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Chad Chalker Date

An Evaluation of UNICEF's Cholera Toolkit: Assessing the Effectiveness and Usability Among UNICEF Staff and Partners

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An abstract of a thesis submitted to the Faculty of the Rollins School of Public Health of Emory University in partial fulfillment of the requirements for the degree of Master of Public Health in Global Health 2017.

Abstract

An Evaluation of UNICEF's Cholera Toolkit: Assessing the Effectiveness and Usability Among UNICEF Staff and Partners

By: Chad Chalker

Background: UNICEF provides technical expertise in advocacy, coordination, assessments, surveillance, and communication for cholera prevention, preparedness, and response. In 2013, the UNICEF Cholera Toolkit was published to help prevent, prepare, and respond to cholera outbreaks. Since the publication, there has not been a comprehensive evaluation of the use and effectiveness of the toolkit among those who use or are aware of it.

Purpose: The objective of this evaluation was to describe how useful and effective the toolkit was to UNICEF staff and partners, understand which sections of the toolkit were most used, and understand if the dissemination process of the toolkit was effective to reach the target audience. Results and conclusions from this evaluation will be given to UNICEF to help inform information to include in future versions of the toolkit.

Methods: An online survey of 39 questions was sent to a non-probability, convenience sample of humanitarian and development workers via email listservs. Respondents were asked questions related to their professional background and experience, their use and knowledge of the UNICEF Cholera Toolkit, and their experience with the toolkit's website. Results were analyzed via Microsoft Excel.

Results: The survey was completed in 20 different countries by 32 individuals. Approximately 81% of respondents reported they were aware of the UNICEF Cholera Toolkit. Of those who were aware, 92.3% have used the toolkit in the past. Seventy-six percent of respondents said the toolkit was useful to their work. Approximately 84% of respondents indicated that they had recommended the toolkit to colleagues as a reference guide; however, 61.5% of respondents said they thought most field-based staff involved in cholera work were not aware of the toolkit. About 32% of respondents have utilized the hard copy of the toolkit and 26.7% indicated a need for additional hard copies for field staff.

Discussion: Based on the data collected from the survey, respondents view the toolkit as a legitimate guidance document and source of information for cholera. Respondents identified a desire for more practical tools and resources to be developed to complement the overall toolkit.

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I. CHAPTER 1 – Introduction

*a. **Background***

Cholera is endemic in many countries across the world and continues to cause significant public health problems (WHO, 2016). The World Health Organization (WHO) estimates that 3 – 5 million cases of cholera occur each year and result in approximately 120,000 deaths (Ali, 2015). In 2015, a total of 42 countries reported cholera cases to the WHO. To effectively prevent, prepare, and respond to cholera outbreaks, it takes a significant amount of resources and typically includes a multi-sectoral response from governments, United Nations (UN) agencies, and non-governmental organizations (NGOs) (WHO, 2016).

The United Nations International Children's Emergency Fund (UNICEF) provides technical expertise in advocacy, coordination, assessments, surveillance, and communication for cholera prevention, preparedness, and response. In 2009, when working with field staff, government ministries, and other partners during cholera outbreaks, UNICEF acknowledged there was a gap in cohesive technical guidance documents for preparing and responding to cholera outbreaks. NGOs and government counterparts who were responding to cholera outbreaks continuously approached UNICEF for technical advice and assistance for creating tools and resources to contain and prevent cholera outbreaks. Therefore, in 2013, UNICEF published the cholera toolkit, which was designed to give NGOs and government ministries a cohesive guidance document with tools and references to help prepare, prevent, and respond to cholera outbreaks. The toolkit encompasses 10 chapters of detailed information on cholera prevention, cholera preparedness, case management, community interventions, and infection control in

health facilities and treatment centers. Additionally, the toolkit includes a series of appendices that provide reference documents, checklists, and templates for cholera experts to use to prevent or contain outbreaks. Links to web-based resources and published papers are also referenced throughout the toolkit to enable the user to easily access additional information that can aid in preparing, preventing, and responding to cholera outbreaks. The toolkit is widely utilized by NGOs, government counterparts, and other organizations and agencies to prevent, prepare, and respond to cholera outbreaks across the world.

Since the distribution of the toolkit in 2013, there have been numerous cholera outbreaks and responses across the world. To date, there has not been a formal review or evaluation of the use and effectiveness of the UNICEF Cholera Toolkit or the accompanied website, where the toolkit and additional resources can be downloaded. UNICEF recognized the need for an evaluation of the UNICEF Cholera Toolkit to effectively strengthen the content of the toolkit and obtain recommendations from partners in the field on what information would be pertinent for future versions of the resource.

This evaluation of the UNICEF Cholera Toolkit will describe the use and effectiveness of the resource among international development and humanitarian workers who have used or are aware of the toolkit. Additionally, this evaluation will identify and describe any gaps in either the toolkit itself or the dissemination process of the toolkit. Recommendations for improvement will be made based on data collected from this evaluation with the aim of strengthening the design and rollout of future editions of the UNICEF Cholera Toolkit or similar resources.

II. CHAPTER 2 – Background and Review of the Literature

a. An overview of cholera

Cholera is an acute bacterial disease caused by *Vibrio cholerae* and is often fatal within hours if not properly treated (Harris, 2012). Cholera is typically contracted from the ingestion of contaminated water or food with the bacterium *Vibrio cholerae* and causes severe diarrhea and vomiting (Harris, 2012; WHO, 2010). Cholera is characterized by acute watery diarrhea lasting between one to three days (WHO, 2010). The WHO recommends that cholera should be suspected if someone five years of age or older, living in any environment regardless of being cholera prone or not, experiences severe dehydration or dies as a result of acute watery diarrhea; or if someone age two years or older experiences acute watery diarrhea in an area that is cholera prone (Harris, 2012).

It was not until 1884 that the bacteria *Vibrio cholerae* was widely known as the cause of cholera (Harris, 2012). There are over 200 different serogroups of *Vibrio cholerae*, however, only serogroups O1 and O139 can cause epidemics, due to their virulence (Morris, 2003). The other serogroups of *Vibrio cholerae* can cause gastroenteritis, septicemia, and infections of wounds, but have not been identified as causing cholera epidemics (Morris, 2003). The major virulence factor associated with cholera that causes severe diarrhea is a protein called cholera toxin (Harris, 2012; Morris, 2003). Not everyone infected with *Vibrio cholerae* will experience severe diarrhea because most of the bacteria can be killed by gastric acid (Harris, 2012; Morris, 2003). In fact, between 75 – 93% of people who are infected with either *Vibrio cholerae* O1 or

O139 experience mild symptoms or nothing at all (Morris, 2003). Figure 1 shows the life cycle of *Vibrio cholerae* as reported by Nelson et al (Nelson, 2009).

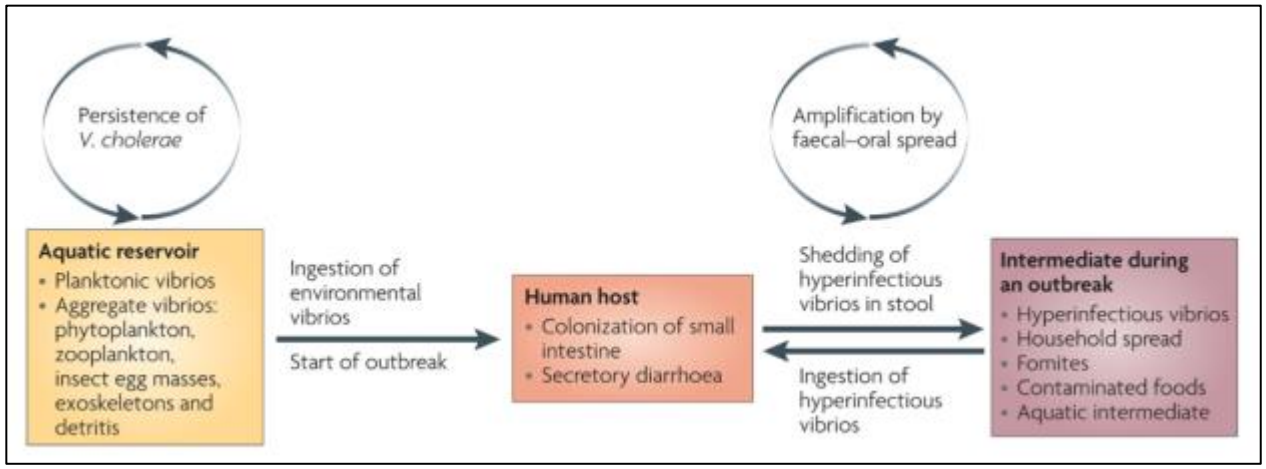


Figure 1 Life cycle of *Vibrio Cholerae (Nelson, 2009)*

Cholera can have an incubation period ranging from 12 hours to five days, with severe cases experiencing an extreme increase in diarrhea within the first 24 hours of symptoms (Morris, 2003). Individuals who contract cholera can experience symptoms in as little as a few hours and those who contract severe cholera and do not seek immediate treatment can die within hours (Harris, 2012). During the Haiti cholera epidemic, 12 hours was the median time between symptom onset and mortality (Harris, 2012). The only animal reservoirs known for *Vibrio cholerae* are shellfish and plankton (Sack, 2004). According to the WHO, cholera is associated with poor sanitation conditions and insufficient safe drinking water.

*b. **Epidemiology of cholera***

Due to limitations in epidemiological surveillance and social, political, and economic hindrances, cholera is widely underreported on a global scale (Ali, 2015). It is therefore difficult to know the true burden of cholera and the actual number of cholera cases occurring annually (Ali, 2015). The WHO estimates that 3 – 5 million cases of cholera occur each year and result in

approximately 120,000 deaths (Ali, 2015). Over 50 countries, primarily in Asia and Africa, are endemic to cholera (Harris, 2012). Figure 2 shows the number of countries reporting cholera and the number of cases of cholera by year from 2000 – 2015 (WHO, 2016).

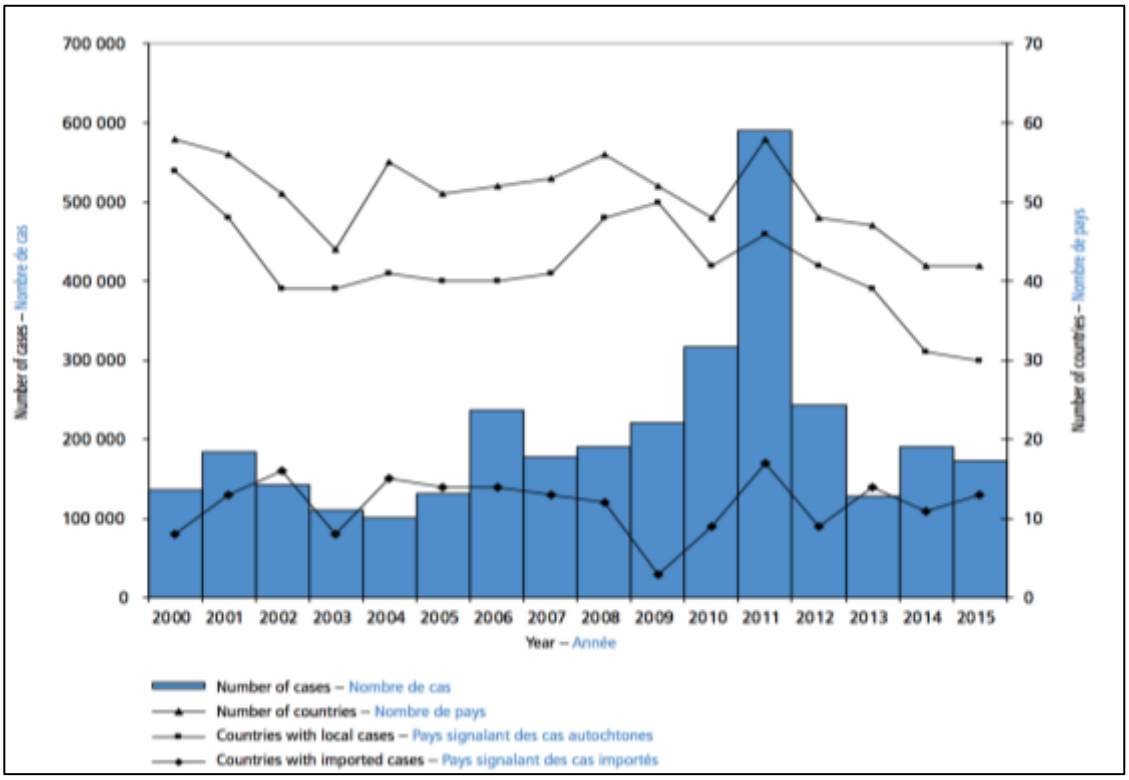


Figure 2 Countries reporting cholera and cases reported by year, 2000 – 2015 (WHO, 2016)

According to the WHO, the global case fatality rate (CFR) for cholera in 2015 was 0.8%, while a CFR >1% was reported in 15 countries; notably, Niger and Myanmar experienced a CFR >5% (WHO, 2016). In countries that are endemic to cholera, the CFR is typically <5%. However, during cholera outbreaks, and in cases of severe cholera that do not seek treatment, the CFR can be up to 50% (Sack, 2004; WHO, 2010). Countries that reported deaths due to cholera in 2015 are shown in Figure 3. The highest number of cases were reported in Africa (71,176) followed by Asia (64,590) and the Americas (36,664) (WHO, 2016). Africa and the Americas

experienced the highest amounts of mortality associated with cholera in 2015, with 937 and 337 reported deaths respectively (WHO, 2016).

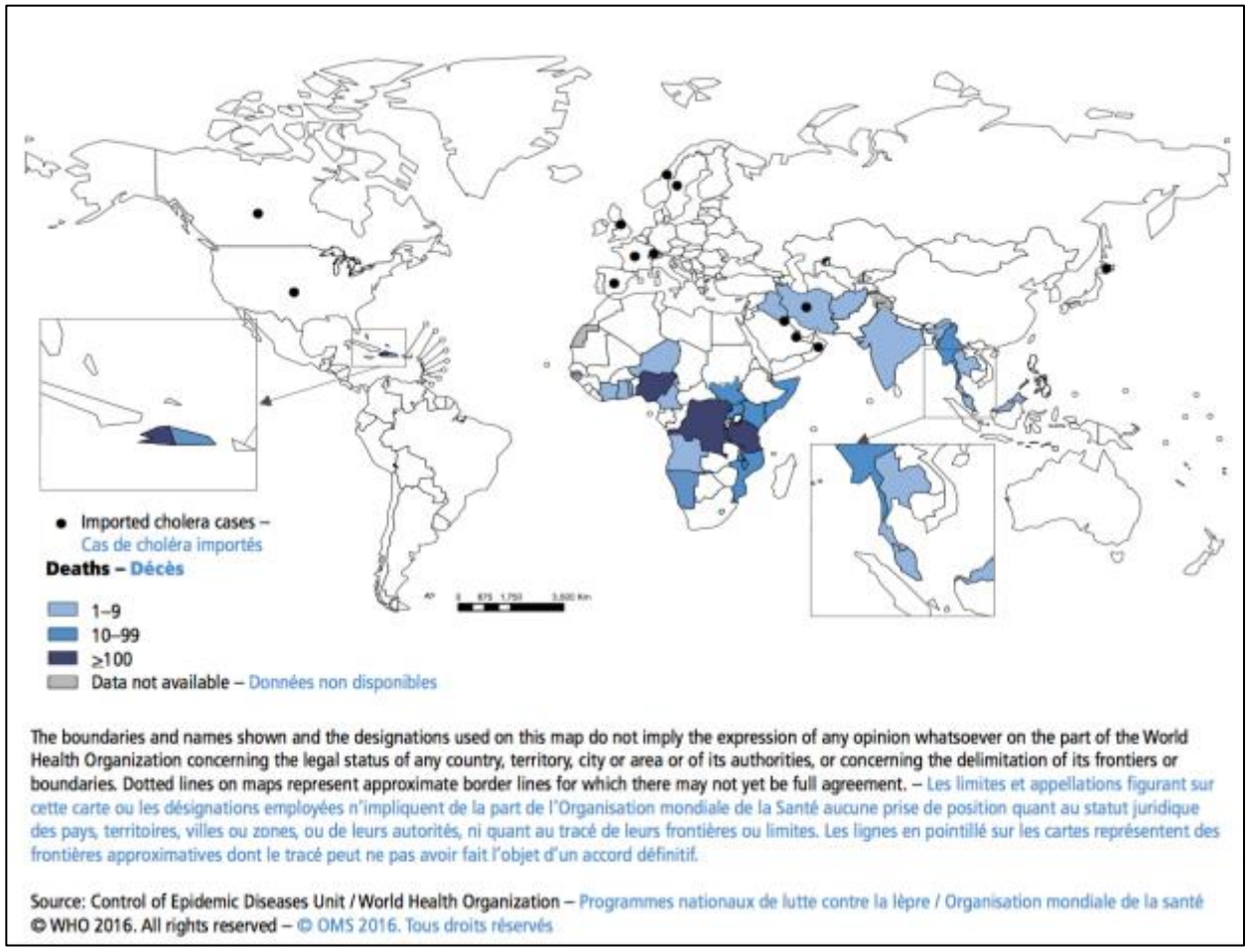


Figure 3 Countries reporting cholera deaths and imported cases in 2015 (WHO, 2016)

c. Prevention, management, and treatment of cholera

Prevention, preparedness, and control of cholera requires a vast amount of resources, coordination, and expertise. It is recommended that in order to effectively prevent and control cholera outbreaks there must be: political commitment from the affected countries; enriched surveillance systems put into place; effective water, sanitation, and hygiene promotion activities and services available that are context specific; culturally appropriate key messaging with an understanding of the local context; and, successful oral cholera vaccination campaigns

(Pena, 2016). The spread of cholera can be prevented by detecting and confirming cases early in the outbreak and coordinating the response based on previous outbreak information and/or information collected during the beginning of the outbreak (WHO, 2004). Cholera responses often focus on detecting cases and providing treatment based on rehydration and the delivery of safe and adequate drinking water (Harris, 2012). These measures are combined with sufficient sanitation facilitates, handwashing stations equipped with necessary supplies, and the preparation of safe food (Harris, 2012).

According to the WHO, treatment for cholera consists of oral rehydration solution (ORS) delivered immediately to the patient upon symptom onset (WHO, 2004). For severe cases of cholera where patients are experiencing excess fluid loss and are at risk of shock, intravenous fluids, ORS, and antibiotics may be needed to properly treat and recover from cholera (WHO, 2004). The WHO does not recommend mass antibiotic administration as it does not reduce the spread or transmission of cholera and can contribute to antimicrobial resistance (WHO, 2004).

During cholera outbreaks, it might be necessary to set up cholera treatment centers (CTCs). CTCs are designed to provide emergency medical treatment to those who present with symptoms of cholera. According to Médecins Sans Frontières (MSF), CTCs should be easily accessible to patients and located in existing medical facilities but separate from other departments to avoid contamination (Bauernfeind, 2004). CTCs are designed to bring emergency medical services to those affected by cholera and should be properly stocked with appropriate medical supplies and sanitation and hygiene facilities (Bauernfeind, 2004). If cholera affected areas are too far from a CTC, it might be necessary to establish a cholera treatment unit (CTU). CTUs are designed as an intermediary to a CTC for patients who

experience mild to moderate symptoms and cannot access a CTC. It is important to ensure that there is proper management and disposal of waste, body fluids, and cadavers in CTCs and CTUs (Harris, 2012).

*d. **Oral cholera vaccines***

To control cholera outbreaks and prevent further transmission, the WHO recommends the use of oral cholera vaccines (OCVs) as a complimentary intervention, combined with the primary strategy of providing safe drinking water, access to sanitation, and hygiene promotion (Lam, 2017). The OCV is given as two or three doses depending on the type of vaccine and the age of the individual (Harris, 2012). The vaccine has been shown to have protective efficacy between 60-85% for a duration of 2-3 years (Harris, 2012).

An emergency stockpile of OCVs was developed in 2013 to enable rapid deployment of vaccines in emergency and outbreak situations across the globe (Lam, 2017). The OCV stockpile is managed by a consortium of international organizations consisting of MSF, UNICEF, and the International Federation of Red Cross and Red Crescent Societies (Lam, 2017). Limitations with OCVs include: limited amount of OCV supply, compliance with follow-up doses, perceptions of alternative treatment methods, distrust in the vaccine, and caregiver consent for the vaccine, only to name a few (Lam, 2017; Peprah, 2016).

*e. **Lessons learned from past cholera outbreaks***

There have been seven pandemics of cholera since 1817, spreading from Asia to the rest of the world (Harris, 2012). The seventh pandemic began in 1961 and is currently ongoing, affecting 3 – 5 million people each year (Harris, 2012). Since the 19th century, medical and

public health practitioners have been combating cholera outbreaks, learning significant and lifesaving strategies along the way. Monitoring and evaluating lessons learned from past cholera outbreaks (e.g., the Iran and Malawi epidemics described below) help to develop evidence-based programs and mitigation strategies for future outbreaks.

During the Iran cholera epidemic in 2005, over 1,100 cases of cholera were registered in a four-month period (Lankarani, 2013). The epidemic originated in a local vegetable farm and quickly grew, attracting attention from local health workers who reported suspected cholera cases to regional health workers and ultimately to national ministries (Lankarani, 2013). As a result of the swift action from local health workers, a national information campaign was initiated to warn citizens of the dangers of consuming fresh vegetables, the suspected source of the outbreak (Lankarani, 2013). The epidemic was quickly stopped because of the swift action and knowledge of the local health workers alongside traditional multi-sector control measures (Lankarani, 2013).

Cholera is endemic in Malawi and was first reported in 1973, with seasonal outbreaks occurring annually (Khonje, 2012). During an outbreak in 2009 – 2010, MSF distributed water storage containers, water disinfectant, and soap, alongside context specific educational materials, and conducted case management (Khonje, 2012). After the outbreak was contained, MSF evaluated the response and provided recommendations to their own staff and the wider cholera response community to help improve future outbreak response strategies. These recommendations included improving surveillance, particularly active case-finding, and ensuring that there was accurate reporting and documentation of cholera cases (Khonje, 2012).

During this specific outbreak, cases were not documented at the beginning, potentially resulting in the outbreak spreading further and affecting more people.

Another lesson learned from this Malawi outbreak was the need to improve environmental management related to water and sanitation (Khonje, 2012). It has been shown that better management of water and sanitation infrastructure results in lower transmission of cholera during epidemics (Khonje, 2012). Therefore, improving the protection of water sources or point-of-use water treatment measures could potentially slow the progression of cholera cases (Khonje, 2012). Other recommendations included refining outbreak preparedness by bolstering district level emergency plans and logistics, strengthening case management through stockpiling supplies, conducting cholera preparedness workshops, and ensuring close collaboration and coordination between NGOs and government ministries before outbreaks occur (Khonje, 2012).

These two examples of lessons learned from previous cholera outbreaks demonstrate the importance of monitoring and evaluating response activities and strategies to help contain cholera epidemics. The UNICEF Cholera Toolkit utilized past evaluations, such as the Iran and Malawi examples, to help inform the content and information in the cholera toolkit.

f. ***Other resources for cholera response***

The UNICEF Cholera Toolkit is only one of many resource guides that details steps and processes to effectively prevent, prepare, and control cholera outbreaks. Below are other tools and guidance documents from various organizations that are used widely in the field of cholera.

MSF Cholera Guidelines

This document was originally published in 1995 with a second edition in 2004. The nine-chapter resource was created to "give guidance towards strategies on reduction of mortality as well as reduction of transmission" for cholera outbreaks across the world (Bauernfeind, 2004, p. 5). The guidance document gives detailed information on epidemiological and clinical features of cholera cases and outbreaks and provides information on outbreak investigations, strategies for case management, methods to reduce mortality and the spread of the epidemic. The document closes with information related to monitoring and evaluation and cholera preparedness (Bauernfeind, 2004).

Oxfam Great Britain (GB) Cholera Outbreak Guidelines: Preparedness, Prevention and Control

Oxfam GB published cholera guidelines in 2012 as a pilot document for other organizations and agencies to utilize for cholera outbreaks. The guidelines were initially an internal document but were released publically with the aim to "provide a quick step-by-step guide to inform cholera outbreak interventions" (Lamond, 2012, p. 6). The two-part document describes how to effectively design public health preparedness and response programs for cholera outbreaks and gives tools and resources for rapid assessments and monitoring and evaluation (Lamond, 2012). The guidelines utilize lessons learned from past Oxfam cholera outbreak interventions and other guidance documents published related to cholera prevention and control (Lamond, 2012). The guidelines are available in English, French, and Spanish (Lamond, 2012).

WHO Cholera Outbreak: Assessing the Outbreak Response and Improving Preparedness

In 2004, the WHO and the Global Taskforce on Cholera Control (GTFCC) published guidelines that "offered a framework for the assessment of a cholera outbreak response" that is intended for ministries of health, technical staff, health professionals, and those conducting assessments on cholera outbreaks (WHO, 2004, p. 5). The document is primarily designed for use at the end of a cholera outbreak, providing information and resources for a retrospective evaluation (WHO, 2004). Secondarily, the document can be used as a reference tool during an outbreak to ensure proper protocols and steps are being taken to control the spread of cholera cases (WHO, 2004). The document was updated in 2010 and is available in English, French, Russian, Spanish, Portuguese, and Swahili (WHO, 2004).

The Centers for Disease Control and Prevention (CDC) Cholera Resources

The CDC offers a variety of documents related to cholera that cover: outbreak response, laboratory diagnostics, healthcare provider resources, cholera treatment centers, health promotion, and outbreak investigation trip reports (CDC, 2014). Compared to other cholera resources, the CDC provides specific guidance documents for healthcare providers to help train and inform clinical practitioners on how to prepare, prevent, and respond to cholera cases and epidemics.

g. Similar evaluations of guidance documents completed in the past

While many humanitarian organizations have published guidelines and toolkits on how to respond to various outbreaks and emergency responses, few have published evaluations of their guidelines. After consulting both peer-reviewed literature and gray literature, only one

evaluation report was found. The report was of an evaluation of the Sphere Project, which is an initiative with the aim to "improve the quality of humanitarian assistance and the accountability of humanitarian actors to their constituents, donors and affected populations" (The Sphere Project, 2011, p. ii).

The evaluation was conducted six-years after the inception of the Sphere Project, from September 2002 – September 2003, by the Mailman School of Public Health at Columbia University. The evaluation focused heavily on the content of the Sphere Project's handbook entitled *Humanitarian Charter and Minimum Standards in Disaster Response*. This UNICEF Cholera Toolkit evaluation is similar to the Sphere Project evaluation in that it utilized comparable methods, such as a survey distributed via the internet and similar survey questions, to determine the use and effectiveness of the resource to those who use it for their work.

The Sphere Project evaluation survey was distributed via an e-mail attachment to individuals in the humanitarian response community to assess their experience with the handbook, including their perceptions on the usefulness of the handbook relative to their work, opinions about which aspects of the handbook were beneficial, and which areas needed additional information or updates for future versions of the handbook (Dyke, 2004). The questionnaire was sent out in more than 750 individual emails to over 160 international and national NGOs (Dyke, 2004). The survey was available in English, French, and Spanish and was completed by 581 individuals from over 90 countries representing almost 200 humanitarian organizations (Dyke, 2004). The evaluation also consisted of in-depth interviews with over 80 key informants.

The results of the evaluation showed that the Sphere handbook is widely used in the humanitarian community and is perceived to be an important resource for both programmatic decisions, maintaining accountability in the humanitarian community, and helped humanitarian workers strive for better results (Dyke, 2004). Recommendations from the evaluation included the need to increase training for humanitarian workers on specific terminology and the need to employ a "rights-based approach" to humanitarian assistance that the Sphere Project emphasizes (Dyke, 2004). Other recommendations included formulating innovative ways to widely distribute the handbook across the humanitarian community to reach more aid workers; broadening some of the standards so they are not specific to certain contexts given how emergencies vary widely; and, providing guidance on how to manage the relationship between the humanitarian affected populations and the surrounding non-affected populations (Dyke, 2004).

The Sphere handbook was updated in 2011 and is currently undergoing a year-long review, with the aim to produce updated Sphere standards in 2018.

III. CHAPTER 3 – Methods

a. Research team

The UNICEF Cholera Toolkit evaluation took place between November 2016 – March 2017 with a team comprised of staff from UNICEF, CDC, GTFCC, and Emory University. The evaluation team consisted of three epidemiologists, one senior emergency health advisor, one cholera technical officer, and one graduate research assistant.

b. Evaluation objectives

The evaluation sought to complete the objectives listed in Table 1.

Table 1: The UNICEF Cholera Toolkit Evaluation Objectives	
Objective 1	Describe the extent of use and effectiveness of the toolkit and website by both UNICEF staff and partner organization staff
Objective 2	Identify how much different sectors (e.g. WASH, health, etc.) used the toolkit and which sectors found the toolkit most useful and why
Objective 3	Understand how often staff and partners utilize the toolkit for guidance and how to increase the usability of the resource, including the format of the document
Objective 4	Identify the most used sections of the toolkit and any content that should be added for future versions or updates
Objective 5	Understand if the dissemination process of the toolkit was effective to reach the target audience and to solicit input on potential ways to distribute future versions of the toolkit

Institutional Review Board (IRB) determination was obtained from both CDC and Emory University. Both institutions declared that the evaluation did not meet the definition of human research and was thus exempt from official IRB review.

c. The UNICEF Cholera Toolkit overview

The toolkit is available in hardcopy and digitally to allow for easy access and portability. Approximately 500 English and 500 French hardcopies of the toolkit were printed and

distributed by UNICEF in 2013. The distribution of the toolkit took place at conferences, trainings, and throughout UNICEF offices globally. The toolkit is available in Arabic, French, and English. The content of the 10 chapters included in the toolkit is listed in Table 2.

Table 2 – The UNICEF Cholera Toolkit Chapters
1. Introduction
2. Cholera – the basics
3. Understanding the situation and monitoring
4. Cholera prevention
5. Coordination, responsibilities, and information management
6. Cholera preparedness
7. Communicating for cholera preparedness and response
8. Case management and infection control in health facilities and treatment sites
9. Community focused interventions
10. UNICEF procedures for emergency preparedness and response

The toolkit website, which can be accessed at https://www.UNICEF.org/cholera, was developed in 2013 when the toolkit was launched. The website provides comprehensive information and additional resources regarding cholera. The digital copy of the toolkit can be downloaded from the UNICEF Cholera Toolkit's website in a PDF format. This format can be saved to computers and other devices to be accessible offline. The website also has links to training videos on cholera control, other technical guidance documents on cholera, information on the oral cholera vaccine, and other supplemental information for preparing and controlling cholera outbreaks.

d. The UNICEF Cholera Toolkit evaluation questionnaire

Data was collected via an online survey questionnaire that was designed to obtain information from aid workers with experience in cholera work. To ensure the evaluation objectives were met (in Table 1), all survey questions were designed to directly relate to one or

more objectives. The questionnaire was reviewed several times by experts and staff members from UNICEF, CDC, and GTFCC with expertise in survey design and cholera response. After multiple iterations, the questionnaire was finalized (Appendix A) and included five sections composed of 29 multiple choice and 10 free response questions. The five survey sections included: 1) Background – questions related to the respondent's work experience and involvement with cholera work (7 questions); 2) Basics on the UNICEF Cholera Toolkit – questions regarding the respondent's use of the toolkit (20 questions); 3) UNICEF Cholera Toolkit website –questions about the toolkit's website (4 questions); 4) Dissemination process of the UNICEF Cholera Toolkit – questions related to how the respondents learned about the toolkit and dissemination approaches (3 questions); and, 5) Recommendations and improvements for future versions of the UNICEF Cholera Toolkit – included five free response questions related to the value of the toolkit reference documents and specific aspects of the toolkit that are beneficial or could be improved for future versions. Table 3 shows the specific questions in each section of the survey.

Table 3: Online Survey Questions

Question #	**Question**	**Question Type**
1	Survey consent	Multiple choice
I. Background Information		
2	Which of the following categories best describes your professional expertise? *(please select the best option)*	Multiple choice
3	Which sector(s) do you work in? *(please select all that apply)*	Multiple choice
4	Which category best describes the organization you work for? *(please select the best option)*	Multiple choice
5	What type of work are you typically involved in when working within cholera? *(please select all that apply*	Multiple choice
6	How long have you been involved with cholera activities? (e.g. prevention, preparedness, response, surveillance, etc.)	Multiple choice
7	How many cholera outbreaks have you worked in/on (including preparedness and response) since 2013?	Multiple choice
II. Basics on the UNICEF Cholera Toolkit		
8	Are you aware of UNICEF's Cholera Toolkit, a comprehensive manual	Multiple choice

	published in 2013, aimed to support UNICEF staff and partners from other agencies to prepare for and respond to cholera outbreaks?	
9	When did you learn about the UNICEF Cholera Toolkit?	Multiple choice
10	Have you ever used the UNICEF Cholera Toolkit?	Multiple choice
11	How often have you referred to the UNICEF Cholera Toolkit since learning about it (i.e. for technical advice, guidance during an outbreak, etc.)?	Multiple choice
12	During what timeframe(s) did you use the UNICEF Cholera Toolkit? *(please select all that apply)*	Multiple choice
13	Please rank each section of the UNICEF Cholera Toolkit based on how much you have utilized that section. *(please **rank** each section either:* not at all, small amount, moderate amount, high amount or very high amount*)*	Multiple choice
14	How user friendly is the UNICEF Cholera Toolkit?	Multiple choice
15	What improvements would you suggest to make the UNICEF Cholera Toolkit more user friendly?	Free response
16	How do you feel about the length of the UNICEF Cholera Toolkit?	Multiple choice
17	What do you think about the level of detail regarding the UNICEF Cholera Toolkit?	Multiple choice
18	Are you aware that the UNICEF Cholera Toolkit is available in Arabic, English and French?	Multiple choice
19	In which of the following languages have you used the UNICEF Cholera Toolkit? *(please select all that apply)*	Multiple choice
20	Do you think the UNICEF Cholera Toolkit should be available in other languages? *(if so, please indicate which language(s))*	Multiple choice
21	Which format(s) of the UNICEF Cholera Toolkit have you utilized? *(please select all that apply)*	Multiple choice
22	What format(s) of the UNICEF Cholera Toolkit would be most useful for you? *(please select all that apply)*	Multiple choice
23	How useful has the UNICEF Cholera Toolkit been to your work?	Multiple choice
24	Please elaborate on how useful the UNICEF Cholera Toolkit has been for your work, based on your response from the previous question.	Free response
25	Do you find the appendices in the UNICEF Cholera Toolkit beneficial?	Multiple choice
26	Why are the appendices beneficial/not beneficial, based on your response from the previous question.	Free response
27	Have you recommended the UNICEF Cholera Toolkit as a reference to colleagues?	Multiple choice
III. UNICEF Cholera Toolkit Website		
28	When was the last time you visited the UNICEF Cholera Toolkit website? (https://www.unicef.org/cholera/)	Multiple choice
29	How useful is the UNICEF Cholera Toolkit website?	Multiple choice
30	What was your reason for visiting the UNICEF Cholera Toolkit website? *(please select all that apply)*	Multiple choice
31	What recommendations do you have to make the UNICEF Cholera Toolkit website more useful?	Free response
IV. Dissemination Process of the UNICEF Cholera Toolkit		
32	How did you learn about the UNICEF Cholera Toolkit?	Multiple choice
33	What distribution methods do you think would be effective to distribute/educate UNICEF staff and partners on the Cholera Toolkit?	Free response
34	Do you think most field staff involved with cholera work are aware that the UNICEF Cholera Toolkit exists?	Multiple choice

V. Recommendations and Improvements for Future Versions of the UNICEF Cholera Toolkit		
35	If you need reference materials in preparing or responding to a cholera outbreak, what are the key documents you use or would use? (*please list in order of most used or most useful)*	Free response
36	What aspects of the toolkit do you think are the most important?	Free response
37	What content or resources would you like to be added to any future version of the toolkit?	Free response
38	Do you have any further recommendations for future versions of the toolkit that would improve the effectiveness of cholera preparedness, prevention or control?	Free response
39	If there is any other information or thoughts you would like to share that have not been discussed in previous sections of the survey, please do so now.	Free response

e. Online survey platform

To effectively reach the internationally dispersed target population the evaluation questionnaire was distributed via an online survey in English. Survey Planet, an online survey platform, was used as the data collection medium. This platform enabled the survey to be completed via computer or tablet, as long as internet access was available. The survey contained skip patterns and logic depending on the respondent's answers. Each question had to be answered before the respondent could advance to the next question. The average time to complete the survey was approximately 40 minutes.

f. Sample population and recruitment strategy

A non-probability convenience sample and snowball sampling strategy was used to recruit respondents for the survey. The sample consisted of target respondents who were available and accessible via existing e-mail listservs from UNICEF, GTFCC, and the Global WASH Cluster. The four formal listservs included: 1) UNICEF health division in New York; 2) the Global WASH Cluster's listserv; 3) the GTFCC's listserv; and, 4) the regional and country office listservs for

UNICEF staff and partners. Based on the various listserv sizes, it is estimated that the survey was sent to several hundred individuals across the international humanitarian community.

Once respondents completed the survey, they were asked to forward it to other colleagues who have experience working with cholera preparedness, prevention, and/or response. This snowball sampling strategy enabled more respondents to be reached that were potentially not subscribed to the listservs where the survey was initially sent.

Between the dates of March 1, 2017 and March 31, 2017, a total of 32 people participated in the online survey, representing UN agencies, NGOs, and government organizations. An official response rate could not be calculated because the number of individuals who received the link to complete the survey is not known.

*g. **Analysis of survey results***

Survey Planet enables users to download survey results into a Microsoft Excel file. The data was downloaded from the Survey Planet website intermittently throughout the four-weeks when respondents could participate in the survey. When the data was downloaded, it was cleaned and prepared for analysis at the end of data collection, on March 31, 2017. All data were analyzed in Microsoft Excel using basic statistical functions and formulas (i.e., mean, median, and mode). Free response data analysis was conducted by coding respondent's free text responses and grouping similar answers together based on themes identified in the data. For example, respondents who described the appendices as "*useful,*" "*helpful,*" or "*provided detailed information to my interventions*" were coded as 'useful and examples of tools and resources.'

IV.CHAPTER 4 – Results

*a. **Respondent background information***

The survey was completed in 20 different countries by 32 individuals. Over 30% of responses came from the Africa region, 28.1% came from the Middle East and Mediterranean region, 21.9% from the Americas, and 18.8% from Europe. Figure 4 shows a map of countries where the survey was taken.

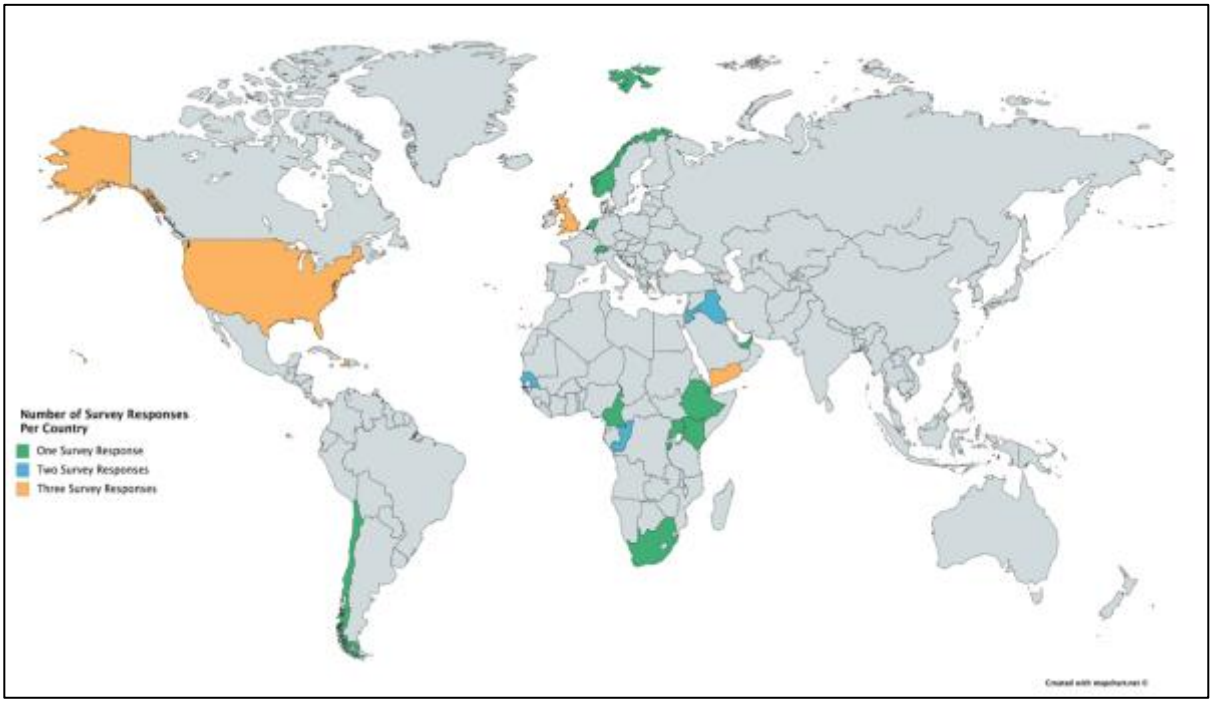
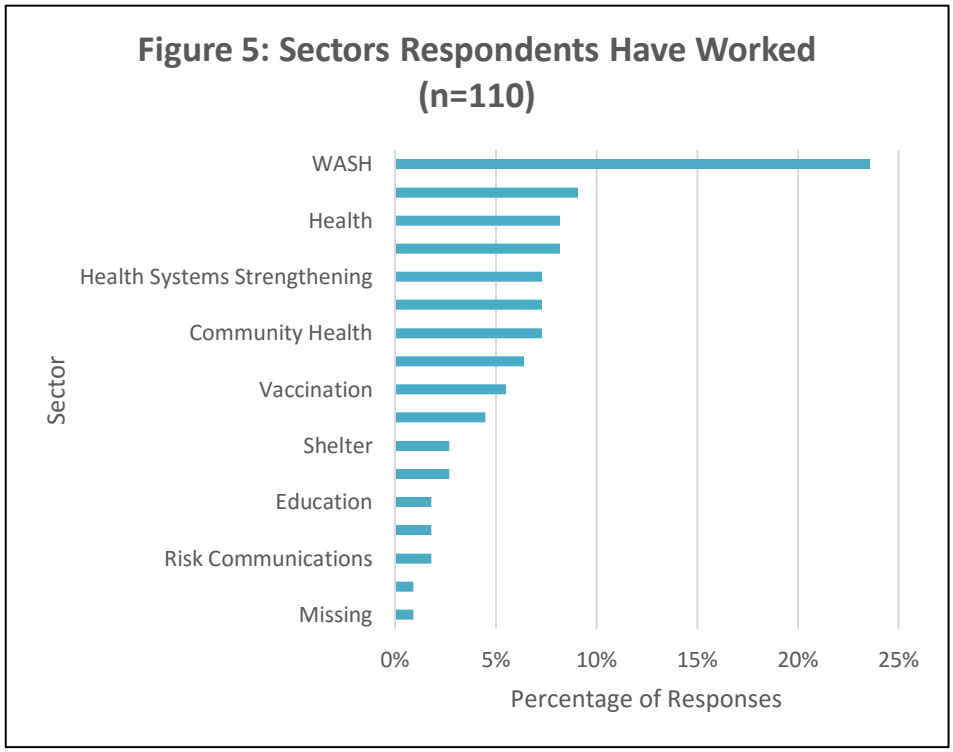


Figure 4 Countries where the survey was taken

In terms of the characteristics of the respondents, a majority were employed as technical advisors, program managers, and field staff officers. Table 4 provides a breakdown of other professional expertise among survey respondents.

Table 4: Professional Expertise of Survey Respondents	
Professional title	**Percentage**
Technical advisor	21.7%
Program manager	18.8%
Field staff officer	12.5%
Consultant/researcher	9.4%
Regional advisor	9.4%
Cluster coordinator	6.3%
Head of programs	6.3%
Trainer or educator	6.3%
Information manager	3.1%
WASH monitoring and evaluation officer	3.1%
WASH team lead	3.1%
Total	100%

A majority of respondents worked in WASH (23.6%), behavior change (9.1%), and health (8.2%). The other work experience among respondents is displayed in Figure 5. In terms of employment organizations, approximately 43% of respondents reported working for UN agencies; 34.4% for international non-governmental organizations (INGOs); 9.4% for academic institutions; 3.1% for donor agencies; 3.1% for corporate institutions; 3.1% for governmental ministries or agencies, and 3.1% for national NGOs.



Cholera experience

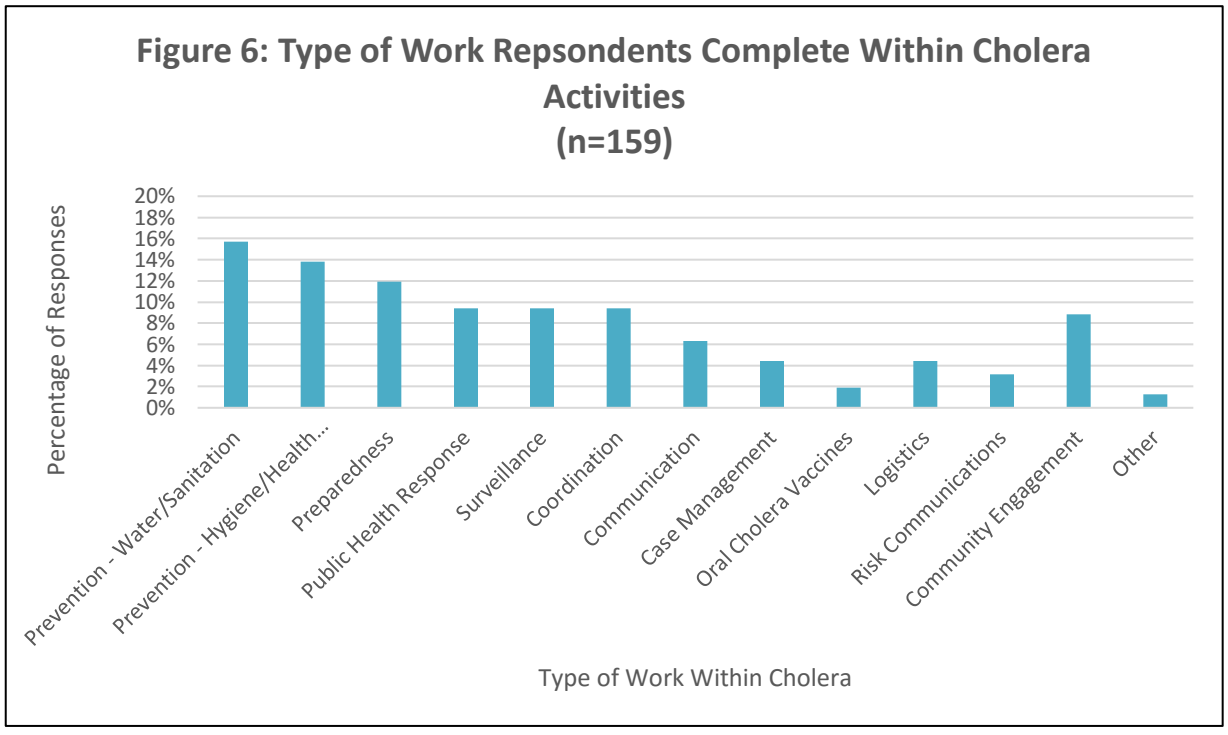
Table 5 shows the number of years of cholera related work experience and the number of cholera outbreaks worked by respondents. The majority of respondents have 0 – 3 years or 10 or more years of cholera work experience. Over 30% of respondents worked 5 or more cholera outbreaks while approximately 9% had not worked any cholera outbreaks.

Table 5: Number of Years of Work Experience and Number of Cholera Outbreaks Worked by Survey Respondents

Number of Years Work Experience	Percentage	Number of Cholera Outbreaks Worked	Percentage
0 – 3 years	28.1%	0	9.4%
4 – 6 years	21.9%	1 – 2	28.1%
7 – 9 years	21.9%	3 – 4	25.0%
10 or more years	28.1%	5 or more	31.3%
Total	100%	Total	93.8%*

* 6.2% of respondents chose not to answer the number of cholera outbreaks they have worked

Respondents reported a range of technical experience within cholera work, with 29.6% in WASH prevention, 11.9% in cholera preparedness, and 9.4% in cholera public health response (Figure 6).



*b. **Respondents use and familiarity with the UNICEF Cholera Toolkit***

Approximately 81% of respondents (n=26) reported they were aware of the UNICEF Cholera Toolkit while 18.8% (n=6) were not aware of it. Respondents that were not aware of the toolkit were excluded from further questioning because the survey asked specific questions that only those who were aware of the toolkit would be able to sufficiently answer.

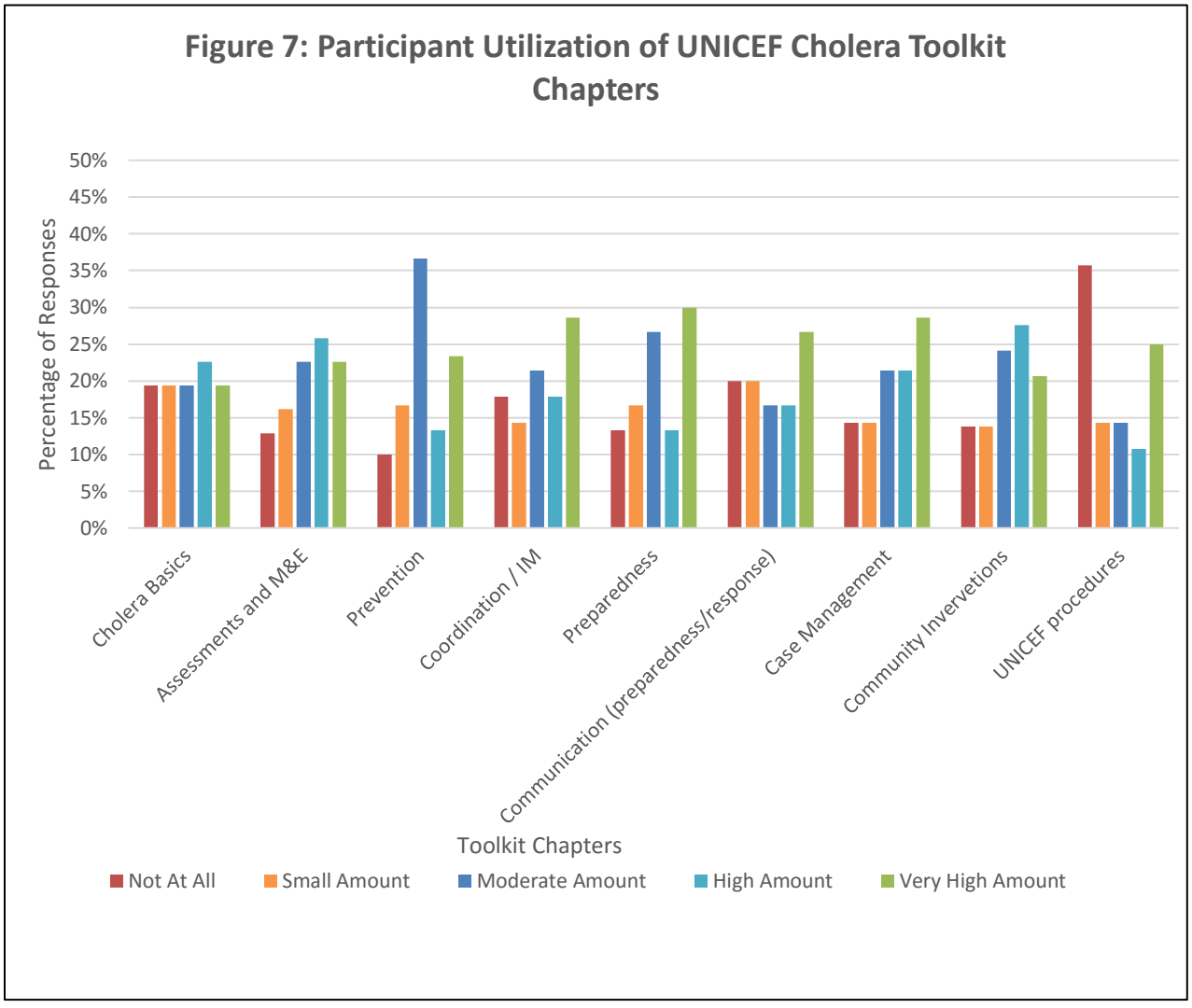
Of the 26 respondents who were aware of the toolkit, 42.3% learned of the toolkit in 2013, the year it was initially published. Approximately 15% of respondents learned of the toolkit in 2014, while 26.9% learned of it in 2015, and 15.4% learned of it in 2016. When asked how they learned about the toolkit, fifty percent of respondents reported learning of the toolkit from UNICEF staff, 23.1% found the toolkit on their own, 15.4% learned about it from staff not from UNICEF, 3.8% found it during a workshop or training, 3.8% learned of it via one of the authors of the toolkit, and another 3.8% learned of the toolkit through GTFCC.

Of the 26 respondents who were aware of the toolkit, 92.3% have used the toolkit in the past while 7.7% have not used the toolkit in the past. Of those that had used the toolkit, 58.3% referred to the toolkit between 1 – 3 times for cholera related guidance or technical advice, while 8.3% referred to the toolkit between 4 – 7 times, and 33.3% of respondents referred to the toolkit over eight times for technical advice.

Approximately 84% of respondents indicated that they had already recommended the toolkit to colleagues as a reference guide, while 11.5% did not. Approximately 3% of respondents chose not to answer whether they had recommended the toolkit to colleagues. Approximately 61% of respondents said they thought most field-based staff involved in cholera

work are not aware of the toolkit, 30.8% of respondents said they did not know if field staff were aware of the toolkit, and 7.7% said they thought colleagues were aware of the toolkit.

Respondents were asked to rank each chapter of the toolkit based on how much they utilize the information in that chapter. The chapters most used by respondents include the case management, community interventions, and assessments and monitoring sections. The UNICEF procedures chapter was identified as the least used section of the toolkit. Figure 7 shows each of the nine chapters of the toolkit and how much respondents reportedly used that chapter.



c. Characteristics of Respondents who were not aware of the toolkit

Approximately 18% of respondents said they were not aware of the toolkit (n=6). Among these respondents, 50.0% worked for UN agencies, 33.3% worked for INGOs, and 16.7% worked for corporations. Fifty percent of respondents who were not aware of the toolkit said they had been involved in cholera activities between 0 – 3 years while the remaining 50.0% of respondents reported they had been involved with cholera activities between 4 – 6 years. Approximately 33% of respondents indicated they had never worked with cholera outbreaks, 50.0% said they had worked on 1 – 2 outbreaks, and 16.7% reported to had worked with five or more cholera outbreaks.

d. The toolkit format, amount of detail, and language preferences among respondents

Of the 26 respondents who were aware of the toolkit, approximately 19% of them reported the toolkit was extremely user friendly, 65.4% said the toolkit was very user friendly or somewhat user friendly, 3.8% reported it was not so user friendly, 3.8% reported it was not at all user friendly, 3.8% reported 'other', and another 3.8% of respondents chose not to answer the question.

Length of the toolkit

When asked about the length of the toolkit, about 69% of respondents reported it was the right length, 23.1% reported the toolkit was too long, 3.8% of respondents reported that the length needed to be shortened for some sections but expanded for others, and another 3.8% of respondents chose not to answer the question.

Detail of the toolkit

Approximately 65% of respondents indicated that the toolkit had the right amount of detail. Nearly 7% of respondents indicated that there was too much detail while 7.7% of respondents said the toolkit was too vague. Another 7.7% of respondents said more details could be added in some places while there should be less details in other sections. About 12% of respondents chose not to answer the question on the level of detail in the toolkit.

Appendices of the toolkit

Nearly 73% of respondents reported they were aware that the toolkit had appendices and 19.2% were not aware there were appendices. Approximately 7% of respondents chose not to answer the question regarding their knowledge of the appendices.

Usefulness of the toolkit

About 53% of respondents indicated that the toolkit has been extremely useful or very useful to their work, 30.8% reported it was somewhat useful to their work, 11.5% indicated it was not useful to their work, and another 3.8% chose not to answer the question.

Languages the toolkit was used by respondents

Approximately 65% of respondents reported they were aware that the toolkit was available in Arabic, English, and French while 34.6% were not. Approximately 61% of respondents reported to had used the toolkit in English, 28.2% said they had used the toolkit in French, 7.7% of respondents said they had used the toolkit in Arabic, and 2.6% of respondents chose not to answer this question. Respondents indicated the need for additional languages of the toolkit in order for it to be used among more people and in specific parts of the world. The languages

respondents requested for the toolkit are: Spanish, Portuguese, Swahili, Lingala, Hausa, Hindi, Kiswahili, and Russian.

Formats of the toolkit used by respondents

Thirty-two percent of respondents have utilized the hard copy of the toolkit while another 32.0% have used the PDF format. Ten percent of respondents used the USB version of the toolkit, 24.0% have used the online version, and 2.0% have not used the toolkit at all.

Responses were similar regarding the preferred preference of format for the toolkit among respondents. Approximately 31% of respondents preferred the PDF format, 25.9% preferred the hard copy of the toolkit, another 25.9% preferred the online version, 14.8% of respondents preferred the USB version, and 1.9% of respondents preferred a word file of the toolkit.

e. Usefulness and usability of the UNICEF Cholera Toolkit website among respondents

Approximately 69% of respondents have visited the toolkit's website in the past while 26.9% of respondents have never visited the toolkit's website. Approximately 3% of respondents chose not to provide an answer as to if or when they had visited the toolkit's website.

Of those who had viewed the website, 78.9% of respondents indicated the website was somewhat or very useful while 5.3% reported the website was extremely useful. Approximately 15% of respondents chose not to answer the question. No respondents expressed that the website was not useful. Approximately 53% of respondents accessed the website to download or view the toolkit, 15.6% of respondents said the reason they visited the website was to access the appendices of the toolkit, 12.5% of respondents accessed the

website to look for additional resources, and another 12.5% visited the website to learn more about cholera. Approximately 6% of respondents chose not to answer the question.

*f. **Results of the free-text data***

Respondents were asked 10 free response questions (as seen in Table 3) related to 7 main issues: 1) the user friendliness of the toolkit; 2) the usefulness of the toolkit to the respondent's work; 3) the most important aspects of the toolkit per the respondent's perspective; 4) information to add for future versions of the toolkit; 5) the usefulness of the appendices to the respondent; 6) what respondents think are effective dissemination processes for future toolkit distributions; and, 7) recommendations on how to make the toolkit's website more useful. The following are the results of the qualitative data respondents provided to these questions.

Respondent's feedback on how to improve the user friendliness of the toolkit

Respondents were asked what improvements could be made to ensure the toolkit is user friendly. Eight respondents (26.7%) said that the format of the toolkit should be adapted and/or more hardcopies should be distributed to field workers who do not have access to internet. The respondents gave examples of new formats that would be beneficial, which included tablet based applications and interactive formats that enable readers to click on relevant topics that would link directly to the section they were interested in. Seven respondents (23.3%) stated that the toolkit could be more user friendly if there were more practical or situation specific resources that could be quick "go-to" guides for field workers to reference when working in cholera outbreaks. Four respondents (13.3%) indicated that there should be more information on specific topics, such as chlorination measures, CTUs, CTCs, and

coordination roles and responsibilities among various actors. Two respondents (6.7%) said it was good as-is and they already found it to be user friendly. Another two respondents (6.7%) said that the toolkit would be more user friendly if it was promoted among field staff. One respondent (3.3%) indicated that for the toolkit to be more user friendly there should be more languages of the toolkit available for field staff. Six respondents (20%) chose not to answer this free response question.

Usefulness of the toolkit to the respondent's work

Respondents were asked to elaborate on how useful the toolkit has been to their work and to provide specific examples. Twenty-two respondents (75.9%) said the toolkit was useful to their work because it synthesized large amounts of information into a cohesive document that was regarded as a legitimate resource. Three respondents (10.3%) said they used the toolkit for trainings. Two respondents (6.9%) said the toolkit enabled them to build capacity among government organizations or field staff. One respondent (3.4%) said they do not use the resource anymore because they prefer the Oxfam cholera guidance document. Another respondent (3.4%) chose not to answer this question. Some of the specific examples given by respondents on how the toolkit was useful to their work is shown below:

> *"It [the UNICEF Cholera Toolkit] was useful as a legitimate reference for some important facts and recommendations (for example "household spraying is not recommended.)" –* (Consultant/Researcher, U.K.)
>
> *"I have used the toolkit to provide guidance and as a basis for some training, and have referred students and field workers to the toolkit and to relevant sections of it." –* (Trainer/Educator, U.K.)
>
> *"It [the UNICEF Cholera Toolkit] has been specifically useful in developing cholera contingency and preparedness plans for the WASH Cluster and as a reference guide for context specific SOPs developed at the country level." –* (WASH Cluster Coordinator, Iraq)

Respondent's views as the most important aspects of the toolkit

Respondents were asked to explain the various aspects of the toolkit that are most important. Responses were coded on thematic areas and the themes are listed in Table six. Six respondents (21.4%) indicated that the tools and appendices were the most important aspects of the toolkit and four respondents (14.3%) expressed that the level of detail and topics covered were the most important aspects. Three respondents (10.7%) chose not to answer this question. Table 6 gives a breakdown of other important aspects of the toolkit based on respondent's input.

Table 6: Respondent's Input on the Most Important Aspects of the Toolkit
Most Important Aspect of the Toolkit
Tools and appendices
Level of detail and topics discussed
Information on coordination among various organizations and technical areas
Cholera prevention
Format and usability of the toolkit
Case management information
Communication for Development (C4D)
Community focused interventions
Infection control information
Preparedness information
Surveillance methodologies
The 'Sword and Shield' approach

Information respondents think should be added to any future versions of the toolkit

Additionally, respondents were asked what should be added to future versions of a toolkit if one is produced. Three respondents (12.5%) stated that information on how to map cholera cases and how to create outbreak maps would be useful for future versions of the toolkit.

Another three respondents (12.5%) stated that more information related to cholera specific WASH interventions and guidance was needed for future updates. Three respondents (12.5%) chose not to answer this question. Table 7 gives a breakdown of other topics that respondents thought would be beneficial for future toolkits.

Table 7: Topics Respondents Think Are Needed for Future Versions of the Toolkit
Topic
Mapping (cases and outbreaks)
Cholera specific WASH information
Advocacy information
Assessment formats and guidance
Context specific outbreak information
Coordination (by thematic area)
Data management
Endemic cholera information
Information sharing protocols
Integrated approaches on interventions
Link to development (exit strategies)
Oral cholera vaccines
Reporting guidance on activities
Strategy information regarding working with governments
Step-by-step guidance on case management
The intersection of WASH and oral cholera vaccines
Training resources (PowerPoints or videos) for field staff

The usefulness of the appendices in the toolkit among respondents

Respondents were asked to provide their input on how beneficial the appendices were for them. Twelve respondents (70.6%) stated that the appendices were useful to them because they gave specific examples and resource documents that could be utilized for their work. Two respondents (11.8%) stated that the appendices were helpful because it supplemented

information referenced in the toolkit. One respondent (5.8%) stated that the appendices were hard to find and two respondents (11.8%) chose not to answer this question.

Recommendations for future distribution methods among respondents

Respondents were asked what distribution process would be most effective for future versions of the toolkit. Eight respondents (30.8%) said that any future toolkit should be disseminated via workshops or trainings. Another eight respondents (30.8%) said any future versions of the toolkit should be distributed via the cluster system, namely the WASH and health clusters. Three respondents (11.5%) said that an email should be sent to UNICEF staff and partner organizations informing them about any future version of the toolkit. Two respondents (7.7%) said that partner organizations, such as the WHO and the Rural Water Supply Network (RWSN), should be incorporated in the distribution process of future toolkits. Another two respondents (7.7%) said UNICEF and partner organization field offices should be used to distribute future versions of toolkits to ensure field staff are obtaining the resource document. Two additional respondents (7.7%) said social media should be used to help disseminate future versions of a toolkit to a wide audience and reach those that may not be on listservs or other large communication lists. One respondent (3.8%) stated that country offices should be used to distribute future versions of the toolkit.

Recommendations on how to make the toolkit's website more useful among respondents

Respondents were asked to provide recommendations on how to make the toolkit website more useful for their work. Three respondents (17.6%) indicated that the website would be more useful if more people knew that the website existed and what content was

available on the website. Another three respondents (17.6%) stated that the website should give an option to download specific sections of the toolkit instead of only being able to download the entire toolkit. Two respondents (11.8%) indicated that there should be a low bandwidth version of the website to ensure field-based staff that have poor internet signal can access the website in its entirety. Another additional two respondents (11.8%) said the website was good in its current state. One respondent (5.9%) said the website would be more useful if it were easier to download the toolkit from the website. An additional respondent (5.9%) stated that they have not used the website and five respondents (29.4%) chose not to answer this question.

V. CHAPTER 5 – Discussion and Recommendations for Future Versions of the UNICEF Cholera Toolkit

a. Discussion

The evaluation shows that over half of the survey respondents think the UNICEF Cholera Toolkit has been extremely useful or very useful to their work it. Those who completed the survey and were aware of the UNICEF Cholera Toolkit thought it was an important reference document for cholera work. Further, respondents reported that one of the most important uses of the toolkit is the appendices and tools that can easily be adapted to specific contexts. In fact, survey respondents indicated a desire for more cholera management tools and specific information such as how to map cholera cases, more cholera specific WASH information, and assessment formats and guidance that can be used when working a cholera outbreak.

While all chapters of the toolkit appear to be used, respondents indicated higher use of content related to coordination, community interventions, assessments and monitoring and evaluation, and, case management. Similarly, these topics were recognized by survey respondents as areas of the toolkit where additional resources and tools were needed.

The survey results demonstrate that the design, length, and amount of detail of the toolkit are widely accepted among the respondents. However, respondents do not feel that those who work within cholera are aware of the toolkit. While a majority of the respondents have recommended the toolkit to their colleagues, a large percentage of respondents think that most field-based staff involved in cholera are not aware of the toolkit. This leads to the conclusion that the toolkit is useful; however, there needs to be more publicity related to the

toolkit to ensure that those working in cholera prevention, preparedness, and response are aware of it.

Results showed that respondents used a variety of formats of the toolkit. However, multiple respondents stated a preference for hardcopies of the toolkit to be distributed, especially to field offices. Other respondents indicated that future formats could include tablet based applications to allow for easier portability and accessibility among users.

Results showed that over 20% of respondents found the toolkit on their own while approximately 50% found it via a UNICEF colleague. Respondents indicated that there was a gap in the dissemination process of the toolkit within field staff and offices. Several respondents suggested that a potential way to ensure more field staff are aware of the toolkit and know how to obtain a copy, is to communicate to field staff by using the cluster system.

Survey results showed that the toolkit's website is an important medium for individuals to access the toolkit and learn more about cholera. Respondents recommended having a low-bandwidth version of the website to enable those with poor internet connectivity to download the toolkit. This would allow the toolkit to be accessed by more individuals who are working in field locations with a weak internet signal.

Recommendations for future versions of the UNICEF Cholera Toolkit can be found in Appendix B. These recommendations will be shared with UNICEF to: provide guidance on information and content to include in any future versions of the toolkit; determine which formats might be effective for future versions of the toolkit; will give various strategies on how to disseminate any future versions of the toolkit; and, contribute to ideas on how to update the toolkit website.

VI.CHAPTER 6 – Evaluation Limitations and Conclusion

*a. **Limitations***

Despite many positive aspects of the evaluation and the fruitful recommendations that were captured, there are some limitations that should be recognized. First, the survey was available only online. There is a high potential that people involved with cholera work were excluded because of the lack in internet connectivity in remote locations where cholera outbreaks occur or have occurred in the past. Further, the survey was only available in English and not translated into other languages due to financial and time restraints. Feedback and input from individuals in francophone countries that have endemic cholera or have had cholera outbreaks were potentially missed due to the language barrier.

The online survey platform provided an easy and convenient medium to launch a global survey. However, there was a low response to this evaluation survey. While valuable data was collected to inform future versions of the toolkit, a replication of the survey to collect more responses is recommended. If the survey is repeated, it should be publicized on a larger-scale and via multiple humanitarian organizations and outlets.

The survey was disseminated thru various listservs; however, this did not allow for a formal response rate to be calculated because of the inability to determine the number of people that received the survey. Further, while the survey was distributed via multiple cholera, WASH, health, and humanitarian listservs, not all individuals who work directly with cholera were reached. This may have resulted in missed opportunities to gain insightful feedback and recommendations from people not on these listservs. The use of a convenience sample is by

nature non-random and not representative of everyone who works in cholera. Therefore, the reported responses are limited in generalizability given this sampling scheme.

b. ***Conclusion***

Based on the data collected from the survey, respondents view the UNICEF Cholera Toolkit as a legitimate guidance document and source of information regarding cholera prevention, preparedness, and response. Respondents identified a desire for more practical tools and resources to be developed to compliment the overall toolkit. Respondents also indicated a need for more awareness of the toolkit, specifically among those that are based in remote field locations working directly with cholera activities. To create more awareness, the distribution process needs to be enhanced to include more hardcopies and low-bandwidth website version in order to reach the larger cholera response community. With the data and recommendations outlined above, a second version of the UNICEF Cholera Toolkit can be developed to enrich the preparedness, prevention, and response of cholera around the world.

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Appendix A: Survey Questionnaire

Evaluation of UNICEF Cholera Toolkit Questionnaire

Version: 4 (online compatibility)

14 February 2017

Informed Consent

QUESTION NUMBER	QUESTION	RESPONSE	SKIP PATTERN
Q1	We are conducting an evaluation of the UNICEF Cholera Toolkit that was published in 2013. The toolkit is a comprehensive manual aimed to support UNICEF staff and partners to prepare for and respond to cholera outbreaks. The purpose of this evaluation is to understand the use and effectiveness of the toolkit from 2013 to 2016. Based on responses to this survey, recommendations will be made on how to strengthen the content and dissemination process of the toolkit to ensure the resource is most effective for staff and partners in the future. Your participation in this short survey is not mandatory and you can decide to opt out at any time. If you choose to participate, you can decide not to respond to any questions you do not feel like answering. If you have any questions about the survey or the evaluation, you can email the study lead at chad.chalker@emory.edu. The information you provide will be used by UNICEF, the Centers for Disease Control and Prevention (CDC), Emory University and other partner organizations who may provide input and feedback on the evaluation. If you are willing to participate in this interview, please select 'yes' below. If you do not wish to participate in this survey, please click 'no.' Do you agree to participate in this survey about the UNICEF Cholera Toolkit?	Yes ..... 01 No 02	→ **End survey**

I. Background Information

We will begin with some questions regarding your background and work related to cholera.

QUESTION NUMBER	QUESTION	RESPONSE	SKIP PATTERN
Q2	Which of the following categories best describes your professional expertise? *(please select the best option)*	Clinician ..... 01 Consultant/researcher ..... 02 Field staff officer ..... 03 Head of programs..... 04 Program manager ..... 05 Regional advisor ..... 06 Technical advisor..... 07 Trainer or educator ..... 08 Other (specify)..... 88 No response 99	

Q3	Which sector(s) do you work in? *(please select all that apply)*	Behavior change ..... 01 Camp coordination/management ... 02 Community engagement ..... 03 Community health ..... 04 Coordination ..... 05 Education ..... 06 Food security ..... 07 Health ..... 08 Health systems strengthening ..... 09 Maternal and child health ..... 10 Nutrition ..... 11 Risk communication ..... 12 Shelter ..... 13 Supplies/logistics ..... 14 Vaccination ..... 15 Water, sanitation, and hygiene ..... 16 Other (specify) ..... 88 No response 99	
Q4	Which category best describes the organization you work for? *(please select the best option)*	Government ..... 01 International NGO ..... 02 National NGO ..... 03 UN agency ..... 04 Academic ..... 05 Other (specify) ..... 88 No response 99	

Q5	What type of work are you typically involved in when working within cholera? *(please select all that apply)*	Prevention – Water/Sanitation ..... 01 Prevention – Hygiene/health promotion ..... 02 Preparedness..... 03 Public health response..... 04 Surveillance ..... 05 Coordination ..... 06 Communication..... 07 Case management..... 08 Oral cholera vaccines ..... 09 Supplies/logistics..... 10 Risk communications ..... 11 Community Engagement..... 12 Other (specify)..... 88 No response 99	
Q6	How long have you been involved with cholera activities? (e.g. prevention, preparedness, response, surveillance, etc.)	0 – 3 years ..... 01 4 – 6 years ..... 02 7 – 9 years ..... 03 10 or more years..... 04 No response 99	
Q7	How many cholera outbreaks have you worked in/on (including preparedness and response) since 2013?	0..... 01 1 – 2..... 02 3 – 4..... 03 5 or more..... 04 No response 99	

We will now be moving on to questions related to the UNICEF Cholera Toolkit.

II. Basics on the UNICEF Cholera Toolkit

QUESTION NUMBER	QUESTION	RESPONSE	SKIP PATTERN
Q8	Are you aware of UNICEF's Cholera Toolkit, a comprehensive manual published in 2013, aimed to support UNICEF staff and partners from other agencies to prepare for and respond to cholera outbreaks?	Yes ..... 01 No ..... 02 No response 99	**→ Survey success message (end survey)**
Q9	When did you learn about the UNICEF Cholera Toolkit?	In 2013..... 01 In 2014..... 02 In 2015..... 03 In 2016..... 04 No response 99	
Q10	Have you ever used the UNICEF Cholera Toolkit?	Yes ..... 01 No ..... 02 No response 99	**→ Q13**
Q11	How often have you referred to the UNICEF Cholera Toolkit since learning about it (i.e. for technical advice, guidance during an outbreak, etc.)?	0 times..... 01 1 – 3 times..... 02 4 – 7 times ..... 03 8 or more times..... 04 No response 99	**→ Q13**
Q12	During what timeframe(s) did you use the UNICEF Cholera Toolkit? *(please select all that apply)*	Prevention of cholera outbreaks Preparing for cholera outbreaks.. Responding to cholera outbreaks ..... 03 Recovery period of a cholera outbreak..... 04 Other (specify)..... 88 No response 99	

Q13	Please rank each section of the UNICEF Cholera Toolkit based on how much you have utilized that section. *(please **rank** each section either:* not at all, small amount, moderate amount, high amount or very high amount*)*	Learning the basics of cholera ..... Conducting assessments or monitoring cholera outbreaks ..... Cholera prevention ..... 03 Coordination, responsibilities and information management .... Cholera preparedness..... 05 Communicating for cholera preparedness and response.. 06 Case management and infection control in health facilities and treatment sites..... 07 Community focused interventions..... 08 UNICEF procedures for emergency preparedness and response..... 09 No response 99	
Q14	How user friendly is the UNICEF Cholera Toolkit?	Extremely user friendly..... 01 Very user friendly..... 02 Somewhat user friendly..... 03 Not so user friendly..... 04 Not at all user friendly ..... 05 Other (specify)..... 88 No response 99	
Q15	What improvements would you suggest to make the UNICEF Cholera Toolkit more user friendly?	FREE RESPONSE No response 99	
Q16	How do you feel about the length of the UNICEF Cholera Toolkit?	It is too long..... 01 It is too short..... 02 It is the right length..... 03 Other (specify)..... 88 No response 99	

Q17	What do you think about the level of detail regarding the UNICEF Cholera Toolkit?	It is too detailed ..... 01 It is too vague..... 02 It has the right amount of detail .. Other (specify)..... 88 No response 99	
Q18	Are you aware that the UNICEF Cholera Toolkit is available in Arabic, English and French?	Yes ..... 01 No ..... 02 No response 99	
Q19	In which of the following languages have you used the UNICEF Cholera Toolkit? *(please select all that apply)*	Arabic ..... 01 English ..... 02 French..... 03 No response 99	
Q20	Do you think the UNICEF Cholera Toolkit should be available in other languages? *(if so, please indicate which language(s))*	Yes (specify) ..... 01 _____ _____ No ..... 02 No response 99	
Q21	Which format(s) of the UNICEF Cholera Toolkit have you utilized? *(please select all that apply)*	Hard copy of the manual ..... 01 PDF version ..... 02 USB version ..... 03 Web/online version..... 04 I have not used the toolkit at all .. Other (specify)..... 88 No response 99	
Q22	What format(s) of the UNICEF Cholera Toolkit would be most useful for you? *(please select all that apply)*	Hard copy of the manual ..... 01 PDF version ..... 02 USB version ..... 03 Web/online version..... 04 Other (specify)..... 88 No response 99	

Q23	How useful has the UNICEF Cholera Toolkit been to your work?	Extremely useful ..... 01 Very useful ..... 02 Somewhat useful ..... 03 Not so useful ..... 04 Not at all useful ..... 05 No response 99	
Q24	Please elaborate on how useful the UNICEF Cholera Toolkit has been for your work, based on your response from the previous question.	FREE RESPONSE No response 99	
Q25	Do you find the appendices in the UNICEF Cholera Toolkit beneficial?	Yes ..... 01 No ..... 02 I was not aware there were appendices ..... 03 No response 99	
Q26	Why are the appendices beneficial/not beneficial, based on your response from the previous question.	FREE RESPONSE No response 99	
Q27	Have you recommended the UNICEF Cholera Toolkit as a reference to colleagues?	Yes ..... 01 No ..... 02 No response 99	

We will now be moving on to questions related to the UNICEF Cholera Toolkit website.

III. UNICEF Cholera Toolkit Website

QUESTION NUMBER	QUESTION	RESPONSE	SKIP PATTERN

Q28	When was the last time you visited the UNICEF Cholera Toolkit website? (https://www.unicef.org/cholera/)	Within the past two weeks ... 01 Within the last month ..... 02 Within the last six months .... 03 Within the last year..... 04 More than a year ago..... 05 I have never visited the website .. → **Q32** No response 99	
Q29	How useful is the UNICEF Cholera Toolkit website?	Extremely useful ..... 01 Very useful ..... 02 Somewhat useful ..... 03 Not so useful ..... 04 Not at all useful ..... 0 5 No response 9 9	
Q30	What was your reason for visiting the UNICEF Cholera Toolkit website? *(please select all that apply)*	To access the toolkit ..... 0 1 To see if there were additional resources available ..... 0 2 To access appendices of the toolkit ..... 0 3 To learn more background information about cholera ..... 0 4 Other (specify)..... 88 No response 99	

Q31	What recommendations do you have to make the UNICEF Cholera Toolkit website more useful?	FREE RESPONSE No response 99	

We will now be moving on to questions related to the dissemination process of the UNICEF Cholera Toolkit.

IV. Dissemination Process of UNICEF Cholera Toolkit

QUESTION NUMBER	QUESTION	RESPONSE	SKIP PATTERN
Q32	How did you learn about the UNICEF Cholera Toolkit?	Through UNICEF staff..... 01 At a workshop/training ..... 02 Through a colleague outside of UNICEF..... 03 I found it on my own ..... 04 Other (specify)..... 88 No response 99	
Q33	What distribution methods do you think would be effective to distribute/educate UNICEF staff and partners on the Cholera Toolkit?	FREE RESPONSE No response 99	
Q34	Do you think most field staff involved with cholera work are aware that the UNICEF Cholera Toolkit exists?	Yes ..... 01 No ..... 0 2 I don't know ..... 0 3 No response 9 9	

We will now be moving to the final section which provides an opportunity for you to give your opinion on the toolkit overall. This section consists of free response questions. Please take the time to fully give your thoughts and recommendations on the toolkit.

V. Recommendations and improvements for future versions of the UNICEF Cholera Toolkit

QUESTION NUMBER	QUESTION	RESPONSE	SKIP PATTERN
Q35	If you need reference materials in preparing or responding to a cholera outbreak, what are the key documents you use or would use? (*please list in order of most used or most useful)*	FREE RESPONSE No response 99	
Q36	What aspects of the toolkit do you think are the most important?	FREE RESPONSE No response 99	
Q37	What content or resources would you like to be added to any future version of the toolkit?	FREE RESPONSE No response 9 9	
Q38	Do you have any further recommendations for future versions of the toolkit that would improve the effectiveness of cholera preparedness, prevention or control?	FREE RESPONSE No response 9 9	
Q39	If there is any other information or thoughts you would like to share that have not been discussed in previous sections of the survey, please do so now.	FREE RESPONSE No response 99	

Success Message	This concludes the survey. Thank you for your time. If you have any specific questions you can reach Chad Chalker, the study lead, at chad.chalker@emory.edu. If you know of anyone who is involved with cholera work and/or has utilized the UNICEF Cholera Toolkit, please forward this survey along to them.		
End Survey (if participate did not consent to take survey)	Thank you for your time. If you know of anyone who is involved with cholera work and/or has utilized the UNICEF Cholera Toolkit, please forward this survey to them. If you have any questions you can contact Chad Chalker, the study lead, at chad.chalker@emory.edu.		

Some questions were adapted from: The Sphere Project, How do humanitarian practitioners use the Sphere Handbook?; *Preliminary survey analysis (v2), September 2016*

Appendix B: Recommendations to UNICEF for Future Versions of the UNICEF Cholera Toolkit

Table 8: Topics That Could Be Expanded Upon for Future Versions of the Toolkit	
Topic	**Information to include in future updates of the toolkit**
Coordination	Respondents to the survey indicated that guidance on coordination was a high need among those responding to cholera outbreaks. Inter-sectoral coordination, especially between the health and WASH sectors, was mentioned by several respondents as a challenge they face in the field. Guidance information regarding how to coordinator and share information with other sectors would be beneficial for those working in cholera outbreaks.
Protocols	The desire for more protocols on how to report cases and interventions, how to properly manage data, and how to work better with other partners (e.g. government agencies, other NGOs, etc.) was highlighted as a need among multiple respondents.
Integrated approaches	Guidance and examples of how to implement multi-sectoral programs and interventions when preventing, preparing, or responding to cholera was expressed as a gap in the current toolkit. Information on what sectors should be included and consulted for multi-sector activities and how to work closely with these sectors were specific requests among respondents.
Low resource interventions	Respondents requested more practical information and guidance for low resource interventions that can be utilized by organizations that have limited capacity and funds.
WASH specific information	More specific information regarding cholera related WASH advice on interventions and activities was requested by multiple respondents. The current WASH related information is seen as broad and generic, according to respondents.
Mapping	Information on how to map cases and the progression of an outbreak was reported as a need by multiple respondents. More information on mapping would enable field based staff to more quickly understand trends and areas of importance within cholera outbreaks.
Assessments	More detailed information and guidance on conducting assessments and examples of various formats for assessment tools was requested from respondents.
Endemic cholera	Detailed information and strategies on working in countries where cholera is endemic and what methods should be used in these instances was a topic of interest among a few respondents.
Oral cholera vaccine	Respondents reported interests in information on updated guidance related to the oral cholera vaccine, its uses, and effectiveness.

Advocacy	Information and tools that could be used for advocacy purposes when working within cholera prevention, preparedness, and control was a topic of interest among respondents.
Lessons learned	Respondents requested information and resources from previous cholera outbreaks on strategies and interventions that were both successful and unsuccessful. This could include country and context specific information as well.

Format options for future versions of the toolkit

Participants stated that hardcopies of the toolkit appear to be greatly utilized; however, there is a need for more hardcopies, primarily among those who work on the frontlines of cholera outbreaks or those who do not have access to reliable internet and electricity.

Respondents also recommended that future versions of the toolkit include electronic versions compatible with tablets, such as an Android and/or Apple based applications that can be downloaded via the internet and used offline on a small electronic device. This would enable the toolkit to be more accessible and available to those in remote locations and could be downloaded anywhere with a strong internet connection. This electronic application based toolkit could have multiple interfaces and enable users to easily search for specific information that is needed most.

Future formats of the toolkit should ensure that links or appendices referred to in the document are easily available to the user. Since many users are utilizing the resources offline, links to various documents cannot be accessed unless internet is available. It is therefore recommended that all appendices and reference documents be available in PDF format for users to download and store for use at a later time.

Dissemination strategies for future resources and toolkits

Table 9: Recommendations for the Dissemination Process of Future Toolkits Based on Survey Responses	
Dissemination method	**Explanation**
Incorporate the toolkit into ongoing trainings and workshops	Design a specific training on the toolkit to include within other trainings related to cholera. The training could consist of short modules to educate people on what contents are in the toolkit, how to access the toolkit, and how to properly utilize the toolkit during each phase of preparing, preventing, and responding to cholera. This short training could be prepackaged and available online for trainers or educators to use during workshops or trainings related to cholera.
Engage the clusters, key partners, and government ministries	A formal webinar or discussion for global cluster coordinators, key partner organizations, and ministry officials on how they can utilize the toolkit would help reach further target audiences in the dissemination process. Since these organizations and entities are active in many countries where cholera is endemic or where outbreaks occur, engaging them would enable a wider audience to learn about and utilize the toolkit.
Work with country offices to inform field offices and staff	Ensure that the information and awareness of the toolkit is not stopping at country offices. Engage field offices and staff to ensure key personnel are aware of the toolkit. If hardcopies of future toolkits or resources are produced, it is vital they reach the field offices along with the country offices.
Utilize social media	Incorporate social media outlets that either already exist or are created to publicize the toolkit and resources. The social media accounts would allow for a more diverse audience to see the information and provide an outlet for partners and individuals to ask questions or discuss important topics related to cholera.
Hold a publicized event to launch the new toolkit or resources	Organize and promote a launching event that can be based online or during a large conference or workshop that will engage large amounts of people and create awareness and discussion around the updated toolkit or resources. This event could be advertised on social media platforms, listservs, and trainings or conferences leading up to the launching event.

Changes and information to include on the toolkit website

Table 10: Recommendations for the Toolkit Website Based on Survey Responses	
Recommendation	**Explanation**
Low-bandwidth version	Create a version of the website that can be utilized by individuals who have poor internet connectivity and cannot download large files or webpages. Some respondents indicated they could not access the website in its entirety because the website was not compatible with slow internet connections. It is therefore recommended to create a HTML version of the website that can be used by individuals who have slow internet connections.
Make the website interactive	The website can provide an atmosphere and forum to share lessons learned, post useful resources, and ask important questions to those in the cholera community. Adding a forum or chat option to the website will not only attract cholera practitioners to the website but will create a peer learning environment.
Ensure complete versions and resources are easily labeled and accessible	Some respondents reported difficulty with accessing complete versions of the toolkit, inclusive of the appendices and tools, from the current website. Other respondents indicated it was difficult to find additional resources and publications on the website. It is therefore recommended to ensure the layout of the website is easy to read and maneuver and to ensure that the appendices and tools referenced within the toolkit are available to download for use offline.
Publicize the website	To ensure that the website is widely known within the cholera community, it is recommended to publicize the website and the content that can be accessed on the website. Effective strategies to advertise the website could include involving the clusters at the global and national level, using social media platforms, and referencing it at workshops and trainings.