Health Sector Cholera Outbreak Readiness and Response Plan

2024 – 2025

Cox's Bazar – Rohingya Refugee Response

December 2024 – May 2025

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Cholera Outbreak Response Plan – Health Sector – Rohingya Refugees Response in Cox's Bazar – Bangladesh 2024

Introduction

According to the United Nations High Commissioner for Refugees (UNHCR) data as of August 2024, there were 994,124 Rohingya refugees registered in Bangladesh, residing in thirty-three congested camps formally designated by the Government of Bangladesh in the space-constrained, densely populated and climate-vulnerable Ukhia and Teknaf Upazilas of the Cox's Bazar District. While World Health Organization (WHO) closely monitors the communities for outbreak diseases in the refugee camps through the Early Warning, Alert and Response System (EWARS), cholera remains a concern, with the lack of vaccines significantly straining the healthcare system. According to the health sector data, the cholera Attack Rate (AR) in Ukhia was 4/10,000 person based on RDT-positivity and was 1.29/10,000 in Teknaf, as of the end of October 2024.

On 23 June 2024, a noticeable upsurge in the incidence rate of Acute Watery Diarrhea (AWD) cases was detected in the refugee camps. Besides the Rapid Diagnostic Tests (RDT), the lab culture tests showed an increase in the number of confirmed cholera cases. The figure 1 below shows the changes in the standardized RDT positivity rate to the overall RDT since the epidemiological week 21, 2024. As of the end of 2024, the RDT positivity rate shows a steady increase trend. Additionally, the average positivity rates between every two weeks do not show any changes in the standardized epi curve trends since the recent upsurge in the cases. A strongly positive correlation was found between Epi-week and RDT positivity rate and numbers. For time series data, this normally indicates increase over time. A total of 525 cholera culture-confirmed cases have been reported between 23 June 2024 and 28 December 2024, with under-five children accounting for 37.9% of the total cases, and 33% of the cases are severely dehydrated.

Rationale

The Cholera Outbreak Response Plan for Rohingya refugees in Cox's Bazar, Bangladesh, is driven by several urgent factors. The refugee camps are highly overcrowded, housing nearly

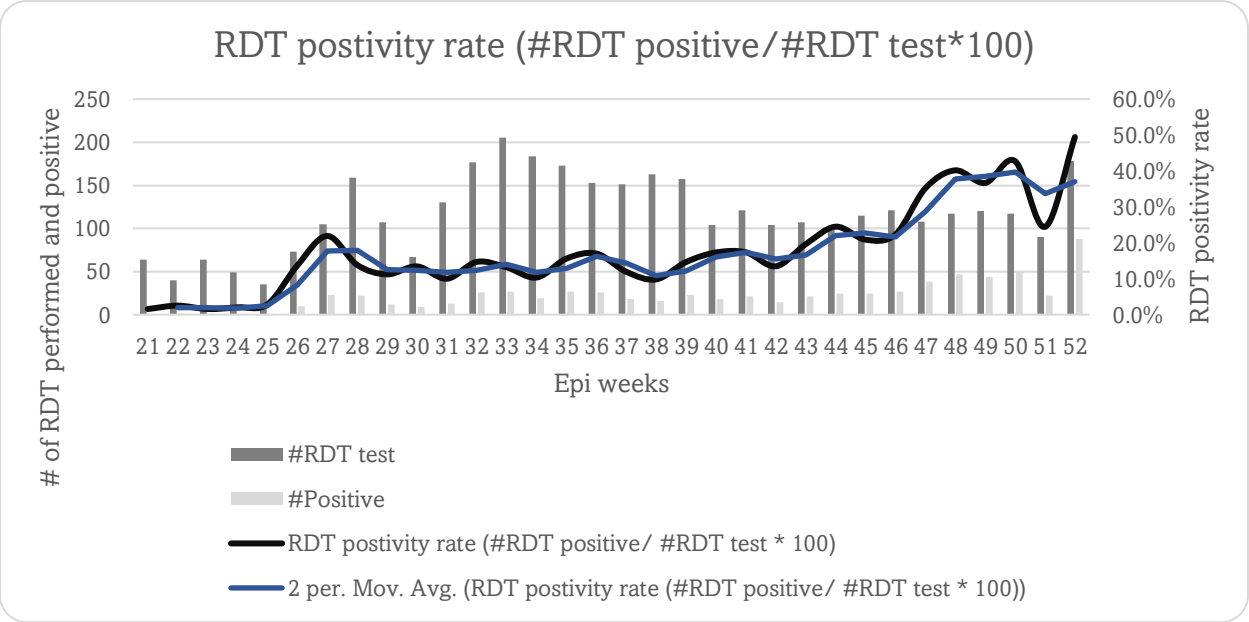


Figure 1: Standardized cholera RDT positivity

one million people in conditions that significantly heighten the risk of waterborne diseases like cholera. This dense population, coupled with inadequate water, sanitation, and hygiene infrastructure, and the fact that the last OCV campaign was three years ago make the camps particularly vulnerable to disease outbreaks. Furthermore, the area has seen a steady increase in cholera cases since June 2024, marking a concerning shift towards endemic patterns of the disease, especially with the new arrivals and increased unvaccinated population. With limited access to vaccines and essential medical supplies like Oral Rehydration Salts (ORS), the healthcare system is under significant strain. There is also a critical shortage of trained health personnel and functional Diarrhea Treatment Centers (DTCs) needed to manage the growing number of cases. To address these challenges, the plan emphasizes the need for cross-sectoral collaboration, integrating Health, WaSH (Water, Sanitation, and Hygiene), and risk communication efforts to ensure a coordinated response that prevents further outbreaks and mitigates the current crisis.

The cholera outbreak response plan: objectives and indicators

The WHO-led Health sector in Cox's Bazar has been coordinating the cholera outbreak response since the last upsurge in collaboration with the sector partners, including local

health authorities, the WaSH sector, UN agencies, and international and local NGOs. The overall objective of this plan is to

The health sector selected response indicators based on the GTFCC monitoring and reporting guidelines that are applicable in the Rohingya refugees' context. The baseline data were taken from a secondary source of information, including Situation Reports (SitRep), the health sector bulletins, WaSH sector dashboards, and recent needs assessment reports. The cholera outbreak response indicators are available in Annex 3. The final update of this plan before dissemination was on 22.09.2024. The timeline of this plan is for 6 months, between October 2024 and March 2025.

Response pillars

Under the cholera response plan for Rohingya refugees, the health sector has identified eight response pillars, which are in line with the global cholera outbreak response plan. Specific activities relevant to each of these pillars have been identified in consultations with WHO and the Technical Working Groups (TWG). Besides, the timeline for implementing and fulfilling these activities has been determined. While the health sector facilitates the coordination and implementation of the pillar's activities, each of these pillars is led by the sector coordination team, WHO, or one of the TWGs.

Leadership and coordination

The health sector coordination team developed and activated the Preparedness and Response Plan (PRP) for the cholera outbreak after the last significant increase in cholera cases among refugees in Cox's Bazar. The readiness and response plan is based on the last version of the Multisectoral Acute Watery Diarrhea (AWD)/Cholera Preparedness and Response Plan – Cox's Bazar. The PRP is composed of 8 pillars: leadership and coordination, surveillance and lab, Risk Communication and Community Engagement (RCCE), case management, WaSH, vaccination, supplies and logistics, and information and data analysis.

Currently, there are 15 health partners involved in the Cholera/AWD response in the camps, as shown in the table below.

SL No	Name of Partner Organization	Sentinel Testing Site	DTC/CTC	Laboratory Testing	JART Investigation
1	WHO	No	No	Yes	All Health Sector and Wash Sector Partners
2	BDRCS	Yes	No	No	
3	BRAC	Yes	No	No	
4	FH	Yes	No	No	
5	GH-YPSA	Yes	No	No	
6	GK	Yes	No	No	
7	Hope Foundation	Yes	No	No	
8	ICDDR'B	Yes	No	Yes	
9	IOM	Yes	Yes	No	
10	IRC	Yes	No	No	
11	MOH	Yes	Yes	No	
12	MSF	Yes	Yes	No	
13	PHD	Yes	No	No	
14	RTMI	Yes	No	No	
15	TDH	Yes	No	No	

WHO activated the Incident Management System mechanism at Cox's Bazar level to manage the outbreak response effectively. The Epi Technical Working Group (TWG) meeting will be held on a weekly basis to follow up on the outbreak response in a timely manner.

The health sector will conduct an assessment of the existing HR capacity and required training regarding the PRP pillars. Additionally, the health sector coordination team mapped the available Diarrhea Treatment Centers (DTC). In order to assess the functionality and readiness of the existing DTC, the sector coordination team will conduct a DTC readiness check based on the Global Task Force on Cholera Control (GTFCC) materials. The

assessment will be administered by the Camp Health Focal Points (CHFPs), who will receive an orientation and training session on administering the surveys.

Based on the survey findings, the health sector will identify the existing gap related to DTC functionality and readiness, as well as the active capacity of DTCs in camps. Additionally, the sector team will develop referral pathways between the Health Facilities (HFs) and communities and functional DTCs. The referral pathways will be revised regularly based on the DTCs' functionality updates.

The referral pathways will be disseminated to the health sector partners and other sectors through the cholera dashboard and soft copy materials.

Since the cholera response is part of the ongoing coordination efforts of the health sector, no additional budget is required for this pillar.

NO	Activity Discussion	Who	Action points	Timeline
1.1	Lead and coordinate the response plan	HSC		Ongoing
1.2	Activate IMS and coordination platform to respond to the case upsurge	WHO Epi team	Cholera IMS activated and discussion is ongoing.	Ongoing
1.3	Update the preparedness and response plan	HSC	Epi team will organize weekly meetings on cholera.	Ongoing
1.4	Assess the existing HR capacity in the field (trained staff, required training)	HSC	101 participants attended the case management training. Need to collect information about HR	Completed
1.5	Map and conduct an assessment of available DTC and health facilities with AWD isolation capacity.	HSC		Completed
1.6	Develop and disseminate referral pathways for cholera cases	HSC	After DTC mapping, referral pathways will be created for Cholera cases	Pending
1.7	Sensitize the nutrition sector and partners on the referral pathways	HSC	After developing referral pathways, will be shared with the nutrition sector and partners	Pending

1.8	Ensure consistent flow of information to WASH, nutrition, and other sectors	HSC		Ongoing

Surveillance and laboratory

While the data collection of AWD cases is executed daily, there is a time lag of 2 – 3 days between collecting the samples and obtaining lab test results.

A laboratory capacity assessment was recently conducted by WHO to ensure that the labs have adequate capacity. The lab capacity checklist is included in Annex 1. The most recent assessment covered the period up to the end of September 2024. According to the lab capacity assessment and based on the needs determined through this plan, it was found that there is no gap in lab supplies.

The primary activity under this pillar involves conducting RDTs and antimicrobial tests for screening and confirming suspected cases. Between 23 June and 21 September 2024, approximately 1856 RDTs and 305 culture tests were conducted. While there is no evidence-based recommendation for the optimal number of RDTs required to detect cholera transmission effectively, surveillance data indicates that a minimum of 87 RDTs should be performed daily between June and September 2024. This translates to a requirement of 400 RDT kits per month, including a 10% contingency buffer. Additionally, an average of 55 antimicrobial tests (culture and sensitivity tests) and an equal number of sample collection kits are required each month. The total budget needed for these over the plan's timeline is $6,600 and $1,650, respectively. The logistics cost for transferring culture samples to the medical laboratory in Cox's Bazar is $5 per sample, totaling $1,650 for the duration of the plan. Based on the most recent inventory, these items are sufficiently available in WHO warehouses.

NO	Activity Discussion	Who	Action points	Timeline
2.1	Ensure daily-based data collection and reporting from the sentinel sites	Epi	Ongoing regularly	Ongoing
2.2	Ensure sufficient capacity of the labs	Health OPS	Lab assessment conducted and shared	Completed

2.3	Checklist of Cholera testing in the lab	Health OPS	The lab checklist was created and shared	Completed

Risk Communication and Community Engagement (RCCE)

The RCCE working group added the cholera outbreak response as a fixed agenda point until further notice. The group has reviewed and contextualized the cholera awareness messages and later disseminated them through the CHWs. A total of 1693 CHWs are involved in the RCCE activities in camps. To assess the impact of RCCE efforts regarding the cholera outbreak response, a baseline KAP survey was conducted by the health sector in September 2024, and it will be followed by another KAP survey after 12 months. The survey revealed significant gaps in awareness, preventive practices, and access to essential sanitation resources related to cholera. The findings showed that education plays a crucial role in understanding cholera; individuals with no formal education are less likely to know about using ORS or recognize how cholera is transmitted. There are also geographical differences, with residents of Teknaf generally exhibiting lower awareness and preparedness for cholera prevention and treatment compared to those in Ukhia. Gender disparities were found as well; women are 1.75 times more likely to lack access to latrines, while men are more likely to hold incorrect beliefs about the need to stop breastfeeding during a child's cholera infection and to mistakenly believe that food restrictions are necessary for cholera patients, which can negatively affect recovery. The survey highlighted an urgent need for targeted community awareness and education programs, particularly for individuals with limited formal education, men in the community, and older adults. It also emphasized the importance of ensuring equal access to sanitation facilities, especially for women and PwD. Additionally, raising awareness about improved water safety practices and cholera vaccinations is crucial, particularly in regions where misconceptions are prevalent. These findings underscored the necessity of focused, community-based health interventions to address knowledge and resource gaps. The full report, survey plan, and questionnaire are available in Annex 4. The KAP questionnaire has been reviewed by the RCCE TWG and the WaSH sector, and the CHWs who administered the survey received an online orientation session on the questionnaire.

RCCE TWG facilitated an orientation session for the CHWs involved in the cholera outbreak response about the last RCCE awareness messages. Another orientation session will be held to provide information to the CHWs about available DTCs and referral pathways.

The key activities under this pillar include the distribution of awareness materials and the facilitation of awareness sessions within the camps. Additionally, the deployment of CHWs is crucial to ensure the continuity of these efforts. With a budget of 18,000 USD, UNHCR will print a total of 15,000 leaflets and 5,000 posters about cholera and vaccines, sufficient to meet the entire demand for RCCE materials. Over 1600 CHWs are actively engaged in cholera RCCE activities under the guidance of the CHW TWG. The costs associated with deploying these CHWs are fully covered by NGOs for the duration of the plan. Furthermore, training sessions on the CHW core package of services, including cholera awareness, were conducted in January and February 2024 for CHWs. However, further specialized training on cholera RCCE is necessary, with an estimated budget of 6,000 USD, fully covered by UNHCR. This training was scheduled to take place in September or October 2024.

NO	Activity Discussion	Who	Action points	Timeline
3.1	Review and disseminate RCCE messages	RCCE		Completed
3.2	Print and disseminate IEC materials	RCCE		Completed
3.3	Deliver an orientation session to the CHWs on RCCE and cholera awareness messages as well as available isolation facilities.	RCCE	UNHCR to deliver cholera RCCE training.	Planned
3.4	Baseline KAP assessment	HSC		Completed
3.5	Rumor tracking/categorization	RCCE	No cholera-related rumors have been reported to the RCCE group. RCCE will share the rumor categorization. There is no unified platform to track and categorize rumors.	Ongoing

Case management

WHO Epi team reviewed the existing cholera case definitions, including those for diagnosis, admission, and discharge. These definitions are detailed in Annex 2: Glossary. This review was conducted prior to a case management training session organized and delivered by the WHO technical team on 1 August 2024, which trained over 101 participants. All training materials, including the cholera definitions, were distributed online as soft copies to the trainees and field health workers.

Additionally, the Joint Assessment and Response Teams (JART), a collaboration between the Health and WaSH sectors, continuously assess new confirmed cases. These assessments focus on health and WaSH infrastructure and services in the affected households to identify specific gaps. Currently, a team of six field surveillance officers from WHO is actively involved in JART activities. The monthly operational and salary cost for this team is 6600 USD, which is covered by WHO throughout the plan's timeline. The recommended number of field surveillance officers is 10, and currently, there are only six surveillance officers with a gap of 4 positions that need to be filled up to adequately meet the capacity needs of the epidemiology and field surveillance and response activities.

The last distribution map of DTCs in the camp showed that there were 10 available DTCs as of the end of September 2024 (8 in Ukhia and 2 in Teknaf). In order to assess the readiness and functionality level of the DTCs in the field, the health sector coordination team, in cooperation with the Camp Health Focal Points (CHFPs), contextualized and conducted a field assessment of the existing DTCs utilizing the Global Task Force on Cholera Control (GTFCC) CTC checklist[1]. The DTC checklist includes an Infection Prevention & Control (IPC) assessment to identify IPC needs and gaps within the DTCs.

The evaluation of DTC/CTC covered 10 facilities, with eight located in Ukhia and two in Teknaf, providing a total of 90 beds managed by either the Government or INGOs like IOM and MSF. The catchment population varies, with Ukhia facilities serving a larger refugee

[1] https://www.choleraoutbreak.org/book-page/appendices.html

population than Teknaf. The findings revealed some adherence to IPC protocols but identified gaps such as inadequate footbaths with chlorine and inconsistent cleaning schedules, leading to recommendations for **enhanced IPC practices**, prioritizing hand hygiene, increasing cleaning frequency, and better monitoring at entry and exit points. The layout of most DTCs/CTCs was partially effective in preventing cross-infection. However, it is recommended to **establish sex-segregated diarrhea wards**, allocate observation beds, and streamline referral processes to higher-level care facilities. While cholera patient management protocols were generally followed, **documentation practices**, particularly for patient demographics like age and sex, need improvement. Recommendations include maintaining a detailed patient register and ensuring prompt referral and management of severe cases.

The evaluation also found that specialized cholera beds and proper protocols were often lacking, suggesting the provision of **cholera beds**, assessment of current bed availability, and rigorous adherence to treatment protocols. Significant gaps in **food safety and hygiene** practices were identified, with many facilities relying on external food sources, leading to recommendations for designated food preparation areas, monitoring leftover food disposal, and providing staff training on food safety. Inconsistencies in water quality management, insufficient latrines, and inadequate waste and dead body management were also noted, with recommendations for routine FRC testing, improved **water quality** management, enhanced waste disposal practices, and clear protocols for **dead body management**. While most centers adhered to cholera treatment protocols, there was a need for better **training on chlorine use** and more consistent implementation of **hygiene practices**, with the use of 2% chlorine solution specifically flagged for further evaluation. Inventory management was generally effective, but gaps in the availability of certain medications and supplies were noted. Therefore, it is strongly suggested that regular inventory checks be conducted and that training on supply usage be delivered. Data collection and transmission were generally good, but improvements in death registration protocols and the overall data management system were recommended to enhance accuracy and timeliness. Staffing levels were mostly adequate during the day but less so at night, with recommendations for ensuring 24/7

coverage, particularly by community health workers and logistics staff, and regular training to **improve staff preparedness**. The evaluation also highlighted the need for improved patient education on cholera, distribution of hygiene kits, and better use of Information, Education, and Communication (IEC) materials, with recommendations for ensuring the availability of IEC materials and hygiene kits and enhancing staff training on their use.

In addition, the budget required for IPC activities includes the deployment of an IPC officer, along with associated operational and logistical costs, which have already been covered by WHO for six months. However, IPC training sessions for field focal points will be necessary, with an allocated budget of 6,000 USD.

Based on historical data from the past few years, a 6-month period was used to project the number of cholera cases. This projection was performed using an AR of 0.0016, derived from data available since June 2024. Epidemiological and surveillance data from June 2024 indicated that, on average, 28% of cases presented with moderate dehydration, 28% with severe dehydration, and 44% with no dehydration. Using these rates, the expected number of cases by dehydration level was calculated, as shown in the table below. Additionally, data from the epidemiology team indicated an admission rate of 7 cases per week since June 2024. The average length of stay was assumed to be 2 days. Therefore, the total required beds = expected number of cases per week X length of stay = 14 beds + 10% contingency = 16 beds.

Population	Weekly AR	Expected number of cases per week	Expected number of cases during the plan timeline	No dehydration cases during the plan timeline	Under-five children	Moderate dehydration	Severe dehydration	Required bed capacity
994124[2]	0.0016	50	1100	484	513	308	308	16

[2] UNHCR data as of August 2024.

The required quantities of ORS and supplementary treatments were calculated as outlined in the table below. These calculations are based on the following standards: 10 liters (sachets) of ORS per patient, 10 liters of Ringer's Lactate (RL) per patient with severe dehydration, one infusion set per 2 liters of RL, one catheter per 3 liters of RL, a course of antibiotics[3] for patients with moderate to severe dehydration, and zinc sulfate (10 tablets) for all children under 5 years of age (representing 46.6% of total cases). An additional 10% has been added to the quantities for contingency planning.

	ORS	Ringer Lactate RL	Infusion set	catheter	Doxycycline	Zinc sulfate
No dehydration	(10 X 484) + 10% = 5324					(513 X 10) + 10% ≈ 5650
Moderate dehydration	(10 X 308) + 10% = 3388				(3 X 308) + 10% = 1017	
Severe dehydration	(10 X 308) + 10% = 3388	(10 X 375) + 10% = 4125	4125/2 = 2063	4125/3 = 1375	(3 X 308) + 10% = 1017	
TOTAL	12100	4125	2063	1375	2034	5650

The health sector has identified the available ORS stock and established methods for distributing ORS to beneficiaries. According to a UNHCR update, a total of 300,000 ORS sachets (10.25 g/L) are currently in the pipeline for distribution to the health sector partners. Based on the health sector's assessment as of 22.09.2024, the available ORS quantities are sufficient to meet the overall demand. The distribution of these stocks is detailed in Appendix 5.

The case projections and treatment supply calculations indicated a need for 12,100 ORS sachets, confirming that there is no shortfall in ORS supplies. Additionally, the WHO cholera

[3] Bangladesh follows the WHO recommendation to use antibiotics only for specific cases:
- Antibiotics are recommended for dysentery and suspected cholera cases with severe dehydration.
- Azithromycin is the preferred first-line antibiotic for treatment of AWD
  - Single dose of 500 mg for acute watery diarrhea
  - Single dose of 1000 mg for febrile diarrhea and dysentery
  - Azithromycin must not be used for > 65 years old patients or at any age with an established heart disease to avoid adverse side effects specially conduction defects (in such a case, Doxycycline 300 mg single dose may be considered).

calculation tool (2020) was utilized to determine the number of cholera kits required for the response timeline[4]. These kits, once available, will cover all necessary medical supplies and medicines for CTC/DTC operations. According to the guidelines, 08 periphery or central kits and 08 community kits are required to manage the projected cases. The costs for these kits were derived from the operational cholera toolkit available on the GTFCC[5]. Based on the most recent logistics inventory check, one central cholera kit has been distributed, no kits are available in warehouses, and two central kits and two modules (1.1 drugs and 1.2 supplies) are in the pipeline by WHO.

NO	Activity Discussion	Who	Action points	Timeline
4.1	Review and update the existing case definition standards based on the national standards.	Epi		Completed
4.2	Deliver case management training	Epi and CD team		Completed
4.3	Print out and disseminate standards for case definition, investigation, and management.	Epi		Completed
4.5	Distribute ORS	CHW	There are available ORS quantities.	Completed
4.6	Undertake active case search and JART	Epi	JART is activated for every case, and an active case search is ongoing during the JART assessment	Ongoing
4.7	IPC monitoring	Epi/IPC		Ongoing

WaSH

Water, Sanitation and Hygiene (WaSH) interventions are the backbone of the cholera outbreak response and involves strategic and targeted interventions on both facility and

[4] https://cdn.who.int/media/docs/default-source/documents/emergencies/supplies/cholerakits-2020-24august2022.pdf?sfvrsn=517290c_9
[5] https://www.gtfcc.org/wp-content/uploads/2023/01/8th-meeting-of-the-gtfcc-working-group-on-wash-2023-camille-bureau.pdf

community levels. While the WaSH in HFs is under the mandate of the health sector, community-based WaSH interventions are under the WaSH sector mandate.

The health sector launched a WaSH in HFs FIT assessment to collect information about the partners' WaSH capacity and services and identify the gap. A preliminary report has been issued by the health sector by the third week of August. The report covering 46 HFs (21 Primary Healthcare Centers, 21 Health Posts, and 3 field hospitals) across 15 camps, all in Ukhia, showed a need for significant improvements, particularly in water service accessibility, sanitation facilities, and waste management practices. The assessment showed that 96% of the health facilities failed to meet the acceptable range for free residual chlorine (FRC) in drinking water and water sources, indicating potential contamination risks.

The WASH assessment findings revealed distinct disparities in service levels across different types of health facilities. PHCs and hospitals generally perform better in providing basic hygiene and waste management services compared to HPs. The majority of HPs lack WaSH in HFs services, particularly in water quality, accessibility, and sanitation, with a notable portion having no or only limited services. Hospitals and PHCs demonstrate higher compliance with hygiene protocols and waste management practices yet still face challenges in sanitation infrastructure and water quality. The water quality test in HFs showed that water is not drinkable in 90% of the health facilities in the camps, mainly in the HPs. These disparities highlight the need for targeted interventions to upgrade the WASH services in lower-performing facilities, particularly in Health Posts, to ensure that all health facilities, regardless of type, meet the minimum standards.

According to the WaSH sector dashboards, the main sources of water in camps are hand pumps, production boreholes, raw water (open sources like canals or ponds), and tap stands[6]. According to the most recent figures from the WaSH sector, 84% of households have chlorinated water of the recommended levels (FRC 0.2% - 0.5%). Additionally, 78% of water sources in the camps are of FRC within the required levels. Nevertheless, there is anecdotal evidence of noncompliance with water chlorination measures among private water suppliers

[6] https://public.tableau.com/app/profile/tanvir.ahmed/viz/WaterQualityDashboard-FieldAgencies/Dashboard?publish=yes

in the camp. Moreover, people have unrestricted access to open and unprotected sources of water, like canals, which might expose residents to infection, especially age groups with lower subjective care and awareness, like children, for example, because of swimming.

The budget allocated for WaSH activities in health facilities is limited to the procuring of water quality test kits and operational costs, amounting to 7,896 USD for six months, which is already covered by WHO. However, based on the results of the WaSH in HFs assessment, additional training on water chlorination may be required in the future, with an anticipated cost of 6,000 USD for the training session.

NO	Activity Discussion	Who	Action points	Timeline
5.1	Conduct a WaSH in HF assessment and water quality test in the health facilities.	HSC		Completed
5.2	Conduct a WaSH in HF assessment and water quality test in the DTCs	HSC		Completed
5.3	Procurement of Water testing kits for conducting regular water quality tests in HF	HSC	The WaSH officer will assess the required quantities and initiate the procurement process.	Planned
5.4	Regular monitoring of the quality of drinking water sources particularly Free Residual Chlorine levels at water points and HH (Take corrective action if necessary)	WSC	No updates on it	Ongoing
5.5	Monitor compliance with procedures used by NGOs for desludging and ensure safe disposal	WSC		Ongoing
5.6	Water chlorination in HFs training	HSC		Planned

Vaccination

Several cholera vaccination rounds have been administered in Rohingya refugee camps since 2017 (table 1). Currently, there are 3 WHO pre-qualified oral cholera vaccines (OCV): Dukoral, Shanchol, and Euvichol-Plus. All three vaccines require two doses for full protection.

WHO submitted an application to the International Coordinating Group (ICG) on Vaccine Provision, specifically the Euvichol-Plus, due to its stability outside the cold chain and temperatures up to 40 degrees Celsius. The vaccines will be a single-dose strategy as guided by GTFCC and ICG guidelines. The vaccination campaign will be conducted among 1,635,691 targeted populations of Rohingya Refugees (1,132,280) residing in 33 camps, including the surrounding host Bangladesh Population (537,380) residing in Ukhia and Teknaf Upazilas/Sub-Districts of Cox's Bazar District and Bhasan Char Islands in Noakhali. The WHO request was for Euvichol-Plus. The cold chain costs will be covered as part of the vaccination plan.

Table 1: Table 1: OCV mass vaccination campaigns in camps and host community, 2017-2021. Updated as of 20 July 2024

	Name of campaign	Campaign period	Target Age group	Target population	Coverage
1	OCV Campaign (R1)	10 – 18 Oct 2017	>1 year	658,371	106%
2	OCV Campaign (R2)	04 – 09 Nov 2017	1 <5 Years	182,317	109%
3	OCV Campaign (R1) (+Host community)	6 – 13 May 2018	>1 year	984,906	879,273
4	OCV Campaign (R2) (+Host community)	17 November – 13 December 2018	>1 year	328,556	110%
5	OCV Campaign, Refugees	7 – 14 Dec 2019 (R1) 15 – 20 Feb 2020 (R2)	1<5 years	144,062	113%
6	OCV Campaign, Host (partly done)	7 – 31 Dec 2019 (R1) 22 February – 12 March 2020 (R2)	>1 year	495,197	107% ~80,000
7	OCV Campaign Rohingya Refugees (R1) OCV Campaign Rohingya Refugees (R2)	October 2021 November 2021	>1 year >1year	869,095 754,172	87% 85%

The estimated budget of 743,459 USD required for implementing the OCV campaign includes logistics, daily allowances, capacity-building, advocacy, and social mobilization activities, post-campaign assessment, and support to the national lab and surveillance system. The vaccinators' training, social mobilization, and advocacy campaigns will be part of the overall operation budget.

	Activity Discussion	Who	Action points	Timeline
6.1	Prepare an application to ICG and explore the available resources.	Epi		Completed
6.2	Develop OCV micro plan	IVD	Draft the OCV campaign micro-plan and operations budget and submit it to DGHS-CDC for review and approval.	Completed
6.3	Deliver training on OCV	IVD	After the vaccine is available, training will be conducted.	Completed
6.4	Implement OCV campaign in camps and host communities	EPI		Completed

Supplies and logistics

The logistics team of WHO carries out a weekly inventory check of medical supplies at WHO warehouse. According to the last update, WHO has distributed one Central/4-module cholera Kit to partners. Each kit is designed to serve 100 cholera patients (moderate and severe). Additionally, WHO recently ordered one additional central cholera kit (4 modules) and two cholera drug modules to strengthen further the stabilization of health sector management of additional surges of Cholera cases.

NO	Activity Discussion	Who	Action points	Timeline
7.1	Stockpile AWD supplies on the warehouse level	WHO	Inventory check for the warehouses	Ongoing
7.2	Identify available stock on the DTC level	HSC	Assessment of the available stock on the DTC level	Ongoing

Information and data analysis

NO	Activity Discussion	Who	Action points	Timeline
8.1	Update the caseload projection	Epi		Completed
8.2	Analyze results from WASH assessment and diarrhea cases to identify hot spots	EPI		Ongoing
8.3	Prepare a list of the data entry focal points at the organizational level	EPI – IM		Completed
8.4	Review and update existing data collection tools	EPI – IM		Completed
8.5	Deliver training/orientation sessions to the data collection focal points on the existing data collection tools	EPI – IM		Completed

Annexes

Annex 1: Cholera culture sample collection and testing checklist

Cholera culture sample collection and testing checklist				
Sl	**Items name**	**Status up to 30 September 2024**	**Quantity**	**Expiry date**
A	**Sentinel Site**			
1	Collection Kit (Carry Blair medium)	Available	100 tests	04.2025
2	Sterile Swab Stick	Available	100 tests	30.10.2024
3	Training for lab person (if required)	Available		
4	Sample collection requisition form	Available	100 pcs	
5	Sample transportation-Hub	Available		
6	Sample transportation vehicle and cold chain maintain	Available		
B	**IEDCR Lab**			
1	Carry Blaire medium	Available	800 tests	04.2025
2	Culture media (all types)	Available	900 tests	03.2025
3	Antibiogram disk (as required)	Available	300 tests	05.2025
4	Antisera for cholera testing	Available	200 tests	01.2025
5	Petri dish (all types)	Available	5000 pcs	06.2025
6	Training for lab person (if required)			

Annex 2: Glossary

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

Attack Rate (AR): AR is the cumulative incidence of cholera over a defined period of time (usually the duration of an epidemic) in a defined area and population. AR is usually expressed as a percentage and can be calculated by age and area. AR indicates the impact of the epidemic on the population. In rural communities with low population density, the AR might vary (0.1–2%). In crowded places (such as urban settings or refugee camps), the AR tends to be higher (1–5%), and in settings with no immunity and poor water and sanitation conditions, AR can exceed 5%.

$$AR = \frac{total\ number\ of\ cases\ reported\ since\ the\ beginning\ of\ the\ outbreak\ or\ upsurge}{population}\ x\ 100$$

AWD Isolation Unit: Dedicated health facility that serves the FDMNs in the camps as well as the host population living in the neighborhood housing; manages cases of moderate to severe diarrheal disease and associated malnutrition and carries out diarrheal disease surveillance.

Case Fatality Rate (CFR): CFR is the proportion of cholera deaths among the total number of cases within a specified period of time, expressed as a percentage. Deaths occurring at the CTUs/CTCs and in the community should be recorded and analyzed separately. Calculate CFR at health facilities and in the community. CFR, calculated with deaths and cases registered in a given health structure, is an indicator of adequate case management and access to treatment. The death of a person from cholera at any time after arrival at a health facility is considered to be an institutional death. Cholera CFR can reach 50% if adequate treatment is not provided for patients with severe dehydration. With adequate and appropriate treatment, no one should die of cholera. However, a treatment center with less than 1% CFR is considered well-run. High CFR may indicate:

- Poor access to treatment: patients arrive late in the progression of the disease (with severe dehydration) due to factors including long distances from care centers with no means of transport; cultural barriers, beliefs or misinformation on when and where to go for treatment; or costs of care.
- Inadequate case management due to factors including lack of properly trained health professionals, lack of supplies, and overwhelmed facilities; and/or bias of surveillance where deaths are more accurately recorded than numbers of cases (for example, outpatient cases are not recorded).

If CFR is high, an assessment of the treatment structure, including early access to care, should be conducted to identify the causes and implement corrective measures.

$$CFR = \frac{number\ of\ cholera\ deaths}{number\ of\ cholera\ cases}\ x\ 100$$

Cholera Alert: a cluster of AWD cases or death(s) reported through EBS (Health facilities, community, and other sources)

Cholera confirmed Case: A suspected case of Cholera 01 or 0139 was confirmed by culture or PCR.

Cholera Control: A reduction in the incidence, prevalence, morbidity, or mortality of cholera cases to a locally acceptable level (according to NCCP), and no longer considered a public health problem, and continued intervention is required to maintain a controlled situation.

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

Cholera endemic area: An area where confirmed cholera cases have been detected during the last three years with evidence of local transmission (cases are not imported from elsewhere). An area can be defined as any sub-national administrative unit, including state, district, or smaller localities. Any country that contains one or more sub-national administrative units that are endemic, as defined above, is considered cholera endemic country cholera can be epidemic or endemic, and cholera outbreak/epidemic can occur in endemic settings and in settings where the transmission doesn't occur regularly.

Cholera hotspot: A geographically limited area (e.g., city, administrative level 2, or health district catchment area) where environmental, cultural, and/or socioeconomic conditions facilitate the transmission of the disease and where cholera persists or re-appears regularly. Hotspots play a central role in the spread of the disease to other areas.

Cholera Outbreak: This is defined by the occurrence of at least one confirmed case of cholera by culture or PCR and evidence of local transmission. Outbreaks can even occur in areas with sustained year-round transmission, meaning they are in an endemic area. These outbreaks are defined by an unexpected increase in the magnitude or timing of suspected cases over two consecutive weeks, with some cases being confirmed by laboratory tests. Such increases should be Investigated and responded to appropriately through additional outbreak response, and control measures are required.

Cholera suspected case: In areas where a cholera outbreak has not been declared, a suspected case is any patient who has acute watery diarrhea and severe dehydration, or AWD suspected case confirmed positive by Rapid Diagnostic Test (RDT) or died from acute watery diarrhea. In areas where a cholera outbreak is declared, a suspected case is any person presenting with or dying from acute watery diarrhea.

Culture and Sensitivity: A culture is a test to find germs (such as bacteria or a fungus) that can cause an infection. A sensitivity test assists with the assessment of effective medicine, such as an antibiotic, that would effectively treat the illness or infection. An RDT-tested sample (irrespective of

its detection status) undergoes culture and sensitivity tests. Any RDT-detected case is considered a confirmed cholera case.

Diarrhea Treatment Center: A dedicated health facility with AWD isolation and treatment capacity that serves Rohingya refugees in the camps as well as the host population living in the neighborhood housing; manages cases of severe diarrheal diseases, including cholera and associated malnutrition, and carries out diarrheal disease surveillance.

Hygiene: Hygiene refers to the conditions and practices that help maintain health and prevent the spread of disease, including handwashing, menstrual hygiene management, and food hygiene (JMP WASH).

Incidence Rate (IR): The IR shows the speed at which new cases occur within a given period of time (usually per week) in a given area or a specific population (such as an age group). IRs can be expressed per 100 (percentage), per 1000, per 10,000 persons, or even more in case of small numbers of cases. IRs indicate the evolution of the epidemic and the rapidity of its spread. It can be compared between groups and other areas since incidence is adjusted by population.

$$IR = \frac{number\ of\ cases\ in\ one\ week}{population}\ x\ 10{,}000$$

Rapid Diagnostic Test (RDT): Cholera rapid diagnostic test (RDT) represents a promising tool in the early detection of V. cholerae O1/O139 directly from stool specimens, even in remote areas where laboratory resources are poor. This technique requires no special laboratory skills for the detection of cholera cases. An AWD case potentially detected positive by RDT is considered a suspected cholera case, and irrespective of the RDT detection, every such sample is further submitted for culture to isolate/confirm for cholera case and sensitivity test to guide appropriate case management.

Safely managed drinking water services: Improved water source located on premises, available when needed, and free from microbiological and priority chemical contamination.

Sentinel surveillance site: Selected health facilities in Ukiah and Teknaf Upazilas, Cox's Bazar, including in the camps, to gather information regarding the cholera burden among the fragile population (FDMN) and host community.

Upazila (Sub-district): The Upazilas are the second-lowest tier of regional administration in Bangladesh.

Annex 3: Cox's Bazar refugee camps cholera outbreak response indicators

Objectives:

Timeline: 6 months

Pillar / NO	Indicator	Rationale	Disaggregated by	Indicator calculation / Data elements	Target	Data source	Progress
1.1.	Proportion of the cholera response plan, which is funded	Measures the level of funding of the national cholera plan for elimination or control by government or external partners and donors	NA	Numerator: amount of funding received Denominator: total budget	100%	Health sector WaSH sector	
1.2.	Available updated sectoral and inter-sectoral referral pathways (camp-based)	To ensure timely referrals to isolation departments and DTC	Gender – age – PwD – refugees and host population.	Numerator: available referral pathways documents. Denominator: required referral pathways documents: 1	1	Health sector	

2.1.	Incidence rate of suspected cholera	Incidence rate of suspected cholera cases among the target population	Gender – age – refugees and host population.	Numerator: The number of suspected cases of cholera was reported. Denominator: total target population	TBD	WHO epidemiological and surveillance team	
2.2.	Number of lab facilities accessible by field surveillance teams for timely reporting	Measure the system's capacity to adequately receive samples and confirm suspected cases.	NA	Number of lab facilities	TBD	WHO epidemiological and surveillance team	
2.3.	Proportion of lab facilities functional and provided by required supplies for effective reporting	Measure the system capacity to effectively receive samples and confirm suspected cases.	NA	Numerator: number of lab facilities with adequate supplies for at least 3 months based on the lab checklist	95%	WHO epidemiological and surveillance team	

				findings (Annes 1). Denominator: number of lab facilities accessible by field surveillance teams for timely reporting (indicator 2.2)			
2.4.	Proportion of camps with functional and active sentinel site	Measure the system capacity to effectively receive samples and confirm suspected cases	Camp	Numerator: active sentinel sites with a completeness and timeliness rate of 95%. Denominator: total number of camps	100%	WHO epidemiological and surveillance team	
3.1.	Proportion of trained CHWs to support community engagement,	Measures the availability of trained CHWs in refugee camps that can support suspected	Camp – NGO – gender	Numerator: Number of trained focal points to support	1 per 5000 population	CHW TWG RCCE TWG	

	referrals, and cholera prevention and treatment per inhabitants in camps	case referrals and promote relevant behaviors for cholera prevention and control		community engagement and cholera prevention and treatment in camps. Denominator: total target population.			
3.2.	Proportion of the camp population who have achieved a score of at least 80% for knowledge on cholera prevention and awareness of available DTC in camps, as determined by the KAP survey.	Proportion of the population living in camps who know how to approach DTCs and prevent the transmission of cholera and actively implement these practices	Camp – gender – age – PwD	Numerator: Number of people who have adequate knowledge and attitude based on the survey scale (Annex 5). Denominator: total target population with the KAP survey	95%	KAP survey	

3.3.	Proportion of rumors about cholera disease and vaccine documented via the RCCE TWG dashboard and timely tracked and addressed (within 72 hours) through direct awareness sessions	To stop the spread of new rumors about cholera outbreak and vaccine	Camp	Numerator: number of awareness campaigns to address documented rumors. Denominator: number of documented rumors.	100%	RCCE TWG	
4.1.	CFR	Number of deaths attributed to cholera	Camp – gender – age – PwD	Numerator: number of deaths attributed to cholera in the community and CTC/DTC (over the identified timeline).	< 1%	WHO epidemiological and surveillance team	

				Denominator: number of cholera cases.			
4.2.	Proportion of the population living in hotspots who have access to ORS within a 30-minute walk from their home	Proportion of the population with rapid access to ORS for cholera-suspected cases in health care facilities or via community members/volunteers and CHWs.	Camp – gender – age – PwD	Numerator: Number of people living in camps with access to ORS within a 30-minute walk from their home. Denominator: total target population.	100%	KAP survey	
4.3.	Number of trained medical workers in cholera case management	To measure the health system's capacity to treat cholera cases properly	Gender – position (doctor, nurse, paramedic … etc.).	Number of trained medical workers	100	HR capacity assessment survey	
4.4.	Proportion of available cholera beds in CTC/DTC	To measure the health system's capacity to treat cholera cases properly	Camp – NGO	Numerator: number of cholera beds.	90%	Available beds: CTC/DTC checklist survey.	

	to the total required beds.			Denominator: total number of required cholera beds based on the case projection.		Case projection and calculation of required beds: WHO epidemiological and surveillance team	
4.5.	Proportion of health facilities with available ORS spaces	To measure the health system's capacity to treat cholera cases properly	Camp – NGO	Numerator: number of health facilities with ORS services. Denominator: functional health facilities	80%	4Ws	
4.6.	Proportion of confirmed cases followed by active case search and JART investigation	To measure the health system's capacity to control the spread of infection in a timely manner.	Camp	Numerator: number of JART visits Denominator: number of confirmed cholera cases	100%	WHO epidemiological and surveillance team	

4.7.	Proportion of health facilities, including CTC/DTC with a minimum required score of IPC (90%)	To ensure effective infection prevention and control with the treatment centers.	Camp – disaggregated by the type of health facility	Numerator: number of CTC/DTC that meet 90% of the IPC score Denominator: total number of functional health facilities	100%	CTC/DTC checklist survey.	
4.8.	Number of IPC monitoring reports for CTC/DTC	To ensure effective infection prevention and control with the treatment centers	Camp	Number of IPC monitoring reports	1 every three months	CTC/DTC checklist survey	
5.1.	Proportion of health facilities, including CTC/DTC with minimum WaSH services	To measure the proportion of health facilities with sufficient WaSH services to prevent further infection or contamination	Camp	Numerator: number of health facilities with minimum WaSH services. Denominator: total number of functional	100%	WaSH fit assessment. CTC/DTC checklist survey	

				health facilities			
5.2.	Proportion of health facilities, including CTC/DTC with water FRC levels between 0.2 – 0.5	To measure the health facilities capacity to provide safe drinking water and prevent waterborne diseases	Camp – type of health facilities	Numerator: number of health facilities with water supplies of the recommended FRC levels. Denominator: total number of functional health facilities	100%	WaSH fit assessment. CTC/DTC checklist survey	
5.3.	Proportion of households with access to safe drinking water within the household	Measures the proportion of people with access to safe water	Camp	Numerator: number of households who have access to safe water in the household level Denominator: total number	80%	WaSH sector water quality dashboard: LINK	

				of households in the camps			
5.4.	Proportion of households with access to safe water sources	Measures the proportion of people with access to safe water	Camp	Numerator: number of households who have access to safe water sources Denominator: total number of households in the camps	80%	WaSH sector water quality dashboard: LINK	
6.1.	OCV administrative coverage in camps	OCV administration coverage implemented	Camp – gender – age	Numerator: total number of doses administered for rounds 1 and 2 in the reporting timeline. Denominator: Total number of persons targeted by the OCV campaigns	95%	OCV campaign micro plan. OCV post-campaigns report.	

				(rounds 1 and 2).			
6.2.	Number of health workers received training sessions on OCV administration	To measure the health system's capacity to deliver OCV.	Gender	Total number of trained health workers		The Immunization and Vaccine Development (IVD) team at WHO.	
7.1.	Number of available cholera kits based on the case projection.	To ensure timely and rapid response to cholera cases.	NA	Total number of available cholera kits	8	WHO logistics team.	
7.2.	Proportion of CTC/DTC without cholera supplies.	To ensure timely and rapid response to cholera cases.	NA	Numerator: number of CTC/DTC without basic cholera supplies for more than 48 hours. Denominator:	0%	The health sector partners	

				Total number of functional CTC/DTC.			
7.3.	Number of data processors who received cholera information management and reporting capacity-building.	To strengthen data management capabilities and improve data quality and consistency	NGO – CTC/DTC – health facilities Unique ID (UID).	Number of information and data workers who received cholera data management training	102	HR capacity assessment survey	

Annex 4: Cholera KAP survey findings

- **Demographics**

Location (Upazila): The survey encompassed a total of 661 respondents, 84% from Ukhia and 16% from Teknaf.

Age: The majority of respondents belong to the 30-49 age group (52%), followed by those aged 18-29 years (24%) and individuals aged 50 and above (23.6%).

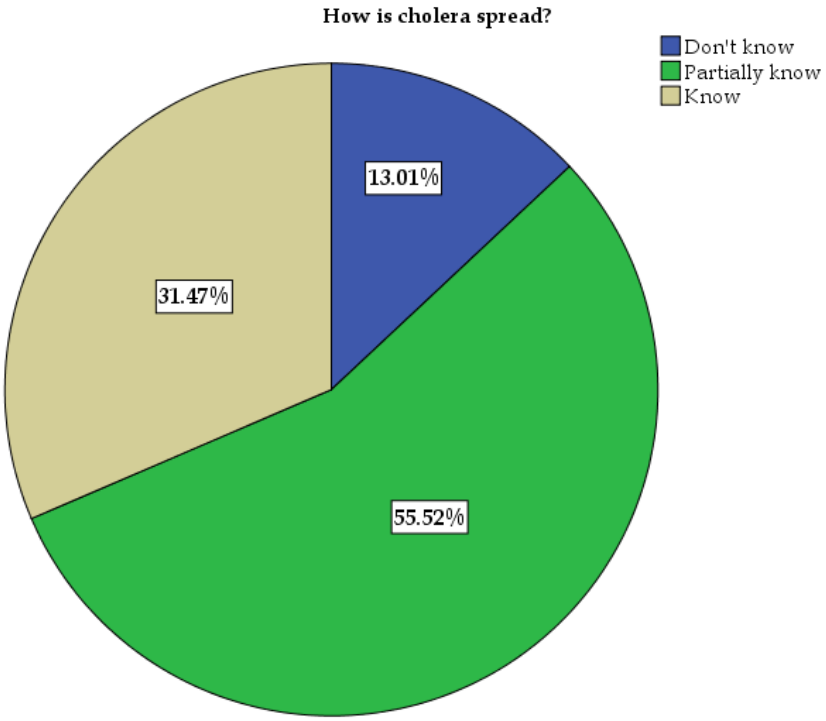
Sex: sex representation is nearly balanced, with 51.7% males and 48.3% females.

Disability: About 18% of the sample had physical or sensory (visual or hearing impairment), and 45.8% were female.

Education: A significant portion of respondents have no formal education (67%). Additionally, 25.7% have completed primary education, 5.7% have attained secondary education, and only a small percentage, 1.5%, hold higher education degrees.

- **Knowledge and awareness about cholera**

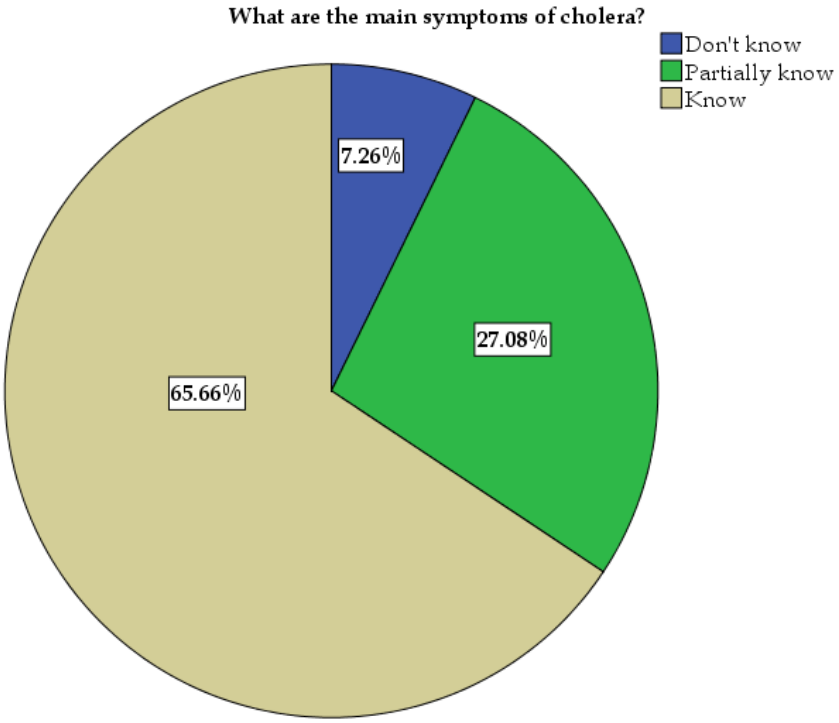
Data analysis revealed that approximately 90% of the sample had **heard** of cholera. However, 59.5% of respondents were unaware of the disease's **cause**. Additionally, only 31.6% provided a complete answer when asked about how cholera **spreads**, 55.5% had a partial understanding, and 12.9% did not know how cholera spreads.



Statistical analysis showed a significant causal relationship ($P < 0.05$) between this variable (awareness of the cholera transmission ways) and education level. Individuals with lower educational attainment are more likely to be unaware of the cholera spread ways.

Individuals with lower levels of educational attainment are more likely to lack awareness of cholera symptoms and transmission ways.

Knowledge of cholera **symptoms** is comparatively higher, with 65.6% of respondents able to identify them correctly. 34.4% of respondents either did not know the symptoms of cholera or provided partial correct information.

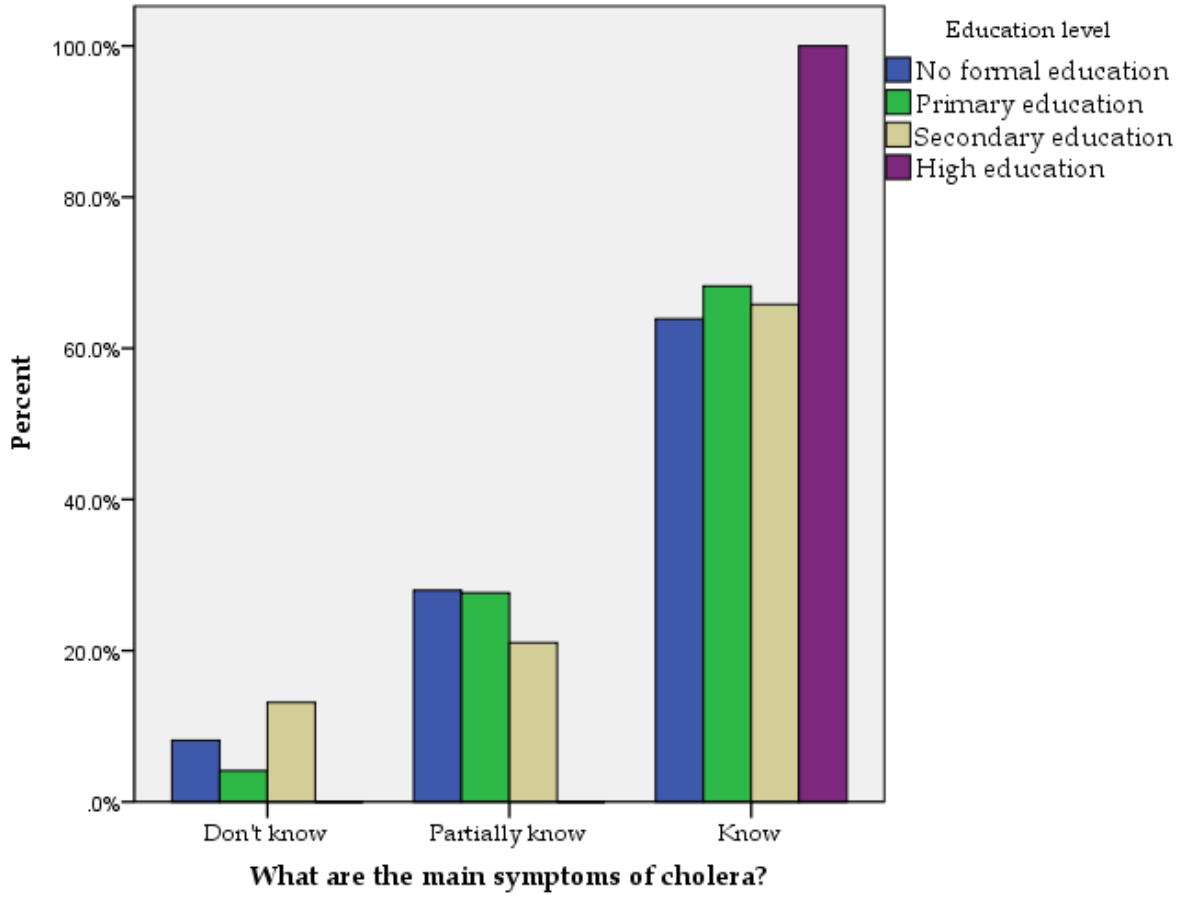


A significant correlation pattern between the variable of knowing cholera symptoms and education was also concluded based on statistical analysis ($P < 0.05$). Individuals with lower educational levels have less information about cholera symptoms.

When inquiring whether cholera can lead to **death** if left untreated, the results indicated that nearly 86% of individuals are aware that cholera can be fatal. Statistical analysis showed that Teknaf respondents are approximately 2.4 times more likely to be uncertain (do not know) about cholera's fatality when untreated, and a higher odds ratio (4.42) was found for Teknaf respondents selecting "No, cholera does not lead to death of not

People from Teknaf are more likely to be unaware of the consequences of untreated cholera.

treated" indicates a significant lack of awareness or misunderstanding about the dangers of untreated cholera.



Data showed that 70% of the sample is aware that **ORS** is the first-line treatment for cholera cases. The results indicated that respondents in Ukhia have a notably higher proportion of correct knowledge on cholera treatment compared to those in Teknaf. Significant statistical trends were concluded between Ukhia and Teknaf when the correlation between this variable and location was analyzed. People in Teknaf, in this correlation, were significantly less likely to show knowledge about ORS as a first-line treatment for cholera.

People from Teknaf are more likely to be unaware of ORS as the first-line treatment for cholera.

Upazila * How is cholera treated? Crosstabulation					
			How is cholera treated?		
			Not correct	Correct answer (ORS)	Total
Upazila	Teknaf	Count	48	58	106
		% within Upazila	45.3%	54.7%	100.0%

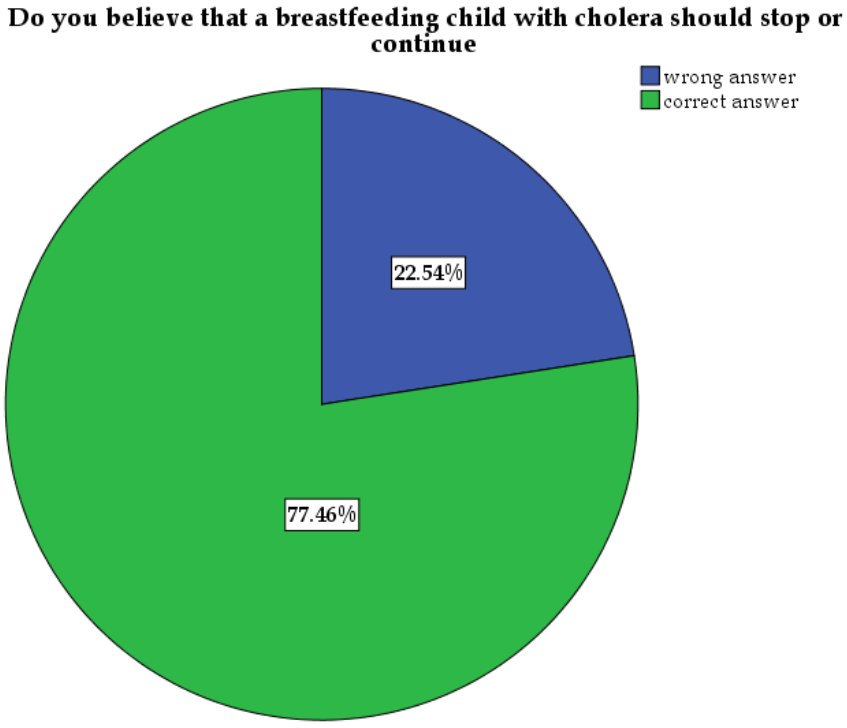
	Ukhia	Count	149	406	555
		% within Upazila	26.8%	73.2%	100.0%
Total		Count	197	464	661
		% within Upazila	29.8%	70.2%	100.0%

When the participants were asked to provide information about ORS, 79.4% of the sample were able to provide at least one correct answer, and 20.6% did not know any information about ORS.

When disaggregating the results based on age groups, it was found that individuals within the age group composed the highest percentage of those who have basic knowledge of ORS. Statistical analysis showed a significant correlation between age and knowledge of ORS. Older populations were less likely to have information about ORS.

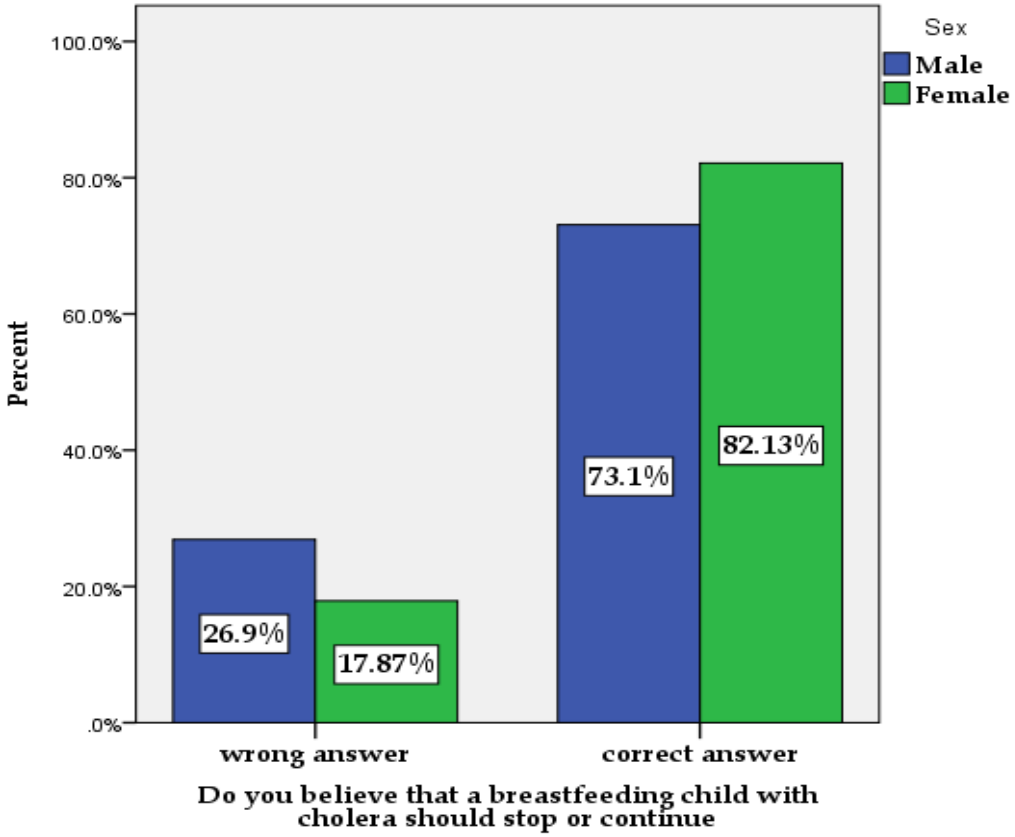
Almost 97% of the sample know they can get ORS from the nearest health facility.

Data about cholera and **breastfeeding** showed that 22.5% of people think that breastfeeding must stop if the infant has cholera.



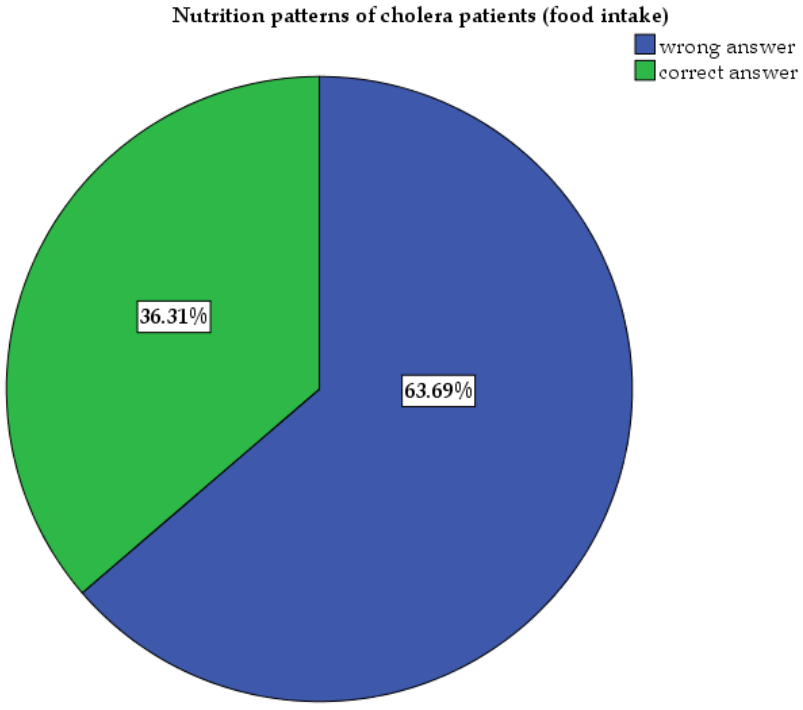
Males are more likely to believe that mothers must stop breastfeeding infants who have cholera.

In fact, most of those who hold an incorrect belief about breastfeeding for infants with cholera were males (61.7%), and statistical analysis showed that males were 1.69 more likely to believe



that lactating mothers must stop breastfeeding their infants if they have cholera.

A question about **food intake** patterns among cholera patients revealed that the majority of individuals in the camps hold wrong beliefs. In fact, 63.7% of the individuals said that cholera patients must eat less food (55% were male).



The analysis reveals a significant association between sex and beliefs about dietary and food intake recommendations for cholera patients, with males being more likely than females to hold incorrect beliefs.

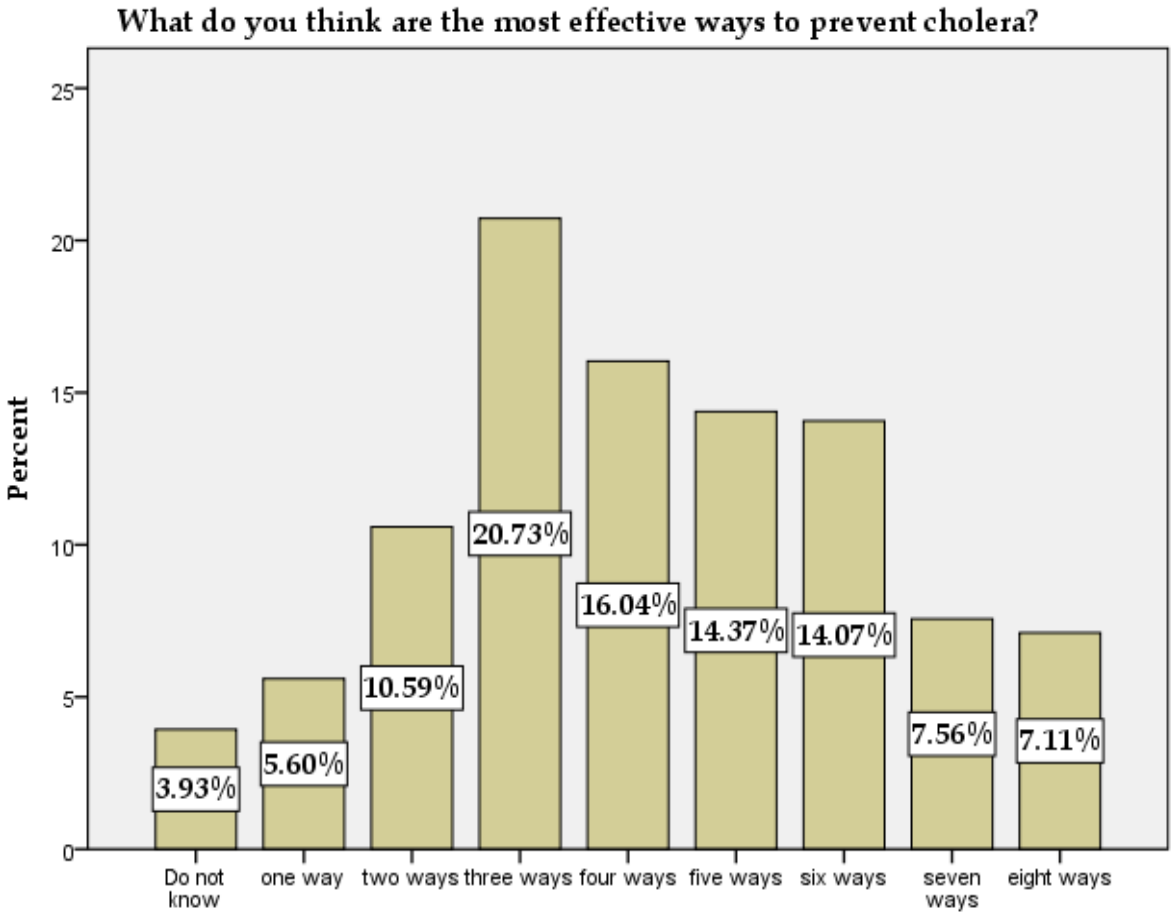
Additionally, data showed that a remarkable portion of people (36.24%) do not have precise information about who is at **risk** of cholera. Actually, 32.5% of people think that only children are at risk of cholera.

Finally, it is worth mentioning that data disaggregation based on disability status showed significantly better figures among PwD compared to non-disabled.

PwD have significantly more knowledge about cholera compared to non-disabled persons.

- **Attitudes toward Cholera Prevention and Treatment**

The majority of people (95.6%) consider cholera a serious **health concern** that must be considered seriously. Additionally, almost 90% of people are willing to **adhere** to cholera awareness messages and precautions measures. When participants were asked about their



awareness of cholera as a **preventable** disease, 84% responded correctly. Besides, the majority of the participants showed a positive attitude in adhering to cholera preventive measures and were able to mention more than one or two ways to prevent cholera.

However, 35% of the individuals indicated that they are uncertain about **using ORS** for cholera or diarrhea patients. The analysis reveals a significant correlation between education level and individuals' attitudes and knowledge of ORS as a response to diarrhea. Respondents with higher education levels are more likely to have the correct information and follow recommended actions.

Individuals with low education attainment are more likely to avoid or do not know that ORS must be given to diarrhea patients.

- **Section D: Practices Related to Hygiene and Sanitation**

Most people said they frequently **wash** their hands with soap and water, especially before preparing food or contacting sick persons. However, 12.1% of respondents indicated that they do not have **access to latrines** for defecation, while nearly 5% reported having occasional access to latrines for this purpose. Among those who have no access to latrines, 61.3% were female. The analysis indicates a significant association between gender and access to latrines, with females more likely to report no access and males more likely to report inconsistent access. Women are 1.75 more likely to have no access to latrines than men.

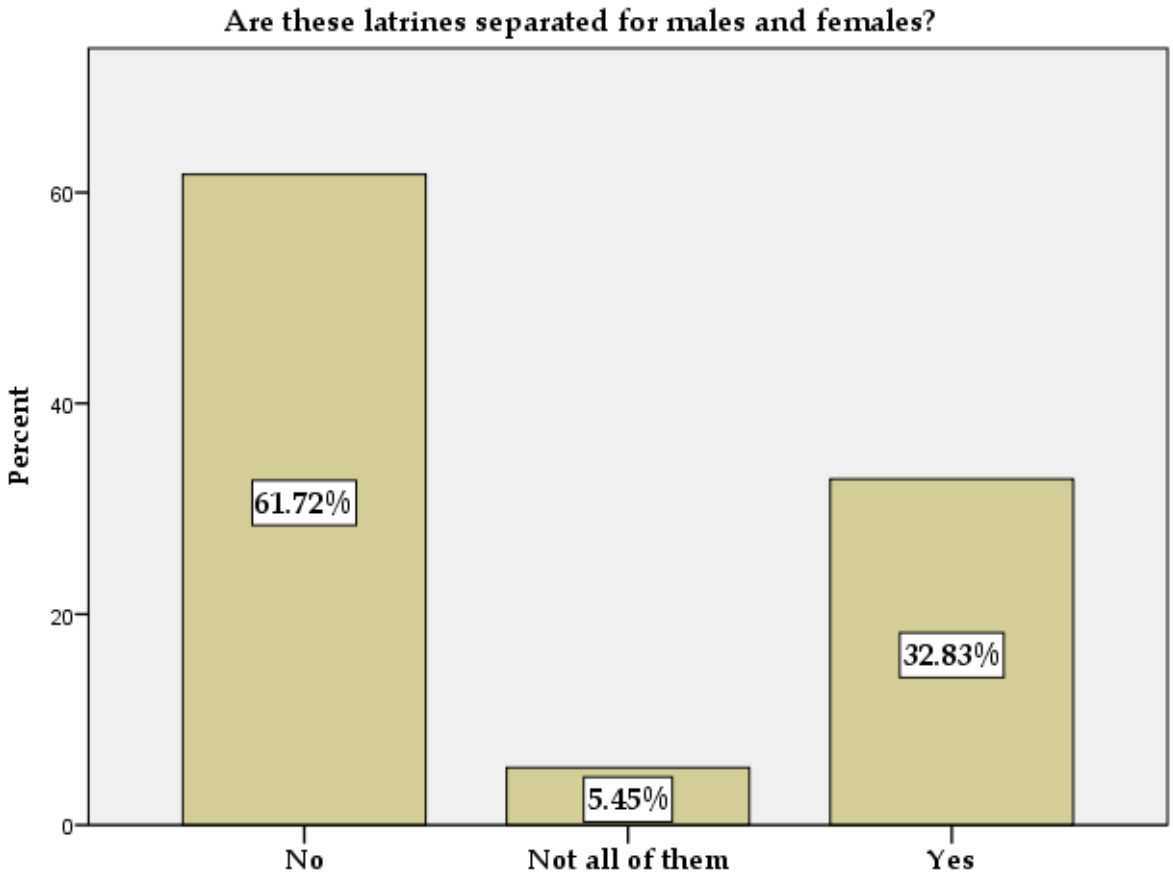
Women in camps are more likely to have no access to latrines compared to men.

Furthermore, 61.7% of respondents indicated that the latrines are not **separated by sex**. Among participants from Ukhia, 59.3% reported that the latrines are not separated, while 74.5% of those from Teknaf stated the same.

Are these latrines separated for males and females? * Upazila Crosstabulation

			Upazila		
			Teknaf	Ukhia	Total
Are these latrines separated for males and females?	No	Count	79	329	408
		% within Upazila	74.5%	59.3%	61.7%
	Not all of them	Count	4	32	36
		% within Upazila	3.8%	5.8%	5.4%
	Yes	Count	23	194	217
		% within Upazila	21.7%	35.0%	32.8%

Total	Count	106	555	661
	% within Upazila	100.0%	100.0%	100.0%

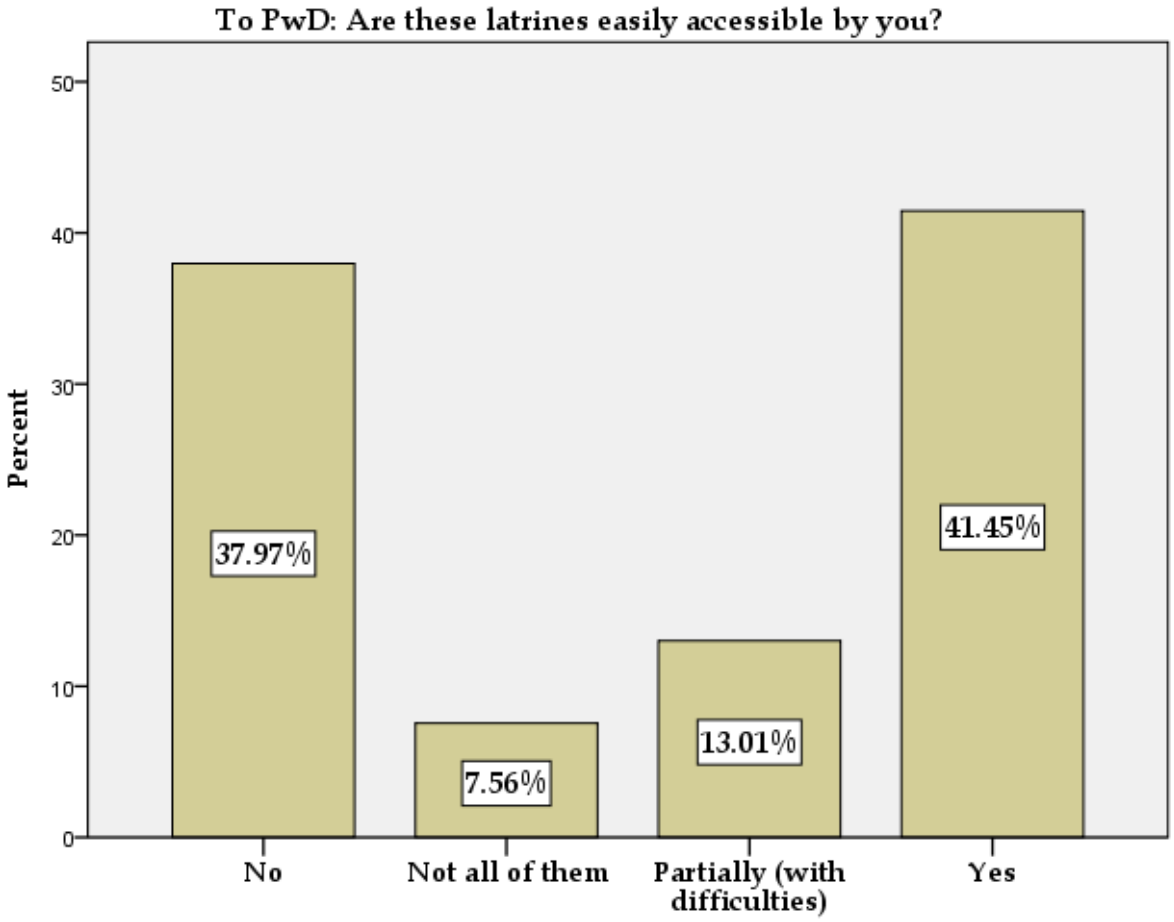


Residents in Teknaf are more likely to state that latrines are not separated for males and females.

Statistical analysis showed that a person from Teknaf is twice as likely to state that the latrines are not separated for males and females. Data showed no significant difference in this variable between males and females, meaning that none of the two groups has less or more access to sex-separated latrines, even when disaggregating the results based on location (upazila) as well.

Among PwD, 38% said that latrines are inaccessible by them, 7.5% said that not all latrines are accessible, 13% said that not all latrines are **accessible**, and 41.5% said that latrines are accessible.

Almost 64% of the participants said that latrines in camps are **accessible for children**. Additionally, 31.47% of the participants said that they do not follow hygienic practices in **disposing of children's feces**.



Participants were asked about ways they follow to ensure the drinking **water is safe**, and 32.5% mentioned unsafe ways or had no information. Additionally, while 88.5% of the participants said they **store water** in covered containers, 11.5% do not follow the hygienic ways of storing water. Data showed that 83.8% of the respondents use safe ways to **prepare and cook food,** and almost 10% use safe and unsafe ways. PwD practices to ensure safe drinking water were significantly better than others based on statistical analysis.

- **Vaccination**

Data analysis showed that 21.18% of the respondents are not **aware of a cholera vaccine**. Of participants from Teknaf, 33% were unaware of the cholera vaccine compared to 19% from Ukhia. In fact, people from Teknaf were 2.1 more likely to be unaware of the cholera vaccine. Additionally, almost 34% of the sample said they had not **received a cholera vaccine** before. Almost 42.5% of the participants from Teknaf said they had not received the cholera vaccine, compared to 32.3% from Ukhia. Statistical analysis showed a significant correlation between upazila and receiving the cholera vaccine before (P = 0.029). People from Teknaf are 1.5 more likely to be never vaccinated against cholera compared to Ukhia residents. Additionally, data

showed that 11.5% of the respondents said they would not take the cholera vaccine. It was found that the likelihood of rejecting the cholera vaccine increased with age.

Elderly people are more likely to be hesitant to accept the cholera vaccine.

Recommendations

1- Enhance community health education programs on cholera transmission and treatment.

Target Group: Individuals with lower education levels, particularly those without formal education.

Action: Develop simple, visually engaging, and culturally appropriate health education materials focusing on how cholera spreads and the importance of ORS as a treatment.

Rationale: Given that 67% of respondents lack formal education, health messages should use simple language and include visual aids, such as pictures or videos, to clearly illustrate cholera symptoms, transmission routes, and the preparation of ORS.

2- Community awareness campaigns on ORS knowledge and usage.

Target Group: All HHs, especially residents of Teknaf, males, and older adults.

Action: Implement a group education and HH campaign that demonstrates ORS preparation and usage.

Rationale: Since 30% of respondents from Teknaf lack knowledge of ORS as a first-line treatment, specific attention should be given to this group.

3. Increase awareness of cholera's fatal risks if untreated.

Target Group: All HHs, especially residents in Teknaf.

Action: The community health technical working groups should impede awareness messages focusing on the risks of untreated cholera in the cholera awareness campaign.

Rationale: With Teknaf residents 2.4 times more likely to misunderstand cholera's severity, these interventions could raise awareness about the disease's fatality and highlight the urgency of seeking treatment.

4- Address misconceptions about breastfeeding and cholera.

Target Group: Pregnant and lactating women and males who are more likely to hold incorrect beliefs about stopping breastfeeding.

Action: Integrate specific messaging about the importance of continued breastfeeding during cholera into broader health education, especially through male-focused outreach.

Rationale: Educating men on this topic can be essential since they play a role in health decisions within families.

5- Promote accurate dietary guidance for cholera patients.

Target Group: All HHs focusing on males.

Action: Deliver refresher training to community health workers on communicating correct dietary practices for cholera patients.

Rationale: Misconceptions about food restrictions during cholera are more prevalent among men than women.

6- Improve access to sanitation facilities, especially for women.

Target Group: female camp residents.

Action: To communicate with the WaSH sector.

Rationale: Since women are 1.75 times more likely to lack access to latrines, improving infrastructure and access is essential in reducing open defecation, enhancing dignity, and reducing cholera spread in camps.

7- Ensure cholera vaccination awareness and uptake.

Target Group: All HHs focusing on residents of Teknaf and elderly individuals.

Action: Tailor the social mobilization and awareness message about vaccination to address vaccine safety and efficacy, especially for elderly community members.

Rationale: With a 2.1 times higher likelihood of vaccine unawareness in Teknaf, combined with elderly individuals' greater vaccine hesitancy.

8- Implement safe water storage and hygiene practices.

Target Group: all HHs.

Action: To communicate with the WaSH sector.

Rationale: With 11.5% of respondents not following hygienic water storage practices, proper intervention is important to prevent contamination and improve water safety, thus reducing the risk of waterborne diseases.

9- Increase Accessibility of Sex-Separated and Disability-Friendly Latrines

Target Group: PwD and all camp residents, especially in Teknaf, where facilities are less often separated by gender.

Action: Construct or modify latrines to meet the needs of PwD and ensure sex-segregated facilities to improve safety and usability.

Rationale: 38% of PwD reported inaccessible latrines, and 61.7% of respondents overall indicated no sex separation in latrines. Accessible and segregated facilities are important to promote inclusivity, safety, and hygiene, especially in densely populated camp areas.

Knowledge, Attitudes, and Practices KAP Survey Plan for Cholera among Rohingya Refugees, Cox's Bazar

Objectives:

- To assess the **knowledge**, **attitudes**, and **practices** (KAP) regarding cholera prevention and treatment among Rohingya refugees in identified hot spots within the camps.
- To determine the level of awareness about available cholera treatment facilities and prevention strategies.
- To identify gaps in knowledge and behavior that could lead to cholera outbreaks and provide recommendations for the implementation of future interventions.

Timeline:

- **Planning and tool design**: 2 weeks
- **HR recruitment and training**: 1 week
- **Data collection**: 2 weeks
- **Data analysis**: 2 weeks
- **Report preparation and dissemination**: 1 week.

Total Timeline: 6 weeks

Sampling:

- **Population**: Rohingya refugees in cholera hotspot areas within the camps.
- **Sampling method**: Stratified random sampling will be used to ensure representation from different demographic groups (age, gender, location within the camps).

Age	Gender	location
18 -29	Male, female, and other	All the camps in Ukhia and Teknaf
30-49		
50 and above		

- **Sample size**: aim for a sample that provides statistically significant results (e.g., 400-600 participants).

Data Collection Plan:

Data Collection Tool:

- **Questionnaire**: Structured survey designed to assess:
  - Knowledge of cholera transmission, symptoms, and prevention measures.
  - Attitudes towards cholera risk and response to outbreaks.
  - Practices related to water, sanitation, and health-seeking behaviors.
  - Awareness of available treatment facilities and willingness to seek care.
  - Sources of information on cholera (health workers, community leaders, etc.).
- The tool will be used in both English and Bengali and tested in a pilot survey for clarity and cultural appropriateness.

HR and Training:

- **Human Resources**: Community health workers will perform as local data collectors, those who are most familiar with the language and culture.
- **Training**: 1–2-day training on survey objectives, data collection techniques, ethical considerations, and cholera knowledge.
- **Supervision**: Community health workers' field supervisors will monitor data collectors for quality control and troubleshooting.

Data Analysis:

- **Quantitative analysis**: Use statistical software (*as applicable*) to analyze:
  - Percentage of participants with correct knowledge of cholera prevention and available treatment.
  - Correlation between knowledge, attitudes, and practices.
  - Identification of demographic or geographic factors associated with poor KAP.

Reporting: Findings will be summarized in a report with recommendations for targeted cholera prevention and awareness campaigns within the camps.

KAP Survey: questionnaire

Date: yyyy-mm-dd

Upazila: Ukhia – Teknaf

Camp:

Section A: Demographic Information

A.1. Age:

- 18-29
- 30-49
- 50 and above

A.2. Gender:

- Male
- Female
- Other

A.3. Number of people in the household:

- 1-3
- 4-6
- 7 and above

A.4. Education level:

- No formal education
- Primary education
- Secondary education
- High education

A.5. Does the person have observable sensory or physical disability? (This question must be answered by the CHW)?

- No
- Yes

Section B: Knowledge about Cholera

B.1. Have you ever heard of cholera?

- No
- Yes

B.2. What causes cholera?

- Virus
- Bacteria
- Parasite
- Don't know

B.3. How is cholera spread? (Select all that apply)

- Through contaminated food or water
- Through direct contact with an infected person

- Through mosquito bites
- Don't know

B.4. What are the main symptoms of cholera? (Select all that apply)

- Severe watery diarrhea
- Vomiting
- Fever
- Skin rash
- Don't know

B.5. Can cholera cause death if not treated?

- Yes
- No
- Don't know

B6. How is cholera treated?

- ORS
- Antibiotics
- Other

B7. What do you know about ORS?

- Nothing
- Any correct information about ORS

B8. Where can you get ORS?

- I do not know
- The nearest health facility

B9. Do you believe that a breastfeeding child with cholera should:

- Stop breastfeeding
- Continue breastfeeding

B10. Do you believe that a case of cholera should (food intake):

- Stop eating food until the diarrhea stops
- Eat less food until the diarrhea stops
- Eat the usual same quantity of food
- Eat more food

B11. Who is at risk of contracting AWD or cholera?

- Children
- Adults
- Everyone
- No one

Section C: Attitudes toward Cholera Prevention and Treatment

C1. How serious do you think cholera is as a health problem?

- Don't know
- Not serious
- Somewhat serious

- Very serious

C.2. To what extent are you willing to adhere to all the cholera awareness and information awareness messages? For example, preventing your children from swimming in open canals, boiling row vegetables, water chlorination … etc.

- Not willing at all.
- Somehow willing
- Willing

C.3. Do you believe that cholera can be prevented?

- Yes
- No
- Don't know

C4. What do you think are the most effective ways to prevent cholera? (Select all that apply)

- Personal hygiene (e.g., handwashing)
- Washing food
- Safe drinking water
- Covering water containers
- Cleaning storage
- Vaccination
- Proper sanitation facilities
- Proper waste disposal
- Don't know

C.5. What would you do first if someone in your household had diarrhea?

- Give them an Oral Rehydration Solution (ORS)
- Take them to a health center
- Wait to see if they get better on their own
- Don't know

Section D: Practices Related to Hygiene and Sanitation

D.1. How often do you wash your hands with soap and water?

- Before cooking
- Before eating
- After using the latrine
- After taking care of a sick person
- Rarely/Never

D.2. Do you have access to a latrine for defecation?

- Yes
- No
- Sometimes

D.3. Are these latrines separated for males and females?

- Yes
- No
- Not all of them

D.4. *This question is only for persons who have a sensory or physical disability*: Are these latrines easily accessible by you?

- Yes
- No
- Partially (with difficulties)
- Not all of them

D5. Can your children (except babies) go to the latrine by themselves?

- Yes
- No
- Not all of them

D.6. How do you dispose of children's feces?

- In the latrine
- Bury them
- Leave them in open areas
- Private bathing space
- Don't know

D.7. How do you ensure the water you drink is safe? (Select all that apply)

- Boil the water
- Use chlorine drops or tablets
- Drink directly from the source
- Don't take any precautions

D.8. How do you store drinking water at home?

- In a covered container
- In an uncovered container
- Don't know

D.9. When you prepare food, what do you do to ensure it is safe to eat? (Select all that apply)

- Cook food thoroughly
- Wash vegetables with soap and safe water
- Eat raw food without preparation
- Don't know

D.10. If you take care of someone sick with cholera, what do you do to protect yourself and others? (Select all that apply)

- Wash hands after contact with the sick person
- Disinfect the sick person's clothing and bedding
- Avoid contact with their vomit or stools
- Don't take any specific precautions
- I do not know.

Section E: Community Perspectives on Vaccination

E1. Are you aware of the cholera vaccine?

- Yes
- No

E2. Have you been vaccinated before?

- Yes
- No

E3. Would you take it again?

- Yes
- No

Annex 5: Cholera response and readiness budget

NO	Item	Number of needed units	Duration/recurrence	Number of units needed	item unit	cost per item per month USD	Total cost needed USD	Available units as of the last update	Available budget as of the last update USD	Gap in units for the timeline as of the last	Gap in budget USD for the timeline
1	**Surveillance and lab**										
1.1	RDT	400	6	2400	kit	1.90	4,560.00	2400	4,560.00	0	-
1.2	Sample lab test kit (culture and sensitivity test)	55	6	330	kit	20.00	6,600.00	330	6,600.00	0	-
1.3	Sample collection kit	55	6	330	kit	5.00	1,650.00	330	1,650.00	0	-
1.4	Transfer the samples from the field to the lab	55	6	330	lump sum	5.00	1,650.00	330	1,650.00	0	-
1.5	Surveillance HR	1	6	6	person	2,000.00	12,000.00	0	-	6	12,000.00
	TOTAL Surveillance and lab pillar						**26,460.00**		**14,460.00**		**12,000.00**
2	**RCCE**										
	CHW	1600	6	9600	person	110.00	1,056,000.00	9600	1,056,000.00	0	-

	awareness materials	1	1	1	lump sum	18,000.00	18,000.00	1	18,000.00	0	-
	training for CHWs on RCCE messages and referral pathways	1	1	1	training	6,000.00	6,000.00	1	6,000.00	0	-
				0			-			0	-
	TOTAL RCCE pillar						**1,080,000.00**		**1,080,000.00**		**-**
3	**Case management**										
	Ringer lactate	4125	1	4125	serum bag	0.50	2,062.50			4125	2,062.50
	infusion set	2063	1	2063	set	0.19	391.97			2063	391.97
	catheter	1375	1	1375	piece	0.34	467.50			1375	467.50
	ORS	12100	1	12100	sachet	0.08	1,004.30	12100	1,004.30	0	-
	cholera periphery kit	11	1	11	kit	4,532.20	49,854.20			11	49,854.20
	cholera community kit	11	1	11	kit	324.60	3,570.60			11	3,570.60
	Camp Health Diseases Surveillance Officer (JART)	6	6	36	person	1,112.00	40,032.00	36	40,032.00	0	-
	IPC officer	1	6	6	person	1,290.00	7,740.00	6	7,740.00	0	-
	IPC training	1	1	1	lump sum	6,000.00	6,000.00	0	-	1	6,000.00
	DTC operational costs	10	6	60	lump sum	5,000.00	300,000.00	0	-	60	300,000.00

	TOTAL Case management pillar						**411,123.07**		**48,776.30**		**362,346.77**
4	**WaSH**										
	WaSH officer	1	6	6	person	1,316.00	7,896.00	6	7,896.00	0	-
	WaSH in HFs training	1	1	1	lump sum	6,000.00	6,000.00	0	-	1	6,000.00
	Water quality test kits	1	1	1	lump sum	529.41	529.41	0	-	0	529.41
	TOTAL WaSH pillar						**13,896.00**		**7,896.00**		**6,529.41**
5	**Vaccination**										
	vaccine			0			-			0	-
	operational costs	1	1	1	lump sum	743,459.00	743,459.00	0	-	1	743,459.00
	TOTAL vaccination pillar						**450,000.00**		**$ -**		**743,459.00**
	Plan operational cost	1	1	1	lump sum	163,027.96	163,027.96	0		1	163,027.96
				0						0	-
	TOTAL						**2,491,998.77**		**1,151,128.00**		**1,298,670.77**