Oral Antibiotics: Give an Oral Antibiotic to Patients with Severe Dehydration
Rapid and appropriate rehydration is the main management intervention for treating cholera cases, either orally for moderate cases, or intravenously for severe cases.

Appropriate antibiotics can reduce the volume of diarrhoea due to cholera, reduce the volume of rehydration fluids needed, and shorten the duration of *V. cholerae* excretion.

The following are the guidelines (details shown in Table 8):

- a. Give antibiotics only to cholera cases with severe dehydration
- b. Children under 12 years of age should be given a 5-day course of erythromycin (12.5 mg/kg – 4 times a day).
- c. For older children and adults, a 5-day course of tetracycline (12.5 mg/kg – 4 times a day) or Doxycycline: 100mg two times daily for 5 days.
- d. For pregnant women, give Erythromycin: 500mg 4 times a day for 5 days.
- e. Regular laboratory monitoring of the antibiotic sensitivity of circulating strains in all settings, including during an outbreak, to guide treatment.

4.2.4.1 Chemoprophylaxis
Chemoprophylaxis is Not Recommended. The close contacts should be followed up for five (5) days (maximum incubation period of cholera) for signs and symptoms. Those who develop acute watery diarrhoea are referred to health facility for diagnosis and treatment (refer to Contact Tracing and Follow-up under Surveillance section)

Table 8: Antibiotics used to treat Cholera

<table>
<thead>
<tr>
<th>Patient Classification</th>
<th>First Choice</th>
<th>Second Choice</th>
<th>Chemoprophylaxis</th>
</tr>
</thead>
</table>

49
<table>
<thead>
<tr>
<th>Adults (Non-Pregnant)</th>
<th>Ciprofloxacin: 500mg two times daily for 5 days</th>
<th>Azithromycin: 1gm in one dose</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Doxycycline: 100mg two times daily for 5 days</td>
<td>Tetracycline: 500mg 4 times a day for 5 days</td>
<td></td>
</tr>
<tr>
<td>Pregnant Women</td>
<td>Erythromycin: 500mg 4 times a day for 5 days</td>
<td>Azithromycin: 1gm in one dose</td>
<td></td>
</tr>
<tr>
<td>Children ≥ 12 months old and capable of swallowing pills or tablets</td>
<td>Erythromycin: 12.5mg/kg 4 times a day for 5 days</td>
<td>Azithromycin: 20mg/kg in one dose</td>
<td></td>
</tr>
<tr>
<td>Children &lt;12 months old and are unable to swallow pills or tablets</td>
<td>Erythromycin suspension: 12.5mg/kg 4 times a day for 5 days</td>
<td>Azithromycin suspension: 20mg/kg in one dose</td>
<td></td>
</tr>
</tbody>
</table>

### 4.2.4.2 Use of Zinc tablets

Children under 5 years of age should also be given zinc tablets for 10 days (10 mg per day for under 6 months old and 20 mg per day for above 6 months).

### 4.2.5 Step 5. Feed the Patient

- Resume feeding with a normal diet when vomiting has stopped.
- Continue breast-feeding for infants and young children

### 4.3 Cholera Treatment Centre (CTC)

The organization of the CTC is meant to offer the best care to patients but also to protect other people from contamination.

#### 4.3.1 Location/Siting of Cholera Treatment Centre

The following criteria should be considered when locating a CTC (see Table 9):
a. Treatment centres should be set up where cases are occurring to avoid transfers or referrals that may create source for further widespread.

b. A CTC should be away from the community market or a place with major community activities. A safe distance allows for privacy and reduces chances of accidental contamination.

c. It should also be sited where it cannot contaminate community water supply

Table 9: Location or Designation of a Cholera Treatment Centre

<table>
<thead>
<tr>
<th>Activity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good access</td>
<td>Road, telephone, and electricity where these facilities are available</td>
</tr>
<tr>
<td>Water supply</td>
<td>1. Adequate and reliable water supply is essential for the required cleaning</td>
</tr>
<tr>
<td></td>
<td>2. Availability of treated water or with the possibility of treating water should be considered</td>
</tr>
<tr>
<td>Existing infrastructure</td>
<td>1. Consider an existing building that can be converted into a CTC at minimal cost</td>
</tr>
<tr>
<td></td>
<td>2. Good drainage and safe disposal of general and medical wastes from a CTC</td>
</tr>
<tr>
<td></td>
<td>3. Availability of toilets/bathrooms – or where temporal structures can be developed quickly at modest costs</td>
</tr>
</tbody>
</table>

4.3.2 Organization of Cholera Treatment Centre

The treatment centre should have the following:

a. A perimeter fence to isolate it from free flow of people

b. Means of controlling human traffic by use of ropes to allow guided flow so that as people enter or leave a CTC, they disinfect their feet/shoes in a footbath of chlorine water

c. Volunteers or auxiliary staff to guide and control human traffic

d. Various designated sections or rooms for smooth organization of activities

Table 10 and Figure 8 provides guidance on specific areas that should be provided in the Treatment Centres.

Table 10: Organization of Cholera Treatment Centre

<table>
<thead>
<tr>
<th>Area/Room</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission area</td>
<td>Patients are admitted into this area. It should have facilities for resuscitation</td>
</tr>
<tr>
<td>Area</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Intravenous rehydration area</td>
<td>This is also the acute care room/area. Patients who are severely dehydrated or with circulatory collapse/shock are admitted here</td>
</tr>
<tr>
<td>ORS rehydration room/Coner</td>
<td>Patients with only mild to moderate dehydration are admitted here</td>
</tr>
<tr>
<td>Treatment Room</td>
<td>Where equipment for procedures are prepared. Medicine cupboard and supplies are kept here</td>
</tr>
<tr>
<td>De-contamination Room</td>
<td>1. Contaminated articles are decontaminated before being sent for cleaning or laundry</td>
</tr>
<tr>
<td></td>
<td>2. Faeces and vomitus of cholera patients should be decontaminated before disposal.</td>
</tr>
<tr>
<td></td>
<td>3. Protective clothing should be used by health workers</td>
</tr>
<tr>
<td>Dead bodies Room</td>
<td>Dead bodies will be accorded safe and dignified burial by a trained burial team. All bodies of Cholera victims should be disinfected</td>
</tr>
<tr>
<td></td>
<td>before immediate transport to cemetery for burial under the supervision of Environmental Health Officer(s).</td>
</tr>
<tr>
<td>Staff Resting Room</td>
<td>This is a room where health workers can rest or take refreshments and recover when they feel exhausted. Some Personal Protective</td>
</tr>
<tr>
<td></td>
<td>Equipment (PPE) that should be used by health workers could be stored here as well.</td>
</tr>
<tr>
<td>Patient and Relative Education</td>
<td>All patients and their relatives should be taught about Cholera, how it is contracted and prevented. Individual and group counselling</td>
</tr>
<tr>
<td>Area</td>
<td>can also take place here. Educational demonstrations are done here</td>
</tr>
<tr>
<td>Note: At every doorway in a CTC</td>
<td>there should be a foot mat or footbath with 0.5% chlorine solution for disinfecting the shoes/feet and a hand washing facility before exit.</td>
</tr>
</tbody>
</table>

**Figure 8: Cholera Treatment Centre (CTC) Organization Chart**

![Cholera Treatment Centre (CTC) Organization Chart](image-url)

- **ADMISSION AREA**
  - Patients with severe dehydration and vomiting
  - Treatment: IV and ORS
- **RECOVERY AREA**
  - Patients with moderate dehydration
  - Treatment: ORS
- **WASTE AREA**
  - Stores for supplies
  - Staff decontamination area
4.3.3 Summary of key activities to be conducted at CTC

The following key activities should be carried at CTC:

- Disinfect water points near the health centre frequently
- Sensitize all health care workers, clients and relatives on how cholera is transmitted and how they can protect themselves from cholera
- Control all entries and exists
- Health workers in the affected wards should not be allowed in unaffected wards
- Cleaning materials used in affected wards should be separated and not to be used in other wards
- Do not allow visitors
- Disinfect sole of shoes by stepping on a 0.5% chlorinated foot mat
- Disinfect cooking dishes, clothes, door handles etc. with 0.05% chlorine
- Disinfect transportation means (vehicle attendant/driver) with 0.5% chlorine
- Disinfect faeces and vomit of patients: add up 2% chlorine solution to make 2 cm level on top of the faeces or vomitus. Dispose in a designated toilet facility.
- Clean the facility with 0.5% chlorine solution two to three times a day: disinfect beds, floors, latrines, empty the rubbish container
- Disinfect all items of patients before their discharge (dishes, clothes, etc.) with 0.5% of chlorine

4.3.4 Infection Prevention and Control (IPC) at Cholera Treatment Centre

An infected person with or without signs discharges Cholera germs (Vibrios) in his/her stool and can contaminate water or foods. Any surfaces or articles that come into contact with the stool of a Cholera patient gets contaminated and is potentially infectious. The only way to reduce the risk of
transmission is effective disinfection of Cholera stools, vomitus, and contaminated clothing and floor surfaces. Chlorine is one of the most widely used disinfectants. Chlorine is one of the most widely used disinfectants and is very important in the fight against cholera. It is used to disinfect water and to prepare solutions of different strengths for washing patients, disinfection of materials, buildings, excreta, vomitus and bodies of Cholera patients.

**2% Chlorine solution:**
This should be used for:
- Disinfection of vomitus, faeces and latrines/toilets
- Disinfect bodies of patients who die of Cholera

**0.5% Chlorine solution:**
This should be used for:
- Disinfection of floors
- Spraying of homes of Cholera patients (floors, beds, latrines)
- Spraying of beds in a Cholera Treatment Centre (CTC)
- Foot mats or Footbaths in all entrances in/out of a CTC (Solution should be changed daily)

Disinfection of clothes by soaking for 10 minutes. Clothes are rinsed and washed afterwards

**0.05% Chlorine solution**
This should be used for:
- Washing of hands and skin
- Disinfection of linen and textile
- Rinsing dishes
- Bathing of patients at CTC on admission and discharge.

### 4.3.4.1 Preparation of Chlorine Solution

\[
\text{Number of parts of Water to be added}(V) = \frac{\text{The given Stock Concentration (S)}}{\text{Expected Concentration (E)}} - 1
\]

i.e. \( V = \frac{S}{E} - 1 \)

**Example1:** To prepare 0.5% bleach solution from a given stock concentration of 3.5%:

Using \( V = \frac{S}{E} - 1 \)
Where S=3.5%, E=0.5%
Therefore: \( V = \frac{3.5\%}{0.5\%} - 1 \)
V=7-1
V=6 parts of water
That is: Mix one (1) part of the bleach solution with six (6) parts of water using the same measuring jar.

Example 2:
To prepare 0.5% bleach solution from a given stock concentration of 5%:
Using \( V = \frac{S}{E} - 1 \)
Where S=5%, E=0.5%
Therefore \( V = \frac{5\%}{0.5\%} - 1 \)
V=10-1
V=9 parts of water
That is: Mix one (1) part of the bleach solution with nine (9) parts of water using the same measuring jar.

4.4. Transportation/Translocation of Patients with Cholera
The following are guidelines to be observed when moving or transporting patients with cholera.

4.4.1 In health facilities
- Avoid the movement and transportation of patients out of the isolation room or area unless medically necessary
- When transporting the patient, the appropriate standard and contact precautions shall be adhered to.
- Wear appropriate PPEs e.g. water resistant gown or apron, gloves and boots.
- The department or institution receiving the patient shall be notified.
- Use route and transportation means that minimise exposure of staff, other patients and visitors.
- Perform hand hygiene after each procedure.
- Perform appropriate decontamination, cleaning and disinfection after any procedure.
4.4.2 Movement or transportation by the public

- Use national ambulance services, as much as possible avoid transporting cholera patients in taxis or other public vehicles. Should it become necessary to use public transport, cover seats with impermeable materials such as rubber that can easily be disinfected or destroyed.
- As much as possible persons involved in the transportation should avoid direct contact with the patient.
- Wear appropriate PPEs e.g. water resistant gown or apron, gloves and boots if available or cover hands and body with any water resistant or rubber product.
- Persons involved should perform hand hygiene after each procedure.
- Receiving health facility should perform or supervise appropriate decontamination, cleaning and disinfection of the vehicle.

4.4.3 Precautions for Family Members

Family members or visitors who are providing care or having very close patient contact (e.g., feeding, holding) should:

- Use PPE correctly.
- Wear gloves whenever touching the patient’s intact skin or surfaces and articles in close proximity to the patient (e.g., medical equipment, bed rails).
- Use gown upon entry into the room or cubicle.
- Remove gown and gloves and observe hand hygiene before leaving the patient-care environment.
- Change personal clothes every day

4.5. Management of dead body at the health facility Level

Upon the death of a cholera patient the attending Health worker (nurse, orderly and mortuary attendant) should immediately notify the Environmental Health Officer and prepare the dead body for immediate burial using the procedure spelled out under management of dead body at facility level in the WASH Section.

5.0 Water, Sanitation and Hygiene (WASH)

The major goal of WASH intervention in cholera prevention and control is to improve access to adequate safe water supply and basic sanitation infrastructure for schools, health facilities,
communities and households. The WASH intervention also promotes complementary hygiene practices to maximize the health impact from this improved infrastructure.

The WASH interventions include:

- Provision of Safe water
- Improving Sanitation
- Promoting Personal hygiene and
- Ensuring food safety

This package of targeted interventions should be implemented during cholera outbreaks within the following transmission settings:

1. Households/communities
2. Cholera treatment centre (refer Case Management Section)
3. Management of dead body
4. Public gatherings (Funerals, out-doorings, etc.)
5. Vulnerable and at risk populations
6. Water points

5.1 Households and Communities

During an outbreak some of the materials likely to be contaminated are; clothes and bedding, dishes, kettles, door handles, water, meals, etc.

Key activities

If an outbreak is confirmed, the rapid response team (RRT) should move to the affected communities and household to conduct the following activities:

- Rapid assessment of risk factors to cholera infection (water, food safety, toilet facilities and hand washing facilities) with support with the patient history (epidemiology)
- Educate the household members on prevention and control of cholera using appropriate Information, Education and Communication (IEC) materials
- Distribute hygiene kits (hand gloves, chlorine tablets (aquatabs) for chlorination, disinfectants, soap) in all the households of the compound affected
- Test for Free Residual Chlorine (FRC Test) (see annex 10.5 for procedure)
- Disinfect all the water in the affected household with chlorine tablets (use manufacturers instruction to disinfect appropriately).
- Soak patient’s clothes and bedding for 10 minutes with 0.5% chlorine solution, wash and rinse afterwards
- Ensure households wash the dishes, kettles and cleaning utensils with 0.05% chlorine solution
- Disinfect excretions (e.g. faeces, vomitus, urine, etc.) with a 2% chlorine solution
- Disinfect spilled excretions with 2% chlorine solution (refer to Procedure for handling spillage in Annex 10.4)
- Disinfect toilet facilities with 2% chlorine
- Spray household waste disposal sites and environment with 2% chlorine solution
- Chlorinate water storage containers with 0.2% chlorine solution
- Wash the water drawing and storage containers with a 0.2% chlorine solution
- Identify and register immediate contacts and follow them for 5 days, those who develop diarrhoea are referred to health facility
- Do an active case search for new cases in the household and neighbourhood for early referral
- Distribute ORS to immediate contacts and educate them on how to use it
- Organize disinfection, safe collection and burial of patients who die from cholera in the community

**5.3 Management of Cholera Dead Body**

Cholera dead bodies are major source for the further spread of Cholera outbreaks, therefore the following general measures need to be implemented:

a. Health workers, especially in cholera camps/CTC, should be well trained in handling corpses
b. Establish and train burial teams. The Burial team should include Social Worker/Psychologist (1), Pallbearers (6), Environmental Health Officers (2) and Driver whose only responsibility should be driving the vehicle
c. Educate funeral organizers/mourners on the risk and the control measures needed to prevent contamination
d. Health Team should limit visits to mortuaries following declaration of cholera outbreaks
e. All death should be recorded in accordance with the vital statistics system of the district and registered with the birth and deaths office.

**5.3.1 Management of dead body at the health facility Level**

Upon the death of a cholera patient, the attending Health worker (nurse, orderly, mortuary attendant) should immediately notify the Environmental Health Officer and prepare the dead body for immediate burial using the under listed procedure:

a. Wear gloves, gown, goggles, apron, boots and mask
b. Cordon off the dead body with a screen
c. Transfer body to pre-identified morgue close to CTC (Move to designated place for preparation)
d. Spray the body with 2% chlorine solution

e. Plug the open orifices (anus, ears, mouth and nose) of the body with cotton wool soaked with 2% chlorine solution

f. Bandage the head to ensure that the mouth is shut. **Manipulation of the body should be minimal and bodies should NOT be washed or embalmed.**

g. Avoid autopsy

h. Put body into a leak proof plastic sheet (body bag) soaked in 2% chlorine solution

i. Environmental Health Officer together with the Health workers counsel the family about burial procedure (take into consideration the religious and cultural beliefs).

j. If the family can provide a coffin the bagged body is put inside the coffin after spraying it with 2% chlorine solution.

a. **Transportation of Dead Body:** Transport the body to the cemetery for immediate burial using a pick up under the supervision of Environmental Health staff for immediate burial by burial team. The Pallbearers in the Burial Team must de-gown and be transported in a separate vehicle from that of the body to the burial site.

k. Disinfect the site of body preparation with 2% chlorine solution, i.e. contaminated surfaces (chairs, tables, faeces, vomitus, urine etc. on the floors, door handles etc.)

5.3.2 Burial of the dead body

a. The burial of the body is done by the burial team under the supervision of Environmental Health Officer(s).

b. Care should be taken to follow burial practices that are culturally acceptable but do not put people at risk

c. Only limited number of family members including religious and traditional authorities should be involved (not more than ten).

d. Burial should be done in the nearest graveyard of the religious group to which the deceased person belong.

e. The clothes and other accessories of the dead body can be handled in the following three alternatives proposed to the family of the deceased:
   1. Incinerating the clothes and other accessories
   2. Burying the deceased with their clothes and other accessories
   3. Soaking them for 10 minutes in a 2% chlorine solution and washing/cleaning with soap

5.3.2.1 Burial Procedure

b. The Pallbearers in the Burial Team must de-gown and be transported in a separate vehicle from that of the body to the burial site.
c. Deceased patients family should:
   - Avoid physical contacts with the body
   - Avoid putting hands into the mouth during funerals
   - Wash their hands under safe water running water with soap, after hand shaking during the funeral

**Grave site:**

f. Before removing the bodies from the back of the vehicle, the Pallbearers (body carriers) should wear full Personal Protective Equipment (PPEs) before transporting the corpses to the grave

g. Disinfect body bag or casket with the corpse by spraying with a 2% chlorine solution

h. The burial team should carefully place the body in a designated pre-dug grave, slowly lowering the coffin or body bag into the grave.
i. Only one body will be placed in each grave, unless during mass burials.
j. Following the burial, after the grave is filled in with soil, the family could place a memorial mark at or near the grave site

k. All burials should be done during the day to ensure clear visibility and avoid the likelihood of contamination of members of the burial team.
l. The Ministry of Health (MoH) does not recommend organisation of funerals during epidemics

m. Disinfect hands and cloths of people in charge of burying the body with 0.05% chlorine solution

**5.3.3 Management of dead body in the community**

a. If a cholera patient dies at home, the family members should not handle the patient but immediately inform the Community Volunteer/Community Health Nurse who will notify the Disease Control Officer and Environmental Officer (at the Metropolitan, Municipal and District Assemblies) to arrange proper management of the body.
b. All deaths, in the community should be reported immediately to Environmental Health Officers at the local authorities (Metropolitan, Municipal and District Assemblies).
c. The local authority should in turn inform the nearby health facility or burial team within the locality.
d. The team moves to the scene to assess the situation and ensure safe handling of the body of the deceased.

Note: The procedure for burial is the same as described in section 5.3.2.1 Burial Procedure.
5.4 Public Gatherings
Social gatherings including funerals, weddings, out-dooring should be discouraged during outbreaks. Some risky behaviours for disease transmission associated with public gatherings include: hand shaking, sharing of common meals and drinking cups, washing hands in common bowl.

The Environmental Health Officers, Community Development Officers/Trained Volunteers, Health Promotion Officers should carry out the following activities as per type of gatherings stated below:

**Key activities:**

Option 1: Discourage funerals during outbreaks

Option 2: If it is absolutely necessary to have the funeral ceremonies then, the ceremony should be supervised by Health workers and traditional authorities. The following measures should be instituted:

- Provide Hand Washing Stations
- Distribute hygiene kits: soap and products such as chlorine tablets (aqua tabs) to disinfect water
- Disseminate key messages on hand washing
- Ensure the event organizers provide mobile toilets
- The function should last the least amount of time

5.5 At Schools

WASH interventions in all schools is paramount to prevent spread of Cholera outbreaks in schools. The Environmental Health Officers, Health Promotion Officers and Disease Control Officers in collaboration with the school authorities should undertake the following key activities:

**Key activities**

- Disseminate information on cholera prevention and control using sketches, hand-washing games and movies
- Provide a functioning Hand Washing Stations e.g. running taps with sink, Veronica buckets, soap and tissue paper
- Distribute hygiene kits (soaps, 60 to 90% alcohol hand sanitizers, toilet rolls) in schools
- Supervise food vendors to ensure food safety
- Close schools during cholera outbreaks when there is an outbreak in the school. The decision should be taken collectively by the Public Health Emergency Management Committee on the recommendation of the Regional/District Director of Health Services and Environmental Health Officer.
5.6 Commercial Eating Centres (Restaurants, chop bars, Food Vendors etc.)

Key activities:
The Environmental Health Officer (s) and Food and Drug Officers should:

- Ensure owners of chop bars, restaurants etc. provide functioning Hand Washing Stations (soap and running water, single use towels)
- Ensure owners of chop bars and restaurants use appropriate disinfectants (0.5% chlorine solution and soap for cleaning)
- Educate owners of chop bars, restaurants, Street Food and Water Vendors on safe food preparation regularly

5.7 Markets

Key activities

The Environmental/Health Promotion Officers in collaboration with other stakeholders like Market Queens, GPRTU etc should:

- Conduct mass sensitization on the prevention and control of cholera
- Provide functioning Hand Washing Stations (soap and running water, single use towels)
- Ensure frequent cleaning and disinfection of toilet facilities
- Promote safe food and water handling
- Ensure regular collection of garbage and its proper disposal

5.8 Vulnerable and at Risk Populations

In cases of displaced and high risk populations including refugees in camps, nomadic population, small scale illegal mining (galamsey) communities, migrant fishing communities, the following key activities in addition to those described during household/community/public gatherings and management of CTC should be carried out by the Rapid Response Team:

- Arrange for supply of safe water, a minimum of 20 litres (‘Kuffour’ gallon) of water per person per day. Each household should have at least two clean water collecting containers, plus at least container for water storage.
- Educate the displaced population on prevention and control of cholera using appropriate IEC materials
- In refugee camps where there is no health care facility, set up a CTC using tents
- Supply buckets, cholera beds, disinfectants, rubber gloves, etc. for cholera treatment units (CTC) in addition to the supplies needed to treat patients. Prepare individual job descriptions for personnel in CTC in advance.
During outbreaks in open communities, establish the CTC inside the health care facility or in another community building, e.g. a school, if the health center is too small to ensure isolation of the cholera patients.

Pre-position Cholera logistics e.g. stocks of medicines and other material, and organization of patient flow

5.9 Water Points

Water points are sources and collection of water for drinking and domestic activities. The water points include surface water (rivers, streams, lakes), hand dug wells, pipe-borne water, bore holes, centralized commercial tanks, community standpipes etc. The likely causes of contamination of these water points are: open defecation in water sources, water run-off, washing patient’s clothes in surface waters, sewage leakages and inappropriate liquid waste disposal.

The Water Quality Experts and Environmental Health Officers should carry out the following key activities:

Key activities

- Educate the household members on prevention and control of cholera using appropriate IEC materials
- Mobilize administrative and traditional authorities to dialogue on prohibition of washing and bathing in surface water
- Periodically disinfect hand dug open wells with chlorine tablets
- Do a bucket chlorination at community shared open wells
- Use a dedicated clean bucket to draw the well water
- Ensure the water agencies frequently conduct water quality check (bacteriological) at collection points of affected areas
- Do household water treatment: use of chlorine tablets (aqua tabs), boiling and cooling before consumption

Note: chlorinated water with chlorine tablets should be stored in a clean container with a small opening or cover and should not be used beyond 24 hours.

5.10 WASH intervention during post Cholera outbreak

- Quick rapid assessment on WASH facilities (toilet and water facilities in both household and community level
- MMDAs and GWCL must undertake water quality assessment
- Immediate premises inspection to assess the household toilet and assess immediate and future risks and immediate abatement
• Track water supply to affected communities and monitor quantity and quality
• Continuous education on behavioural change, hygiene education and user education
• Frequent meetings with the response team to present update from the various department.

6.0 Risk Communication and Social Mobilisation
A well planned cholera communication strategy that will address knowledge, trigger the population to change and maintain behaviour should cover the following: Advocacy, Social mobilization, Behaviour change communication and Training.

Advocacy is a communication intervention aimed at decision makers, community leaders and media practitioners to influence their behaviour and to shape policy making process. It can be directed at NGOs, District/Municipal/Metropolitan Assemblies and donors. It is done at all levels.

Social Mobilisation involves engaging other stakeholders’ participation in achieving a specific development goal through self-reliant efforts. The stakeholders include the MMDAs, NGOs, opinion leaders, community members and other relevant groups in a community. It takes into account the felt needs of the people, embraces the critical principle of community involvement and seeks to empower individuals and groups for action.

Behaviour change communication means using a variety of communication channels to promote positive behaviours and promote and sustain individual, community and societal behaviour change.

6.1 Communication Response
Establish Social mobilization and risk communication sub-committees at the National, Regional and District levels.

Composition of Social mobilization and risk communication sub-committee should include:
Information Service Department, Media ,CWSA, NCCE, SHEP, NADMO, Red Cross, Environmental Health Department, Ghana water company ltd(co-opted), Department of Community Development, representative from Coalition of NGOs, Food and Drugs Authority, Health Directorate etc.

The Risk Communication and Social Mobilization sub-committees at the National, Regional and District levels should undertake the following key activities:
• Conduct situation analysis
• Ensure stakeholder identification and involvement
• Identify the target population for information dissemination
• Develop cholera educational materials and key messages
• Identify and train resource persons
• Identify the channels of communication
• Strategies to reduce rumour and panic
• Develop social mobilization and communication implementation plan
• Develop a monitoring and evaluation plan

6.2 Situation analysis
• Conduct a situation analysis to capture the following information:
  o Description of cholera situation, the persons affected, their culture, NGOs, associations, and available community, communication channels
  o Existing health and demographic data, survey results of KAP on cholera and any other information available on cholera

6.3 Advocacy / Stakeholder involvement
Prevention and control of cholera in any setting involves a multi-sectoral approach. Stakeholders have to be involved at all stages of cholera outbreak (Pre, during and post-outbreak). This is very important for commitments and acceptance of interventions from community members. Some of the key stakeholders to be involved includes: MMDAs, NGOs, Community Leaders and members, Religious leaders, Traditional leaders, Health workers both private and public and organised community groups

6.4 Identify the target population for information dissemination
The following target populations and institutions should be targeted for cholera information: General population, care takers of children, street food vendors (those selling on the streets especially along gutters), Health Workers (private and public), Chiefs, Religious leaders, Market women, Vegetable and Fruit Sellers Association, Sachet water producers Association, Cesspool emptier operators Association, Public toilet operators, Fast food, Chop bars and restaurant owners, Schools, Hospitality managers, Stakeholders, Displaced populations (Refugees in camps), Slum communities, Nomadic population, Small scale illegal miners (galamsey), migrant fisher folks.

6.5 Develop cholera educational materials and key messages
This step involves the development of posters, leaflets, fliers, flip charts. The material development should be done by the Health Promotion Department at National level with the involvement of key
stakeholders and members of the audience. The finished materials including posters, fliers, video clips, flip charts etc. should be distributed to the regions for downward distribution to the districts and communities. Districts can adapt messages to reflect their cultural settings (e.g. Translating from English to local languages)

In developing key messages on cholera the following criteria should be considered:

- target audience
- medium of communication
- stage of the cholera situation (pre, during and post outbreak)
- cultural context of the communities
- language of the targeted population
- the mode of transmission, signs and symptoms, how to prevent the disease, and what to do if you have diarrhoea, Infection prevention and control (Personal hygiene, Food safety, Safe drinking water, Protection of water points from contamination, Care of patients, Handling of corpse)
- Responsibilities of stakeholders, MMDAs, DHMTs, Health facilities

Samples of key messages on cholera attached (see Annex 10.6)

6.6 **Identify and train resource persons**

Determine skills development needed for dissemination of information. In identifying the resource persons,

- Consider the various languages within your community
- Select the resource representative of the languages.
- Conduct training for the resource persons e.g. knowledge on Cholera, interpersonal communication, conducting focus group discussions

6.7 **Identify the various channels of communication**

It is important to choose the most suitable and appropriate channels of communication according to the background variables of the audiences. Some available channels of communication are given in table 10 below:

**Table 10: Communication channels per level of delivery**

<table>
<thead>
<tr>
<th>Level</th>
<th>Appropriate Channels of communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>Meetings, Radio, Television, Social media (WhatsApp, Facebook, etc.), Phones (Text messages)</td>
</tr>
<tr>
<td>Regional</td>
<td>Meetings, Radio, Television, Social media (WhatsApp, Facebook, etc.), Phones (Text messages), Public Address system</td>
</tr>
<tr>
<td>District</td>
<td>Meetings, Radio, Television, Social media (WhatsApp, Facebook, etc.), Phones (Text messages), Public Address system</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Community</td>
<td>Community Durbar, Public Address system, Drama/sketches, Gong gong/megaphones, Community Information Centres, Video shows, Community organized groups e.g volunteers</td>
</tr>
</tbody>
</table>

### 6.8 Strategies to reduce rumours and panic

- **Identify Spokesperson**
  - When an outbreak starts, all levels of service delivery should designate a single spokesperson who will be the focal point for dealing with the media. At the national level, the public relations officer (PRO) of MOH/GHS is responsible for coordinating media activities during an outbreak.

- **Organize a press conference to sensitize media on cholera situation and planned interventions**

- **Prevent rumours** – be “proactive”, (information should go early) use local NGOs, religious organization or community groups as educators

- **Respond to adverse events and rumours timely**

- **Involve community leaders in planning and implementing activities**

- **Present health issues as national, social, economic and security issues and NOT political**

- **Make communication and social mobilization a continuous activity**

- **Identify factors that constrain implementation and address them**

- **Evaluate media involvement**
  - Assess to find out if the media provide accurate information to people within and outside the affected area
  - Check for consistency in content of information packaged for public service announcements and news items in the media.

### 6.9 Develop Social Mobilization and Communication implementation plan

Develop an activity plan with measurable indicators to monitor progress of social mobilization and communication activities sample as per attached annex 10.7. The implementation matrix is characterised by: strategies, broad activities, materials, implementers, indicators, budget and timelines. Make sure all stakeholders involved know what is expected.

6.10 Develop a monitoring and evaluation plan
During implementation, it is important to track activities to check whether they are on track and whether inputs are yielding the desired results. It is important to develop indicators (see Table 11 under Monitoring and Evaluation session for some sample communication measurable indicators). These indicators can be measured by conducting regular monitoring visits to the regions, districts and facilities to assess their level of preparedness. A rapid assessment is also done during the pre-outbreak, outbreak and post-outbreak to the communities to measure their level of awareness.

Some of the activities that should be undertaken at the different levels of service delivery are outlined below:

6.10 National Level Social Mobilization and Communication Activities

6.10.1 Pre-outbreak

- The National Technical Coordinating Committee should organize a stakeholder’s meeting to:
  - Sensitize them on cholera and the likely effects on the wellbeing of people and social and economic settings
  - Discuss development of a Cholera communication Strategic plan
  - Identify roles and responsibilities of each stakeholder and firm up commitments in response activities

Quarterly meeting of risk communication and social mobilization sub-committee

- Mobilize resources from stakeholders
- Develop a cholera communication strategy
- Develop and print appropriate cholera IEC materials if not available
  - Take Inventory of existing cholera materials
  - Review existing material
  - Pre-test materials
  - Print materials
- Train regional risk communication teams (Representatives from the Information Service Department, Media, Waste Disposal Services (e.g. Zoomlion), NCCE, Environmental Health Department, Department of Community Development, Water Company Ltd, Food and Drugs Authority, Regional Health Directorate etc.) on;
  - Current cholera issues e.g. new additions in preventive and management issues
  - Development of regional risk communication plans
  - Material usage and key messages
• Distribute materials to the Regional level
• Initiate discussions on cholera prevention and control on National television and radio stations
• Liaise with PRO to organize regular press conferences to update media of current situation on cholera
• Organize regular monitoring and conduct rapid assessments:
  o To the regional level to assess level of implementation of cholera implementation plans

6.10.2 During outbreak
Risk communication and Social Mobilisation Sub-committee under the National Technical Coordinating Committee/EOC should:
• Organize weekly stakeholders’ meeting:
  o Update on the cholera outbreak and severity of the situation including risk factors
  o Monitor implementation of plans
  o Ensure assigned roles and responsibilities of each stakeholder are carried out and firm up their commitments
• Mobilize additional resources from stakeholders as required
• Support risk communication interventions to minimize rumours and panic
• Intensify distribution of IEC materials to the Regions. Print more cholera IEC materials if not available
• Reorient regional risk communication teams on: current cholera issues e.g. new additions in preventive and management issues. Initiate discussions on cholera prevention and control on National television and radio stations
• MOH/GHS PRO to organize regular press conferences to;
  o Declare the outbreak
  o Update media of current situation on cholera
  o Provide updates on response activities
• Intensify regular monitoring and conduct rapid assessments
  o To the regional level to assess level of implementation of cholera implementation plans

6.10.3 Post-Outbreak
• Evaluate communication implementation
  o Share success and review strategy for future outbreaks
• Review a cholera communication strategy
• Review and print appropriate cholera IEC materials if necessary
• Organize press conference to declare outbreak over

6.11 Regional level Risk Communication and Social Mobilization Activities

6.11.1 Pre-Outbreak
• Regional Minister to organize a regional stakeholders’ meeting quarterly to:
  o Sensitize them on cholera and the likely effects on the well-being of people and social and economic settings
  o Discuss development of a communication plan
  o Identify roles and responsibilities of each stakeholder and firm up commitments
Quarterly meeting of risk communication and social mobilization sub-committee
• Mobilize resources from stakeholders
• Develop a Regional cholera communication implementation plan
• Adapt national materials especially jingles to meet local content (e.g. appropriate local languages)
• Distribute materials to the District level
• Train District Risk Communication Teams (Representatives from the Information Service Department, Media, Waste Disposal Services, NCCE, Environmental Health Department, Department of Community Development, Water Company Ltd, Food and Drugs Authority, District Health Directorate etc.)
• Initiate discussions on cholera prevention and control on Regional television and radio stations
• Organize regular monitoring and conduct rapid assessments
  o To the District level to assess level of implementation of cholera implementation plans
• Organize regular press conferences to;
  o Update media on current situation on cholera

6.11.2 During Outbreak
• Regional Minister to organize the stakeholders’ meeting weekly
Weekly meeting of risk communication and social mobilization sub-committee

- Mobilize additional resources from stakeholders
- Intensify distribution of materials to the District level
- Reorient district risk communication teams on:
  - Current cholera situation
  - Material usage and key messages
- Intensify initiation of discussions on cholera prevention and control on Regional radio stations and television
- Intensify organization of regular monitoring and conducting rapid assessments
  - To the District level to assess level of implementation of cholera implementation plans
  - To the community to assess KAPs of the people on cholera
- Organize regular press conferences to:
  - Update media on current situation on cholera
  - Declare the outbreak
  - Elaborate planned interventions to end the outbreak

6.11.3 Post Outbreak

- The Regional Minister to Organize a stakeholders’ meeting to:
  - Share lessons learnt and review strategy for future outbreaks
- Review a cholera communication plan
- Review and print appropriate cholera IEC materials if necessary
- Distribute materials to the district level
- Continue discussions on cholera prevention and control on Regional radio and television stations
- Organize press conferences to:
  - Update on cholera and declare outbreak over
- Evaluate media involvement
6.12 District Level Social Mobilization and Communication Activities

6.12.1 Pre-outbreak

The Municipal/District Chief Executive in collaboration with the District Director of Health Services should organize a stakeholders’ meeting to:

- Sensitize them on cholera and the likely effects on the well-being of people and social and economic settings
- Discuss development of a social mobilization and communication implementation plan (sample of social mobilization and communication implementation plan attached, see Annex 10.7)
  - Identify roles and responsibilities of each stakeholder and firm up commitments
  - Mobilize resources from stakeholders
- Develop a district cholera communication implementation plan refer to steps in section 6.7
- Train volunteers, CHNs, and other health staff on:
  - Current cholera issues e.g. new additions in preventive and management issues
  - Interpersonal communication (IPC)
  - Cholera Educational Material usage and key messages
- Distribute Cholera educational materials to health facilities, communities, and volunteers
- Initiate and be part of discussions on cholera prevention and control on television and radio stations if available at the district level
- Organize regular monitoring and conducting rapid assessments
  - To the sub-district level to assess level of implementation of cholera implementation plans
  - To the community to assess KAPs of the people on cholera

6.12.2 During outbreaks

- The Municipal/ District Chief Executive in collaboration with the District Director of Health Services should:
- Activate district cholera social mobilization and communication plan
- Organize stakeholders’ meeting weekly to:
  - update them on cholera situation and discuss response measures
  - Identify roles and responsibilities of each stakeholder and firm up commitments
- Mobilize additional resources from stakeholders
- Reorient risk communication teams on:
Current cholera situation
Material usage and key messages
- Intensify distribution of cholera educational materials to the sub-district and community level
- Intensify public education on cholera prevention and control on district radio stations and television, markets, lorry parks, in communities etc
- With support from the region organize regular press conferences to:
  - Update media of current situation on cholera
  - Declare the outbreak
  - Planned interventions to end the outbreak

6.12.3 Post Outbreak
The Municipal/district Chief Executive in collaboration with the District Director of Health Services should:
- Organize a stakeholders’ meeting to:
  - Share lessons learnt and review strategy for future outbreaks
  - Review a cholera communication plan
- Continue distribution of materials to the Communities
  Continue public education on cholera prevention and control on district radio stations and television, markets, lorry parks, in communities etc
- Region to support organize press conferences to;
  - Update on cholera situation and declare outbreak over
- Evaluate media involvement

6.13 Facility Level Social Mobilization and Communication Activities

6.13.1 Pre-outbreak
The Public Health Units (Public Health Specialist, Public Health Nurses, Community Health Nurses, Health Promotion Officers and Disease Control Officers) in collaboration with the Medical Superintendent/Facility In-charge of the health facility should carry out the following activities:
- Develop and implement Cholera social mobilization and communication plan for the facility
- Regularly educate clients on the cholera prevention and control using the flip charts, posters, sketches etc at all public units of the health facility (OPD, Wards, CWC, ANC etc)
- Organize periodic meetings and durbars (at least once quarterly) with other health workers and clients at the facilities on cholera prevention and control measures
• Distribute and paste cholera IEC materials (leaflets and posters) at public areas in the facilities (OPD, Wards, ANC etc.)
• Ensure adherence of all service providers to strict prevention control measures at the health facilities

6.13.2 Outbreak
The Public Health Units in collaboration with the Medical Superintendent/Facility In-charge of the health facility should carry out the following activities:

• Activate the Cholera social mobilization and communication plan for the facility
• Select one focal person to communicate on Cholera situation in the facility to DHMT and Media
• Organize daily education of clients, visitors and all other health workers on the cholera prevention and control using the PA systems, flip charts, posters, sketches etc at all public units of the health facility
• Organize daily/weekly meetings with other health workers to access the cholera situation and review implementation of the control measures
• Ensure that cholera leaflets and posters are distributed and pasted at all public places in the facilities
• The service providers should also adhere to strict prevention and control measures at the health facilities
• Strict prohibition of crowding especially at the Cholera Treatment Centres

6.13.3 Post outbreak
The Public Health Units in collaboration with the Medical Superintendent/Facility In-charge of the health facility should carry out the following activities:

• Organize meeting of the health staff to evaluate the implementation of the social mobilization and communication plan of the facility: identify gaps and provide solutions to prevent future outbreaks
• Continue education of clients and other health workers on the cholera prevention and control measures using the flip charts, posters, sketches etc at all public units of the health facility
6.14 Community Level Social Mobilization and Communication Activities

6.14.1 Pre-outbreak
The Community Health Nurses/Community Health Officers, Health promotion focal persons and Community Health Volunteers, in collaboration with Community health committee should carry out the following activities:

- Organize quarterly meetings with other community leaders, chiefs, NGOs, Civil Societies, religious, traditional authorities to:
  - Sensitize them on cholera situation and prevention and control measures
  - Identify roles and responsibilities of each stakeholder and firm up commitments
  - Develop social mobilization and communication implementation plan (refer to annex 7)
  - Mobilize local and external resources from stakeholders to implement plan

- Conduct house to house education on cholera prevention and control with appropriate IEC materials
- Organize quarterly community durbars to educate community members on cholera prevention and control especially on community cholera case definition for early detection and referral handling of corpse and burial and
- Organize drama and sketches in schools to demonstrate cholera prevention and control
- Organize meetings with religious and traditional leaders on need for by-laws concerning funerals and other gatherings during an outbreak
- Organize discussions at churches, mosques, other public gatherings on cholera prevention and control e.g. limiting hand shaking and public gatherings during outbreaks
- Distribute and paste cholera IEC materials (posters, fliers etc.) at vantage places in the communities

6.14.2 During outbreak
The Community Health Nurses/Community Health Officers, Health promotion focal persons and Community Health Volunteers, in collaboration with Community health committee should carry out the following activities:

- Activate the social mobilization and communication plan
- Organize daily/weekly meetings with other community leaders, chiefs, NGOs, Civil Societies, religious, traditional authorities to:
o update on cholera situation and access level of implementation of the cholera prevention and control measures
o Mobilize additional resources from stakeholders to implement plan

- Intensify public/community education on cholera prevention and control measures through the following:
  - Daily house to house visits
  - Weekly community durbars
  - Weekly dramas and sketches in schools
  - Weekly meetings with religious and traditional leaders on need to suspend funerals and other gatherings during the outbreak
  - Weekly visit to churches and mosques on cholera prevention and control e.g. limiting hand shaking and public gatherings during outbreaks
  - Intensify distribution and paste IEC materials(posters, fliers etc.) at vantage places
  - Make use of gong-gong/megaphones, Community Information Centres and the van with PA system to make announcements on cholera messages

6.14.3 Post-outbreak
The Community Health Nurses/Community Health Officers, Health promotion focal persons and Community Health Volunteers, in collaboration with Community health committee should carry out the following activities:

- Organize meetings with other community leaders, chiefs, NGOs, Civil Societies, religious, traditional authorities to:
  - update on cholera situation
  - evaluate the situation, identify gaps and review strategy to prevent future outbreaks
- Continue community education on cholera prevention and control measures
7.0 Oral Cholera Vaccination

Recognizing the importance of cholera as a continuing public health problem, the World Health Assembly (WHA) adopted Resolution 64.15 in May 2011. This resolution calls for implementation of an integrated and comprehensive approach to cholera control, which may include the use of oral cholera vaccines (OCV). The oral cholera vaccines present an additional tool for cholera control to supplement, but not to replace, existing priority cholera control measures.

Two types of oral cholera vaccines are available: (i) Dukoral and (ii) Shanchol. Based on the properties of Shanchol, the Ministry of Health, Ghana recommends its use for either pre-emptive or reactive vaccination campaign.

7.1 Why vaccinate with OCV

The intent of OCV use is to both protect the individual who receives the vaccine and to reduce transmission and consequently, the burden of disease in the community.

7.2 When to use OCV

OCVs may be used in the following context:

1. Pre-emptive vaccination

Pre-emptive vaccination refers to vaccinating populations before an outbreak occurs in order to limit and reduce spread of the disease. Pre-emptive vaccination aims to:

- *Contribute to the control of diarrhoeal diseases* in communities where cholera transmission occurs at predictable times and places, i.e., seasonal upsurges;

- *Prevent a potential outbreak* in targeted populations and areas at risk for cholera outbreaks ("Cholera Hotspots") i.e., areas that lack essential services to prevent the spread of *Vibrio cholerae* in the environment, such as inadequate safe water, poor sanitation and hygiene;

- *Prevent a potential outbreak during humanitarian crises (refugees, internally displaced populations)* where essential services to prevent the spread of *Vibrio cholerae* in the environment (adequate safe water, sanitation and hygiene) and health care are disrupted or destroyed, populations may be on the move or residing in crowded settings and the area is at risk for cholera outbreaks.

2. Reactive vaccination

Reactive vaccination refers to vaccinating populations after the start of an outbreak and aims to limit mortality and reduce the spread of the disease.

7.3 Criteria for the use of Oral Cholera Vaccine

The initial consideration to use OCV should be based on (Figure 9):

- A sound risk assessment that clearly outlines cholera epidemiology and trends;
• Vulnerability of the population
• The capacity of the community and national mechanisms to prevent and control outbreaks;
• The feasibility of conducting a cholera vaccination campaign and attaining good coverage;
• The relevance of OCV with respect to competing public health priorities.

Figure 9 shows the decision tree developed to determine if OCV use should be considered during cholera outbreaks.

Figure 9. Decision tree to determine OCV use as part of the response to cholera outbreaks

Refer to Annex 10.9 for the details of epidemiological and demographic considerations for OCV stockpile deployment and further criteria required to request for OCV. The OCV stockpile was established in 2013 and managed by the International Coordinating Group (ICG) of OCV – an autonomous group comprising of WHO, MSF, IFRC. The stockpile is for emergency use.

7.4 Target Population

• *In Ghana the target population will be persons one year and above in the cholera “hotspot”.*
• Pregnant women, individuals with HIV, those with moderate or severe malnutrition would be given priority.
7.5 How to administer OCVs
The vaccine is presented in 1.5ml single dose vials and it is administered in 2 doses given orally and 2 weeks apart, booster dose given after 2 years. It should be stored at 2-8°C.

7.6 Preparing for OCV Campaign
1. Seek approval from EPI interagency coordinating committee
2. Prepare a vaccination micro-plan
2.a A micro-plan must be prepared for every district targeted for a vaccination campaign. It is the responsibility of the District Health Management Team to complete and submit the plan in order to prepare thoroughly for the campaign and to secure the necessary vaccines.

The micro-plan should include:
- Names of sub-districts targeted for vaccination
- Total population currently in target areas
- Population targeted for vaccination
- Quantity of vaccine needed
- Quantity of additional supplies needed, safety boxes, cotton wool, gloves
- Number of teams conducting the campaign (each team requires vaccinators, recorders, crowd controllers and a supervisor)
- Number of supervisors at team, district, regional and national levels
- Training of vaccination teams
- Logistic needs – cold chain equipment, vehicles
- Waste management
- Plans for vaccination campaign coverage surveys.
- Social mobilization plan (including allowances for staff)

3. Prepare budget
The budget should include:
- Allowances for members of the vaccination team
- Social mobilization costs (including allowances for staff)
- Costs of logistic equipment
- Costs of waste management

7.7 Accessing the Inter-Coordination Group (ICG) emergency vaccine stockpile
The following conditions are required before accessing OCV from ICG (Figure 10 shows the algorithm of accessing OCV):
- Provide evidence of a cholera disease outbreak
- Provide laboratory confirmation of the *V. cholerae* responsible
- Develop and provide plan of action for the vaccination campaign(s).
- Provide proof of necessary storage and transportation resources to ensure the safe and effective delivery and maintenance of the vaccines to the area affected

**Figure 10: Algorithm of accessing OCV**
8.0 Monitoring and Evaluation

Supervision and Monitoring of the Cholera prevention and control activities will be performed on an ongoing basis by an integrated, multidisciplinary team from the MOH/GHS, MLGRD, and MWRH/Ghana Water Company Ltd in collaboration with WHO and UNICEF-Ghana. Weekly feedback on cholera data and performance indicators will be given to staff and stakeholders involved in the cholera activities.

An evaluation will be performed at the end of every Cholera outbreak where data is reviewed and analysed, lessons learnt are documented and the needed recommendations are made to prevent future outbreaks. A report from the evaluation will be generated and shared with all stakeholders.

Performance indicators for the Cholera prevention and control activities will be categorised and evaluated as follows (see Table 11):

Table 11: Measurable indicators for Cholera Prevention and Control Activities

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicators</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td><strong>Cholera Surveillance and Laboratory Indicators</strong></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Proportion of Health Facilities implementing Acute Watery Diarrhoeal Surveillance per district</td>
<td>≥90%</td>
</tr>
<tr>
<td>1.2</td>
<td>Proportion of suspected cases investigated by RDT/Culture</td>
<td>100%</td>
</tr>
<tr>
<td>1.3</td>
<td>Proportion of communities with safe/potable drinking water</td>
<td>≥90%</td>
</tr>
<tr>
<td>1.3</td>
<td>Proportion of health facilities with availability of RDTs</td>
<td>≥90%</td>
</tr>
<tr>
<td>1.4</td>
<td>Proportion of probable or confirmed Cholera cases with contact tracing.</td>
<td>≥80%</td>
</tr>
<tr>
<td>1.5</td>
<td>Proportion of confirmed cholera outbreaks investigated within 48 hours by RRT</td>
<td>100%</td>
</tr>
<tr>
<td>1.6</td>
<td>Proportion of confirmed cholera outbreaks with targeted WASH interventions within 48 hours</td>
<td>100%</td>
</tr>
<tr>
<td>2.0</td>
<td><strong>Indicators for Monitoring Infection Prevention and Control (IPC)</strong></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>Proportion of districts that have isolation wards/cholera treatment centres or structures that could be converted into cholera treatment centres.</td>
<td>≥90%</td>
</tr>
<tr>
<td>2.2</td>
<td>Proportion of isolation wards/cholera treatment centres that had appropriate social hand washing facilities at all hand wash stations</td>
<td>≥90%</td>
</tr>
<tr>
<td>2.3</td>
<td>Proportion of staff at the isolation wards/cholera treatment centres observed performing the appropriate hand hygiene before attending to patients</td>
<td>100%</td>
</tr>
<tr>
<td>2.4</td>
<td>Percentage tracer personal protective equipment (PPEs) availability</td>
<td>100%</td>
</tr>
<tr>
<td>No.</td>
<td>Indicators</td>
<td>Target</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>2.5</td>
<td>Proportion of housekeeping staff that wore the appropriate PPEs during environmental cleaning activities</td>
<td>100%</td>
</tr>
<tr>
<td>2.6</td>
<td>Proportion of isolation wards/cholera treatment centres housekeeping staff knowledgeable about preparation of disinfectant cleaning solution</td>
<td>≥90%</td>
</tr>
<tr>
<td>2.7</td>
<td>Proportion of isolation wards/cholera treatment centres that segregated healthcare waste appropriately</td>
<td>≥90%</td>
</tr>
<tr>
<td>2.8</td>
<td>Level of adherence to guidelines on handling used/soiled linen</td>
<td>100%</td>
</tr>
<tr>
<td>3.0</td>
<td>Indicators for Burial Practices</td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>Number and proportion of burial team members who contract cholera.</td>
<td>0</td>
</tr>
<tr>
<td>3.2</td>
<td>% availability of tracer burial supplies and consumables</td>
<td>≥90%</td>
</tr>
<tr>
<td>3.3</td>
<td>Level of adherence to guidelines on handling of cholera dead bodies.</td>
<td>100%</td>
</tr>
<tr>
<td>3.4</td>
<td>Proportion of cholera dead bodies disinfected with 2% chlorine solution and supervised burial</td>
<td>100%</td>
</tr>
<tr>
<td>3.5</td>
<td>Proportion supervised funerals with handwashing stations</td>
<td></td>
</tr>
<tr>
<td>4.0</td>
<td>Indicators for measuring communication activities</td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>Input indicators</td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td>Number of risk communication trainings conducted</td>
<td></td>
</tr>
<tr>
<td>4.2</td>
<td>Number of jingles produced</td>
<td></td>
</tr>
<tr>
<td>4.3</td>
<td>Number of posters produced</td>
<td></td>
</tr>
<tr>
<td>4.4</td>
<td>Proportion of IEC materials distributed to lower levels</td>
<td>≥90%</td>
</tr>
<tr>
<td>4.5</td>
<td>Number of stakeholder meetings held</td>
<td></td>
</tr>
<tr>
<td>4.6</td>
<td>Number of radio discussion held</td>
<td></td>
</tr>
<tr>
<td>4.7</td>
<td>Number of times a cholera jingle is aired</td>
<td></td>
</tr>
<tr>
<td>4.8</td>
<td>Number of press briefings held on cholera prevention and control</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>Output indicators</td>
<td></td>
</tr>
<tr>
<td>4.9</td>
<td>Proportion of target audience who remember messages on mode of transmission, prevention, symptoms and where to seek care concerning cholera</td>
<td>80%</td>
</tr>
<tr>
<td>4.10</td>
<td>Proportion of stakeholders who have committed resources to cholera prevention and control</td>
<td>80%</td>
</tr>
<tr>
<td>4.11</td>
<td>Proportion of target audience who wash their hands with soap under running water at critical times</td>
<td>80%</td>
</tr>
<tr>
<td>4.12</td>
<td>Proportion of target audience practicing desired behaviour to prevent and control cholera</td>
<td>80%</td>
</tr>
<tr>
<td>5.0</td>
<td>WASH Intervention Indicators</td>
<td></td>
</tr>
<tr>
<td>5.1</td>
<td>Proportion of targeted households with a designated place for hand washing (hand washing station) with hand washing supplies (water and local cleansing agent (e.g. soap)</td>
<td>90%</td>
</tr>
<tr>
<td>5.2</td>
<td>Proportion of households with WC/improved latrines (washable platform, superstructure, cover over pit, 5 meters away from house)</td>
<td>100%</td>
</tr>
<tr>
<td>5.3</td>
<td>Proportion of households reporting ALL family members regularly drinking treated water</td>
<td>100%</td>
</tr>
<tr>
<td>5.4</td>
<td>Proportion households who can demonstrate treatment supplies at hand (HHWT: credible to interviewer that they are used regularly)</td>
<td>90%</td>
</tr>
<tr>
<td>No.</td>
<td>Indicators</td>
<td>Target</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>5.5</td>
<td>Proportion of households with a safe water storage container (narrow neck vessel with tightly fitting cover; spigot ideal)</td>
<td>100%</td>
</tr>
<tr>
<td>5.6</td>
<td>Proportion of food vendors practicing good personal hygiene</td>
<td>90%</td>
</tr>
<tr>
<td>5.7</td>
<td>Proportion of food facilities with hand washing facilities with soap</td>
<td>90%</td>
</tr>
</tbody>
</table>

9.0 References

10. ICG. Guidance on how to access the Oral Cholera Vaccine (OCV) from ICG emergency stockpile, 2013.


10.0 Annexes

Annex 10.1: Sample of Cary-Blair Media and Rectal Swab Sticks

Annex 10.2: Cholera Data Capture and Reporting Tools

Annex 10.2.1: Cholera Case Investigation Form

<table>
<thead>
<tr>
<th>Variables/Questions</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Place seen (Name of Health facility or Community)</td>
<td></td>
</tr>
<tr>
<td>2 Date seen at Health Facility or Community (dd/mm/yyyy)</td>
<td></td>
</tr>
<tr>
<td>3 Patient identification number (OPD Number)</td>
<td></td>
</tr>
<tr>
<td>4 Epid Number (GHA-RRR-DDD-YY-NNN) (completed by district team)</td>
<td></td>
</tr>
<tr>
<td>5 Patient surname or last name</td>
<td></td>
</tr>
<tr>
<td>6 Patient first name(s)</td>
<td></td>
</tr>
<tr>
<td>7 Name of mother and father/Care taker if a child</td>
<td></td>
</tr>
<tr>
<td>8 Age (completed years), if less than 1 year put in months</td>
<td></td>
</tr>
<tr>
<td>10 Gender: M=Male F=Female</td>
<td></td>
</tr>
<tr>
<td>11 Number of people in same household*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Variables/Questions</td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>12</td>
<td>Patient's residential Address:(Traceable):</td>
</tr>
<tr>
<td></td>
<td>Tel. Number</td>
</tr>
<tr>
<td>13</td>
<td>Name of Patient’s residence: Town/City /Village</td>
</tr>
<tr>
<td>14</td>
<td>Neighbourhood/Locality</td>
</tr>
<tr>
<td>15</td>
<td>District of residence</td>
</tr>
<tr>
<td>16</td>
<td>Urban/Rural? (U=Urban   R=Rural)</td>
</tr>
<tr>
<td>17</td>
<td>Region of Residence</td>
</tr>
<tr>
<td>18</td>
<td>Country of Residence</td>
</tr>
<tr>
<td>19</td>
<td>Date seen at health facility (day/month/year)</td>
</tr>
<tr>
<td>20</td>
<td>Date of onset (first symptoms) (dd/mm/yyyy)</td>
</tr>
<tr>
<td>21</td>
<td>In-patient or Out-patient?</td>
</tr>
<tr>
<td>22</td>
<td>Clinical Signs and Symptoms</td>
</tr>
<tr>
<td>23</td>
<td>Laboratory results: Rapid Diagnostic Test (RDT) Results</td>
</tr>
<tr>
<td>24</td>
<td>Laboratory results: type(s) of organism isolated from stools by culture</td>
</tr>
<tr>
<td>25a</td>
<td>Drugs to which the isolated strain is sensitive</td>
</tr>
<tr>
<td>25b</td>
<td>Drugs to which the isolated strain is resistant</td>
</tr>
<tr>
<td>26</td>
<td>Outcome: (Alive, Dead, Transferred out, Lost to follow-up or unknown)</td>
</tr>
<tr>
<td></td>
<td>Final Classification (Not a case, Suspect, Probable, Confirmed by Lab, Confirmed by epidemiological link, Pending)</td>
</tr>
<tr>
<td>27</td>
<td>Date health facility notified District (day/month/year)</td>
</tr>
<tr>
<td>28</td>
<td>Date form sent to district (day/month/year)</td>
</tr>
<tr>
<td>29</td>
<td>Date latest update of this record (dd/mm/yyyy)</td>
</tr>
<tr>
<td>30</td>
<td><strong>Area: Risk Factor Assessment</strong></td>
</tr>
<tr>
<td>31</td>
<td>Was patient exposed to any known risk factor for this disease? (Yes/No)</td>
</tr>
</tbody>
</table>
If yes, specify risk factor(s):

32a) Within 3 days prior to the onset diarrhoea where did the patient drink from?
(list by type, e.g. tap water, Borehole, unprotected well, protected well, River, dam, lake, pond, bottled water, sachet water)

32b) Where was water located?

32b) Type of Food eaten 3 days before onset of diarrhoea

33d) Was it cooked at home, chop bar, restaurant, street food vendor etc)

33a) Within 3 days prior to the onset of diarrhoea, what type of Food did the patient eat?

33b) Was it cooked at home, chop bar, restaurant, street food vendor etc)

33c) If food outside home where food facility located

34b) Other social event? (Yes/No) if yes specify

34a) Funerals? (Yes/No)

37 Person completing form: Name, Designation, Tel No. Signature

*Household: “People eating from common pot”

**Annex 10.2.2: Cholera Laboratory Reporting Form**

**Cholera Laboratory Reporting Form**

**Part I. Referring health worker to complete this form and send a copy to the lab with the specimen**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Date of specimen collection (day/month/year)</td>
<td>_<em>/_</em>/__/</td>
</tr>
<tr>
<td>2 Cholera RDT test results from facility</td>
<td></td>
</tr>
<tr>
<td>3 Specimen type *</td>
<td></td>
</tr>
<tr>
<td>4 Epid Number (e.g. GHA-GAR-DDD-YY-NNNN) **</td>
<td></td>
</tr>
<tr>
<td>5 Patient Name (s)</td>
<td></td>
</tr>
<tr>
<td>Variables</td>
<td>Answers</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Gender (M= Male  F= Female)</td>
<td></td>
</tr>
<tr>
<td>Age (Years) write in Months if less than 1 year</td>
<td></td>
</tr>
<tr>
<td>Date Specimen sent to lab (day/month/year)</td>
<td>__________</td>
</tr>
</tbody>
</table>

**Part II. Lab to complete this section and return the form to district and clinician**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Laboratory Name and location</td>
<td></td>
</tr>
<tr>
<td>2 Date lab received specimen (dd/mm/yyyy)</td>
<td>__________</td>
</tr>
<tr>
<td>3 Specimen condition: (Adequate/Not adequate)</td>
<td></td>
</tr>
<tr>
<td>4 Type of test(s) performed (RDT, Culture)</td>
<td></td>
</tr>
<tr>
<td>5 Final Lab Result(s)</td>
<td></td>
</tr>
<tr>
<td>5a Types of organisms isolated</td>
<td></td>
</tr>
<tr>
<td>5b Drugs to which the isolated strain is sensitive</td>
<td></td>
</tr>
<tr>
<td>5c Drugs to which the isolated strain is Resistant</td>
<td></td>
</tr>
<tr>
<td>6 Date (dd/mm/yyyy) lab sent results to district</td>
<td>__________</td>
</tr>
<tr>
<td>7 Date Results sent to the clinician (dd/mm/yyyy)</td>
<td>__________</td>
</tr>
<tr>
<td>8 Date district received lab results (dd/mm/yyyy)</td>
<td>__________</td>
</tr>
</tbody>
</table>

| Name of Lab Personnel completing form          |                        |
| Phone                                          |                        |
| Signature                                      |                        |
| Date                                           |                        |

* Stool, food/water samples
** Same as the Epid Number on Cholera Case Investigation Form
Annex 10.2.3: Line List for Reporting from Health Facility to District Cholera during outbreaks

(1) Health Facility: ____________________  Sub-district: ____________________
District: ____________________ Region: ____________________

(2) Date form completed: __/___/______  (4) Date received at District: __/___/______

(3) Disease/Condition: ____________________

<table>
<thead>
<tr>
<th>(5) ID Number (Assigned at the district level only) 001,002, etc.</th>
<th>(6) Out / In Patient</th>
<th>(7) Name</th>
<th>(8) Place of Residence</th>
<th>(9) Sex</th>
<th>(10) *Age (In years and months)</th>
<th>(11) Date seen at health facility</th>
<th>(12) Date of onset of disease</th>
<th>(13) No. of doses of vaccines received</th>
<th>(14) Laboratory Tests</th>
<th>(15) Outcome (A)live (D)ead (U)known (R)eferrer</th>
<th>(16) Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Community/ Suburb/Town</td>
<td>Sub-district</td>
<td></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>
Instructions for completing Line List Form

* Record age in months up through age 12 months. If patient is more than 12 months old, record age in years.

**Column (5)** If district sends specimen to the lab, use district-assigned ID number (GHA-RRR-DDD-YY-NNN format) as well as patient’s name to identify lab specimen. If health facility sends lab specimen to lab without passing through the district, then the patient’s name (only) will be the lab specimen identifier.

**Column (13)** Exclude from No. of doses, doses given within 15 days of onset of illness.

**Column (14)** Ind= Indeterminate; NA=Not Applicable;

**Column (16)** Comments could include comments like “sister to case No. GHA-GAR-DAW-01-002. Live together”, “update record”. Other comments could include specimen condition, and serotype of pathogen.

**NOTE:** If previously reported cases die, update the status by completing a new row with “died” in the status column and “update record” in the Comments column.
Annex 10.2.4: Cholera Contact Listing form

**Case Information**

<table>
<thead>
<tr>
<th>Outbreak Case ID</th>
<th>Surname</th>
<th>Other Names</th>
<th>Head of Household</th>
<th>Address</th>
<th>Town</th>
<th>District</th>
<th>Date of Symptom Onset</th>
<th>Location Case Identified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

**Contact Information**

<table>
<thead>
<tr>
<th>Surname</th>
<th>Other Names</th>
<th>Sex (M/F)</th>
<th>Age (yrs)</th>
<th>Relation to Case</th>
<th>Date of Last Contact with Case</th>
<th>Type of Contact (1,2,3,4,5) *</th>
<th>Head of Household</th>
<th>Address**</th>
<th>Town</th>
<th>District</th>
<th>Phone Number</th>
<th>Healthcare Worker (Y/N)</th>
<th>If yes, what</th>
<th>Any additional info</th>
</tr>
</thead>
<tbody>
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</table>

*Types of Contact:*
1 = Touched body fluids of the patient (vomit, faeces)
2 = Had direct physical contact with the body of the patient (alive or dead)
3 = Touched or cleaned the linens, clothes, or dishes of the patient
4 = Slept or ate in the same household as the patient,
5 = Ate or drank from common source (chop bar, funeral, party, wells etc)

**Indicate landmark to facilitate location**

*Contact sheet filled by:* Name: Title:
Telephone:
Annex 10.2.5: Cholera Contacts Follow-up form

Contact Tracing Form – by Community Volunteer
Volunteer’s name........................................
Address ........................................... Town ........................................
District.................................................. Region........................................

<table>
<thead>
<tr>
<th>CN*</th>
<th>Family Name</th>
<th>First name</th>
<th>Age</th>
<th>Sex</th>
<th>Date of last Contact</th>
<th>Follow-up days</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

*CN=Contact Number
Tick “0” if the contact has not developed diarrhoea with or without vomiting
Tick “X” if the contact has died or developed diarrhoea with or without vomiting (complete Cholera Case investigation Form and, if alive, refer to the hospital)
Annex 10.3: Template for calculating Medicines and Non-medicines consumables required for cholera treatment

**Justification:** The expected attack rate (average number during an outbreak) is 200/100,000 population. About 10% are expected to be severely dehydrated requiring intravenous infusion and antibiotics. 10% of the patients are also expected to be children.

**Annex 10.3.1 Sample of Calculation / Request for Cholera Logistics**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>TOTAL POPULATION</strong></td>
<td>156,000</td>
</tr>
<tr>
<td>Attack Rate 0.2%</td>
<td>312</td>
</tr>
<tr>
<td>10% cases as children</td>
<td>31</td>
</tr>
<tr>
<td>10% cases develop severe dehydration</td>
<td>31</td>
</tr>
<tr>
<td>Each child will take 2 bts of Erythromycin</td>
<td>62</td>
</tr>
<tr>
<td>Each contact will take 20 caps of doxycycline</td>
<td>31,200</td>
</tr>
<tr>
<td>Each severe case will need 6L infusion 1st day, then 3 L dly for 2 more days:</td>
<td>374</td>
</tr>
<tr>
<td>Each patient takes 12L (50%)</td>
<td>5,616</td>
</tr>
<tr>
<td>Each patient will take 20 tabs of Ciprofloxacin (250mg)</td>
<td>11,232</td>
</tr>
<tr>
<td>Erythromycin 500mg 6hrly for 5 dys (250mg tabs) Each pt takes 40 tabs</td>
<td>11,232</td>
</tr>
<tr>
<td>ORS 4 sachet (2.4L) per pt per day for 3 days: Each pt takes 12 sachets</td>
<td>3,744</td>
</tr>
<tr>
<td>Infusion sets</td>
<td>624</td>
</tr>
<tr>
<td>Sanitizers for staff and contacts</td>
<td>1000</td>
</tr>
<tr>
<td>Chlorine Tabs: 1 sachet treat 20 l water for 1 person per day: Each person takes 1 sachet per day for 2 IP (10 days)</td>
<td>1150</td>
</tr>
</tbody>
</table>
Annex 10.3.2: List of Medicines and Non-medicines Consumables Required

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit Size</th>
<th>Approx. Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Rehydration Supplies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ORS</td>
<td>Sachets</td>
<td>700,000</td>
</tr>
<tr>
<td>Cholera Replacement Fluids (5.4.1)500ml</td>
<td>500ml</td>
<td>60,000</td>
</tr>
<tr>
<td>Ringers Lactate</td>
<td>500ml</td>
<td>20,000</td>
</tr>
<tr>
<td>Intravenous Cannulae-assorted sizes</td>
<td>100</td>
<td>800</td>
</tr>
<tr>
<td>N/G Tube Adults(disposable)</td>
<td>100</td>
<td>40</td>
</tr>
<tr>
<td>N/G Tube Paediatrics</td>
<td>100</td>
<td>40</td>
</tr>
<tr>
<td><strong>Sub Total</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>B. Antibiotics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doxycycline caps</td>
<td>100</td>
<td>500,000</td>
</tr>
<tr>
<td>Erythromycin Tablets</td>
<td>1000</td>
<td>15</td>
</tr>
<tr>
<td>Erythromycin Syrup 100ml</td>
<td>100ml</td>
<td>10,000</td>
</tr>
<tr>
<td>Ciprofloxacin Tablets</td>
<td>1000</td>
<td>15,000</td>
</tr>
<tr>
<td>Tetracycline Caps (250mg)</td>
<td>1000</td>
<td>500,000</td>
</tr>
<tr>
<td><strong>C. Disinfectants</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Izal (gls)</td>
<td>5 litres</td>
<td>300</td>
</tr>
<tr>
<td>Sodium Hypochlorite (Bleech)</td>
<td>5 litres</td>
<td>300</td>
</tr>
<tr>
<td>Chlorine Tabs(Aqua Tabs)</td>
<td>1000</td>
<td>60</td>
</tr>
<tr>
<td>Methylated Spirit</td>
<td>100ml</td>
<td>60</td>
</tr>
<tr>
<td>Hand Sanitizers</td>
<td>500ml</td>
<td>1000</td>
</tr>
<tr>
<td><strong>D. Other Supplies including PPEs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adhesive Tapes</td>
<td>10 rolls</td>
<td>50</td>
</tr>
<tr>
<td>Syringes assorted sizes (with needles)</td>
<td>100</td>
<td>1500</td>
</tr>
<tr>
<td>Examination Gloves Medium &amp; large</td>
<td>100</td>
<td>10,000</td>
</tr>
<tr>
<td>Rubber Sanitary gloves</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Cotton wool</td>
<td>200grams</td>
<td>50,000</td>
</tr>
<tr>
<td>Boots</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knapsack Spraying Machine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gowns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aprons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nose mask</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Unit Size</td>
<td>Approx. Qty</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td>Face mask</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>E. Diagnostics Reagent</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cholera RDTs</td>
<td>Boxes</td>
<td>10,000</td>
</tr>
<tr>
<td>Carry Blair Medium 500g</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>TCBS Agar 500g</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Cholera diagnostic sera:Ogawa</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Cholera diagnostic sera:Inaba</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Cholera Diagnostic sera Polyvalent</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Cholera Diagnostic Antisera (Bengal 0139)</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Peptone Water</td>
<td>100ml</td>
<td>12</td>
</tr>
<tr>
<td>Sterile Swabs (Boxes)</td>
<td>100</td>
<td>6</td>
</tr>
</tbody>
</table>
Annex 10.3.3: Sample Cholera Logistics and Supplies; Receipt and Distribution Log

Name of Medical Stores: ____________________________________________

Name of Officer In Charge: _________________________________________

<table>
<thead>
<tr>
<th>Date</th>
<th>Items</th>
<th>Quantity of items received</th>
<th>Quantity of items issued</th>
<th>Receiving District / institution</th>
<th>Issued by</th>
<th>Signature: Issuing Officer</th>
<th>Received by</th>
<th>Signature: Receiving Officer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ORS</td>
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<tr>
<td></td>
<td>Ringer’s lactate (L)</td>
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<td></td>
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<tr>
<td></td>
<td>Infusion 5.4.1 (L)</td>
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<tr>
<td></td>
<td>Infusion giving sets</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Cannula</td>
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<tr>
<td></td>
<td>Scalp vein needles</td>
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<td></td>
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<tr>
<td></td>
<td>NG tube</td>
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<tr>
<td></td>
<td>Doxycycline</td>
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<tr>
<td>Date</td>
<td>Items</td>
<td>Quantity of items received</td>
<td>Quantity of items issued</td>
<td>Receiving District / institution</td>
<td>Issued by</td>
<td>Signature: Issuing Officer</td>
<td>Received by</td>
<td>Signature: Receiving Officer</td>
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<td></td>
<td>Tetracycline</td>
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<tr>
<td></td>
<td>Ciprofloxacin</td>
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<tr>
<td></td>
<td>Erythromycin</td>
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<tr>
<td></td>
<td>Septrin syr (btls)</td>
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<td></td>
<td>Syringes / needles</td>
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<td></td>
<td>Cotton wool</td>
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<td>Sanitizers (btls)</td>
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<tr>
<td></td>
<td>Disinfectant</td>
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<tr>
<td></td>
<td>Chlorine tabs</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Examination gloves</td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>Utility gloves</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Items</td>
<td>Quantity of items received</td>
<td>Quantity of items issued</td>
<td>Receiving District / institution</td>
<td>Issued by</td>
<td>Signature: Issuing Officer</td>
<td>Received by</td>
<td>Signature: Receiving Officer</td>
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</tbody>
</table>

*Others: specify
Annex 10.4: Procedure for handling/disinfecting spillage

Procedure for spill management often depends on the following:

- Nature of the spill, e.g. blood, urine, and faeces.
- Possible pathogens that may be involved.
- Size of the spill, e.g., spot, splash, puddle, large spill.
- Type of surface involved, e.g., linoleum, carpet, wood, laminated, etc.
- Area involved, e.g., preparatory laboratory, teaching areas, common access areas, etc.
- Likelihood of bare skin contact with the soiled area.

The following guidelines shall apply cleaning/disinfecting spillage

- Clean up spills immediately as prompt removal prevents spread of infections and accidents.
- Standard cleaning equipment, including a mop and cleaning bucket plus cleaning agents, should be readily available for spills and should be stored and sign-posted in an area known to all staff.

Steps

1. Wear appropriate PPEs Remove the visible organic matter with absorbent material, e.g., disposable towel or paper, and discard into an appropriate yellow coloured leak-proof bin.
2. Disinfect by pouring 2% sodium hypochlorite disinfectant to cover the area.
3. Mop and clean the area immediately and allow to air-dry.

Note

- Do not place a rag over the spill for cleaning up later, someone could easily slip and fall on it.
- Items used for cleaning must be decontaminated, cleaned and air-dried before reuse.
- Hands should be thoroughly washed and dried after gloves are removed.
**Annex 10.5: Water chlorination Procedure: Jar Test for free residual chlorine (FRC)**

Step 1: Check the FRC of the water source – if it is not adequate proceed as follows:

Step 2: Prepare 1% stock solution

Step 3: Fill 3 plastic buckets (4 or 5 test buckets could be used), each with 10 Litres of the water to be treated

Step 4: Add to each bucket increasing doses of 1% stock solution

E.g.

- bucket 1: 2 ml of 1% stock solution
- bucket 2: 4 ml of stock solution
- bucket 3: 6 ml of stock solution

Step 5: Stir vigorously and leave to work for 30 min.

Step 6: Choose as a reference the dose to have 0.5 – 1 mg/L of free residual chlorine

Measure the free residual chlorine results to identify quantity of stock solution to use per 10 litres:

- Bucket 1: 0.3 mg/L
- Bucket 2: 0.7 mg/L
- Bucket 3: 1.2 mg/L

Measure the free residual chlorine results:

Sample results:

- Bucket 1: 0.3 mg/L
- Bucket 2: 0.7 mg/L (0.5 mg/L < FRC < 1.0 mg/L)
- Bucket 3: 1.2 mg/L

**NOTE: Precautions in using the Pool tester**

- Never touch the Pool Tester tablets/reagents.
- Read the result after 60 seconds, after the tablets/reagent is completely dissolved.
- Read the result in the daylight.
Always do the jar test before chlorination at any water point.

Pool tester can also be used to monitor the free residual chlorine at household level and at water point - as a quality assurance measure, for water network testing and for well testing.

Annex 10.6: Samples of Key Messages on Cholera Prevention and Control
A. General information on Public Education

1. Mode of transmission
One becomes infected by ingestion of food and water contaminated by germ called *vibrio cholerae*. The cholera germ is commonly spread by, contaminated fingers, flies, water and food. These are some of the signs and symptoms of cholera:

- Cholera onset is typically sudden
- Diarrhoea is profuse, painless and watery with “rice water” stool.
- Vomiting occurs involuntarily
- Patients are thirsty tired and weak
- Loss of body fluid occurs rapidly and that leads to death

2. Personal Hygiene

- Wash your hands with soap and under running safe water: (Wash all parts of your hands – front, back, between the fingers, under nails).
  - before cooking,
  - before eating and before feeding your children,
  - after using the latrine or cleaning your children after they have used the latrine.
- Use the latrine to defecate.
- Keep the latrine clean.

3. Food Hygiene

**COOK IT – PEEL IT – OR LEAVE IT**

- Cook raw food thoroughly.
- Eat cooked foods immediately.
- Always cover your food
- Store cooked food carefully in refrigerator.
- Reheat cooked food thoroughly including bought food.
- Avoid contact between raw food and cooked food.
- Eat fruit and vegetable you have peeled yourself.
- Keep all kitchen surfaces clean.
- Wash your cutting board especially well with soap and water.
- Wash your utensils and dishes with soap and water.
- Avoid buying food which is unprotected (vendor selling close gutters, those without sieves to protect food from flies)
- Advocate for food vendors to use sieves to protect their food from contamination

4. Safe Drinking-Water
- Even if it looks clear, water can contain cholera germs.
- Boil, or add drops of chlorine (as per manufactures instructions) to the water before drinking.
- Keep drinking-water in a clean, covered barrel, pot or bucket or other container with a small opening and a cover. It should be used within 24 hours of collection.
- Always pour the water from the container
- If dipping into the water container cannot be avoided, use a cup or other utensil with a handle.
- Chlorinate or boil water bought from water tanker drivers, or household water sellers before usage

5. Water Wells
- Do not defecate in or near a source of drinking-water.
- Do not wash yourself, your clothes, or your pots and utensils in the source of drinking-water (stream, river, or water hole).
- Cover open wells when not in use to avoid contamination.
- Hang up containers used to collect water when not in use – Do not leave them on a dirty surface.
- Keep the area surrounding a well or a hand pump as clean as possible.
- Get rid of refuse around a water source.

6. For People with Diarrhoea
- The biggest danger of cholera is loss of body fluid.
- Drink a solution of oral rehydration salts made with safe (boiled or chlorinated) water.
- Go immediately to the nearest health facility. Continue drinking as you go.

7. Taking Care of Patients
- Wear gloves before caring for the patients, touching them and their excretions
- Wash your hands with soap under safe running water after taking care of patients, touching them, their stools, vomit, or clothes.
- Avoid contaminating a water source by washing a patient’s clothes in it.
• Disinfect stools and vomitus from a cholera patient with disinfectant (e.g. 2% chlorine solution).

• Disinfect the patient’s clothing and bedding with a solution of chlorine (0.05%) or by stirring them in boiling water or by drying them thoroughly in the sun before and after normal washing.

8. Hygienic Handling of Corpses – Restriction on Funerals

• Report immediately to health authorities all community/home deaths

• Burial should be done under supervision of health workers

• Avoid contact with dead

• Wear aprons and gloves when touching body

• Limit number of people preparing the body (maximum 3)

B. Core Points of Public Health Education

• Reporting Early to the nearest health facility all cholera /diarrhoea and vomiting cases

• Buy and keep ORS at home to start with while on the way to health facility

• Food hygiene – fruit, cooked or raw foods

• General sanitation – clean environment, home, work place

• Hand washing with soap under safe running water

• Use the toilet facilities (KVIP, WC, latrine etc)

• Avoid iced drinks (water, ice creams)

• Boil and cool water before consumption

To prevent cholera one needs to:

• Wash hands thoroughly with soap under safe running water before eating, or feeding a baby or handling food, after toilets or handling any suspected material

• Avoid eating cold foods or left-over

• Eat all foods warm/hot

• Reheat all left over foods e.g. TZ, soups

• Avoid buying foods that are not covered or sold around dirty gutters or filthy environment

• Avoid iced waters, ice cream, “zinkoom”, “sobolo”, ice kenkey etc

• Cover all food and drinks properly

• Use the toilet for defecation. Avoid open defecation; if toilets are not available bury your faeces after defaecation
• Avoid eating raw salad, tomatoes; carrots. Wash them thoroughly with salt water or warm water before eating.
• Wash your mangoes, oranges, pawpaw and other fruits before eating
• Report early to the nearest health facility in all cases of diarrhoea or vomiting
• Buy and keep ORS at home to start with in case of diarrhoea or vomiting and while on the way to the health facility
• Cholera prevention is every body’s business. Clean homes, offices, or work place daily. Boil water for drinking if it looks suspicious
• During outbreaks individuals should carry safe water for consumption

C. Responsibilities of Municipal/District Assemblies
• Initiate general clean up campaigns
• Identify shallow wells, leaking boreholes and pipe lines for decontamination and repair
• Stock of chlorine for chlorination of shallow wells
• Enforce public food hygiene including seizing and destroying foods unhygienically prepared, stored or sold at market places, bars and school premises
• Enforce of sanitary bye-laws
• Discourage the use of PAN LATRINES.
• Undertake public education directly or by supporting other partners

D. Responsibilities of Municipal District Health Management Teams (M/DHMT)
• Liaise with Municipal/District Assemblies and ensure clean environment
• Ensure adequate stocks of IV fluids, ORS, giving sets, tetracycline for adults, erythromycin for children, disinfectants (bleach), NG tubes, blankets, mattresses and gloves in all health facilities including CHPS
• Identify isolation places in all districts health facilities
• Start health education through local radio, van announcements, outreach and static points, letter to be read in churches, mosques and schools periodically
• Distribute cholera management guidelines and protocols to all facilities
• Supervise and train on site on cholera investigation and control
• Line list all cases
• Fill case investigation forms for all initial cases
• Collate costs of all cases managed if any
• Notify laterally, vertically and cross border

E. Responsibilities of Health Facilities

• Maintain adequate stocks of all required logistics, laboratory, consumables and medicines for cholera
• Identify isolation places
• Identify standby staff for isolation places
• Stock few blankets, mattresses and rubber covers ready for initial cases
• Promptly and properly manage all cases (keep fatality below 1%)
• Ensure safe faecal disposal by cases
• Ensure proper disinfections of toilets, bedding and flour used by cases
• Give health education to other patients and relatives
• Notify M/DHMT

Note: Strictly adhere to Infection Prevention and Control (IPC) measures (reference: national infection and control policy and guidelines for health care settings, 2015)

F. Responsibilities of Traditional and Religious Leaders

• Support in passing by-laws related to banning of social gatherings during cholera outbreaks
• Support in implementing behaviours that limit over-crowding or unnecessary contact during outbreaks
• Support in identifying high risk water bodies and report to appropriate authorities
• Support in advocating for building and usage of latrines
• Support in educating the public on cholera prevention and control
• Support in safe and dignified burial of people who died of cholera
Annex 10.7: Sample implementation plan of cholera Social Mobilization and Communication Activities

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Broad activities</th>
<th>Materials needed</th>
<th>Implementers</th>
<th>Indicators</th>
<th>budget</th>
<th>Timelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advocacy</td>
<td>Activity 1</td>
<td>Indicate materials needed to support implementation</td>
<td>Indicate level and implementation partners</td>
<td>Indicate the benchmark used to measure the activity</td>
<td>Indicate total cost of activity</td>
<td>Indicate date/period of activity</td>
</tr>
<tr>
<td>Social Mobilization</td>
<td>Activity 1</td>
<td>Indicate materials needed to support implementation</td>
<td>Indicate level and implementation partners</td>
<td>Indicate the benchmark used to measure the activity</td>
<td>Indicate total cost of activity</td>
<td>Indicate date/period of activity</td>
</tr>
<tr>
<td>Communication activities</td>
<td>Activity 1</td>
<td>Indicate materials needed to support implementation</td>
<td>Indicate level and implementation partners</td>
<td>Indicate the benchmark used to measure the activity</td>
<td>Indicate total cost of activity</td>
<td>Indicate date/period of activity</td>
</tr>
<tr>
<td></td>
<td>Activity 2</td>
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<tr>
<td></td>
<td>Activity 2</td>
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</tbody>
</table>

10
Annex 10.8: Data collection tool for Rapid Assessments/Knowledge Attitude and Practice

Questionnaire for Rapid Assessment

**General information:** Randomly select and interview at least 20 people in the community or sub-district to evaluate the level of awareness of Cholera

Region:_____________  District:_____________  Name of community:_____________

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Have you heard of cholera?</th>
<th>If yes, what do you know about it</th>
<th>What do you do if you see symptoms</th>
<th>How did you get to know of Cholera</th>
<th>How are you using the message</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Y</td>
<td>spread</td>
<td>Prevention</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>symptoms</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Respondent 1</td>
<td></td>
<td></td>
<td>1. Call help line</td>
<td>1. TV</td>
<td>1. Share information</td>
</tr>
<tr>
<td>Respondent 2</td>
<td></td>
<td></td>
<td></td>
<td>4. Gong gong</td>
<td>2. Practice positive behavior</td>
</tr>
<tr>
<td>Respondent 3</td>
<td></td>
<td></td>
<td>2. Report to nearest facility</td>
<td>5. Mob van/P.A</td>
<td></td>
</tr>
<tr>
<td>Respondent 4</td>
<td></td>
<td></td>
<td>3. others.</td>
<td>6. Health worker</td>
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<tr>
<td>Respondent 5</td>
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<td></td>
<td>................................</td>
<td>9. Interpersonal</td>
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<td>Respondent 6</td>
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<td>Respondent 15</td>
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<td>Respondent 16</td>
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<tr>
<td>Respondent 17</td>
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<td>Respondent 18</td>
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<td>Respondent 19</td>
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<td>Respondent 20</td>
<td></td>
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<tr>
<td><strong>TOTAL</strong></td>
<td></td>
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</tr>
</tbody>
</table>
### Annex 10.9: Epidemiological and Demographic considerations for OCV stockpile deployment

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Indicator</th>
<th>Decision threshold</th>
<th>Potential impact of</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>High</strong></td>
</tr>
<tr>
<td><strong>Susceptibility of the population</strong></td>
<td>Number of cases reported in the affected area(s) during the past 2–3 years</td>
<td>None or few cases</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High number of cases reported</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Attack rate of previous outbreaks</td>
<td>High attack rate</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low attack rate</td>
<td>X</td>
</tr>
<tr>
<td><strong>Vulnerability of the population</strong></td>
<td>Case-fatality rate (CFR) of previous outbreaks in the affected area(s)²</td>
<td>High CFR</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low CFR</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Refugee camp, internally displaced people, or slums present in the affected area(s)</td>
<td>Yes</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Area(s) with important population movements (border, market hub, etc.)</td>
<td>Yes</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Population density in the affected area(s)</td>
<td>High density</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low density</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Access to water, sanitation, and hygiene</td>
<td>Poor access</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Good access</td>
<td>X</td>
</tr>
<tr>
<td><strong>Risk of</strong></td>
<td>Time elapsed / maturity of</td>
<td>Few weeks</td>
<td>X</td>
</tr>
<tr>
<td>spatial extension</td>
<td>The outbreak since first case reported$^3$</td>
<td>Few months</td>
<td>X</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------------------------</td>
<td>------------</td>
<td>---</td>
</tr>
<tr>
<td>Attack rate since the start of the current outbreak (i.e. cumulative cases)$^1$</td>
<td>Low attack rate</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High attack rate</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Proportion of health units in the district reporting cases$^4$</td>
<td>Low proportion</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High proportion</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Time at which first cases were notified during the epidemic season$^5$</td>
<td>First cases notified</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>First cases notified late</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

1 The calculation of attack rates will rely on the availability of population figures. In some instances, cholera attack rates are overestimated because all cases of acute watery diarrhoea are included in the numerator. In general, the quality of the data should be checked when using this indicator. According to Médecins Sans Frontières (MSF)$^{50}$ guidelines, the maximum expected attack rate (i.e. the “worst case scenario”) would be 5% of the entire population in refugee settings and urban slums, and 2% in rural areas. These figures might however be exceeded in completely naive population as occurred in 2010 in Haiti.

2 The CFR is likely to be underestimated if all cases of acute watery diarrhoea (and not only cases of cholera) are included in the denominator. Only deaths occurring in health care facilities are usually reported. In general, the quality of the data should be checked when applying this indicator. According to WHO, CFR should remain below 1% with proper treatment.$^{51}$