After Action Review for Cholera, Maiduguri Borno State, Nigeria

Date of AAR: **29th- 31st May 2018**

World Health Organization

1. Executive Summary

CONTEXT: The insurgency in North Eastern Nigeria caused disruption in social services, and displacement of thousands of people who moved into Internally Displaced Persons (IDP) camps which are often overcrowded with sub-optimal Water, Sanitation and Hygiene (WASH) conditions. The continuation of the insecurity and the risk factors such as insufficient water supply, poor sanitation and environmental conditions were triggers for a cholera outbreak that started in one IDP Camp in Maiduguri in August 2017 which spread to other camps and host communities. About 6,000 suspected cases of cholera and 71 deaths were recorded by December 2017 when the outbreak was contained. The government supported by partners mounted an unprecedented response to Cholera outbreak; which included the first ever use of Oral Cholera Vaccine in Nigeria (with over one million people vaccinated in two rounds of the cholera vaccine campaign). Despite the complex and challenging context, the outbreak was contained within four months with a case fatality of 1. %

METHODOLOGY - The AAR was conducted from 30th to 31st May 2018 in Maiduguri Borno State, Nigeria. The method involved using qualitative and participatory approaches, standardized WHO framework and tools namely WHO guide for AAR (Facilitators and Participants Manual). There were about 76 participants at the AAR, with representation from Borno State Ministry of Health, Nigeria Center for Disease Control (NCDC), RUWASA, WHO, UNICEF, UNFPA, ALIMA, MSF, FHI 360 as well as facilitators from the State Ministry of Health, WHO (HQ, AFRO, WCO). The AAR focused on the 2017 Cholera outbreak in Borno State that occurred from August to December 2017. In total, 9 functional areas were reviewed in six (6) working groups i.e.

- Group 1- Coordination and Logistics
- Group 2- Case Management and IPC
- Group 3- Surveillance and Laboratory
- Group 4 - Water, Sanitation and Hygiene (WASH)
- Group 5 - Risk Communication and Community engagement
- Group 6 - Oral Cholera Vaccination

RESULTS – About 40 activities were developed. Of these, ten (10) key activities (2 per functional group) were prioritized for immediate implementation to improve preparedness and response to future cholera outbreaks and other public health emergencies.

Key activities recommended:

Function 1: Coordination and Logistics	
1.	Review and update existing (2017) cholera preparedness plans
2.	Secure yearly cholera contingency fund allocation
Function 2: Case management and IPC	
1.	Preposition cholera case management and IPC supplies.
2.	Conduct a 3-day training of trainers for health care providers on case management of cholera and IPC
Function 3: Surveillance and Laboratory	
5.	Conduct refresher trainings for laboratory personnel (Sample Management and testing) and DSNOs (IDSR and data management)
6.	Procure and preposition laboratory reagents and consumables
Function 4: Water Hygiene and Sanitation (WASH)	
7.	WASH and Risk Communication to develop a standardized strategy for communication and hygiene promotion
8.	Establish and train LGA-level WASH committees to be responsible for Operation & Maintenance of all WASH facilities
Function 5: Risk communication	
9	Develop a Risk Communication Plan and SOPs
10	Develop and distribute IEC materials in major and minor languages
Function 6: Oral Cholera Vaccination	
11	Procure one additional cold room at the state level
12	Conduct one-day sensitization programme for community leaders, youth leaders, women group leaders in communities with high number of non-compliance for OCV.

Evaluation survey of the workshop:
About 43 of the 76 participants completed the evaluation survey. Below are the findings of an assessment of the AAR cholera workshop objectives:

- 70% of participants fully agreed that the AAR allowed participants to identify challenges and gaps encountered during the course of the response;
- 68% of participants fully agreed that the AAR allowed participants to share experiences and best practices encountered during the course of the response;
- 70% of participants fully agreed that the AAR allowed participants to propose actions for improving preparedness, early detection and response to public health emergencies.
- 64% of participants fully agreed that they would use this methodology for AAR for other public health emergencies in Nigeria

2. Background on Emergency

The 9-year humanitarian crisis in north-east Nigeria has resulted in untold hardship for numerous displaced persons and their host communities. Civilians still bear the brunt of the conflict and insurgencies; that has resulted in widespread displacement, destruction of infrastructures, near collapse of basic health and social services. An estimated 7.7 million people in the three most affected states of Borno, Adamawa and Yobe depend on humanitarian assistance for their survival. Affected people across north-east Nigeria remain at significant risk of epidemic-prone diseases like cholera, measles, meningitis and viral haemorrhagic fevers such as Lassa fever, Yellow fever. The 2017 HeRAMs assessment showed that out of 755 health facilities in Borno State, 292 (39 percent) were fully damaged, 205 (27 per cent) were partially damaged and 253 (34 per cent) are not damaged. In terms of functionality, 376 (50 per cent) are non-functional.

On 19th October 2017, the Borno State Ministry for Health officially declared a cholera outbreak following detection of 03 cases (two laboratory confirmed and 01 probable) with 3 deaths and CFR of 100% from IDP camp within Maiduguri. The total number of cases reported during the cholera outbreak from the inception on 16th August till the 21st December 2017 was 6,430. Of these, 3,512 (54.6%) were reported from Jere, 1,870 (29.1%) from Monguno, 845 (13.3%) from Dikwa, 115 (1.8%) from Guzamala, 63 (1.0%) from Maiduguri, 23 (0.4%) from Mafa and 2 (0.03%) from Gubio LGAs.

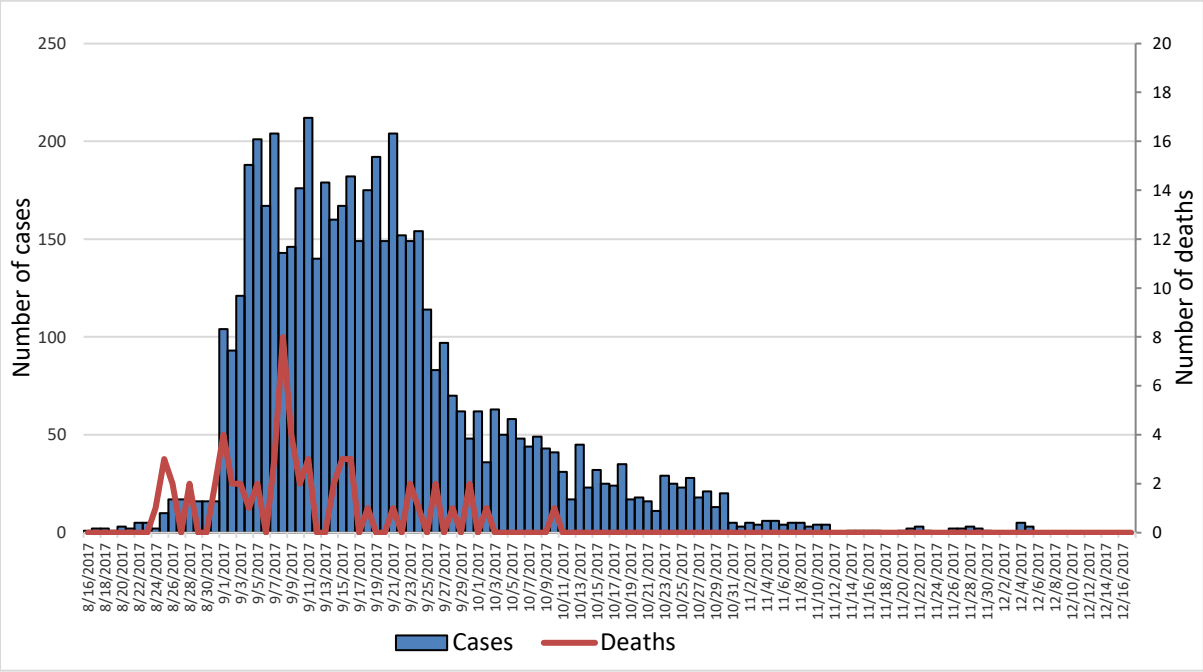


Figure 1 Epi-curve showing the 2017 Cholera Outbreak in Maiduguri

The cholera outbreak was controlled through a response mechanism led from the Emergency Operation Centre in Maiduguri and implemented in affected LGAs. This was possible through coordinated actions with the Borno State Ministry of health, supported by the World Health Organization (WHO), UNICEF, MSF,

FHI360, other donors and partners. The pillars of the response included surveillance, case management, water sanitation and hygiene, OCV vaccination and social mobilization. Key interventions consisted of timely man agem ent of cases with the set-up of five chole ra treat ment cent ers acco mpa nied by targeted WASH and health promotion activities in houses of sick patients on a daily basis. An OCV campaign was conducted for the first time in Nigeria. It targeted all people above one year of age in the affected communities and Internally Displaced Persons (IDP) camps in Maiduguri, Jere, Konduga, Monguno, Dikwa and Mafa Local Government Areas(LGAs).

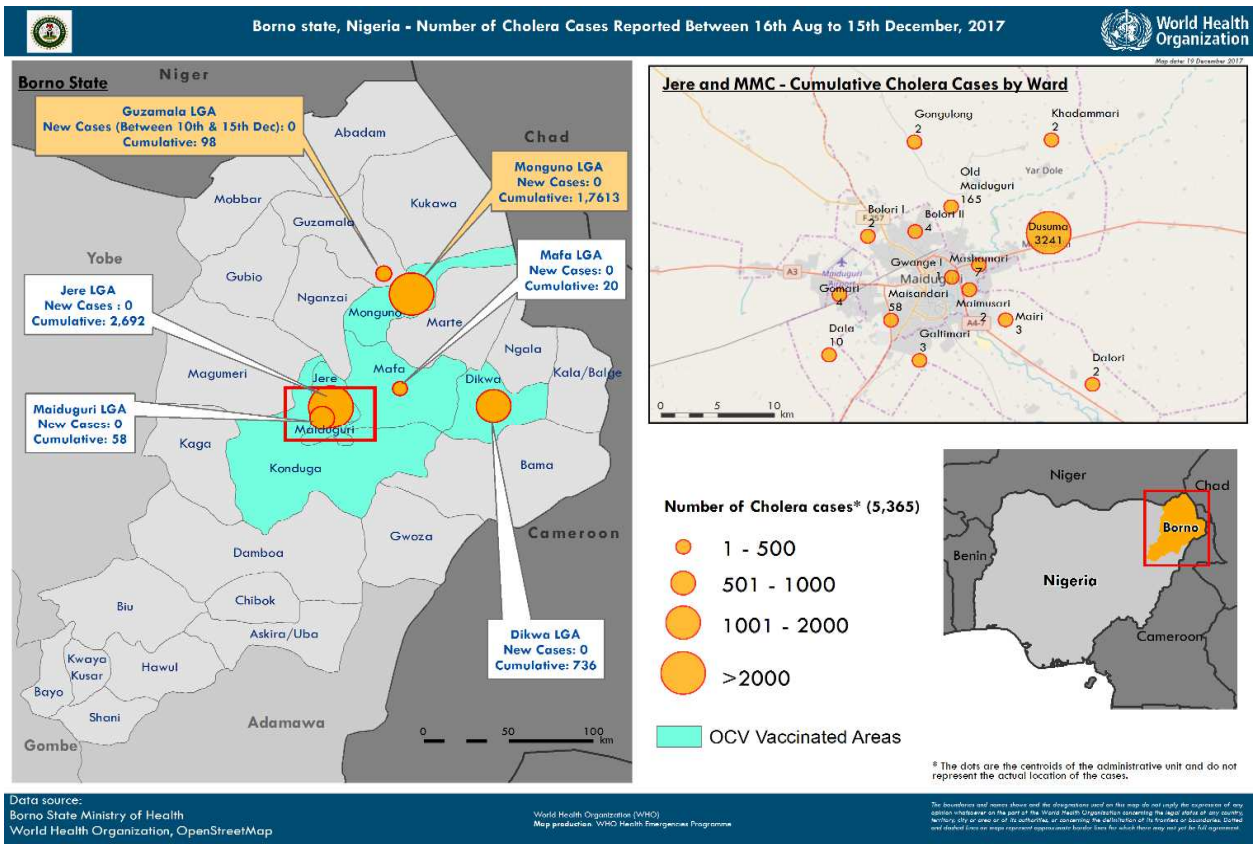


Figure 2 Spot Map showing the cholera caseload by LGAs

3. Scope and Objective of review

Overall Objective

The overall objective of the AAR was to review the preparedness and outbreak response; identifying best practices, and challenges and draw lessons for improved response to cholera and other infectious disease outbreaks. The specific objectives were:

- To document best practices and identify gaps in the preparedness, prevention, detection, investigation and response to cholera outbreak
- To assess the existing coordination mechanisms and identify areas for enhancement/improvement

- To identify actions for learning to improve future response to cholera and other events
- To develop action plan for addressing the identified gaps.

The AAR covered the period from 16th August to 21st December 2017, including the preceding weeks and the following weeks. During the AAR, 9 functions were reviewed in 6 working groups. The functions and groups are summarized in the table below

Function(s)	Working group
1. Coordination of response 2. Logistics	Coordination
3. Surveillance 4. Laboratory	Surveillance and laboratory
5. Case management 6. IPC	Case management and IPC
7. Risk communication and social mobilization	Risk communication and Social mobilization
8. Water Sanitation Hygiene (WASH)	WASH
9. OCV vaccination and logistics	OCV vaccination

4. Methods

This AAR employed a facilitated group discussion approach. Seven-six (76) participants were categorized into six (6) technical groups: Coordination and Logistics; Surveillance and Laboratory; Case management and IPC; WASH; Risk communication and social mobilization; OCV vaccination. Each group had about 13 participants with good representation of the LGA, state and national level staff as well as partners. Each group had one national facilitator supported by one international facilitator and one national note taker/reporter. The national facilitators and reporters were subject matter experts in the technical areas and were identified and assigned by Borno State Ministry of Health and NCDC. Interactive facilitation techniques, structured methodology with user-friendly material and group exercises were used in the review. Groups worked in their pre-identified functions and also had opportunities to share and embark on cross learning with other functional groups throughout the AAR process. The cholera After Action Review was conducted in 2 days and covered 5 sessions. Facilitators' briefing before the exercise was conducted on day 1, and 1 day of action planning meeting after the exercise. The planning meetings helped concretize the identified actions and draw a road map for implementation. Senior officers from Ministry of Health, NCDC, Borno State Ministry of Water Resources, facilitators and note takers from each of the technical groups, WHO and partners participated.

Introduction: The AAR began with introductory presentations on the AAR methodology, the objectives, agenda and an overview of the cholera outbreak.

Session 1 – What was in place before the response? The purpose of the first setting is to establish the baseline for the review by answering the question: what was in place prior to the outbreak to support a health response? Participants were split into working groups, organized by function, and they worked to identify the systems, plans, policy, resources, etc that were in place to support a health response prior to the public health emergency. Groups came together in plenary and organized what they had identified on a chart on the board, identifying synergies between the functions.

Session 2 –What happened during the response? by identifying key milestones, achievement and activities in the health response, the same working groups developed a timeline of the event. Then together, the whole group worked to build a physical timeline on the wall, discussing and agreeing upon key events of the response. The purpose of this session was to have a common operating picture amongst participants and agree on key facts related to the 2017 Cholera Outbreak.

Session 3 – What went well? What went less well? Why? On the basis of what was supposed to happen (Session 1) and what did happen (Session 2) working groups started to dig deeper into what worked, what did not and why. Through this session, the working groups collectively analyzed actions taken for the outbreak response in order to identify the best practices and challenges encountered during the response, their impact on the response and why they occurred (the enabling/limiting factors). The discussion focused on what happened and why, not on who did it. At the end of this session, the groups had a chance to review and provided input to all other working groups.

Session 4 – What can we do to improve for next time? Working groups then worked to identify and develop key activities in order to institutionalize the best practices and address the challenges and their root causes, arising during the Cholera response. Working groups not only developed the activities but also the timeline of implementation, responsible persons, support needed and indicators. All participants were then given a chance to contribute to the work of other groups through a world café to ensure they are harmonized, realistic and achievable.

Session 5 – Way forward: The final session involved the collective prioritization of activities identified during the AAR workshop through a voting process. Finally, the groups together decided how the activities identified will be taken forward including the immediate next steps for ensuring its' implementation.

5. Findings

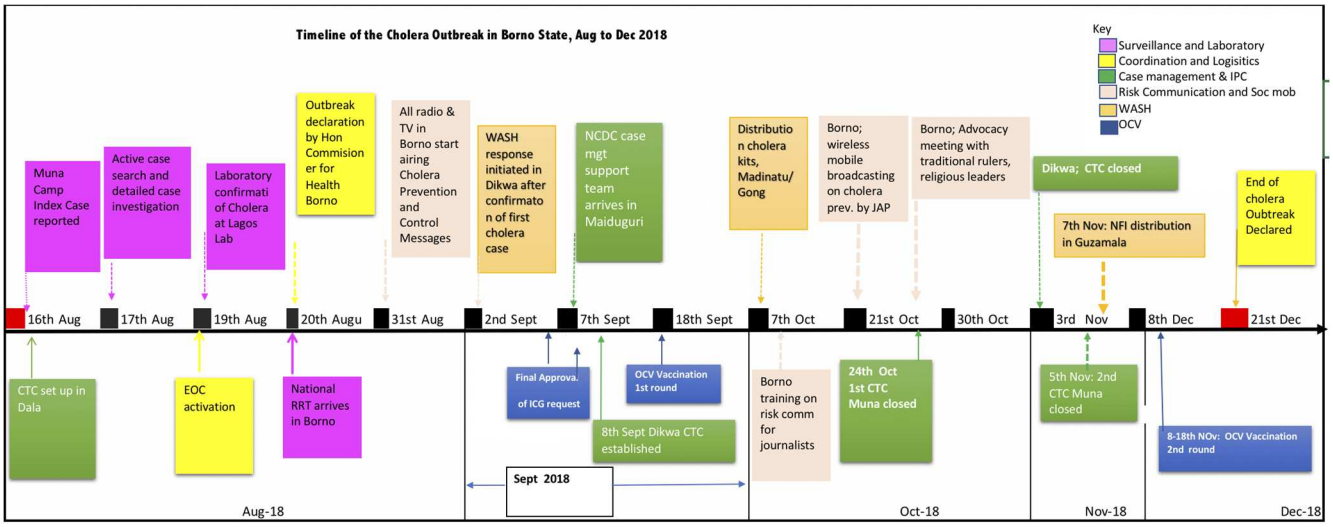
5.1 What was there before the Outbreak

The table below summarizes what was in place before the outbreak in terms of plans, policies, procedures, resources, coordination mechanisms as well as preparedness activities undertaken.

Table 2: Summary of what was in place before the outbreak

PLANS/POLICIES	RESOURCES	COORDINATION MECHANISMS	PREPAREDNESS ACTIVITIES	OTHERS
• 5-year workplan for Epidemic Preparedness. • Algorithm for information flow • IDSR Guidelines • Draft Cholera Preparedness plan • Health Sector Preparedness Plan (partners) • National Technical Guidelines for WASH in Emergencies • Cholera treatment Guidelines • OCV(Shanchol) License for use in Nigeria. • WASH gap analysis	• Rapid Response Teams (State and LGA) • Trained DSNOs in all LGAs • Experienced work force (state and LGAs) • Humanitarian Partners (UN and INGOs) • Contingency Supplies (WASH, Case management (Cholera kits and beds) and IPCs, IEC materials, Ambulances). • Volunteer Networks (community mobilizers and hygiene promoters) • Mobile Water Tankers • Polio resources (Cold chain, Personnel and data tools)	• PHEOC Structure • Health Sector Coordinator • LGA level coordination Structure • Social Mobilization Committee	• Cholera Risk mapping. • Trainings (RRT, Case management, Town announcers, Volunteer community mobilizers, Hygiene Promoters, Journalists, EWARS facility training) • Stakeholder and community Sensitizations (TV and radio panel discussions) • Advocacy meetings • Prepositions (Cholera Kits, Case management Kits. • WASH cholera shield activities (distribution of hygiene kits, desludging, hygiene promotion)	• Partner presence. • EWARS Bulletin. • Good working relationship with the Military • Budget for emergency (State Emergency Management agency

5.2 Timeline of outbreak



5.3 Function 1: Coordination and Logistics

Best practice and challenges during the response

Leadership for the response was from Borno State Ministry of Health with support from the Federal Ministry of Health and NCDC. WHO, UNICEF and other partners provide technical support to the coordination. The Response was coordinated from the Public Health Emergency Operations Centre (PHEOC) that was established by WHO and handed to the BMOH few weeks before the outbreak. An Incident management system was established at the EOC with an Incident manager.

The logistics team was made up three members including the BMOH representative as team lead with NPHCDA (National Primary Health Care Development Agency) and WHO playing critical supportive roles. In line with the 2017 cholera preparedness plan that was developed in May/June, the WHO OSL (Operations Support and Logistics) Team ensured that all cholera supplies were in the country before the outbreak. cholera kits were prepositioned in all locations and LGAs before the rainy season. Specifically, in Borno, 22 cholera kits were prepositioned in various locations.

BEST PRACTICES
1. Establishment of Public Health Emergency Operations centre(PHEOC) prior to cholera outbreak
Impact on the response -Incident management system(IMS) was efficient and effective as partners were in synergy **Enabling factors** • Government commitment and leadership • Wealth of experience (indigenous and imported) resident in the state. • Existing standards and guidelines *Add additional narrative here in order to support the understanding of this best practice*

2. Establishment of coordination body and meetings at LGA

Impact on the response

- Distribution of resources and supplies was based on needs

Enabling factors

- Political will and strong leadership at both state and LGA level
- Commitment of stakeholders and partners to humanitarian principles
- Good monitoring and reporting systems.

Add additional narrative here in order to support the understanding of this best practice

3. Daily/Regular coordination meetings at the PHEOC

Impact on the response

- Duplication of efforts were minimized.
- Wastage of resources minimized.
- Needs-based redistribution of resources

Enabling factors

- Commitment of stakeholders and partners to humanitarian principles.
- Sense of accountability to beneficiaries, and donors.
- Physical and conducive workspace

Add additional narrative here in order to support the understanding of this best practice

4. Existing preparedness plans

Impact on the response

- Provided a framework for effective response

Enabling factors

- Existing coordination body and mechanism.
- Knowledge of international best practices

Add additional narrative here in order to support the understanding of this best practice

5. Prepositioning of supplies.

Impact on the response

- Reduced response time
- Need-based distribution of resources
- Prepositioned resources met early gaps

Enabling factors

- Existing preparedness plans.
- Effective coordination mechanism
- Understanding of the existing well ahead of the outbreak

Add additional narrative here in order to support the understanding of this best practice

6. Use of ICT and Mobile technology

Impact on the response

Streamlined information flow and communication at different response levels (ward, L.G.A, state)

Enabling factors

- Availability of mobile telecommunication networks and phones.
- Availability of Satellite Internet connectivity (Vsat)
- Availability of satellite phones for use in areas with no mobile telecom coverage

Add additional narrative here in order to support the understanding of this best practice

CHALLENGES

1. MOST LGA RRTs not resident in LGAs

Impact on the response

- Delay in notification and responding to alerts

Limiting factors

- Insurgency
- Late notification from facilities
- Poor/unavailable security assessments to facilitate return

Add additional narrative here in order to support the understanding of this challenge

2. FUNDING CONSTRAINTS

Impact on the response

- Delayed procurement of essential commodities
- Delayed recruitment of ad-hoc staff
- Delayed construction of Cholera Treatment Center (CTC), cholera treatment unit (CTU) in some LGA

Limiting factors

- Inadequate contingency funding.
- Inadequate foresight during assessments and proposal writing for some organisations.
- Supply chain challenges

Add additional narrative here in order to support the understanding of this challenge

3. Reluctance of some partners to form single coordinating body

Impact on the response

- Difficulty coordinating partner resources for effective response

Limiting factors

- Different donor interests.
- Insufficient pooled fund for cholera-specific response

Add additional narrative here in order to support the understanding of this challenge

Add additional rows as needed.

5.4 Function 2 – *Case management and Infection Prevention and Control (IPC)*

Best practice and challenges during the response

Case management Pillar was led by the Borno State Hospital Management Board with NCDC playing a coordination role and partners such as UNICEF-health, MSF, Medicins Du Monde, ALIMA, FHI360 providing case management services. Patients were managed or treated in three types of facilities namely Cholera Treatment Center (CTC), cholera treatment unit (CTU), and oral rehydration point (ORP). Depending on the state of dehydration and services needed, referrals where made from one type of facility to another. In addition to its coordinating role, in Muna Garage, the BMOH set up and managed one CTC (with support from WHO) with 135 workers including 70 health workers (five doctors, 15 nurses, community health and extension workers, Borno State sanitation vanguards). The State Government also provided the police, civil defense and military personnel at centers to increase security at these treatment centers.

	BEST PRACTICES
1.	**Use of consistent Case definition by all Health workers**
	Impact on the response **-** Proper identification of cases **Enabling factors** – Previous case management experience – Good EOC coordination *Add additional narrative here in order to support the understanding of this best practice*
2.	**Well organized Case management pillar through public health EOC coordination meetings.**
	Impact on the response – Made coordination of response easy – Well organized and timely response **Enabling factors** – Harmonized preparedness plan. – Willingness of partners to response and support. – Resource mobilization *Add additional narrative here in order to support the understanding of this best practice*
3.	**Early establishment of Oral Rehydration Points(ORPs) and Cholera Treatment Centres(CTC)**
	Impact on the response – Patients accessed treatment easily and early(timely) **Enabling factors** – Resource mobilization – Proper coordination *Add additional narrative here in order to support the understanding of this best practice*
4.	**Availability of free health care services and feeding to the patients**
	Impact on the response – Reduction in case fatality

Enabling factors

- Resource mobilization
- Comprehensive preparedness and response plan

Add additional narrative here in order to support the understanding of this best practice

5. Good IPC procedures in all ORPs and CTCs

Impact on the response

- Reduced infection rate (especially healthcare associated infection)

Enabling factors

- Availability of SOPs
- Trained human resources

Add additional narrative here in order to support the understanding of this best practice

6. Good supply chain

Impact on the response

- Readily available case management and IPC supplies in CTCs and ORPs

Enabling factors

- Good coordination
- Good transportation plan

Add additional narrative here in order to support the understanding of this best practice

CHALLENGES

1. *Insufficient Human Resources for health(HRH)*

Impact on the response

- Fatigue among health care workers
- Medical errors

Limiting factors

- Risk and nature of the outbreak.
- Poor human health resource plan
- Insecurity caused some health workers to relocate

Add additional narrative here in order to support the understanding of this challenge

2. Lack of communication with inaccessible areas

Impact on the response

- Delayed response and intervention

Limiting factors

- Poor resource mapping at the planning stage.
- Insecurity

Add additional narrative here in order to support the understanding of this challenge

3. Inadequate ambulances for patient's referrals

Impact on the response

- Delay in referral of patients

Limiting factors

- Poor resource mapping
- Poor management and maintenance plan

Add additional narrative here in order to support the understanding of this challenge

3. Inadequate ambulances for patient's referrals

Impact on the response

- Delay in referral of patients

Limiting factors

- Poor resource mapping
- Poor management and maintenance plan

4. Inadequate welfare for health care providers

Impact on the response

- Poor motivation among health care workers

Limiting factors

- Limited financial resources

5. Inadequate and late resource mapping

Impact on the response

- Delayed intervention plan

Limiting factors

- Poor inventory management

6. Insecurity

Impact on the response

- Unwillingness of staff to be deployed in certain locations

Limiting factors

- Conflict and Insurgency

5.5 Surveillance and laboratory

Best practice and challenges during the response

Surveillance team consisted of eight members with a State Epidemiologist from the BMOH as the team lead supported by WHO and other partners. For public health surveillance, two platforms are available for epidemic prone disease detection and reporting namely the Early Warning Alert and Response System (EWARS) and Integrated Disease Surveillance and Response (IDSR).

	BEST PRACTICES
1.	**Timely detection and reporting**
	Impact on the response – Prompt initiation of response – Low case fatality rate (1.1%) **Enabling factors** – Presence of skilled and sensitized health workers – Availability of stakeholders' contacts/ phone numbers *Add additional narrative here in order to support the understanding of this best practice*
2.	**Timely case investigation and robust surveillance**
	Impact on the response – Identifying risk factors that informed WASH and risk communication interventions – Hotspots identification enabled prioritization of OCV – Prevented further spread of the Cholera **Enabling factors** – Availability of trained DSNOs and ADSNOs (state and LGAs). – Existence of active RRT. – Sensitized health workers, field volunteers, HTR teams on the field *Add additional narrative here in order to support the understanding of this best practice*
3.	**Regular sample collection and RDT on the field during outbreak**
	Impact on the response – Prompt initiation of response in new areas **Enabling factors** – Availability of RDTs, Cary Blair Medium – RRT that is readily deployable *Add additional narrative here in order to support the understanding of this best practice*
4.	**Active case search**
	Impact on the response – Early detection of cases – Prompt initiation of treatment resulted in Low CFR

Enabling factors

Add additional narrative here in order to support the understanding of this best practice

5. Line listing of cases during outbreak and data analysis by time, place and person

Impact on the response

- Accurate data on cases and risk factors made interventions evidence based

Enabling factors

- Presence of relevant tools
- Skilled and experience staff

Add additional narrative here in order to support the understanding of this best practice

6. Linkages between surveillance, Risk Communication, WASH, Case management

Impact on the response

- Immediate response from WASH, case management

Enabling factors

- Integrated response
-

Add additional narrative here in order to support the understanding of this best practice

CHALLENGES

1. *Data quality issues*

Impact on the response

- Multiple line listing
- Difficulty in carrying out analysis
- Some partners got disaggregated data late to respond

Limiting factors

- Non-adherence to IDSR tools by some partners
- Data by age and sex not available early
- Limiting factor 3: Different data protocols

Add additional narrative here in order to support the understanding of this challenge

2. Inadequate logistics for sample collection and transportation

Impact on the response

- Turnaround time for results was long
- Some samples were not tested

Limiting factors

- Prolonged procurement process for reagents

Add additional narrative here in order to support the understanding of this challenge

3. Non-adherence to SOPs for laboratory

	Impact on the response – False negative results – Inconsistencies in RDT tests **Limiting factors** – Lack of experienced HR – Lack of trainings for Lab personnel *Add additional narrative here in order to support the understanding of this challenge*
4.	**Expired reagents[poor storage of reagents]**
	Impact on the response – Poor reagent quality – False negative & positive results – Inconclusive results **Limiting factors** – Inconsistent stock/inventory monitoring – Lack of trainings for Lab personnel *Add additional narrative here in order to support the understanding of this challenge*
5.	Security challenges
	Impact on the response – Late arrival of samples – Delay in testing and disseminating laboratory results **Limiting factors** – Insurgency *Add additional narrative here in order to support the understanding of this challenge*
6.	**Inadequate transport and logistics for ACS/contact tracing**
	Impact on the response ıte commencement ACS in Dikwa **Limiting factors** Limited ACS movements Limited health funds *Add additional narrative here in order to support the understanding of this challenge*

5.6 Function 4 *Water Hygiene and Sanitation*

Best practice and challenges during the response

There were 12 members/organizations in the WASH Pillar led by the Borno State Rural Water Supply and Sanitation Agency (RUWASSA) with UNICEF-WASH playing a crucial role in the response activities.

	BEST PRACTICES
1.	**Sustain supply from existing water sources and fill supply gaps through water trucking**

Impact on the response

- Ensured safe water provision and reduced the incentive for people to use unsafe water sources.

Enabling factors

- Existing agreement with station water tankers and contractors had been established prior to response.
- Availability of bladder tanks to allow for immediate distribution
- Logistics and coordination with escort is established

Add additional narrative here in order to support the understanding of this best practice

2. Regular bucket chlorination (at distribution point or household-level).

Impact on the response

- Ensured safe water for all users and reduced the risk of contamination between the distribution point to the household.

Enabling factors

- Availability of HTH chlorine and/or aquatabs.
- Availability of jerry cans or other storage containers at the household level
- Trained community volunteers available and supported to do point-of-use treatment.

Add additional narrative here in order to support the understanding of this best practice

3. Dissemination of uniform/ coordinated messages and IEC materials on cholera prevention and response

Impact on the response

- Educated all people at risk and prevents spread of cholera.

Enabling factors

- IEC materials and standardized messages were already printed and available
- Partners listen and coordinate and are willing to use standardized messages
- Trained community volunteers available to distribute IEC and spread messages to communities.

Add additional narrative here in order to support the understanding of this best practice

4. Regular coordination and information sharing between WASH, Risk Communication and Surveillance Pillars

Impact on the response

- Allows for the most high-risk areas to be targeted for preventative health activities

Enabling factors

- EOC existed as a forum for information sharing and coordination.
- Field-level communication existed between WASH, Surveillance and Risk Communication
- Partners willing to shift areas of intervention to the identified risky areas

Add additional narrative here in order to support the understanding of this best practice

5. Installation of handwashing stations with soap and/or chlorinated water at all latrines in

hotspots and surrounding areas.

Impact on the response

- Promotes practice of handwashing and minimizes the risk of contracting cholera

Enabling factors

- Availability of clean water, covered containers, soap and chlorine on ground.
- Demand has been created for handwashing through hygiene promotion
- Trained community volunteers existed to create awareness on handwashing and to maintain handwashing stations

Add additional narrative here in order to support the understanding of this best practice

5. Daily cleaning and disinfecting of all latrines in hotspots and surrounding areas

Impact on the response

- Ensures latrines are clean and safe for use and minimizes risk of contracting cholera while using a latrine

Enabling factors

- Latrine cleaning kits and sprayers have been distributed and provided.
- Community volunteers are trained to mix chlorine and to engage community members to wash latrines
- Camp leaders and members are receptive and willing to participate in washing of latrines

Add additional narrative here in order to support the understanding of this best practice

CHALLENGES

1. Difficulty creating and sustaining behaviour change during outbreak to stop risky behavior like open defecation.

Impact on the response

- Increased open defecation and poor sanitation leading to more risk of cholera transmission

Limiting factors

- Entrenched practices like open defecation and insufficient education on risks of open defecation
- Fear of using latrines due to protection issues (lack of gender segregation, unsafe location of latrines)
- Latrines are dirty or overflowing due to inadequate cleaning and desludging.

Add additional narrative here in order to support the understanding of this challenge

2. Community resistance to use of chlorine for drinking water

Impact on the response

- Drinking unsafe water increasing the risk of spreading disease

Limiting factors

- Inadequate training of hygiene promoters/facilitators.
- Not appreciating local knowledge/practices of beneficiaries

Add additional narrative here in order to support the understanding of this challenge

3. *Inadequate* Coordination between risk communication and WASH

Impact on the response

- Inconsistent messages being disseminated for hygiene promotion
- Duplication of efforts

Limiting factors

- Lack of existing communication plan between the two pillars for cholera response.
- Inadequate coordination process between the two pillars
- Inadequate advocacy regarding importance of synergy between WASH and risk communication, particularly for cholera response

Add additional narrative here in order to support the understanding of this challenge

4. Inconsistent logistics and supply chain for WASH materials

Impact on the response

- Delay in transport of critical supplies
- Frequent stock outs

Limiting factors

- Lack of plan for cholera response and supply chain
- Security threats lead to infrequent military escorts.
- Partners not sharing information on emergency supply stocks

Add additional narrative here in order to support the understanding of this challenge

5. Poor O & M of WASH facilities

Impact on the response

- Reduced supply of clean water
- Reduced use of latrines
- Increased risk of transmission

Limiting factors

- Inadequate capacity building of WMCs and village sanitation committees by partners.
- Lack of supply chain or funding for repair materials
- Lack of sensitization to promote ownership of facilities

Add additional narrative here in order to support the understanding of this challenge

6. Hazardous and unsafe cultural practices, especially with respect to dead body management

Impact on the response

- Increased risk of transmission as communities wash and handle dead bodies

Limiting factors

- Inadequate sensitization of leaders and champions of culture.
- Partners had no communication plan/strategy for dead body management

Add additional narrative here in order to support the understanding of this challenge

5.7 Function 5: *Risk communication*

Best practice and challenges during the response

The Risk Communication Pillar was led by the State Primary Health Care Development Agency (SPHCDA) with the National Primary Health Care Development Agency (NPHCDA), WHO, UNICEF, and other partners playing critical supportive roles. In addition to deploying Volunteer Community Mobiliser(VCMs) the Pillar employed the Outside Broadcasting System (OBS) as most of the affected community did not have access to mass media utilities such as Television, Radios and power supply. Under the OBS, journalists were supported to use wireless communication systems using speakers to communicate health risk messages to the community on how to prevent cholera or what to do if they suspect symptoms of the disease. The epidemiological team and geo-coordinate map assisted in guiding the risk communications teams in effective delivery of their work with regards to areas and/or locations that should be given priority. The communications team also developed flyers that were distributed during house-to-house sensitization and awareness raising campaigns.

	BEST PRACTICES
1.	**Involvement of Community leaders and stakeholders in planning, community mobilization and response to cholera**
	Impact on the response – It enhances community acceptance of the response approach. **Enabling factors** – Existing traditional and religious institutions in the state *Add additional narrative here in order to support the understanding of this best practice*
2.	**Empowering low literate at community level to disseminate information**
	Impact on the response – High acceptability of the messages – Increased awareness on dangers of cholera and its prevention. **Enabling factors** – Available mass media practitioners and local languages experts to train community volunteers *Add additional narrative here in order to support the understanding of this best practice*
3.	**Use of Multiple communication channels in dissemination of information**
	Impact on the response – Empowered the people with real time information on how to prevent and protect themselves from cholera infection, health seeking behaviour and how to prepare ORS at home (Cholera First Aid Treatment) – Improved understanding and acceptance of cholera vaccination and treatment – Availability of Cholera risk messaging at household level – Improved acceptance of cholera messages passed by accepted/known town announcers. – Improved credibility and trust in the source of information **Enabling factors** – Existing IEC Materials in local languages

- Existence of knowledgeable VCMs, HTR and FV teams in various locations
- Most of the targets for household cholera risk messaging are readily available
- Contiguous living arrangement in the IDPs camp
- Trained community volunteers available to distribute IEC and spread messages to communities.

Add additional narrative here in order to support the understanding of this best practice

4. Ensuring Media Report Audit to correct wrong messages or reinforce positive messages

Impact on the response
- Helped reinforce positive messages and correct misconceptions in social and behavioural change

Enabling factors
- Readily available and free flow of needs reports

Add additional narrative here in order to support the understanding of this best practice

CHALLENGES

1. Lack of coordinated key messages

Impact on the response
- Lack of trust

Limiting factors
- Inadequate coordination of partners
- Absence of a common plan and guideline.

Add additional narrative here in order to support the understanding of this challenge

2. Poor coordination and synchronization of activities across the levels

Impact on the response
- Poor uptake of preventive measures

Limiting factors
- Each organization had their plans
- Lack of coordination plans and activities
- Adhoc communication plan

Add additional narrative here in order to support the understanding of this challenge

3. Unavailable SOPs guiding activities

Impact on the response
Waste/duplication of resources

Limiting factors
- Each organization had their own plans

Add additional narrative here in order to support the understanding of this challenge

4. Poor inter-sectoral collaboration and insecurity

Impact on the response
Duplication of activities and gaps

	Limiting factors – Insecurity *Add additional narrative here in order to support the understanding of this challenge*
5.	**IEC materials were not specific or audience specific**
	Impact on the response – Misinterpretation and misconception – Reduced coverage **Limiting factors** – Limited coverage *Add additional narrative here in order to support the understanding of this challenge*
6.	**Funding gaps**
	Impact on the response – All planned activities not fully implemented dead bodies **Limiting factors** – Funding gaps *Add additional narrative here in order to support the understanding of this challenge*

5.8 Function 6 *Oral Cholera Vaccination(OCV)*

Best practice and challenges during the response

The vaccination pillar had five members, which were led by State Primary Health Care Development Agency (SPHCDA) with support from NPHCDA including partners such as MSF, UNICEF and WHO Health Operation (HO) Teams. The pillar also included 27 Disease Surveillance and Notification Officers (DSNO) at the LGA level. The vaccination campaign was carried out using the ***polio vaccination structure****. The polio team has an existing and flexible structure for rapid implementation; which the OCV campaign took advantage of. The Polio personnel and other partners were involved from the micro planning stage up to the implementation of OCV. The Nigerian Centre for Disease Control (NCDC) had considered the use of Oral cholera vaccine before the outbreak. Between the 31st May and 1st June 2017, NCDC had a preparedness workshop against cholera with all partners and states at risk of Cholera. Shanchol Cholera vaccine was licensed for use in Nigeria.*

	BEST PRACTICES
1.	**Comprehensive Microplan**
	Impact on the response – Time saving – Cost effective. **Enabling factors** – Use of polio structure already in existence *Add additional narrative here in order to support the understanding of this best practice*

2.	**Vaccination of prominent people/leaders**
	Impact on the response – High acceptance rate of vaccine campaign and OCV. **Enabling factors** – Flag off event for vaccination campaign *Add additional narrative here in order to support the understanding of this best practice*
3.	**Active Supervision of vaccination activities**
	Impact on the response – Quality implementation of the vaccination campaign. **Enabling factors** – Presence of public health EOC *Add additional narrative here in order to support the understanding of this best practice*
4.	**Provision of Vaccine Plus**
	Impact on the response – Reduced Wastage **Enabling factors** – Involvement of traditional leaders *Add additional narrative here in order to support the understanding of this best practice*
5.	**Daily Review Meetings**
	Impact on the response – Improved Vaccine accountability **Enabling factors** *Add additional narrative here in order to support the understanding of this best practice*
5.	Receipt of vaccine in batches due to limited storage facility
	Impact on the response – Good vaccine management – Improved overall vaccination coordination **Enabling factors** – Availability of standby power supply/electricity. – Tracking of vaccine vials used, closed vial wastages – Good working relationship with the military *Add additional narrative here in order to support the understanding of this best practice*
	CHALLENGES
1.	**Difficulty creating and sustaining behaviour change during outbreak to stop risky behavior like open defecation.**

Impact on the response

- Increased open defecation and poor sanitation leading to more risk of cholera transmission

Limiting factors

- Entrenched practices like open defecation and insufficient education on risks on open defecation
- Fear of using latrines due to protection issues (lack of gender segregation, unsafe location of latrines)
- Latrines are dirty or overflowing due to inadequate cleaning and desludging.

Add additional narrative here in order to support the understanding of this challenge

2. Community resistance to use of chlorine for drinking water

Impact on the response

- Drinking unsafe water increasing the risk of spreading disease

Limiting factors

- Inadequate training of hygiene promoters/facilitators.
- Not appreciating local knowledge/practices of beneficiaries

Add additional narrative here in order to support the understanding of this challenge

3. *Inadequate* coordination between risk communication and WASH

Impact on the response

- Inconsistent messages being disseminated for hygiene promotion
- Duplication of efforts

Limiting factors

- Inadequate communication plan between the two pillars for cholera response.
- Poor coordination process between the two pillars
- Inadequate advocacy about the importance of synergy between WASH and risk communication, particularly for cholera response

Add additional narrative here in order to support the understanding of this challenge

4. Inconsistent logistics and supply chain for WASH materials

Impact on the response

- Delay in transport of critical supplies
- Frequent stock outs

Limiting factors

- Inadequate plan for cholera response and supply chain
- Security threats lead to infrequent military escorts.
- Partners not sharing information on emergency supply stocks

Add additional narrative here in order to support the understanding of this challenge

5. Poor O&M of WASH facilities

Impact on the response

- Reduced supply of clean water
- Reduced use of latrines
- Increased risk of transmission

Limiting factors

- Inadequate capacity building of WMCs and village sanitation committees
- Inadequate supply chain or funding for repair materials
- Insufficient sensitization to promote ownership of facilities

Add additional narrative here in order to support the understanding of this challenge

6. Hazardous and unsafe cultural practices, especially with respect to dead body management

Impact on the response

- Increased risk of transmission as communities wash and handle dead bodies

Limiting factors

- Low sensitization of leaders and champions of culture.
- Partners had no communication plan/strategy for dead body management

Add additional narrative here in order to support the understanding of this challenge

6. Key activities to improve the response for the next health outbreak

Should include all activities identified during the AAR. The following are the activities that were identified by the participants to improve the response for future cholera outbreaks or public health emergencies.

	ACTIVITY	DATE OF DESIRED ACHIEVEMENT	RESPONSIBLE AND FOCAL POINT	REQUIRED SUPPORT	INDICATORS	Means of verification	IMPACT	DIFFICULTY	PRIORITY
Coordination and Logistics									
1.	Review and update existing (2017) cholera preparedness plans	JUNE 30	PS SMOH	Discuss the need for updating preparedness plans at coordination meeting	Availability of an updated cholera preparedness plan Number of stakeholders that received the updated cholera preparedness plan	Coordination meeting report(s) Emails sent and acknowledged hard copy	+++	++	27
				Share reviewed document for implementation		Evidence of sharing documents to partners and stakeholders			
				Discuss the need for updating preparedness plans at coordination meeting	Availability of an updated cholera preparedness plan Number of stakeholders that received the updated cholera preparedness plan	Coordination meeting report(s) Emails sent and acknowledged hard copy			
2.	Secure yearly cholera contingency fund allocation	31st July	IM SMOH and Director Ministry of Budget and Planning	Review cost (financial) of previous years' outbreak	Funds made available for cholera response	Costed preparedness and implementation plan Report of validation workshop Memo of submission of costed plan to MoH	+++	+++	10
				Resource mapping of available funds and essential commodities for cholera response		Report of funding gap analysis			
				Develop a costed preparedness /implementation plan for response					
				Develop funding gap analysis to state and partners					
				Organize stakeholder buy-in meetings		Report of stakeholder buy-in meetings			
3.	Monthly monitoring and supervisory visits to all LGAS	Continuous	Director of public health, Borno State	Monthly security assessment updates	Number of LGA visited Monthly		+++	+	

				Visit to LGAs	Report of Supportive supervision				
				Budgetary allocation and partner support					
4.	SUSTAIN REGULAR COORDINATION MEETINGS	Bi-weekly	IM PHEOC	Define terms of reference and meeting guidelines	Proportion of planned bi-weekly coordination meetings conducted Proportion of resolutions implemented	Biweekly coordination meeting minutes			
				Notification of partners on meeting schedules					
				Budgetary allocation for communication and meeting logistics					
5.	Epidemic Preparedness and Response Committee / State Rapid Response Team Monthly & Quarterly Meetings	Monthly/ quarterly	Honourable Commissioner of Health	Conduct monthly EPR/RRT committee meetings	Proportion of planned meetings conducted Proportion of resolutions implemented	meeting minutes	+++	++	
				Conduct quarterly EPR/RRT meetings	Proportion of planned meetings conducted Proportion of resolutions implemented				
				Funding for meetings	Proportion of planned meetings conducted Proportion of resolutions implemented				
6.	Bottleneck analysis in request, delivery, and timely availability of vaccines	June 15	State Logistics Coordinator	Conduct bottleneck analysis	Number of stakeholder engagement meetings	Bottleneck analysis report	++	++	1

				Engage key stakeholders at each chokepoint of vaccine supply and logistics prior to outbreak		Meeting minutes			
				Meetings and logistics					
7	Official declaration of cholera outbreak within 48 hours of confirmation	As it occurs	Incident Manager and Honourable commissioner for health	Early utilization of EWARS and IDSR and information sharing within 24 hours of case detection	Number of outbreak officially declared within 48 hours of confirmation	Shared cholera/AWD information in 24 hours	+++	++	4
				Regular surveillance working group meetings by state epidemiologist and WHO focal point		Meeting reports			
						Accessibility matrix of LGA			
Case management and Infection Prevention and Control									
8.	Prepositioning of cholera case management and IPC supplies.	30th April 2018	Director emergency and response, and Director Pharmaceutical services SMOH	- Identify available case management resources with each partner Developed a distribution plan	Number of LGAs with critical case management supplies prepositioned	Distribution plan	+++	++	26
				- Collaborate with logistics for procurement distribution					
				Resources - Cholera beds - Cholera kits - IPC materials					
9.	To develop a referral plan	July 2018	Director emergency response SMOH and Director Medical and	• Review existing referral plans Create linkage with referral centres	Number of functional ambulances available for referrals		+++	++	6

			laboratory services HMB						
				• Needs assessment for existing transport system • Logistics for maintenance and fuelling	• Number of equipped referral centres identified Number of severe cases referred within 2 hours				
				Resources • Paramedics • Equipped ambulance • drivers	•	Attendance list for SOPs review meeting			
10.	Partners resource mapping for case management	31st Jan 2018	IM PHEOC	• Identify key partners that are conducting cholera response. Identify meeting venue	• Number of partners providing list of resources in each LGA		+++	++	4
				• Invitation of all relevant partners • Conduct a one-day meeting	•				
				• An updated partner resource mapping done	•				
11.	Conduct a 3-day training of trainers for health care providers on case management of cholera and IPC	July 2018	Director emergency response SMOH	• Plan required resources and appropriate budgeting • Identify trainees and facilitators	Number of Master trainers trained	Training report	+++	++	4
				• Identify venue for training • Send invitations					
				• Provision of training materials • Conduct training	Number of LGAs that have conducted step down training				

12	Review and update of case management SOPs	June 2018	Director emergency response SMOH and Director Medical and laboratory services HMB	• Invite all actors and partners for SOPs review meeting • Conduct 2-day review meeting and update the existing SOPs	Case management SOP reviewed		+++	+	5
				Resources • Existing SOPs • Stationary, venue and logistic support					
SURVEILLANCE AND LABORATORY									
13.	TRAINING: conduct 3-day training on sample management for all lab staff and DSNOs in the state (60 persons)	11-13 June 2018	State lab focal person	Renting of hall Human resource facilitator	Number of lab personnel and DSNOs trained	Training report	+++	+	18
				Refreshment					
				Writing materials RDT, Transport medium Availability of training materials					
14	Laboratory assessment	2-3 July 18	Surveillance lab focal person	NCDC/Partners	Number of planned labs assessed	Assessment reports	++	+	4
				Checklist for assessment SOPs	Number of labs assessed that meet minimum required standard				
				Logistics/transport 1. Adequate lab space 2. Qualified/competent HR Availability of functional equipment Availability of reagents and consumables					

15.	Distribution of the IDSR data collection tools	13-15 July 18	Director, Public Health	Hall Number of participants	Proportion of facilities that receive complete IDSR tools		++	+	3
				Laptops Writing materials					
				Refreshment DSA/Transport for participants					
16	Simulation exercise for RRT	22-23 June 2018	Director, Public Health	Hall hire/field location Facilitators	Number of LGA RRT participating in Simex	Availability of surge capacity for rapid response	++	++	2
				Training materials Refreshments					
				DSA/Transport					
17.	2-day training of DSNOs, M&E officers in the state, LGAs, partners on data collection tools (Linelisting) (80 persons)	14-15 June 2018	State epidemiologist State DSNO	Facilitator (5) Hall Projector/sound system	Number of DSNOs/M&E officers trained		++	+	8
				Refreshments Participants (80)					
				Availability of training materials	Availability of list of trained participants				
18	Develop directory for lab stakeholders and aligned with surveillance directory	6-7 July 2018	State lab focal person State Epidemiologist	Identify the stakeholders' contact details	Number of stakeholders and their contact details		++	+	3
				Laptops	Availability of the updated directory	Production and distribution of the directory			
				Network/internet					

19	Procurement and prepositioning of lab reagents and consumables	15-16 July 2018	Surveillance lab focal person	Funds Needs assessment	Number of laboratories with prepositioned reagents and consumables		+++	+	5
				List of licensed vendors		Quality control guidelines			
				Storage facilities		Adherence to FIFO/FEFO			
20.	Refresher training of public health/UMTH lab personnel in National Reference lab	First two weeks of August 2018	Surveillance lab focal person NCDC focal person	DSA/Transport of personnel	Number of personnel trained		+	++	6
				Training materials		Reduction in false negatives and false positives			
				Facilitators (resource persons)		Reduction in Turnaround Time (T.A.T)			
21.	Establish quality control activities								
22.	Conduct weekly surveillance technical working group meeting								
Water Hygiene and Sanitation									
23	WASH and Risk Communication to develop a standardized strategy for communication and hygiene promotion before and during the response.	June 22, 2018	Director WASH RUWASSA, C4D and partners	Funding for developing/airing jingles	Strategy developed and approved		+++	+	6
					Strategy shared with LGA-level WASH and Risk Communication focal points				
					Number of jingles developed and aired				

24	Establishing and training LGA-level WASH committees to be responsible for Operation & Maintenance of all WASH facilities, monitoring and reporting (ensure at least 50% female participation).	August 1, 2018	RUWASA, Ministry of Water Resources, partners	Training support from partners	Number of LGA WASH committees trained and active after three months		+++	+++	10
				Monitoring, advocacy and accountability support from government.	Number of camps/ communities with dysfunctional WASH facilities for repair				
25	Establish drainage systems in flood prone camps	July 1, 2018	Director WASH RUWASSA, Partners	Basic tools for digging	Number of camps with new drainage systems		+++	+++	16
				Support for human resources (incentives, cash for work)					
26	Hold training and social mobilization sessions with all community and traditional leaders in the use of chlorine, water treatment, cleaning/ disinfection of latrines, risks of Open Defaecation and Dead Body Management.	August 1, 2018	LGA-level WASH coordination leads	Funding for training from partners	Number of community and traditional leaders trained		+++	+	5
				Town hall meetings and sensitization					
27	Update camp and LGA-level WASH gap analysis	June 15 2018	WASH Sector	Share gap analysis template with partners	Number of LGAs with updated WASH gap analyses		+++	++	8
				Partners provide input to WASH sector					
				WASH sector compile and share database					

28	Water quality testing database established and maintained	June 2018	Director WASH RUWASSA and Partners	Reagents, mobile data technology and training	Number % of Free Residual Chlorine tests between 0.02-0.05 mg/L		+++	+++	11
				Funding	Number % of water samples testing negative for coliform				
				Transport					
Risk Communication/Social Mobilization									
29	Conduct a 5-day workshop to develop risk communication plans and SOPs for implementation across the different levels.	20th July 2018	SMOH – SHEO, Director disease control SPHCDA, NPHCDA, RUWASSA, WHO, UNICEF and other partners	Human resource mobilization Funding Logistics	Risk Communication plan available Number of SOPs produced after the workshop. Number of participants who attended the workshop.		+++	+	#. 17
30	Conduct inter-sectoral meeting with WASH to harmonise communication plan	30-06-2018	Director emergency SMOH, Director WASH RUWASSA, UNICEF and partners	Logistics	Number of joint meetings held to harmonize communication plan Number of responding agencies in attendance		+++	++	#. 9
31	Conduct advocacy/sensitization meetings with relevant stakeholders (political, religious, traditional, professional associations, media institutions.	5th – 19th June 2018.	SMOH – State Health Education Officer and Partners	Funding	-Number of stakeholders in the advocacy meetings. involved -Number of advocacy meetings held -Number of stakeholders who have taken public action after the meetings -Number of media houses granting free air time for panel discussions -Number of media houses covering events		+++	++	#. 7
				Advocacy Fact Sheet					

				Technical Support					
32	Conduct 3-day risk communication trainings for Volunteer Community Mobilisers (VCMs), Field Volunteers (FV) and state and LGA health educators on effective Risk Communication	19-06-2018	SMOH – SHEO, Director disease control SPHCDA, NPHCDA, RUWASSA, WHO, UNICEF and other partners	Development of training plan Identify resource persons Hold facilitators pre-training workshop. Conduct training	Number of trainings held. Number of participants in trainings.		+++	+	#. 2
				Funding					
33	Develop and distribute IEC materials in all major and minor languages	5 – 08-2018	SMOH – SHEO WHO UNICEF Other support partners	IEC material development workshop. Develop key messages. Pre-testing of key messages. Translate, print and distribute materials.	Number of IEC materials produced. Number of local languages translated. Number of IEC materials distributed.		+++	++	#. 6
34	Commence airing of jingles and animated cholera messages on media stations.	10-08-2018	SMOH – SHEO WHO UNICEF	Develop key messages. Translation of key messages in local languages (major and minor) Partnership with media houses.	Number of jingles aired. Number of animated cholera messages aired.		+++	+	#. 3
Oral Cholera Vaccination									
35	Procurement of one additional cold room at the state level.	July 2018	National cold store.	Send request to the national	Availability of additional functional cold room in the state.		++	+++	14
				Follow-up with a reminder after one week of request.					
36	Conduct one day sensitization of community leaders, youth leaders, women group leaders in community with high number of non-compliance for OCV.	One week before OVC campaign.	State social mobilization committee.	Identification of areas of high number of OCV non-compliance.	Number of community members sensitized		++	+	8

				Mapping of areas with OCV non-compliance in the micro-plan.	Number of sensitization meeting held.				
37	Advocate to the military to provide adequate security for OCV vaccination team / supervisors during campaign in security compromised areas.	One week before OVC campaign.	IMPHEOC	Write a letter to the military informing them on the date of OVC implementation.	Number of OCV vaccination team supported with military escort.		+++	++	8
38	Sensitization of community leaders in border community.	One week before OVC campaign.	State social mobilization team.	Identify border areas involved in OCV.	Number of community members sensitized,		+++	+	4
				Identify key personnel to be sensitized.	Number of sensitization meeting held.				
39	Transportation arrangement made by state for OCV from the national cold store three weeks before campaign.	One week before OVC campaign.	DPS.	Summit request to NPHCDA,	Availability of OCV in the state one week before campaign.		+++	++	1
				follow up with a reminder two week after request.					
40	Provide pluses according to target (sweets etc.) population of children in all LGAs.	Three days before campaign.	Logistics working group (DPS).	Procurement and distribution plan.	Number of illegible children supplied with pluses.		+++	+	1

8. Conclusions

Though a lot of good work was done in the response to the 2017 Cholera Outbreak. There is still much to be done to ensure that the state is adequately prepared to respond to future outbreaks. The AAR has identified key best practices and challenges; from which preparedness activities have been developed. It is important that the activities identified in each group are implemented starting with the first two priority activities. Best practices that were identified need to be institutionalized for continuity purposes.

The EOC needs to continue actively monitoring trends and evaluating risks not only for cholera but other hazards as well. Pre-emptive oral cholera vaccinations need to be consider when risk assessments indicate moderate to high risk of a cholera outbreak.

9. Annexes

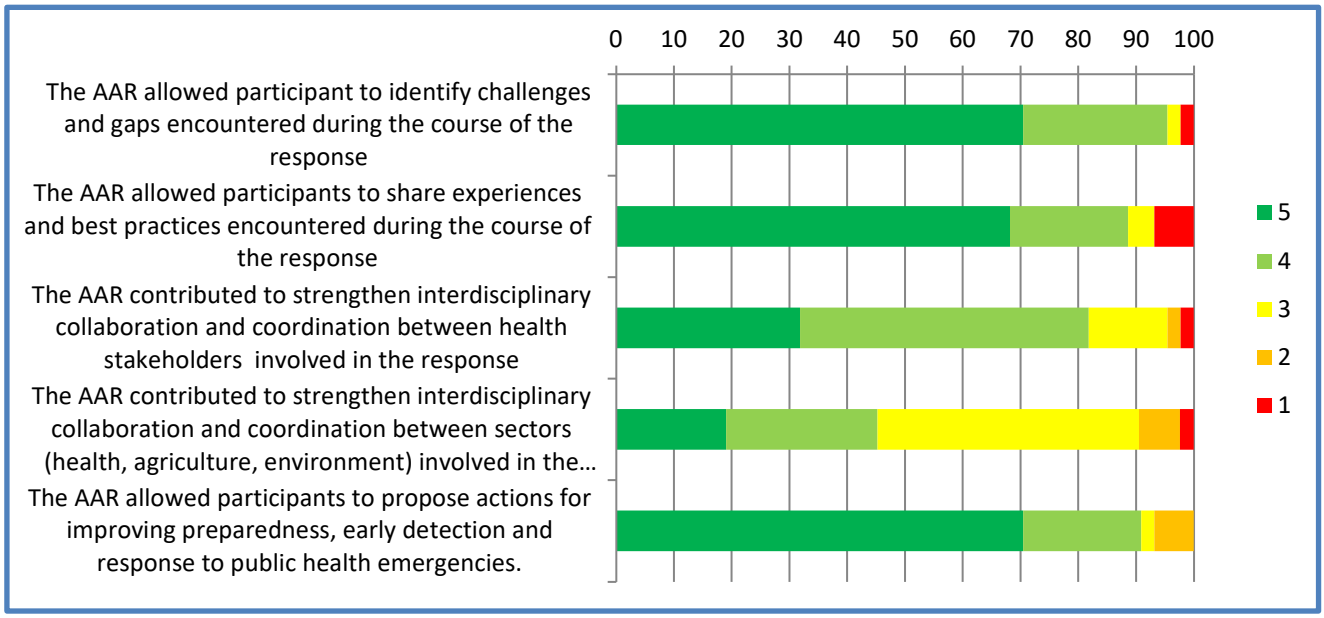
Annex 1 – Evaluation of AAR workshop by participants

A total of 43 participants completed the evaluation questionnaire for the workshop and the results from the survey are presented.

On a scale of 1 (fully disagree) to 5 (fully agree) participants agreed to the following extent that the AAR reached the following objectives of the workshop.

- 70% of participants fully agreed that the AAR allowed participant to identify challenges and gaps encountered during the course of the response;
- 68% of participants fully agreed that the AAR allowed participants to share experiences and best practices encountered during the course of the response;
- 32% of participants agreed that the AAR contributed to strengthen interdisciplinary collaboration and coordination between health stakeholders involved in the response;
- 19% of participants fully agreed that the AAR contributed to strengthen interdisciplinary collaboration and coordination between sectors (health, agriculture, environment) involved in the response;
- 70% of participants fully agreed that the AAR allowed participants to propose actions for improving preparedness, early detection and response to public health emergencies.

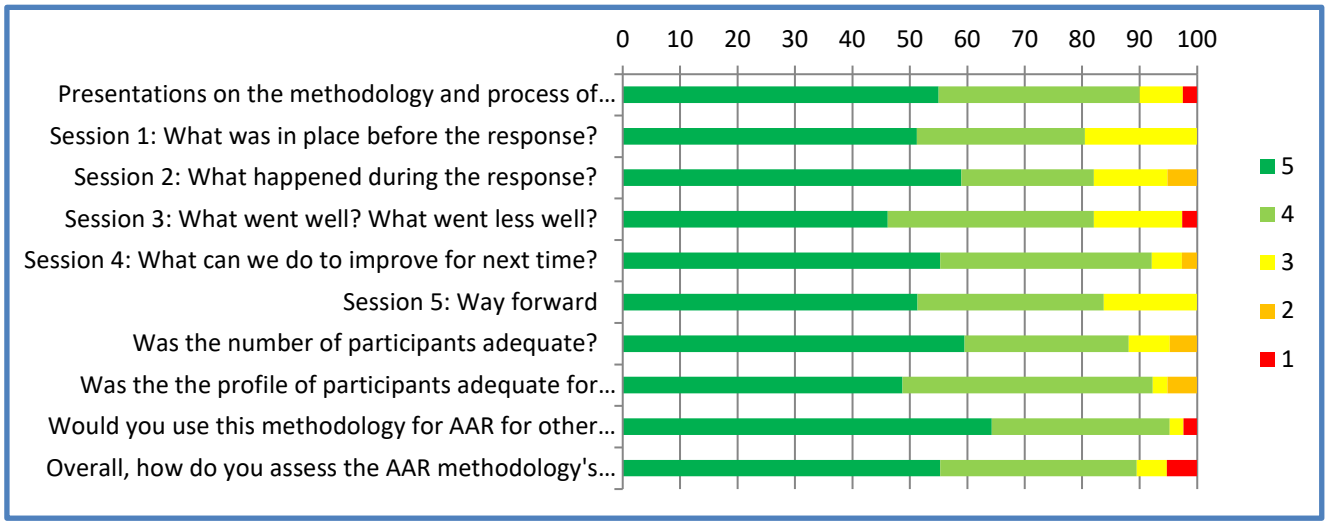
Other results for this section are presented in the chart below:



On a scale of 1 (fully disagree) to 5 (fully agree), how well did the AAR achieve its objectives?

- 55% of participants fully agreed that the presentations on the methodology and process of the AAR workshop were clear and useful;
- 51% of participants fully agreed that objectives of the **session 1** – ''What was in place before the response '' were achieved?
- 59% of participants fully agreed that the objectives of the **session 2** – "what happened during the response "were achieved?
- 46% of participants fully agreed that the objectives of the **session 3** – "What went well? What went less well? Why? were achieved;
- 55% of participants fully agreed that the objectives of the **session 4** – "What can we do to improve for next time "were achieved;
- 51% of participants fully agreed that the objectives of the s**ession 5** – **"Way** forward "were achieved?
- 49% of participants fully agreed that the profile of participants was adequate for the function of the response examined;
- 64% of participants fully agreed that they would use this methodology for AAR for other public health emergencies in Nigeria;

Other results for this section are presented in the chart below:



To what extent do you think the results of the AAR can contribute to:

- 59% of participants fully agreed that the results of the AAR can contribute to strengthen preparedness and response capacity;
- 56% of participants fully agreed that the results of the AAR can contribute to strengthen coordination and collaboration mechanisms;
- 45% of participants fully agreed that the results of the AAR can contribute to strengthening of preparedness and preparedness plans
- 58% of participants fully agreed that the results of the AAR can contribute to empower individuals to better appreciate the challenges of emergency response

Other results for this section are presented in the chart below