UNICEF Nigeria

WASH as a Cornerstone for Conquering the 2017 Cholera Outbreak in Borno State, Northeast Nigeria

CHOLERA OUTBREAK WITHIN A HUMANITARIAN CONTEXT

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Preamble

The cholera outbreak in Nigeria began in Borno state in August 2017 and was contained in December 2017 with a combined total of 5,365 cases and a final death toll of 61 people. The outbreak was caused by multiple underlying factors including overcrowding in internally displaced persons' (IDP) camps, a weak national health system, poor sanitary conditions and the lack of clean water and other basic services—all exacerbated by the Boko Haram insurgency in Borno state. It is important to note that the overall health and sanitary situation is still critical with some serious capacity gaps to provide and sustain minimum lifesaving services. UNICEF will continue to work with local government and other aid agencies to ensure that long-term measures aiming at sustained quality services are put in place, while emphasizing the importance of the nexus between emergency and development, to mitigate the risk of cholera in Borno state and elsewhere and to build Government institutions in preparedness and response capacity on top of investing in water, sanitation and health care. Unfortunately, as UNICEF sends out this report, there is a cholera outbreak in Baga LGA in Borno.

15 March 2018

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List of Acronyms

BOSEPA	Borno State Environmental Protection Agency
C4D	Communication for Development
CFR	Case Fatality Rate
CMAM	Community Management of Acute Malnutrition
CTC	Cholera Treatment Center
DFID	Department for International Development
DPD	N-diethyl-p-phenylenediamine
EOC	Emergency operations center
EOT	Emergency operation team
EPR	Emergency Preparedness and Response
FO	Field Office
FRC	Free Residual Chlorine
H2S	Hydrogen sulfide
HTH	Calcium Hypochlorite
HQ	Headquarters
IDP	Internally Displaced Person
IEC	Information, Education and Communication
LGA	Local Government Area
LTA	Long Term Agreement
NFI	Non-Food Item
NGO	Non-governmental organization
O&M	Operation and Maintenance
OCV	Oral Cholera Vaccination
PHC	Primary Health Center
RUWASSA	Rural Water Supply and Sanitation Agency
SBMC	School Based Management Committee
SEMA	State Emergency Management agency
SITREP	Situation Report
UNICEF	United Nations Children's Fund
VCM	Volunteer Community Mobiliser
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

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Background

Context – Borno State

Cholera remains a threat to public health in Nigeria with many cases recorded yearly and a peak during the rainy season between June and September. Borno state, situated in the northeast of Nigeria, is the state that has been the most affected by the Boko Haram insurgency and military counter-insurgency operations since 2009, and by extension is highly vulnerable to cholera.

Figure 1: Map of Nigeria showing Borno state with conflict hotspots

In Borno state, almost 7 million people need health assistance and 60% of health facilities are functioning partially or not at all.[1] While access for humanitarian actors has improved since 2016 in Borno, most of Borno state remains inaccessible to humanitarian actors, with humanitarian operations focusing on Maiduguri city and local government area (LGA).

At the same time, the water and sanitation situation in the region is critical. The insurgency and counter insurgency has resulted in widespread forced displacement of people and disruption of lives leaving the northern states with a lack of basic necessities including water and sanitation. As of 31

[1] http//www.afro.who.int/news/who-and-partners-supporting-health-authorities-rapidly-respond-cholera-outbreak-north-eastern

January 2017, an estimated 8.5 million people needed humanitarian assistance, including 1.78 million IDPs.[2] An estimated 200 of 450 health facilities had been destroyed, along with 75 per cent of water, sanitation and hygiene (WASH) infrastructure. Some 3.6 million people lack access to safe water, 1.9 million people lack access to basic sanitation and 6.2 million people are without proper hygiene due to the high rate of open defecation and low rates of hand-washing.[3] Insecurity in these areas occupied by the insurgents also makes planning and delivering essential interventions difficult. Resources in camps for IDPs have been overstretched, with humanitarian agencies providing most of the health services. In most cases the camps are overcrowded and poor sanitation and hygiene as made them potential spots for recurrent outbreaks of diseases such as cholera. This, in the long-run, increases cases of infant and maternal mortality.

In response, UNICEF Nigeria has, for several years, been implementing rapid life-saving humanitarian assistance in Borno, Yobe and Adamawa states through the UNICEF Borno and Bauchi zonal offices. This document highlights UNICEF's response to the 2017 cholera outbreak in northern Nigeria.

[2]OCHA Nigeria Humanitarian Response Plan 2017, December 2016.
[3]OCHA, Nigeria Humanitarian Needs Overview 2017, November 2016.

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History of Cholera Outbreak in Northeast Nigeria (2010 – 2016)

Since the 2010 cholera epidemic which recorded 41,787 cases and 1,716 deaths, Nigeria has experienced recurrent outbreaks of cholera. In 2014, according to the Cholera Regional Platform, Nigeria was the most affected country by cholera in west and central Africa with 35,996 cases reported. In early 2015, 13 out of 36 states of Nigeria recorded cholera cases, with Anambra, Kano, Rivers and Ebonyi states being the worst affected. By the end of April 2015, 2,108 cases had been reported, with 97 deaths and a Case Fatality Rate (CFR) rising to 4.76%, causing extreme concern.[4] Following the 2015 outbreak, UNICEF Nigeria facilitated an evaluation of the 2015 cholera outbreak which informed the 2016 preparedness plan. The evaluation identified the "hotspots" that were mostly affected by cholera; the nature of affected settlements; hygiene practices within settlements; types of facilities within settlements; and challenges in terms of gaps in WASH. Furthermore, the evaluation found that no single strategy or intervention had an impact in isolation on controlling the 2015 cholera outbreak but rather a combination of both software and hardware interventions worked in compliment.

[4](IFRC, 01 Jan 2016)

The following recommendations emerged from the 2015 evaluation, which became part of the 2016 preparedness and response plan:

- Increase access to safe drinking water through drilling of deep aquifer boreholes and water quality monitoring using H2S vial kits. Monitoring of chlorine residuals using DPD pool testers was recommended as it was found to helpful in informing local authorities on poor quality drinking water.

- The evaluation recommended that UNICEF strengthen collaboration with other WASH partners in solid waste evacuation and in general environmental sanitation as well as train and empower local communities and provide them with environmental sanitation tools /materials for them to manage their waste at local level.

- Social mobilization, health/hygiene promotion and distribution of IEC materials for awareness creation, behavioural change and preventing and reducing the spread of cholera. The evaluation recommended heightening and sustaining awareness creation on the dangers of cholera before and after the outbreak as well as disseminating more cholera IEC materials during hygiene promotion.

- Improvement of coordination among WASH sector partners to eliminate duplication of efforts and inefficient use of resources, and improve effective contact among the epidemic control stakeholders. This included reactivating and strengthening state and LGA Emergency Preparedness and Response (EPR) committees, conducting regular local outbreak review meetings, establishing permanent epidemic control operation centres, and identification of an epidemic data repository.

The above recommendations were implemented as part of the 2016 preparedness and response plan, and no cholera outbreak was recorded in 2016.

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2017 Cholera Outbreak - Situation Analysis

The 2017 cholera outbreak in northeast Nigeria's conflict-affected state of Borno began in August 2017 with the first case reported on 16 August 2017. The cholera outbreak was quickly confirmed in the following six LGAs: Monguno, Guzamala, Dikwa, Maiduguri Metropolitan Council, Mafa and Jere. Figure 1 below shows cholera affected LGAs in Borno state as of 3 December 2017.

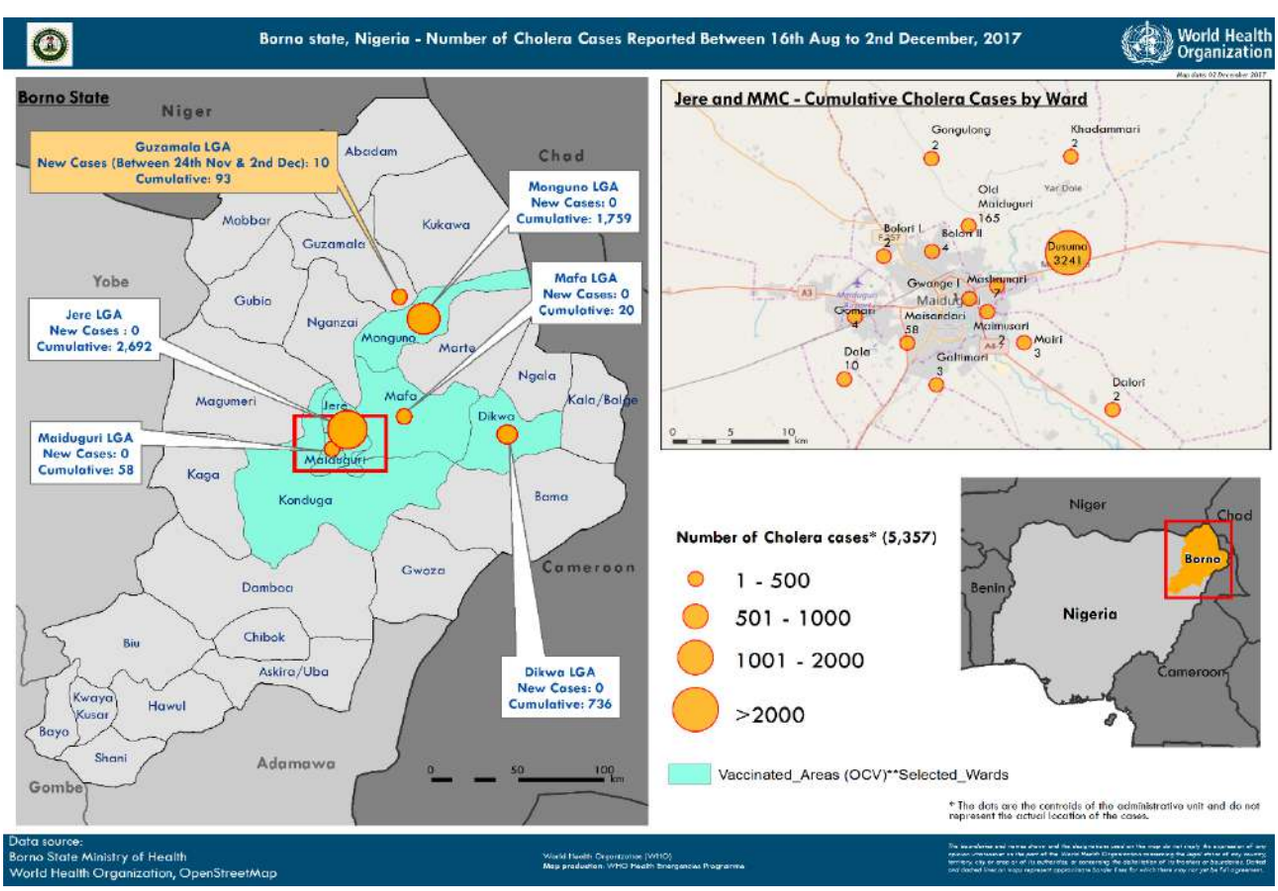

Figure 2: Map of Borno state showing cholera affected areas

According to the weekly cholera situation report prepared by the Borno State Ministry of Health, as of 10 December 2017, the cholera outbreak had claimed the lives of at least 61 individuals in Borno state (CFR of 1.1%) with 5,365 total reported cases. The highest number of cases were recorded in Jere LGA with 2,692 cases, and followed by Monguno with 1,762, Dikwa with 736, Guzamala with 98, MMC with 58 and Mafa with 20. Cholera cases in Jere were recorded from 15 locations including Muna Garage camp which hosted 20,000 IDPs on the outskirts of the state's capital, Maiduguri. Figure 3 below shows the number of cholera cases and deaths in affected LGAs.

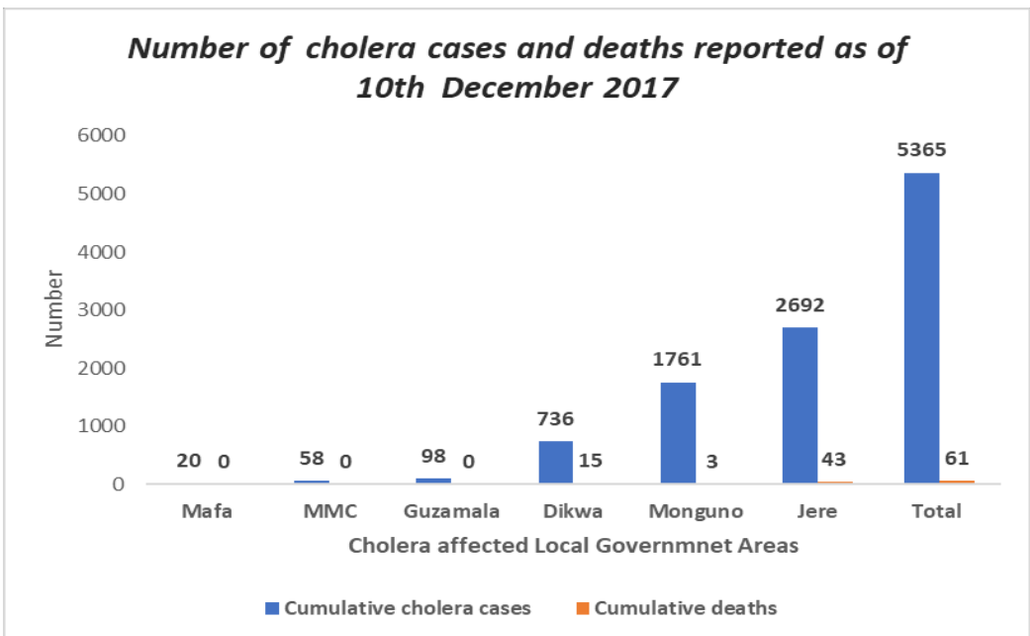

Figure 3: Number of cholera cases and deaths as of 10 December 2017
Data Source: Borno State Ministry of Health

The cholera outbreak further heightened the humanitarian crisis facing the 1.78 million IDPs in northeast Nigeria, including children, who comprise 56% of this population. The severe overcrowding and unsanitary conditions in the camps strained the water and sanitation infrastructure. For example, in a rapid risk assessment carried out by World Health Organization (WHO) in September 2017, the risk of cholera spreading in the capital of Borno was rated as “high” given the congestion, poor infrastructure, and water and sanitation conditions.

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Cholera Outbreak Response

UNICEF Nigeria initiated the response at the onset of cholera outbreak in August 2017 through the Field Office (FO) in Borno – Maiduguri. The country office responded to the outbreak through a multi-sectoral integrated approach integrating responses in health, WASH, nutrition, education and Communication for Development (C4D).

UNICEF supported the Borno State Ministry of Health, along with other Health and WASH humanitarian partners, in coordinating the cholera response to contain the outbreak. This involved a significant scale-up in prevention, treatment and preparedness activities. Women and girls were particularly at risk as gender roles influenced their exposure to cholera, with women and girls caring for sick family members, clean latrines, fetching and handling untreated water and preparing food.

Cholera Context Investigation

Knowing the characteristics of cholera affected areas, cultural factors and household sanitation and hygiene behaviors is a necessary part of any cholera prevention and response strategy. During a cholera outbreak, assessing the situation allows actions to be undertaken in a timely manner to contain the disease, limit its spread and reduce mortality.

In collaboration with the WHO surveillance team, the UNICEF country team began its response with a rapid cholera context investigation to understand the main causes of cholera transmission in the affected areas. The assessment was conducted on 35 cholera

Picture 1: Street restaurant showing poor hygiene practices and lack of handwashing stations in Muna Garage Elbadawey IDP Camp, Jere LGA.

Picture 2: Household observation showing poor child fecal management in Zannari host community, Jere LGA

cases including 23 children and their caregivers in Muna Cholera Treatment Center (CTC), Muna Garage in Zannari and Shuwari in Borno. The investigation was complemented by field observations on behavior and practices around water points, at household level, in street restaurants, at schools and at the Muna CTC.

Data was analyzed on the major transmission context for all cases, and particularly for children. The rapid assessment found that the main mode of transmission for cholera was household transmission (40%), where in most cases children were taking care of their younger siblings using poor or no fecal management techniques, and at the same time continuing to have normal contact with household members showing symptoms of cholera without use of appropriate hygiene practices. The second mode of transmission was found to be from public places (17%); followed by transmission through water sources (15%); transmission specific to an area or specific group (14%); transmission at health centers (10%) and funeral rituals (4%). These findings informed UNICEF and its partners to plan for WASH interventions in the affected settlements.

Picture 3: Poor hygiene around water storage in Muna Garage El Badawe IDP camp

Picture 4: Poor protection of food in in Muna Garage El Badawe IDP Camp, Jere LGA

Picture 5: Low sanitation around water point in Shuwari and Bolori host communities in Maiduguri.

Coordination

Humanitarian coordination involves bringing humanitarian actors together o ensure a coherent response. During a cholera outbreak, coordination improves the effectiveness of the response, ensures greater accountability and partnership and reduces duplication.

During the cholera outbreak in Borno, a three-tier coordination approach was applied in response:

(i) Internal coordination within UNICEF: UNICEF's response was coordinated between Abuja and Borno FO through daily contact and a cholera specific emergency operation team (EOT). Additionally, daily meetings were held in the Maiduguri FO with all sections involved.

(ii) Coordination among WASH sector partners: WASH sector partner meetings were held at LGA level on a weekly basis to avoid duplication of efforts among the WASH partners and strengthened the response.

(iii) Multi-sectoral coordination through the Emergency Operations Centre (EOC): The EOC in Maiduguri was activated, ensuring information sharing among stakeholders and continuity of response. Strong inter-sectoral coordination was ensured through daily meetings chaired by the Health Commissioner and WHO and attended by key health, WASH and social mobilization stakeholders including UNICEF, who presented their response activities, results and challenges. UNICEF shared information from the

cholera transmission context investigation to alert all sector actors on priority points and activities necessary for cholera control. A situation report (SitRep) was prepared and shared on a daily basis. The EOC also ensured that there was no duplication among partner activities but rather that activities were complementary and coordinated.

Water, Sanitation and Hygiene Response

Bearing in mind that camps do not fall under the responsibility of a WASH authority, the UNICEF strategy to fight cholera focused on expansion of services to areas of need and emphasized quality and sustainability of services including strengthening the human capacity to deliver the related activities in all affected or at risk areas. UNICEF employed human resources through the Rural Water Supply and Sanitation Agency (RUWASSA) to supplement weak local government and NGO capacity on the ground. The WASH response strategy included the following: (i) Operation and Maintenance of water facilities in cholera hotspots and high risk camps; (ii) Intensified focus on chlorination, including batch chlorination in host communities and blanket chlorination in urban areas; (iii) Sustained provision of emergency WASH supplies; (iv) Immediate access to safe water through emergency water trucking in unserved and under-served locations; (v) Environmental sanitation; and (vi) Hygiene promotion.

(i) Management of Operation and Maintenance of water facilities in camps, including chlorination

As is commonly understood among WASH project implementers, water facilities frequently fail when appropriate operation and maintenance (O&M) is not regularly instituted. This ultimately hampers sustained access to clean and safe water by the targeted population and exacerbates the spread of water-borne diseases. In the northeast Nigeria context, it was observed that most WASH sector stakeholders were not providing O&M services after facilities were constructed or rehabilitated in high risk camps, and RUWASSA's capacity to manage these water facilities were limited. UNICEF thus introduced an efficient O&M mechanism to manage both motorized and hand pump water systems as a key element to ensure the sustainable delivery of potable water services in cholera affected and high risk camps.

UNICEF's O&M package consisted of four critical services: provision of fuel for generators powering pumping systems, supply and replacement of fast-moving spare parts, chlorination and monitoring of free residual chlorine (FRC) levels to ensure quality, and stationing of one standby technician/operator to operate and monitor water facilities and two attendants (including one hygiene promotor) for each water facility to coordinate IDPs, manage queues and perform regular bucket chlorination and the monitoring of FRC.

UNICEF's implementing partners recruited water facility operators, technicians and attendants from the affected population to aid in strengthening maintenance and building local ownership of facilities. The water facility technicians were trained with the requisite skills needed to conduct daily operation and monitoring of water facilities, while the capacities of attendants' on managing and coordinating IDPs, maintaining proper hygiene around water facilities, conducting bucket chlorination using Calcium Hypochlorite (HTH chlorine) solution, and disseminating proper hygiene information to IDPs was built. FRC testing was conducted at the point of collection to ensure that the water supplied was within the acceptable range of 0.5 – 1.0 mg/l. In addition to bucket chlorination, chlorine dosing pumps were procured and installed on motorized water facilities in Bama and El Miskin camps to automate chlorination in these locations. This measure was done as a pilot/trial to test effectiveness and sustainability of automated chlorination in camps. UNICEF plans to replicate the installation of automated chlorine dosing pumps to other camps as the pilot was successful.

Picture 6: Bucket Chlorination in Muna Garage El Badawe, Jere LGA

The proper management of operations and maintenance ensures that facilities are repaired within 24 hours after breakdown and that FRC levels were maintained within

an acceptable range at water collection points. UNICEF's O&M services benefited about 265,000 IDPs and aided in curbing the spread of cholera by ensuring that IDPs in cholera affected and high risk camps had adequate and long-term access to potable water.

(ii) Chlorination in Host Communities and Urban Areas

The chlorination of water supplies was carried out in urban areas and host communities, reaching IDPs, returnees, and urban dwellers in Borno, Yobe and Adamawa states, including all identified cholera hotspots in these states. UNICEF carried out the blanket chlorination of urban water systems by providing the states' water utility companies with 142 tons of HTH chlorine and 416 tonnes of coagulant (Alum sulphate) to enhance chlorination effectiveness for surface water, and 654 dosing pumps (for automated chlorination) to chlorinate water facilities and their connected distribution networks, reservoirs and storage tanks. This benefitted an estimated 4.5 million people in Borno, Adamawa and Yobe states, including 680,000 IDPs who reside in urban centres.

Additionally, through UNICEF's collaboration with NGOs, water points for 300,000 people in 660 host communities in Jere and MMC LGAs sustained access to potable water through regular batch chlorination. FRC tests were conducted randomly at household level to assess the efficacy of the batch chlorination. Treatment with Aquatabs at home was used where FRC was not traced or was too low. Approximately 40% of the population reached were IDPs residing in host communities within Jere and MMC.

The precautionary chlorination measures were initiated at the start of the rainy season as a preventive response against cholera and other water-borne diseases and were scaled up in response to the outbreak.

(iii) Sustained Provision of Emergency WASH supplies

Picture 7: NFI distribution in Ngala International IDP camp, Ngala

UNICEF provided WASH/dignity supplies and sustained replenishments to 400,000 IDPs to ensure continued focus on hygiene, safe household water management and personal hygiene. This comprised of Aquatabs for household (point-of-use) water treatment; water storage/collection containers to ensure safe transportation, handling and storage of water; sanitary pads to promote proper menstrual hygiene management, multi-purpose soap bars to promote handwashing and cleanliness and plastic kettles for cleaning after defecation and handwashing. UNICEF provided top-ups of these items and the provision of WASH/dignity supplies was always complemented with the dissemination of key hygiene promotion messages.

HTH for water disinfection was provided to other humanitarian actors including International Medical Corps, Solidarites Internationale, Action Against Hunger, Mercy Corps, and Catholic Relief Services where UNICEF was not present, benefiting more than 155,000 IDPs in Borno state.

(iv) Immediate Access to Safe Water through Emergency Water Trucking

Safe chlorinated water is critical to preventing cholera and for breaking transmission during outbreaks. The prevailing lack of adequate access to safe water in Borno State, in terms of lacking adequate quantity or acceptable quality, has been exacerbated by damage of the water infrastructure during the ongoing insurgency. Untreated water had dire consequences on cholera outbreak and transmission.

Picture 8: Tanker desludging a latrine in Farm Center IDP camp.

UNICEF's goal during the cholera outbreak was to provide immediate access to safe/chlorinated water to meet the identified gap in water supply in the short term as well as in the long term. UNICEF activated existing Long Term Agreements (LTAs) with vendors to truck chlorinated water with adequate levels of FRC into cholera affected areas that were suffering a shortage of water for the duration of the cholera outbreak. Water collection points were identified and collapsible jerry cans were distributed. As a long-term measure to prevent future outbreaks, UNICEF continued to construct and rehabilitate water points in all areas with limited water access, aimed at increasing water quantity and improving quality to meet the minimum standards of 15 litres/person/day. In addition, UNICEF upgraded water facilities by installing larger capacity pumps to increase discharge rates. UNICEF had originally planned to use dual pumping on solar powered boreholes by introducing generators for nocturnal pumping but this option was constrained by limited resources.

(v) Environmental Sanitation

The absence of a clean environment affects human health. Sanitation aims to protect human health by providing a clean environment that prevents the transmission of disease, especially through the fecal-oral route. In Borno, pit/emergency latrines are the sanitation facilities in IDP camps and host communities. When pit latrines become full, it is critical that they are emptied in time; otherwise, the practice of open defecation proliferates, contaminating the environment with ready sources of disease. In the most densely populated camps, which were the main foci for the cholera outbreak, safe management of full pits and eradicating open defecation was critical to maintaining access to safe sanitation and a necessary measure to stop cholera transmission.

Picture 9: Disinfection of Latrines in Muna Garage, IDP Camp

Picture 10: Camp Cleaning in Muna Garage, IDP camp

To achieve this, UNICEF enabled the emptying of latrines, daily cleaning, regular disinfection of latrines, and cleaning of the environment including garbage removal. Management of solid waste and latrines in IDP camps was undertaken through Government partners (RUWASSA), who supervised teams of 580 workers recruited from the affected population who were responsible for cleaning and disinfecting latrines and garbage removal. They operated in 43 camps (7,588 latrines) reaching 522,374 beneficiaries (91 percent of the camp population in hotspots). The government agency Borno State Environmental Protection agency (BOSEPA) is responsible for environmental sanitation and management of sludge disposal sites. WASH sector partners identified 13 locations in Borno state that have the potential to become dumping sites, but only one was established by BOSEPA despite availability of support from the humanitarian community.

UNICEF managed to carry out desludging using alternative temporary dumping sites under agreement with the State Emergency Management agency (SEMA). In fact, in cholera-affected camps, up to 90% of all latrine desludging was carried out by UNICEF.

UNICEF ensured that the protocol for safe desludging was followed despite an absence of permanent sludge disposal sites. UNICEF provided support through hiring a contractor on an LTA basis responsible for regular desludging and disposal of latrine waste. Initially, up to 2,000 latrines in 34 locations required emptying but this could not be achieved because of limited resources, forcing ad hoc emptying as resources were received.

(vi) Hygiene promotion

In terms of hygiene promotion, UNICEF ensured that handwashing facilities were installed, not only in schools, primary health centres (PHCs) and cholera treatment centres (CTCs), but also in all IDP camps. Plastic kettles, a culturally preferred mode for cleaning after defecation and handwashing, were also provided as part of the distributed NFIs. Rapid response teams comprising of volunteers were put in place in areas where a case of cholera was located. The teams were trained by the UNICEF WASH section in liaison with Health and C4D and were also tasked with evacuating patients and conducting house to house risk-informed hygiene promotion within IDP camps and host communities. Key basic messages were disseminated through the use of graphic IEC materials including on household water treatment methods, food handling hygiene, handwashing techniques, cholera transmission routes, how to control diarrhoea and where to seek help.

Picture 11: Handwashing training for IDP Children in Muna Garage IDP camp

Picture 12: Rukayya Abba - Education facilitator conducting hygiene promotion community meeting in Muna Garage IDP camp.

The response team also helped to ensure that disinfection was conducted within 12 hours after identification of each new suspected case of cholera. Global Handwashing Day on October 15 and the World Toilet Day on November 19 became opportunities to run an aggressive hygiene promotion campaign at individual household level as well as in public places within the communities, including schools and markets. Promotion outlets included mass media awareness programmes through local television and radio stations, and were broadcasted in local languages.

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WASH Response in Education Facilities

Schools, particularly those in rural areas and humanitarian situations, often lack drinking water and sanitation facilities, or have facilities that are inadequate in quality. Schools with poor water, sanitation and hygiene conditions are high risk environments for children and staff, and exacerbate children's susceptibility to diarrhea diseases such as cholera.

In response to the cholera outbreak in Borno state, the UNICEF WASH section targeted all schools in Muna Corridor and Dikwa to ensure all had a minimum level of WASH facilities in place (chlorinated water, handwashing stations with soap and sanitary latrines). Ahead of school re-opening on 19 September 2017, UNICEF trained 300 teachers to guide children on handwashing practices and hygiene education in the affected areas and at risk camps.

Picture 13: Handwashing Station in GSSS Banki, Bama LGA

Since school re-opening, children have been trained on cholera prevention and monitoring reports on school facilities indicate that handwashing is practiced on a daily basis in schools where handwashing facilities have been provided. Active involvement of school teachers and School Based Management Committees (SBMCs) who are responsible for management of school affairs, was a key enabler for the response in schools.

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Oral Cholera Vaccination (OCV)

Picture 14 : Child being vaccinated by a UNICEF Health Specialist in Muna Garage IDP Camp

In the long term, improvements in water supply, sanitation, food safety and community awareness of preventive measures against cholera are the best means of preventing cholera and other diarrheal diseases. However, to complement these measures, oral cholera vaccines of demonstrated safety and effectiveness have been used to immunize populations considered to be at high risk for cholera outbreaks. Through the Ministry of Health, UNICEF supported a successful round of cholera vaccination in six LGAs (Jere, Maiduguri, Monguno, Dikwa, Konduga and Mafa). UNICEF reached 100% of the targeted population of approximately 900,000.

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Social Mobilisation

When planning, and implementing a cholera response, it is essential to plan and implement community mobilization activities. In cholera response, social mobilization involves providing the community with adequate information and support about all aspects of the outbreak.

In collaboration with UNICEF Health, Education and WASH Sections as well as implementing partners including local health and surveillance officials, UNICEF's Communication for Development (C4D) team developed a communications and social mobilization plan aimed at controlling the spread of the cholera and creating awareness about modes of prevention.

Community engagement for increased knowledge and behaviour change

The use of community volunteers to perform house to house community hygiene promotion was one of the community engagement strategies used during the outbreak and a main component of UNICEF's social mobilization plan. A total of 1,414 community mobilizers were strategically deployed to conduct community hygiene education from house to house, providing key messaging on handwashing with soap at critical times, keeping water sources clean, covering water, treating water with Aquatabs before use as well as environmental cleanliness. The mobilizers were also responsible for reporting any cases of diarrhea and vomiting they came across and directing them to the nearest CTC. Community mobilizers were recruited from the various IDP camps, with some already serving as Volunteer Community Mobilisers(VCMs) previously engaged in the polio response. This pre-existing network, initially created for Nigeria's polio response, strengthened UNICEF's ability to respond promptly and effectively at the community level.

Picture 15: Awareness creation exercise targeting children via community leaders

Community and religious leaders were also involved in the response as change agents. They sensitized worshippers in mosques within the IDP camps and undertook house to house sensitization in the camps.

Radio and television messages were broadcast in major languages spoken in Borno state. Mobile media and wireless broadcast were used to disseminate messages in the various IDP camps where there was no access to radios or television. This attracted audiences to take part in open discussions. The broadcasts carried key cholera prevention messages and broadcast equipment were moved from one IDP camp to another to ensure full coverage.

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Challenges

1. With the onset of the rainy season, some of the IDP camps became inaccessible. Transportation of construction materials was possible only through the very limited UNHAS fleet of helicopters. Construction and rehabilitation of WASH infrastructure became expensive and was delayed and emergency water supplies and distribution of WASH kits were disrupted. This challenge worsened the WASH situation in the less accessible areas.
2. Scarcity of resources for the outbreak was a major problem. However the reprogramming of existing UK DFID funding for the cholera outbreak enabled a timely boost to the response.
3. Security is still one of the major challenges faced, preventing adequate and timely response to the most vulnerable, not only to combat cholera but to continue to respond to the humanitarian needs of the vulnerable population.
4. Latrine disposal sites were not permanent. There has been extremely slow response from BOSEPA on the need to develop permanent and well-managed sludge disposal sites, leading to the use of temporary disposal sites instead. With high level advocacy from UNICEF, the State Government directed LGA secretariats and Chairmen to provide land where BOSEPA was to develop the disposal sites. So far only one site was developed even after land was provided by the LGAs in five locations. The capacity of RUWASSA is very weak and needs to be strengthened. To mitigate this, UNICEF WASH employed temporary human resource capacity to fill the gap. Efforts are continuing to solicit the capacity of other partners such as SEMA.
5. Population density is very high in camps which makes it difficult to contain a cholera outbreak.
6. There was limited capacity of both local and international partners such that most of the engaged partners did not meet expectations which led to a lack of sustained

services. It was therefore necessary to establish new partnerships.

7. Bucket chlorination and latrine cleaning, one of the key components of UNICEF's WASH interventions, were initially interrupted due to the superstitious beliefs of the affected population that chemicals being used for these activities would have a negative health impact on contact, including sterility. This ultimately led to a spike in the initial transmission of cholera as many IDPs shunned bucket chlorination, neglected the use of Aquatabs and resorted to open defecation rather utilize a sanitized latrine. Key efforts were made in conjunction with UNICEF's C4D section to conduct an intensive, targeted and customized hygiene promotion campaign in affected camps to sensitize individuals on all sanitization and water treatment chemicals being used and their importance in stopping the transmission of faecal-oral and water-borne diseases, including cholera.
8. The sustainability and durability of handwashing stations was an issue for UNICEF's project implementers in the field. It had commonly been observed and reported that most constructed handwashing stations were vandalized or removed (by the IDPs or other unknown persons) almost immediately after being installed. Buckets were removed, sometimes along with the stands. Nevertheless, UNICEF supplied and maintained approximately 200 handwashing facilities in schools, CTCs and CMAM/PHCs during the 2017 cholera outbreak. In addition, to complement the provision of handwashing stations, in the past two years UNICEF has supplied kettles as part of the WASH component of NFI distribution reaching 1,052,735 beneficiaries in 2016 and 1,054,996 beneficiaries in 2017. Culturally, most communities in which UNICEF has intervened in prefer to use kettles for handwashing and cleaning, thus providing an effective alternative to handwashing stations. UNICEF is still strengthening social mobilization on proper use of handwashing stations in order to prevent the vandalization and theft.

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Effect of Limited funding on the Cholera Outbreak

In providing the WASH response, limited funding compromised the quality of response and sustainability of services provided. For instance, UNICEF prioritized camps with larger populations over informal camps with a population of less than 1,000. As a result, smaller communities continued to be affected by cholera after cholera cases had disappeared in the larger communities.

Additionally, because of the funding gap, within the targeted bigger host communities, the capacity to empty latrines did not meet the demand. In a period of six months, 2,000 latrines in 34 locations in camps required emptying. However, this could not be fully achieved in time because of limited resources, thus increasing the risk of disease, and ad hoc emptying took place as resources were received.

In terms of access to sanitation, in most camps in Borno, currently one emergency latrine is being used on average by 50 - 80 people (and in some cases 200 people), which is far below the standard of 1 to 20 people. All these factors, including the time lag in emptying latrines, increased the risk of disease outbreak.

Cholera broke out mainly in camps with dense populations with the largest demand for emptying latrines. Limited funding gave rise to prioritizing immediate lifesaving interventions at the expense of sustaining the investments that were made such as systematic support for operations and maintenance. This in turn caused minor breakdowns requiring more time to be fixed, which also led to gaps in access to safe water – a vicious cycle.

However, the situation was rectified as more resources were received. For example, grants from UK DFID was reprogrammed and channeled to the cholera outbreak, allowing desludging to become more systematic, O&M systems to be put in place and smaller host communities to be targeted reaching an additional 190,000 people.

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Lessons learnt and way forward

1. Blanket chlorination along with automation of urban water systems is an important process that greatly supports the quality aspect of drinking water and a critical mitigation element of water-borne diseases including cholera. There is need for UNICEF to not only continue to support this intervention throughout the crisis but to also advocate for streamlining chlorination as part of the nexus between emergency and development work.
2. Establishment of LTAs with vendors enables quick response when an outbreak occurs, for both supplies and services.
3. Sectoral convergence and coordination are important during a cholera outbreak at all levels. Good collaboration between C4D, WASH and health actors within UNICEF enabled quick information sharing and a coordinated and effective response.
4. Garbage collection was not foreseen as a WASH activity in the humanitarian response but was necessary during the cholera response to keep the environment clean and has been identified as one of the key interventions that aided in controlling the cholera outbreak.
5. More generally, supporting the sustained operations of every supported WASH service, water facilities, latrines, etc., is key in achieving WASH objectives in an emergency context. It does not only ensure that the quality aspect of the service is taken care of but also perpetuates the investments made by the donors. As WASH sector lead, UNICEF will advocate within the donor community to pay special attention and allocate sufficient resources for this element even when donations are channelled through other implementation partners.

6. The establishment of the EOC enabled Government and humanitarian actors to respond in a coordinated and complimentary manner.
7. It is necessary to investigate and understand transmission routes and risk factors during a cholera outbreak as this allows for a targeted and risk informed response.
8. House to house communication and mobile radio efforts are most effective in areas of low literacy and where people have no electricity. These also give an opportunity to overcome the language barrier.
9. Traditional and religious leaders play a key role in social mobilisation and are important change agents. Religious leaders sensitize their congregation about cholera risks and prevention during sermons and help to dispel false rumours.
10. There is a significant benefit in using existing volunteer networks. During the outbreak polio VCMs who were available and able to work were redeployed to provide cholera messaging in affected areas. Mobilising an existing network was much faster than creating a new one.
11. Human resource capacity was key to responding to the cholera outbreak. It is necessary to deploy staff where there are gaps. The UNICEF Emergency Specialist was deployed full-time to the EOC to support inter-sectoral coordination, in addition to attendance of WASH, Health and C4D staff at EOC meetings. The Information Management (IM)/Humanitarian Performance Manager specialist from the Emergency Unit in UNICEF was temporarily deployed to support WASH sector IM activities, especially filling the gap in cholera response reporting to feed into the daily EOC cholera SitRep. C4D also deployed two staff to the Borno FO to support the coordination of hygiene promotion activities. The Regional Cholera Platform also deployed a cholera expert to support the Borno FO for one month.
12. Engagement with UNICEF HQ and the regional office is helpful for technical support. A technical Emergency Management Team meeting was held on October 4 with HQ, the regional office, and Copenhagen, to take stock of UNICEF Nigeria's cholera response. This engagement at global level helps to raise awareness among WASH agencies on the cholera outbreak and resource mobilisation.
13. Active case search in hotspots and high risk areas helped in discovering cholera cases.

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Conclusion

Effective water and sanitation interventions were the cornerstone for the reduction of transmission cholera during this outbreak; in particular comprehensive chlorination treatment, disinfection of affected camps, sustained desludging of latrines and targeted hygiene promotion. Sectoral convergence and coordination at all levels were key enabling factors to the success of these WASH interventions in controlling the cholera outbreak. The capacity of the local NGOs and government institutions are still weak and require strengthening. UNICEF will continue to build government capacities while supporting service delivery efforts amidst the humanitarian situation. Preventing and eliminating cholera remains a key objective for UNICEF as the humanitarian situation in Borno remains dire.

In cholera affected areas, on average, the population continues to have access to only 10-12 litres per person per day as compared to the standard of 15 litres per person per day and there are still critical gaps in access to proper sanitation facilities. UNICEF Nigeria will continue to prioritize cholera preparedness and eventual eradication of cholera.