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WASH IN EMERGENCIES RESEARCH PRIORITISATION MEETING: BRIEFING PAPER

JUNE 29–30TH 2017

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EXECUTIVE SUMMARY

INTRODUCTION

There are noted gaps in the evidence supporting and evaluating water, sanitation and hygiene (WASH) interventions in humanitarian crises. Convened by Elrha's Research for Health in Humanitarian Crises (R2HC) programme, a meeting in Windsor, UK, took place from 29–30th June 2017, whereby a group representing international non-governmental organisations (NGOs), academic institutions and donor agencies gathered to identify and discuss the priorities for WASH research and to consider a potential a WASH research agenda specific to humanitarian crises.

KEY POINTS

- *Lack of a strategic research agenda* – There is no consolidated or focused research agenda by agencies active in emergency WASH research.
- *Barriers to WASH research*
    - Lack of resources and shared tools
    - Difficulty in conducting research in humanitarian crises contexts
    - Differences in needs and expectations of responders, academics, and donors.
- *Funding WASH in humanitarian crises research* – Despite increased funding for humanitarian research, certain mechanisms, such as R2HC, receive few funding proposals from the WASH sector.
- *Proposed research priorities* – An initial list of research areas was proposed, through a research priority-setting exercise. This list is neither exhaustive nor meant to corral specific research objectives of the global WASH community. The discussions highlighted the need to extend this exercise for inclusion of the broader WASH Cluster membership, as well as others active in the humanitarian response. Meanwhile the following priorities were highlighted:
    - Effectiveness of WASH to prevent and control cholera
    - Use of oral cholera vaccination with WASH interventions
    - Evaluating the use of hygiene kits
    - Menstrual hygiene management
    - Effectiveness of WASH integrated with nutrition programmes

CONCLUSIONS AND RECOMMENDATIONS

- Setting a clear and complementary sector-wide research agenda is key to coalescing the academic, programmatic and funding communities around the goal of getting a coordinated set of priority WASH research studies developed and funded in the next 2-3 years.
- A research repository with existing research and accepted protocols is urgently needed.
- Promoting the findings of research already conducted, and expanding the research agenda through the Emergency Environmental Health Forum (EEHF) and the Global WASH Cluster will continue.
- Finally, establishing a Technical Working Group (TWG) within the Global WASH Cluster is recommended.
- Further work with the wider global WASH community to disseminate and solicit feedback on these initial recommendations will take place before the end of 2017 and presented at the upcoming 2018 EEHF for wider discussion.

BACKGROUND

Over the last 10 years, there have been numerous investigations and systematic reviews into the evidence of water, sanitation, and hygiene (WASH) interventions in humanitarian crises (1–9). Despite different approaches and objectives, there is general consensus within the reviews that: i) actual evidence supporting WASH interventions used in humanitarian crises is lacking which is largely based on operational experience and institutional memory; and, ii) nearly all of the current evidence is focused on household water treatment, with almost no research effort into sanitation, hygiene, or combined WASH projects. Despite the increasing standardisation of humanitarian work, the evidence base for current practice remains weak. Moreover, the guidance for humanitarian WASH projects, including the Sphere Standards (10), were shown to have virtually no evidence base for included standards, guidance notes or SMART (Specific, Measurable, Assignable, Realistic, Time–related) programme indicators (11–15).

The knowledge gaps and weak understanding of complex WASH interventions undermines the confidence of humanitarian responders, and calls into question the effectiveness and cost–efficiency of chosen strategies. With vulnerable population numbers increasing due to political unrest and environmental disasters, and the annual funding shortfalls (USD$8.9 billion funding gap in 2016) (16), there is demand for more efficient, effective and well–considered public health programmes. Elrha's R2HC programme, funded by DFID and the Wellcome Trust, is unique in that it is one of the few initiatives dedicated to funding public health research in humanitarian crises; yet, through four annual Calls for Proposals (2013 – 2016), of 383 submitted Expressions of Interest, only 24 applications (6.2%) were in the field of WASH. Of these, out of 121 applicants invited to develop full proposals, only nine related to WASH (7.4%), with an eventual four research grants awarded in the field of WASH, out of 32 grants awarded. This highlights the fact that WASH remains an under– researched area of public health in humanitarian crises and echoes other calls for evidence by international donors (11, 17–23). Considering the paucity of evidence supporting WASH interventions and the sparse number of WASH research applications, there appears to be a barrier preventing the submission of quality research proposals that would enable the generation of findings to improve the evidence base for WASH interventions during humanitarian crises.

In November 2016 during the 7th Emergency Environmental Health Forum (EEHF) in Kathmandu, Nepal (24), a group of humanitarian responders, academics, donors and Elrha discussed the possibility of conducting a research priority–setting exercise to explore which areas of WASH in humanitarian crises require particular attention for further enquiry, research and investment. A two–day meeting, held 29–30th June 2017, was convened in Windsor, UK, with fourteen representatives from a small group of agencies and research institutions. Attendees are listed in Annex A. The objective of the meeting was to initiate discussions to define critical research priorities for WASH in humanitarian crises, and to develop a plan to increase awareness of the

WASH research agenda with a view to generating an increased number of quality research proposals and, ultimately, improving the impact of the WASH humanitarian response.

MEETING CONTENT

The meeting agenda consisted of a series of sessions designed to enable participants to: i) *provide information* on research priorities from their organisational perspectives, ii) to *discuss* WASH research priorities, and iii) to *define* a way forward. The following briefly describes the process taken to develop an initial consultative research agenda for the humanitarian WASH sector.

The first sessions provided an overview of previous and current research, and enabled participants to share information from individual organisational perspectives. This provided a common foundation for later discussions, and included: the results of a scoping review and an overview of knowledge and current gaps with WASH in humanitarian crises; research priorities, and internal and external mechanisms of using research and research uptake in participants' respective agencies; and an overview of relevant research design and methodologies that can be used in crises contexts.

Open discussions on conducting research on WASH in humanitarian crises were then explored, and were revisited over the two days, focusing on what the research priorities should be and how to ensure best use of research. Main points included: using research for advocacy and policy changes; translating research into practice; establishing academic–humanitarian practitioner research collaborations; and specific crosscutting issues around where research should be focused, including within particular contexts and populations (see Annex B for full list).

Three important WASH research areas were selected for further discussion: i) recurrent and emerging diseases; ii) coordination, governance and market-based programming; and iii) commonly implemented but under-researched interventions. In small groups, participants discussed potential critical research questions in relation to these topics. These discussions generated approximately 75 research topics/questions across the three research areas, which were then prioritised through individual balloting, resulting in a list of issues the group members considered to be the most critical areas for current and future WASH research (See Annex C for the full list of topics and research questions).

R2HC and USAID/OFDA research objectives were presented and there were discussions on currently held beliefs and barriers around conducting WASH research. The meeting concluded with development of a tentative plan to further advance the research agenda both within the group and with the wider humanitarian WASH sector.

KEY POINTS

Below is a summary of key points raised and conclusions reached during the two-day meeting.

THERE ARE FEW COMMONALITIES BETWEEN RESEARCH AGENDAS OF ORGANISATIONS

Information provided by representatives from the six agencies that shared their current research portfolios suggests that agencies work independently of each other, self-selecting research projects and thematic areas of specific relevance to their organisational interests and priorities. Research priorities are generated internally, arising from field operational experience and matching the priority focus of individual agencies. For example, Médecins Sans Frontières (MSF), as a medical organisation, demonstrated how their WASH research aims to examine the impact of WASH on communicable disease burden and particularly on outbreak-prone disease. Similarly, research conducted by Action Contre la Faim (ACF) aims to evaluate the effectiveness of WASH on nutritional outcomes such as relapse rates and treatment duration in their emergency nutrition programmes. Comparatively, Oxfam highlighted their research focus on community participation and engagement, and new systems for operations and maintenance of infrastructure. The variation in research seen from this small group reflects the variability of field operations, contexts and populations served by agencies in humanitarian WASH programmes. There were few commonalities between internal research portfolios. Participants remarked that it might not be feasible for all agencies to adhere to a common research agenda due to individual agency priorities, although a common agenda might help to guide and initiate future research activities.

BARRIERS FOR CONDUCTING RESEARCH FOR WASH IN HUMANITARIAN CRISES

The need for rapid response posed by humanitarian crises often proves challenging considering the acute needs and unpredictable environments, which make traditional research approaches difficult. The space for research in crises, particularly that involving differing standards of care, experimental interventions or randomisation, can be limited and yet evidence-based programming in such settings is crucial. Agencies need to have an adaptive research agenda to overcome these obstacles. Common hurdles to WASH research in the emergency context were identified as:

- Lack of readily-available and appropriate financial resources required
- Lack of consistency of tools and standards (i.e. protocols and impact measures)
- Limited data sharing, programme reports and access to evaluations conducted by different agencies across the sector

- Challenging ethics considerations when conducting research in crises contexts; and also issues or delays with ethics applications
- Differences in needs and expectations of research between humanitarian practitioner responders, academics, and donors
- Natural difficulty and evolution of humanitarian crisis contexts
- Time and space to conduct research; the need for expert personnel, additional team management and resources

RESEARCH UPTAKE SHOULD BE PRIORITISED

It was recognised that if research is to be used to improve practice and policy, mechanisms for research uptake and use are required to be in place from the outset. Of the six humanitarian agencies represented, some had specific programmes to increase research outputs, such as operational research training, learning schemes, or dedicated research units. There were also examples of academic–humanitarian collaborative partnerships with universities in the U.S., UK, Europe, Africa and Asia whereby agencies collaborate on their programs and evaluations with Masters (MSc) and Doctoral (PhD) students.

A notable barrier remains on how to establish and maintain connection to the field. Participants recommended that research uptake needs careful consideration in dedicated training programmes, to build local capacity and as an advocacy tool across the WASH, health, nutrition and shelter humanitarian clusters. Revisions to guidelines and manuals need to be evidence–based with SMART indicators to aid monitoring and evaluation. Participants noted that a cultural shift is required within most organisations to better carry out and incorporate research within programmes.

RESOURCES ARE NEEDED TO ASSESS DIFFERENT TYPES OF RESEARCH OUTCOMES

It was noted that consideration of appropriate outcome measures and research design is important, not only for researchers, but also for humanitarian agencies and donors. Research can be used to test proof–of–concept or the efficacy and effectiveness of interventions, but outcome frameworks will vary depending on the research design. Outcomes for WASH research are wide–ranging and can include implementation fidelity, compliance, environmental indicators (e.g. water quality) and a long list of health outcomes. The measurement of health outcomes may not always be feasible or necessary with WASH interventions, and proxy indicators can be used to assess impact. Funding bodies need to be flexible and reflective, like the research designs, to allow for variable outcome measurement unique to the WASH sector.

SETTING CRITICAL RESEARCH PRIORITIES FOR WASH IN HUMANITARIAN CRISES

The following areas were ranked highest from the approximate 75 free-listed topics/questions by the 14 participants. These were considered the most pertinent research areas for the sector to focus on. In order of rank, the tally indicates the number of participant votes the topics received.

Topics	Tally
Cholera and the effectiveness of WASH interventions (rapid response, interventions etc.)	13
OCV with WASH interventions (integrated packages etc.)	7
Hygiene kits (use, items, distribution, effectiveness)	5
Menstrual hygiene management (kits, spaces, programmes, cultural context etc.)	5
Undernutrition and effectiveness of WASH (preventing relapse, delivery through SAM clinics, ambulatory delivery, targeting caregivers)	4
Pathogen characterisation and transmission pathways	4
Maternal health, safe births, neonatal health, and WASH interventions (baby WASH, safe birth environments, etc.)	4
Behaviour change for handwashing at critical times	3
Effective coordination (WASH cluster, inter-agency, etc.)	3
Measuring sanitation access and use	3

PROPOSED WAY FORWARD

This preliminary meeting was representative of the thinking of the small number of agencies and institutions represented, and a snapshot of their reflections. Engagement of the entire Global WASH Cluster was however recognised as being crucial to ensure the involvement of the broader group of those involved in the humanitarian WASH response. This meeting was intended to gauge interest and undertake initial discussions on the direction for future WASH in humanitarian

crises research. The group made the following recommendations to develop and maintain the momentum of the emergency WASH research agenda:

- Conduct a webinar to disseminate information from the meeting to the global WASH community.
- Conduct a survey amongst Global WASH Cluster members to map the research landscape through current and future WASH research, and to identify research priorities.
- Prepare a paper documenting the results of the above survey and outcomes of this initial meeting, with a consolidated list of WASH research priorities, for submission to a peer–reviewed journal.
- Develop a knowledge management/data repository of publications (published and grey literature) within the Global WASH Cluster
- Establish a Technical Working Group (TWG) within the Global WASH Cluster for research and knowledge management. Consider the potential for identifying funding for a website and platform to manage the TWG.
- Investigate the potential for connecting WASH research prioritisation activities into other events such as the EEHF, WEDC, and UNC Water and Health conferences.

CONCLUSION

As the scale, duration and complexity of humanitarian crises increases, it is crucial to strengthen the evidence base for interventions used in these high-risk contexts. Many agencies are active in the humanitarian WASH sector, but the evidence for guiding effective interventions is limited. More and better research is needed, funding opportunities need to be made more available and knowledge needs to be shared among agencies and institutions. Establishing priority research areas is important to best utilise limited available resources, and to foster a strong research environment.

The meeting that resulted in this paper aimed to facilitate initial discussions on the barriers humanitarian agencies face in conducting WASH research, and to initiate the setting of a research agenda. Identified priorities reflect the opinions of those that participated in the meeting and are intended as the starting point for deeper and wider discussions with a broader group of stakeholders. Dedicated agreement and commitment from the global WASH community is necessary to increase research within the humanitarian WASH sector and to ensure the uptake of new evidence into the humanitarian response.

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ANNEX A: LIST OF ATTENDEES

There were 14 participants:

- Andy Bastable (Oxfam)
- Oliver Cumming (LSHTM)
- Claudio Deola (Save the Children)
- Caetano Dorea (University of Victoria)
- Robert Dreibelbis (LSHTM)
- Tim Grieve (UNICEF)
- Tom Handzel (CDC)
- Daniele Lantagne (Tufts University)
- Jean Lapegue (ACF)
- Peter Maes (MSF)
- Melissa Opryszko (OFDA)
- Dominique Porteaud (UNICEF/WASH Cluster)
- Brian Reed (WEDC)
- Rafael Van Den Bergh (MSF)

Additional attendees included: Maysoon Dahab (ELRHA), Sarah Palmer-Felgate (ELRHA), and Lauren D'Mello-Guyett (LSHTM) with Travis Yates (Independent Consultant).

ANNEX B: LIST OF CROSS-CUTTING THEMES ACROSS ALL RESEARCH QUESTIONS

Crosscutting themes:

The following crosscutting contexts and populations were considered priority areas across all research questions.

Contexts of concern:

- Displacement
- Transient situations/migration
- Fragile states
- Phase of the crisis (rapid-onset, chronic protracted)
- Stage of response (acute, post-acute, recovery, reconstruction)
- Camp vs. rural vs urban

Populations of concern:

- Refugee/IDP
- Equity
- Women
- Children (under five years of age and under two years of age)
- Elderly
- Disabled
- Migrants
- Unique populations

ANNEX C: LIST OF RESEARCH PRIORITIES AND QUESTIONS BY RESEARCH AREA

Over the course of the afternoon, all participants worked in groups to discuss the three research focal areas and conducted a free-listing exercise to note research questions that they felt should be prioritised.

GROUP 1: RECURRENT AND EMERGING DISEASES

Cholera

- Relative effectiveness (and cost-effectiveness and do we combine) of WASH interventions alongside OCV
- Human to Human transmission – Design, test, investigate
- How do using WASH rapid response teams (sword and shield) for 50 m quarantine zones affect case detection, WASH Interventions and case management?
- Field diagnostic tools to reduce non-cholera load at CTU
- Impact of early response vs. delayed (i.e. 1 or 2 month later)
- Behaviour change during cholera

Emerging diseases (Current and growing concern)

- Vector diseases – more importance with increased resistance
- Maternal health
- Health care associated infections
- Malaria
- Acute Respiratory Infections
- Pathogens and pathways – cost of detecting specific diseases – which infections are more dominate – so how to target interventions to address those specific pathways

Undernutrition

- Impact and cost-effectiveness of WASH on SAM
- Effective behaviour change targeting caregivers at infant and young child feeding centres
- Distribution of hygiene kits at SAM clinics – rate of return/relapse

GROUP 2: COMMONLY IMPLEMENTED BUT UNDER RESEARCHED

Hygiene Kits

- Effectiveness of standard kits vs. custom –
    - Considering: Use / Acceptability / Timeliness
    - What items are needed? What items are missing?
- Follow-up distributions of kits (contents/timing)
    - How long should kits be distributed
    - How does subsequent distribution work?

- Distribution of kit: Initial consultation vs. Standardised kit and no consultation

Menstrual Hygiene Management

- Appropriateness of items (foundational research)
- What are minimum needs (similar to hygiene kit contents) – best disposal items
- What are the components of the MHM kit: do they fit the needs, disposal, context
- How do we develop culturally appropriate MHM messaging?
- Can we set up MHM spaces in crises– laundry, sanitation facilities, in camps, in urban and rural contexts?

Household Water Treatment

- What is best 'long-term' HH option for high compliance and consistent use: chlorine vs. filter
- What else needs to happen to ensure use – frequency of visits, what behaviour change – etc?

Effectiveness of Water Treatment

- Bulk treatment vs. HWT
- Decentralised bulk treatment vs. HWT

Household Chlorine Spraying

- Efficacy?
- Secondary factors – social wants or stigma associated to spaying?

Treatment of waste

- Medical waste management – items in emergency/non-emergency that need special treatment (lab reagents, HCF faecal waste)
- Ebola waste – faecal sludge management (hospital vs. not)

Water supply rehabilitation

- What is the cost-effectiveness of rehab vs new vs O&M?
- Do water committees work? And why not?
- How do we set up O&M systems in crises settings?

Sanitation

- How do we measure use and access to sanitation– can we set up standard measurements?
- How is faecal sludge managed in crises?
- What are novel approaches to child faeces disposal in crises?

Behaviour change

- Related to achieving hygiene messages
- Increasing use of products
- Community engagement

GROUP 3: OTHER – (GOVERNANCE / CASH & MARKETS / COORDINATION)

Coordination Questions:

- Is it worth spending money on coordination or better to spend on implementation?
- Do we have baseline studies pre and post for coordination to make comparisons?
- Is coordination a formal arrangement only or do the informal activities such as networking as value?
- Role of coordination – before emergency / after / for the exit strategy
- How does coordination strengthen national governments for hand over?

Policy Questions:

- Can we assess research uptake, changes in policy and changes in practice?

Market Based Approaches:

- Are market based approached in WASH effective?

Sustainability:

- How to exit out of emergency: Build Back Better and handover or increasing resilience pre-emergency?

In addition to specific topics in need of research, other activities were identified to support the lack of research including a repository to research conducted in emergencies, registered protocols, proven 'common' methods, and gathering appropriate data from development sources.