The WASH'Em Project

Summary of the fieldwork in DRC

Overview

The WASH'Em project is funded by the Office of U.S. Foreign Disaster Assistance (OFDA) and is a collaboration between Action Contre la Faim (ACF), the London School of Hygiene and Tropical Medicine (LSHTM) and the Centre for affordable Water and Sanitation Technology (CAWST). It aims to improve handwashing promotion in humanitarian crises by exploring the determinants of hygiene behaviour in these contexts (Phase 1) and developing a software-based decision-making tool to aid in the design of rapid but evidence based programs (Phase 2).

To fulfil the first of these objectives exploratory field work was carried out in Iraq and the Democratic Republic of Congo (DRC). This report describes the work done in the DRC including an overview of activities, the research objectives and methods used and some of the key findings.

The research in DRC was conducted between the 1st of October and the 17th of November 2017.

Objectives of the work in Iraq

1. Describe the determinants of handwashing behaviour during a cholera outbreak in a context which also experiences ongoing conflict and population displacement (DRC).
2. Understand how humanitarian actors currently design hygiene programs and identify the constraints that they have to operate within.
3. Pilot and refine a set of rapid and simple formative research methods that could be replicated by humanitarian practitioners with limited experience and guidance.

Activities undertaken

- **Sought appropriate local permissions**

  Prior to the trip ethical permission had already been attained from LSHTM and from the School of Public Health at the University of Kinshasa. During the trip we also received permission to

undertake the research from the Provincial and District Health Departments in the areas where we were working.

- **Presented at a WASH cluster meeting in Goma.**
  The purpose of this was to inform all relevant actors about the research and to get their input and feedback on the approaches that would be used.
- **Conducted interviews with potential research assistants**
  Three research assistants were selected – two men and one woman. All had good English and experience working with internally displaced people (IDPs). Two were selected to support the qualitative research and one to conduct the survey. We also employed a local female community health volunteer to assist with the survey and build local capacity.
- **Conducted 14 interviews with representatives of the WASH cluster.**
  The purpose of these interviews was to a) understand current approaches to hygiene programming in this context, b) identify the constraints that humanitarian actors have to operate within when designing hygiene programs in emergencies, and (c) get their opinion on the likely determinants of handwashing behaviour among crisis-affected populations in this context. A summary of findings from this part of the research will be presented in a separate report.
- **Visited potential research sites.**
  We intended to select a rural and an urban location for the research as it was assumed that the population dynamics and geographies would differ substantially between these locations (and thus the transmission of cholera and behaviour would also be different). Minova town was selected as the urban location and the surrounding rural areas formed the rural location. The site benefited from having a Cholera Treatment Centre which made it easy for us to track patients and was an area home to a mix of displaced people, returnees and permanent host community. We had initially considered adding Goma as an additional research site but there were safety concerns at the time that limited access to many of the cities regions.
- **Assessed whether the research methods were likely to be feasible and acceptable**
  While visiting potential research sites we spoke with members of the camps and communities and described the methods we intended to use. We also met with staff at the Cholera Treatment Centre and with local community volunteers to develop a mode of following up with patients once they had returned from hospital.
- **Trained the research assistants**
  The training covered the principles of behaviour change and the methods that would be used during the research. It was a three-day classroom based training followed by two days of field-based practice and learning. Following this pilot period, amendments were made to the research tools and the translations.
- **Conducted qualitative research into handwashing behaviour.**
  The methods and findings associated with this are described in this report.
- **Undertook a complementary Barrier Analysis survey.**
  This was led by one of the research assistants who worked together with a local community health volunteer. The methods and findings are described in this report.
- **Oversaw the translation and transcription of qualitative data**

This started during the trip and concluded on the 1st March, 2018.

- **Trialled a set of shortened and simplified methods**
  In the last 4 days of the field work we reviewed the methods we had used and tried to modify them so that they were more simple and rapid to conduct. This was done with the intention of developing methods guides which could be easily replicated by NGO practitioners.

Study Sites

Cholera has been endemic in DRC since 1994. In the eastern provinces of North and South Kivu, cases are registered throughout the year with peaks at the end of the dry season. However, in 2017 DRC experienced its worst cholera outbreak in decades with almost 50,000 suspected cases and over 900 deaths registered between January and December. Although the outbreak spread across 21 of the nation's 26 provinces, the Kivus were the worst affected. South Kivu province has been marred by political instability, conflict and natural disasters and currently houses approximately 400,000 displaced people.

Minova, where the research took place, sits alongside Lake Kivu, a renowned reservoir for *vibro cholera*. There are also two informal IDP camps in Minova and many other IDPs living in the community.

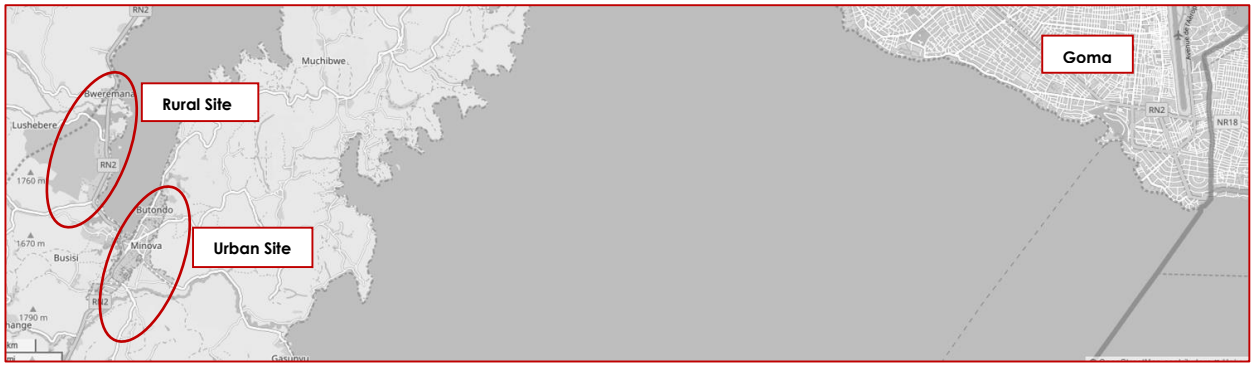

Table 1: Characteristics of study sites

	Urban	Rural
IDPs living in Camps	• Camps are informal and are under pressure to close down. As such there is no formal assistance given to camp residents currently. • Shelters are made by residents from locally available materials. • There is no water access within the camps so residents must walk 10-30 minutes to the nearest surface water source. • Shallow pit latrines and handwashing facilities were constructed by an NGO some time ago. The handwashing facilities are now all broken and many	

	Urban	Rural
	of the toilets are unusable resulting in about 50-100 people sharing a toilet. • Hygiene promotion is occasionally done in the camps but not hygiene kits are distributed.	
IDPs/ living in the community	• The majority of IDPs in the town live among the community on land that is being rented from host community members. • IDP houses are typically more simple than host community members and it is common for IDP families to share a latrine with the host family. • Water access is limited with people walking 10 minutes to 1 hour to reach surface water or a functional pump. • IDPs in communities were less likely to have been exposed to hygiene promotion than those in camps.	• Their situation is similar to those living in town.
Host community and returnees	• As with any town there was a range of wealth but the majority of the host community earned similar incomes to the IDPs (roughly $1.50 per person per day). • Most houses had unimproved latrines but it was not uncommon for these to be shared among several households. • No houses had handwashing facilities • Few houses had piped water with the majority of people walking 10 minutes to 1 hour to fetch water from their lake, rivers or the few functional water pumps. • Host community members were less likely to have been exposed to hygiene promotion than those in camps.	• Houses were more traditional in the rural areas (more likely to be made from local materials than brick and tin). • Income levels were similar to as in the town. • Most homes had unimproved latrines and some had tippy-taps (mostly non-functional) following a CLTS triggering in the area 2 years ago. • Water pumps were more common in rural areas. • Hygiene promotion was done inconsistently in these areas. • The majority of people in this area had been displaced multiple times over the last decade.

Qualitative research

Methods

The research was designed based on the Behaviour Centred Design framework (Aunger and Curtis, 2016). This framework outlines a set of behavioural determinants. For each of these a handwashing specific definition of the determinant was developed as an output of the literature review. By reviewing handwashing literature and looking more broadly a method was then selected to explore each determinant in the framework (Table 2).

Table 2: Methods use to explore behavioural determinants

Behavioural Determinant	Method/s
Socio-demographic factors	Survey
Physical environment	Household Observation
	Site observation (at waterpoints)
Key objects and infrastructure	Behaviour Trial
	Soap attribute ranking
	Water and soap prioritisation
	The ideal handwashing facility
Social environment	Social Network Mapping
Habit	Household Observation
	Handwashing demonstrations
Routine	Routine Scripting
Motives	How would you feel activity/Motive characters
Norms	100 people activity
Priorities	Free listing and ranking
	Water and soap prioritisation
Risk perceptions	Risk perception scaling
Roles	Identity mapping
Context	Personal Histories
Touchpoints	Touchpoint mapping

Above: *Observation at the lakeshore – the main source of water in this area.* ***Below Left:*** *Participants of a focus group discussion take part in the soap attribute ranking.* ***Bottom middle:*** *A man who recently recovered from cholera describes how it affected his social relationships through a social network map.* ***Below right:*** *Participants in a focus group discussion use character cards to describe which motives are associated with handwashing.*

Method reflections

Most of the methods were well accepted and were found to be appropriate to this context. Some of the methods that worked particularly well were the behaviour trials, the soap attribute ranking, the motive characters, the water prioritisation and the personal histories method. Observation was particularly challenging in this context because shelters were very small and dark, thus making it hard for the research assistants to position themselves in a discrete location. The lead researcher also had to cease participating in the observation (leaving it to the local staff) as the presence of a foreigner in the community tended to cause a lot of disruption and cause crowds to gather. Some of the methods took longer to do in this context because lower levels of literacy necessitating longer explanations.

Above left: *An IDP woman who has recently recovered from cholera, describes the norms of area through the 100 people activity.* ***Above middle:*** *An IDP woman whose child recently recovered from cholera free lists and ranks her priorities to do with hygiene and cleanliness.* ***Above right:*** *A fisherman describes his daily routine through picture cards.*

Sample characteristics

Table 3 summarises the population who participated in the qualitative part of this research. The sample intentionally included people who had been cholera cases within the last 3 months (as identified from the cholera treatment centre register). It also included IDPs and members of the host community. Participants were selected purposively to include all regions of the camps and communities; different language groups; different durations of displacement; a mix of genders (although more women were included as they are primary caregivers and are responsible for hygiene in the home) and a range of ages. The study population had a high exposure to hygiene programming with 88% reporting that they had seen hygiene promotion materials or attended hygiene promotion events. Relatively few had received hygiene kits and only 38% had soap in their houses at the time.

Table 3: Socio-demographics and WASH related data for the qualitative sample

Participant Characteristics	N = 104	%
Sex		
Women	67	64%
Men	37	36%
Place of residence		
Camp	22	21%
Community	82	79%
Rural/urban		
Rural	34	33%
Urban	70	67%

Participant Characteristics	N = 104	%
Cholera case within the household in the last 3 months		
No	63	91%
Yes	41	39%
Households with multiple cases	6	6%
Duration since the cholera case was discharged from hospital		
Range	1 - 90 days	
Median	17 days	
Number of people who share a toilet		
Range	3 to 150 people	

Participant Characteristics	N = 104	%
Literacy		
38%Some literacy	56	54%
No literacy	50	48%
Languages spoken (reflective of ethnicity)		
Numbers of languages spoken	8	
Household size		
Range	1 to 13 people	
Average	6.56 people	
Displacement Status		
Number of IDPs	51	49%
Number of returnees (within the last 5 years)	13	13%
Number of host community members	40	38
Duration of residence for IDPs		
Range	1 month to 20 years	
Average	4.5 years	
Duration since return for returnees		
Range of time since returning home	2 months to 5 years	
Average duration since returning home	3.3 years	

Participant Characteristics	N = 104	%
Average	25 people	
Have received a hygiene kit in the last month		
Yes	6	6%
Soap available in the home at the time of visit		
Yes	39	38%
Seen hygiene poster or materials		
Yes	37	36%
Exposure to hygiene events or sensitization		
Yes	76	73%
Exposed to some kind of hygiene programming		
Yes	91	88%

Findings

The boxes and photos below describe some of the key preliminary findings from the qualitative research.

HANDWASHING BEHAVIOUR:

Observations indicated that handwashing with soap and hand rising (with water alone) were rare in these locations. Handwashing with soap was only observed once among the 17 observation households. Handwashing rarely took place after using the toilet but hand rinsing was sometimes practiced before eating, and this was actively taught to children as part of good mannerly behaviour. Hands rinsing was most often motivated by disgust, that is to say that hands were washed when they were visibly dirty (e.g. after returning from the field). Despite the low prevalence of handwashing behaviour people were well aware of the benefits of handwashing and 98% of participants could explain the association between handwashing and disease transmission.

One of the main factors that prevented convenient handwashing was the absence of handwashing facilities. None of the urban houses we visited had a dedicated place for handwashing. In camps facilities had been built several years ago but were now damaged and non-functional. In rural areas some houses had built tippy-taps (as part of a prior Community-led Total Sanitation campaign) but none were observed to be used or working. In focus groups people reported that they disliked the design of the tippy-taps and saw them as a symbol of poverty that they were not willing to adopt. Both water and soap were considered valuable and therefore people were often reluctant to store them near the toilets or kitchens which were often unclean, shared spaces. During behaviour trials participants identified that one of the barriers to handwashing was that there was nothing to cue behaviour at the key times and this prompted several people to design and build handwashing facilities. They were able to do so in a short period of time, using local materials and at no cost.

Handwashing is not considered to be a worthwhile use of soap. Partly this is because NGOs have promoted the use of ash as a free alternative for handwashing. Handwashing with ash

was practiced by some people, but was described as unpleasant and undesirable, resulting in it being used infrequently. Where soap is available in households it is normally laundry powder or laundry bar soap. Although soap is rarely distributed by NGOs, in cases where it is, it is the laundry bar soap that is normally procured. However, participants explained that they would never use this for handwashing as it smells unpleasant and makes their hands dry. In camps and among host community members people live very communally. It is common for people to share containers and tools, share food and give water to a neighbour if they are running low. It was considered acceptable to ask a neighbour for soap to do laundry or for bathing but the idea of asking for soap for handwashing was considered humorous and people reported that you would be seen as trying to be above others if you did so.

In this setting it was common for daily household earnings to be less than $US 2. Daily routines were entirely oriented around earning enough to buy food for that day. With these limited resources adults would normally only eat once a day. People explained that their constant hunger constrained their capacity to remember to be hygienic (for example this was the main reason people said they often forget to wash hands prior to food preparation or eating). In order to earn sufficient money, adults spend most of their day in the fields, leaving young children at home unaccompanied. Parents acknowledged that they were worried about their children's hygiene during these hours, but felt powerless to change this situation. This suggests that in this context the nurture motive may be less appropriate to utilise to promote handwashing. Although handwashing was a socially desirable behaviour, observed transgressions in handwashing practice were rarely socially sanctioned. This was largely because people normally adopted a forgiving attitude towards such transgressions, assuming that others, like them, must be dealing with poverty, hunger and psychological trauma (due to conflict and displacement). Affiliation (the desire to belong in a social group and therefore conform to group behaviours) did not emerge as a strong motivator of handwashing in this context. During the motives activity people explained that many of their close friends have poor hygiene but this just due to their circumstances rather than their character. In contrast people were judgemental of the handwashing behaviour of their spouse and explained that they could not be attracted to someone if they did not have clean hands. People did think that at a community-level handwashing increased in response to the cholera outbreak. People thought that for the majority of people this would only cause a short-term change in behaviour, but for others it could result in improved habits.

Left: *A mother helps her child to rinse his hands prior to eating.* ***Middle:*** *A man returns from the field and rinses his hands to remove visible dirt.* ***Right:*** *A woman in the camp cleans the communal toilet facilities which do not have any handwashing facilities.*

Below left: *In rural areas some people had built tippy-taps as a result of a previous Community-led Total Sanitation campaign. However none of they were all unused or broken and people explained that they associated the tippy-tap design with poverty.* ***Below right:*** *As part of a focus group discussion with IDPs, participants categorised the types of soap they access in the camp compared to the soaps they used to have access to prior to displacement.*





Above left: *During the motives activity it emerged that handwashing was closely associated with being attractive.* ***Above middle:*** *Children are often left unattended during the day. Here children help themselves to yesterday's left-over food.* ***Above right:*** *People commonly cited that their psychological wellbeing, poverty and hunger created major barriers to being hygienic, as seen in this ranking activity.*

ATTITUDES AND EXPERIENCES OF CHOLERA:

All participants were well informed about cholera and able to explain all key transmission routes. In focus group discussions people ranked cholera as the health issue that they were most concerned about and thought that it was the health issue which most commonly affected members of their community. In contrast diarrhoea was considered a mild health issue that did not have severe consequences and was only due to 'disagreeable food'. Despite this reported 'fear' of cholera people simultaneously felt that cholera was just like any other disease and their familiarity with it over the years had allowed them to develop the belief that it could easily be treated (for free) and therefore rarely resulted in death. Consistent with this, many research participants told us that 'black people don't die of germs'. This saying was used to rationalise the fact that although most people viewed their environment as dirty and contaminated, and often lacked the means to be hygienic, it was rarely perceived to have adverse consequences. These factors have contributed to cholera no longer being seen as an outbreak disease but rather as a chronic health problem that the population had to manage and tolerate.

Although participants knew that good hygiene practices could reduce the likelihood of getting cholera most people who had contracted cholera felt that in their case it must have been due to bad luck, with the high prevalence of cases causing hygienic people like themselves to fall ill. Since most people knew someone who had had cholera recently there was minimal stigma towards the disease. People perceived it as normal for young children and older people to get cholera – in both cases people explained that this was because it is hard to control their behaviour. However, if healthy adults contracted cholera this was still met with confusion and stigma. Adult cholera cases reported that friends tended not to visit them when they heard they

had got cholera. Immediate family and neighbours did not tend to 'stay away' nor change their opinion of the person with cholera. These individuals often played an important role in helping the cholera patient to recover. In addition to proximity, this may explain why intra-household transmission and transmission between neighbouring households was common in this region (and is well documented in the literature). Another contributing factor in this region is that cholera case management and follow-up remains suboptimal. On discharge patients are given 7 water treatment tablets and a small bar of laundry soap (although often they do not receive either). Providing such a small amount of hygiene provisions has the effect of distorting people's risk perception, facilitating beliefs that it is not necessary to sustain good hygiene behaviours in the long term. This is of particular concern given that cholera cases may continue shedding for up to 50 days post discharge.

Although people had strong attitudes towards cholera as a disease, people on average had a poor understanding of the socio-economic impact that it could have on a household. Cholera cases described that they often felt weak and were unable to fulfil their normal tasks for up to a month after being discharged. In a context like DRC where people are generally living in extreme poverty and need to work in order to put food on the table each day, this has a substantial impact on the family economy. With less available of money, people said that they were normally unable to afford products like soap in the weeks after being discharged. Additionally, having a cholera case in the household often meant that the family could not collect as much water as normal (either because the women of the household were personally affected or because they were involved in caring for male household members who were sick). Both of these factors obviously place other family members at higher risk of contracting cholera.

Lastly people tended to associate cholera with people who they viewed to be categorically different from themselves. In focus group discussions people described a typical cholera cases as someone who is already sickly, has little respect for themselves or others, is arrogant and is poor and uneducated. Host community members thought cholera more commonly affected IDPs, while IDPs felt that they often had to behave more hygienically in order to rise above their circumstances and were therefore less likely to get cholera than the host community.

Above left and right: *The behaviour trials ran for a period of 10 days. Participants were challenged to identify barriers to handwashing and come up with their own solutions to them. Here we see a man who is an IDP and whose daughter had cholera recently. In just one day he managed to build a handwashing facility with local materials that didn't cost him anything. During the motives activity it emerged that handwashing was closely associated with being attractive. Despite the absence of any handwashing facilities in his community from which to get ideas, he was able to develop a truly innovative design. It is located immediately opposite his toilet, making it hard to walk past, has stones for drainage and a specific location for water and ash to be kept.*

Below left: *A woman holds the limited amount of water tablets that she was given when she was discharged from hospital after having cholera.* ***Below middle:*** *In focus group discussions participants wer asked to imagine and draw the type of person who is most vulnerable to getting cholera.* ***Right:*** *People in this region had become highly familiar with cholera and had begun to view it as more normal because they knew that good treatment was available for free at the Cholera Treatment Centre.*

Implications for practitioners

- **Knowledge:** Almost everyone understood the association between handwashing and disease transmission. This means that we can stop educating people about disease transmission as part of programs.
- **Behavioural settings:** Creating dedicated places for handwashing would help to reposition handwashing as a norm and act as a cue or reminder to prompt behaviour. Prior programs that have attempted to do this have installed facilities that are not considered pleasant to use and which break easily. New initiatives should incentivise family units or compounds to design and build their own facilities that are appealing and affordable. Doing these initiatives at the compound level could work well in this context since neighbours are already reliant on each other for many aspects of their daily lives. This would enable families to pool their resources so that they are able to purchase soap for handwashing. A collective commitment to handwashing among the compound members might make handwashing more social judged and therefore adhered to. This may also enable soap and water to be kept at the handwashing facilities.
- **Products:** There is a need to change perceptions towards soap. This may require organisations to reduce the extent to which they promote handwashing with ash. It will also require hygiene promotion activities that highlight the non-health benefits of soap, such as how nice hands smell afterwards or how soft they feel. This should be done through experiential learning (e.g. people trying different soap products and seeing how they smell). There may also be opportunities to work with women's groups to rebrand/decorate locally produced soaps to make them more appealing.
- **Supporting cholera cases upon discharge:** Stronger efforts should be made to map where cholera cases reside and to support patients upon discharge. This will be critical for reducing transmission within the household and among neighbouring households. Tailored hygiene promotion and hygiene kits should be provided to families with a cholera case and their neighbours. Ideally cholera cases should receive hygiene provisions (e.g soap) sufficient for the first three months after their discharge (the period when they are still able to transmit the disease). The provision of hygiene products for this period should be staged. With some

given immediately and further provisions given once the family has built a handwashing facility, for example.

- **Shifting community perceptions towards cholera:** Cholera is understood as a disease but its increasing familiarity is breeding complacency. Rather than continuing to tell people about the health risks of cholera it may be more effective to humanise the disease and emphasise other types of impacts that people are currently unaware of – such as the impact of cholera on household economies and on a person's social relationships. It is important that this be done in a manner which is not just fearmongering but rather helps people to see a now familiar disease in a new light. One way of doing it would be to film short videos with people who have had cholera and get them to describe their personal experiences. These could then be taken house to house when doing hygiene promotion and shown on tablets/mobile devices.
- **Motives:** Disgust is currently the primary motivator of handwashing but could still be heightened by implementing activities like Glow Germs (www.glogerm.com). Motives that have been previously used to promote handwashing behaviour such as nurture and affiliation are likely to be less effective in this context than the motives of comfort and attract. One way that this could be done is by creating a picture or video-based narrative that links handwashing with romance and beauty or positions it as a way of feeling momentarily more comfortable despite difficult circumstances.
- **Keeping a broad view:** People in this context are under a lot of psychological and economic strain. Those delivering hygiene programs need to be mindful of the much bigger issues that people are facing and ideally connect people with other development initiatives which try to address these issues.

Barrier Analysis

The qualitative work was complemented with a Barrier Analysis (BA) Survey which was undertaken by one of the research assistants and a local community health volunteer. Table 4 provides a summary of the key findings.

Table 4: Summary of key findings from the Barrier Analysis Survey

Camp	Communities
• Doers were more likely to report that handwashing was made easier if infrastructure and products were available like water, soap and containers. In particular doers felt that clean/potable water was important for handwashing. • Doers also reported that having a job or a reliable source of money made handwashing easier as it meant that more soap and containers could be purchased. • Non-doers tended to identify the lack of water as a major difficulty for handwashing with soap (while doers tended to find that it was soap that was the primary barriers). • Doers were more likely to perceive their chance of getting cholera within the next 3	• Doers were more likely to report that the factors that made handwashing easier were primarily cognitive – for example they explained that handwashing is easier if you knew that it could prevent disease and if you had the determination to practice it. • Non-doers on the other hand were more likely to report that the factors that made handwashing easier were the availability of physical infrastructure and products like water and soap. • Doers were more likely to say that they experienced no difficulties in managing to wash their hands at critical times

Camp	Communities
months as 'somewhat likely', while more non-doers reported that it was 'not likely at all'. • The 'block leaders' and 'cleaning representatives' in the camp create an additional positive social pressure which encourages handwashing (obviously this is absent in communities). •	• Doers were more likely to report that handwashing became more difficult when they were facing time pressures. • Non-doers were more likely to think that the people around them disapprove of handwashing.* • Doers were more likely to think that it was God's will that people get Cholera. • Non-doers more commonly reported that there were no cultural rules which discouraged handwashing. • Non-doers are more likely to think there are community rules which encourage handwashing.

Common findings

- 83% of people said it is difficult to access the materials they need for handwashing (like soap and water.
- Fear of cholera was cited as something that made it easier to wash hands.
- Almost everyone perceived cholera as serious (89%) but far fewer were convinced that handwashing would definitely prevent cholera (57%).
- The majority of people found it very hard or somewhat hard to remember to wash hands (77%) and explained that this was partly because of hunger, instability, and the necessity to work long hours.
- People tended to think that people in their immediate social network approved of handwashing whereas people from other areas or people that they disliked were considered to disapprove – indicating strong in-group/out-group tendencies among these populations.

* This finding should be interpreted with caution as the local translation of the terms 'approve/disapprove' may not have been that accurate.

General reflections on the Barrier Analysis method

- This method works very well when complemented with qualitative research. It was able to confirm some of the qualitative insights (eg. hunger and stress making people less able to practice handwashing). The insights from the Barrier Analysis can be interpreted more soundly by setting them against the broader qualitative dataset.
- When doing the Barrier Analysis in this setting we had tried to sample every fifth house (although random selection is not a requirement of BA) which has a child under the age of 5. Although this was done in order to get a diverse sample and create a fair way of selecting participants from among a broader population, it was actually perceived as unfair by many people in the camps and communities. In humanitarian response it is common for everyone to receive interventions equally so those houses that did not participate perceived that they may be missing out on something (even if this was not the case).
- To be done effectively Barrier Analysis requires close supervision and diligent data collectors. Staff need to treat every interview with equal care and precision. The repetitiveness of the process can easily lead to data collectors cutting corners by rushing through the interview without sufficient probing or reflection or changing the way questions are asked.
- In DRC and in the previous survey we conducted in Iraq our translators struggled to come up with a local term for 'approve' and 'disapprove' as it is used in the social norms

questions. The terms chosen ended up being more serious in nature and more about bearing witness to the behaviour.

- Often Barrier Analyses generate results that are inconsistent (e.g. responses to different questions contradict each other directly) or that don't really make sense behaviourally (e.g. we would expect that non-doers were more aware of cultural taboos discouraging handwashing and less aware of community rules that encourage hygiene). The tendency is to disregard such results but this surely calls into question the validity of the other results.
- The Barrier Analysis covers a lot of determinants in a short period of time through quite focused questions. However, such a format may not provide an appropriate setting for participants to actually answer the questions being asked. For example, if a stranger (the data collector) asks a set of rapid questions and then asks about cultural taboos, participants may be likely give a socially desirable response since answering honestly may not align with the format.
- The analysis process for BA surveys is highly subjective but this is rarely acknowledged within the method. As with any analysis of qualitative data, the number of categories and types of categories created will shape the results of the data substantially.

Development of the rapid methods

During the previous fieldwork in Iraq our team had developed and refined the following rapid methods: handwashing demonstrations, risk perception scaling, motive characters, and touchpoint mapping. All of these methods were trialled in DRC. In generally they worked well and required limited adjustment. Towards the end of the field work we also worked on refining a few additional methods. The aim of this process was to develop additional methods that were shorter to conduct and could easily be taught and replicated by humanitarian practitioners. Table 5 provides a summary of this process.

Table 5: Description of how methods were adjusted to make them more simple and rapid.

Original Method	How it was adjusted
Personal histories: This method was developed for this research. It involved asking people to draw pictures of themselves before the crisis and currently and then getting them to narrate their journey between these time points. The last part of the activity was to use this timeline to understand how their hygiene behaviour had been affected by these experiences.	We kept the drawing part of the method since acted as a useful 'icebreaker' which seemed to create the right mind frame for participants to feel comfortable articulating their experiences. We added more structure to the method, with specific, focused questions that we had found to generate the most useful responses. These were also drawn from the identity mapping tool. Lastly we ask some focused questions about hygiene behaviour.
Water Prioritisations: The method involves using plastic cups to simulate the number of jerry cans of water that the person collects per day. These help the participant to explain the way that they utilise water in the home. The researcher then changes the situation by adding or removing cups to simulate scarcity or plentiful amounts of water and then asks the participant how their water use would change.	We added a worksheet for the researcher, with focused questions and images of cups for them to be able to capture what the respondent says.



Left and middle: *Two people, residing in the IDP camp, take part in the Personal Histories method which involved drawing pictures of themselves during their journey of displacement.* ***Right:*** *Another woman, residing in the camp, takes part in the Water Prioritisation activity which involves explaining water use with the aid of plastic cups to represent jerry cans.*

Dissemination Meeting

Key stakeholders will be invited to dissemination meetings in Goma and in Kinshasa in March/April 2018.

This research was led by Sian White a Research Fellow at LSHTM but was made possible with support from the Goma ACF Base, the local government, local community health volunteers and the dedication of the research assistants involved in this work: Anna Mutula Christine, François Kawalina Mazimwe and Modeste Munganga Buroko.