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Hygiene kit distribution and use in humanitarian response: summary of information from a systematic review and key informant interviews

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Abstract: *Hygiene kits are commonly distributed in humanitarian emergencies to provide dignity and safety, yet remain under-researched. We aimed to close evidence gaps by completing a systematic review and key informant interviews (KII) to assess current practice in hygiene kits distributions. Fourteen KIIs were conducted and >5,000 documents were screened, with nine meeting inclusion criteria. Existing evidence highlights that reported use of hygiene kit items is high, and standardization, beneficiary involvement in kit design, and post-distribution monitoring are needed. Emergent themes from KIIs were: hygiene kit design; logistics/procurement; field appropriateness/feedback; and recommendations. Unexpectedly, menstrual health management (MHM) and market-based programming (MBP) dominated the literature. Overall, hygiene kit distributions are governed by 'best practice' rather than 'evidence base'. This limited evidence base is stark compared to more robust evidence for market-based programming. As a common definition of hygiene kits was lacking, we developed and present a hygiene kit typology. We recommend hygiene kit programming: 1) understands local context, cultural norms, and preferences by incorporating beneficiary consultation and feedback; 2) ensures item type and quantity is what beneficiaries need; 3) ensures hygiene kits are context-appropriate, and considers concurrent MHM and/or MBP programming; and 4) works with coordination mechanisms to harmonize kit materials, delivery, and monitoring.*

Keywords: hygiene kit, humanitarian response, water, sanitation, and hygiene, WASH, hygiene items

Humanitarian emergencies, including natural disasters, conflicts, and disease outbreaks, are occurring at increasing rates and affecting growing numbers of people (CRED, n.d.; Smith et al., 2014; Kohrt et al., 2019). Providing access to safe

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drinking water, sanitation, and hygiene (WASH) is critical to human survival, infectious disease control, and dignity in humanitarian emergencies (Connolly et al., 2004; Salama et al., 2004; Watson et al., 2007). One common WASH intervention in humanitarian emergencies is hygiene kit distribution. Hygiene kits are packages of materials needed to improve and maintain adequate hygiene, aiming to reduce the disease burden and provide dignity (Yates et al., 2018b). Hygiene kit materials vary, but often include items such as: soap, shampoo, laundry detergent, toothbrushes, medicines, pads, buckets or jerrycans, or water treatment (e.g. chlorine tablets) (Sphere Association, 2018). During an emergency, additional items may also be distributed as kits, such as: menstrual hygiene management (MHM) or non-food items (NFIs) which cover basic household needs.

In the Sphere Standards, it is recommended to adapt hygiene kits and items to culture and context while prioritizing essential items in the initial phase such as: soap, water containers, and menstruation and incontinence materials (Sphere Association, 2018). Donors and responders are increasingly moving toward using cash or vouchers for hygiene items as a mode to provide choices for affected populations in lieu of hygiene kits (UNHCR, 2016; Sphere Association, 2018). However, these programmes must have access to functional markets, which may not be present in some humanitarian crises.

Despite being commonly implemented by responding non-governmental organizations (NGOs) and United Nations (UN) agencies, hygiene kit distributions are under-researched (Vaillancourt, 2016; Yates et al., 2018a; Kohrt et al., 2019). In two systematic reviews of WASH interventions in humanitarian response in 2015, hygiene kits were not described as an implementation activity (Ramesh et al., 2015; Taylor et al., 2015). However, one study included in the review reported that providing soap, without hygiene promotion or behaviour change messaging, can help reduce diarrhea rates (Peterson, 1998). Another document included in the reviews reported that 98 per cent of cholera-affected households used a household disinfection kit (Gartley et al., 2013).

In 2018, a systematic review on humanitarian WASH considered both grey and published literature; of the 114 documents included, 21 documents mentioned hygiene kit distributions (Yates et al., 2018a). Hygiene kits were most commonly used to deliver household water treatment (HWT) products, but were not commonly evaluated as a specific WASH intervention. Several critical factors were still identified in the review for hygiene kit programme success including: sufficient quantity of materials, timeliness of distribution, and coordination to ensure kit content consistency, full coverage of affected population, and avoiding duplication. Also, it was identified that men and women had different preferences for kit materials, including a lack of appropriate MHM materials.

Partnership for Quality Medical Donations (PQMD) is a non-profit organization that works to set quality standards, disseminate knowledge, and influence policy for medical supplies and service donations. PQMD and Tufts University worked together to research the evidence gaps around hygiene kit use in short-term emergencies and post-disaster settings in low- and middle-income countries (LMICs), creating a Strategic Advisory Group (SAG) for the project, and solicited

participants to be members of a Coalition on Hygiene Kits (including NGOs, UN, and corporate partners that distribute hygiene kits). Overall, the project goal was to increase the evidence base and inform the development of accepted methods and tools to increase future evaluations of hygiene kit programmes.

Methods

To address the research gaps on hygiene kit distributions, we conducted a systematic review on hygiene kits, and conducted key informant interviews with practitioners distributing hygiene kits. The methodologies for the systematic review and key informant interviews are described below.

Systematic review

A search strategy, including search terms on hygiene kits and related terminology, was developed to identify both peer-reviewed manuscripts and unpublished grey literature. Searching took place in seven databases of peer-reviewed manuscripts including: Science Direct, Web of Science, PLoS, Pubmed, Embase, Global Health (Ovid), and Medline (Ovid). Keywords are listed in the Appendix. Google Scholar was searched using the same keywords, with the first 50 references reviewed. Grey literature online repositories were also searched to collect accounts of responder organizations, including the International Initiative for Impact Evaluation (3ie), Cash and Learning Partnership (CaLP), Active Learning Network for Accountability and Performance (ALNAP), Oxfam, Save the Children, Action Contre la Faim (Action Against Hunger), UNICEF, and the World Health Organization. Solicitation of relevant works was also sought through the WASH and PQMD networks.

Inclusion criteria were defined using the PICOS framework detailing: populations, interventions, comparisons, outcomes, and study types (PICOS), a model recommended by the Cochrane Library to structure rigorous reviews on health-related questions (Higgins et al., 2013). *Populations* included humanitarian-emergency affected populations in LMICs from 2000 to 2020. *Interventions* included any hygiene kit distribution. No specific *comparisons* were required for inclusion, all quantitative and qualitative *outcomes and impacts* were included, and all *study types* were included.

Identified documents were screened against the PICOS criteria first by titles, then by abstracts or executive summaries, and then by full text. If relevance was unclear, it was passed until the full review where adherence to humanitarian hygiene kit programming was ensured. Relevant data were extracted from each article, including: author and publication details, experimental design, and outcomes and impacts relevant to hygiene kit distribution. Bias was assessed in accordance with methodology from previous reviews that included both published and grey literature (Yates et al., 2018b). A tabular summary of all included documents was developed, and a narrative synthesis approach was used to summarize extracted information.

Please note, MHM and cash/voucher programming were beyond the specific scope of this review and therefore not specifically searched; however, in the search,

as numerous documents were identified, we broadly discuss MHM and cash/voucher programming documents identified using hygiene kit search terms in the text.

Key informant interviews

PQMD established a SAG and solicited members for the Coalition via a web-survey. Interviewees were selected from a combined list of SAG members, Coalition members, and web-survey respondents (55 individual contacts), after individuals working with organizations distributing <1,000 hygiene kits per year were removed (n = 12). Of the remaining 43 individuals, 20 were randomly selected for interviewing. Emails were sent to selected individuals to invite them to participate in a remote interview via Skype, Webex, or Zoom. If there was no response from a potential interviewee, a second reminder email was sent after approximately two weeks. If there was again no response, the potential interviewee was dropped, and no replacement was selected.

The questionnaire had a total of 58 questions, but was designed with five separate modules, including funding, product selection, kitting/assembly, site distribution, and monitoring and evaluation. The separate modules allowed the interviewer to skip sections not applicable to the interviewee; thus, most interviewees were asked 30–35 questions. After obtaining informed consent, all interviews were recorded. This investigation was approved by Tufts University's Institutional Review Board (STUDY00000154).

Audio recordings were uploaded to Temi transcription software (San Francisco, CA, USA), transcribed, and manually cleaned. Cleaned transcripts were uploaded to Nvivo (Melbourne, Australia) for coding and analysis. Results were analysed by emergent themes and summarized.

Results

The results are presented by activity, including systematic review and key informant interviews.

Systematic review

In total, 5,039 documents were identified from the search strategy (Figure 1). The title and abstract screening eliminated 4,945 documents, resulting in 94 documents assessed for full-text inclusion. Ultimately, nine documents on hygiene kits were included in the review. Additionally, seven documents on MHM and 43 on market-based approaches (using the hygiene kit search terms) were identified and separated for broad summary.

Of the nine documents included on hygiene kits, all were published between 2009 and 2019, three (33 per cent, n = 9) were peer-reviewed and six (67 per cent, n = 9) were grey literature (Appendix Tables A1 and A2). The three peer-reviewed documents included results from two hygiene kit distributions in outbreak response and one global summary. In Haiti, hygiene kits with cleaning materials

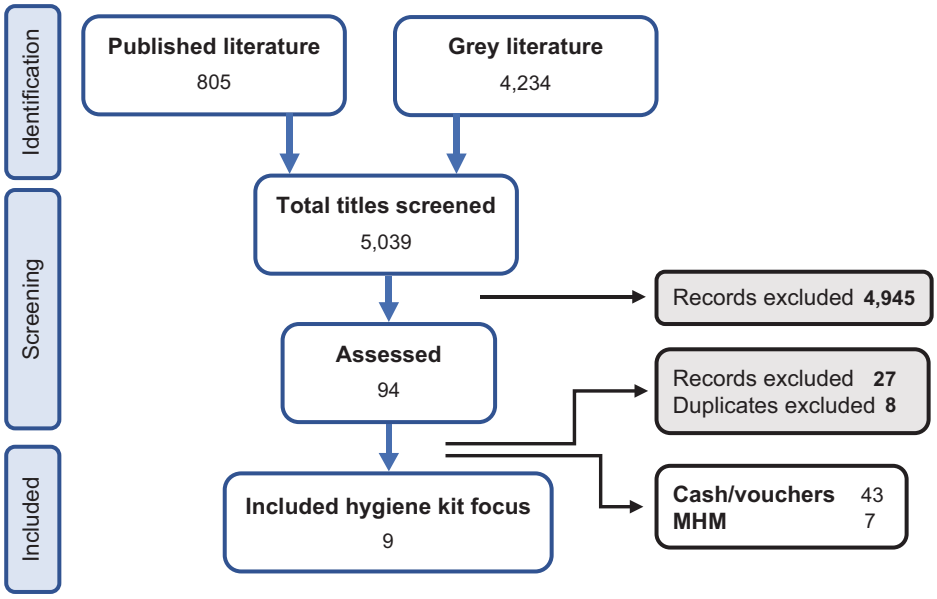

Figure 1 Preferred reporting items for systematic reviews and meta-analyses (PRISMA) flow chart

were distributed to cholera patients to enable disinfection of their homes, as well as meet basic hygiene needs (Gartley et al., 2013). In Chad, a similar distribution of cleaning kits was used in response to a hepatitis E outbreak (Spina et al., 2018). Both documents described cross-sectional methods for data collection and describe self-reported use of distributed materials above 98 per cent. The kits were also described as, 'easy, feasible and valued by the target population' (Gartley et al., 2013). The third published document focused on global reflections of five different NFI kits, including hygiene kits, from UNICEF staff (Vaillancourt, 2016). Interviews with 14 staff revealed that: strong collaboration was needed for NFI kit distribution, from logistics to post-distribution monitoring; and there is a need for standardized kits.

The six grey literature documents included four post-distribution monitoring (PDM) documents of hygiene kit projects and two summary documents on general NFI distributions (with a portion on hygiene kit distributions). The PDM documents were from three different organizations and four countries, including Iraq (Bedran, 2018), Jordan (Post Distribution Monitoring Report Hygiene Kit funded by IMC, 2014), Lebanon (Turnbull, 2014), and Pakistan (Ahmed et al., 2012). All four used cross-sectional data collection methods, and descriptions of data collection methods were limited. Results from the post-distribution monitoring indicated: high self-reported use of distributed materials (70–92 per cent), insufficient material quantity, and lack of beneficiary involvement in decision-making on hygiene kit content and quantity.

The first review document was completed by the United Kingdom's Department for International Development (DFID) because they spend US$10 m annually

on hygiene kits (Rohwerder, 2014). This review was specific for the NFI needs of women and girls in emergencies and supplemented with expert commentary on NFI distributions and gender considerations. The review highlighted that knowledge gaps around hygiene kit distributions exist, and that most monitoring and evaluation documents are grey literature. Key findings included the need to focus on appropriate local solutions for MHM, the fact household items (not just hygiene items) may also be needed, and that contraception needs remain, and are often unmet, in humanitarian contexts. The second review was from an international NGO reviewing its own hygiene kit programming, and summarized key informant interviews with 15 staff who had distributed NFI and/or hygiene kits (Ferron, 2017). Results included: beneficiary preferences were often overlooked, which led to kits being very similar despite location or context; the quality and usefulness of post-distribution monitoring were questioned; and cash/markets should be the default for providing NFIs, including hygiene items.

Related topics. Through the review process, two additional related topics were identified: MHM and cash/vouchers; each is briefly summarized here. Seven documents related to MHM were identified, focusing on: needs assessments (Abbott et al., 2011; Robinson and Obrecht, 2016; Wilbur et al., 2019); toolkits (Oxfam, 2011; Smyth, 2012); and calls to prioritize MHM programming (House et al., 2012). Currently, MHM is gaining awareness among responders with efforts needed to overcome cultural taboos, inconsistent messaging, and expensive materials (Wilbur et al., 2019), yet there are few monitoring and evaluation results.

Cash, vouchers, and/or market-based approaches, herein termed 'market-based programming' (MBP), were a dominant identified theme. Despite specific searching for hygiene kits, 43 documents about MBP were identified; 13 were specific to WASH and hygiene items. Over the last decade, NGOs have developed their own MBPs (Brady and Creti, 2010; CRS, 2017; Le Seve and Mason, 2019) and the Global WASH Cluster recently published guidance on MBP within humanitarian WASH (Otálora and Jacob, 2019). MBP is supported because of its cost-efficiency compared to in-kind distributions (Venton et al., 2015; CRS, 2017; Doocy and Tappis, 2017), and the ability to leverage programming across sectors, combining cash for hygiene items with health, water, or shelter needs (Battistin, 2016; Roelen et al., 2017; Harvey and Pavanello, 2018). MBP is widely used and adaptable; however, MBP requires detailed assessments of local markets, which can be a hurdle due to the time and expertise required (Juillard and Opu, 2014; Oxfam, 2015, n.d.), and is not a universal solution, but one option among many (Juillard and Opu, 2014; UNHCR, 2016; Boulineaud, 2017).

Key informant interviews

From 20 randomly selected interviewees, a total of 14 key informant interviews were conducted between 24 February and 25 March 2020. Half of the interviews were with women (50 per cent, n = 14), and, on average, interviews lasted 69 minutes (min = 34; max = 129). The 14 interviewees represented 12 different organizations across five countries with the majority of interviewees being based in

Table 1 Key characteristics for Kitter and Responder organizational models for hygiene kit distribution

	Kitters	*Responders*
Intended kit use	Individual for 1–2 weeks	Family (5–6) for 1–3 months
Who packs hygiene kits	Volunteers (donors)	Staff or vendors
Where hygiene kit materials are purchased	US domestic	Local (in country)
Organization adheres to international guidance for kit content	✗	✔
Organization typically carries out post-distribution monitoring or beneficiary feedback	✗	✔
Organization has public engagement as a goal	✔	✗

the United States (USA-8, United Kingdom-2, Denmark-1, Belgium-1, Nigeria-1, and India-1). Nearly all interviewees (93 per cent, $n = 14$) were based in headquarters or country-level offices. Interviewee roles varied, from people-associated organizations focused on health and medical supplies based in the United States, to independent consultants, humanitarian NGOs, and UN agencies. Based on the scope of the interviewee and organization, the question modules were utilized which led to different numbers of responses for some topics. Results are summarized by four emergent themes: 1) hygiene kit design; 2) logistics and procurement; 3) field appropriateness and feedback; and 4) recommendations.

Throughout the results and discussion, two groups are regularly separated, termed 'Responders' and 'Kitters' (Table 1). These definitions were developed by the researchers, based on interviews, to describe and clarify results. Responders were described as international organizations with staff in the field with beneficiaries. Kitters were assessed as organizations based primarily in the United States focused on kitting a personal hygiene kit intended for an individual. Depending on role, interviewees could have been assessed as both Responders and Kitters. The imposition of programme models was explored within the larger context of the research, highlighting where important differences emerged.

Hygiene kit design. When asked to describe a hygiene kit, answers varied by organization. Materials for their specific kit or the overarching goal of their organization's hygiene kit programme were described. Goals converged around two primary responses: 1) reducing hygiene risks ($n = 6$ responses); and 2) linking beneficiaries to additional care ($n = 6$ responses). Additionally, providing dignity to beneficiaries was a described goal ($n = 3$ responses) and Kitter organizations also emphasized goals around building company morale or public engagement ($n = 3$ responses).

Hygiene kit designs varied between Responder and Kitter organizations. Responder organizations designed kits for families (~5 persons) to last between 1 and 3 months, whereas, Kitter organizations designed kits for an individual to last up to a week. Relatedly, Responder kits cost $15–100/kit, while Kitter kits cost $1.50–3.50/kit.

Deciding what materials to include in a hygiene kit was most commonly determined by country or international standards (n = 7 responses) (e.g. country-level WASH cluster or Sphere) and beneficiary involvement (n = 6 responses) (e.g. rapid assessments, focus groups, post-distribution monitoring). Overall, 20 distinct kits were described by the interviewees. Most kits were described as a hygiene kit intended to meet some of the hygiene needs for an individual or family (50 per cent, n = 20 kits), MHM kits were described by seven organizations (35 per cent, n = 20 kits), and two organizations described a version of a first-aid kit (10 per cent, n = 20 kits).

No hygiene kits were the same and there were notable differences between Responder and Kitter kits (Table 2). Responder organizations did not include personal items like a towel and nail clippers, whereas, Kitter organizations did not

Table 2 Kit materials by organization and Sphere Guidelines

Item	*Kitters*						*Responders*				*Sphere*
	K1	*K2*	*K3*	*K4*	*K5*	*K6*	*R1*	*R2*	*R3*	*R4*	
Jerrycan							✔	✔	✔	✔	✔
Bucket							✔	✔	✔	✔	✔
Soap	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔
Laundry soap							✔	✔	✔		✔
Toothbrush	✔		✔	✔	✔	✔	✔		✔		~
Toothpaste	✔	✔	✔	✔	✔	✔	✔		✔		~
Child's potty							✔	✔			✔
Shampoo			✔	✔		✔					~
Hygiene leaflet						✔	✔	✔			
Hairbrush/comb		✔	✔								~
HWT (i.e. Aquatab)							✔	✔		✔	
Towel		✔	✔		✔	✔		✔		~	
Underwear (W)							✔	✔	✔		
Sanitary pads							✔	✔	✔		
Hand lotion	✔		✔						✔		
Nail clipper/file		✔	✔			✔					
Flashlight/torch							✔	✔			
First-aid kit				✔		✔					
Whistle								✔			
Additional items*	✔						✔				

Note: Sphere (~) labelled as 'nice to have' but not essential.
*Additional Items. K1 included: hand sanitizer, tissue, deodorant, razor, shave gel, hairbrush, soap holder, personal note, and R1 included: rope, clothes pins, kettle, bed nets, blanket

include water containers (i.e. jerrycan and/or bucket), household water treatment (HWT), laundry soap, and/or a child's potty. Responder organizations tended to have more items aligned with Sphere, compared with Kitter organizations.

Standardized kits were described as efficient for programming (n = 6 responses) as distribution partners 'knew what they were getting' and could supplement standardized kits with addition items (n = 2 responses). Negatives of standardized kits were that they were too small for large families (n = 1 response) and some standard items may be unwanted by beneficiaries (n = 1 response).

All organizations described their kits as being culturally sensitive (n = 12 organizations) based on feedback from the field (67 per cent, n = 8 responses); the organization considered kit materials 'generic' or 'low risk', and thus not a concern for cultural sensitivity (50 per cent, n = 6 responses).

Informational pamphlets or fliers were included in three hygiene kits (30 per cent, n = 10 hygiene kits). Responders described providing in-person instruction and demonstrations. Kitters relied on distributing partners to explain kit materials.

Logistics and procurement. Most organizations directly procured kit materials (90 per cent, n = 10 hygiene kits), with one Kitter organization currently accepting donated materials (10 per cent, n = 10 hygiene kits). Several organizations had accepted donated materials in the past (33 per cent, n = 12 organizations), but stopped because of quality concerns and an emphasis on uniformity. Procuring large volumes of kit materials also enabled: improved logistics tracking; quality control (especially for managing material expiry); and lower costs. Two organizations described the advantage of uniform kits in clearing customs, for example in Mozambique (2019):

> And so if each kit is in a box that looks the same, there's the same number of kits in each box, they're all packaged the same with exactly the same items in there. It might be the difference between spending three days getting through customs versus three weeks (key informant from US-based NGO).

Kitter organizations purchased items from vendors in the United States (83 per cent, n = 6 Kitter organizations), choosing consistent material quality and domestic kitting engagement over timing needed to transport hygiene kits from the United States to humanitarian contexts globally. Responder organizations prioritized local procurement (100 per cent, n = 4 Responder organizations), defined as in the same country or community as the response itself, to strengthen local supply chains and allows for context specific kits. Some materials may not be available in sufficient quantities to support large distributions or are only available internationally (e.g. Aquatabs®, collapsible jerrycans).

Responder organizations relied on field-based logistics teams or local vendors to procure and package hygiene kits (75 per cent, n = 4 Kitter organizations). Kitter organizations used kitting or 'packing' events with a donor group to assemble hygiene kits, and warehouse them in the United States awaiting deployment (100 per cent, n = 6 organizations). Kitting events also enabled fundraising and community engagement.

Overall, *quality* was mentioned 288 times across all interviews; and *uniformity* was mentioned 136 times. For Kitter organizations (100 per cent, n = 6 Kitter organizations), quality control was prioritized at the kitting events utilizing multiple quality control measures (n = 10 responses). A reliance on procurement procedures (n = 4 responses) and uniform (consistent) items (n = 4 responses) were described by both Kitter and Responder organizations.

Field appropriateness and feedback. 'Beneficiary need' was the general theme when describing where hygiene kits were more or less appropriate, across different contexts (i.e. natural disasters (n = 3 responses) to displacement (n = 4 responses)).

Responder organizations relied on PDM for beneficiary input (100 per cent, n = 4 Responder organizations), with three organizations making changes because of the feedback (75 per cent, n = 4 Responder organizations). Almost all Kitter organizations (83 per cent, n = 6 Kitter organizations) received general feedback and distribution descriptions through distribution partners, but often without specific beneficiary input.

Most interviewees had a neutral view on MBP compared to hygiene kit distributions. This was generally expressed as, *cash is fine if markets exist*, but hygiene kits are well-suited for the other situations (79 per cent, n = 14 interviewees). One interviewee was against MBP because it undermined the transition to development and did not build up capacity of local organizations through hygiene programming. At least four organizations (33 per cent, n = 12 organizations) had some experience with cash or vouchers, but this was often for projects outside the scope of hygiene kits or the experience was organizational, not interviewee-specific.

Recommendations. Interviewees provided a total of 25 recommendations for future hygiene kit programmes. The most common recommendation was to meet additional beneficiary needs through providing additional kits (MHM, baby, psychosocial) (n = 4 recommendations) or additional items in existing kits (n = 4 recommendations), such as water filters (n = 2 recommendations). Next, it was suggested to harmonize kits among partners (n = 5 recommendations), improve synergies with other projects (n = 3 recommendations), better understand beneficiary needs, including flexibility from donors to meet those needs (n = 3 recommendations), improve the evidence/evaluation for hygiene kits (n = 2 recommendations), and distribute hygiene kits faster (n = 2 recommendations).

Discussion

To understand current evidence and approaches to hygiene kit distribution in humanitarian contexts, we completed a systematic review and 14 key informant interviews. In total, 5,039 documents were identified in the systematic review; nine documents that evaluated hygiene kit distributions met inclusion criteria. MHM and market-based approaches emerged from the systematic review as related themes. Key informant interviews were conducted to gather and assess information on the current practices of organizations distributing hygiene kits. Our results highlight: the lack of evidence on hygiene kit distributions in humanitarian response; the need

for a common definition of types of hygiene kits; and best practices and recommendations for hygiene kit distributions.

The systematic review results are consistent with previous studies that also found a lack of evidence; and that what evidence exists is based on self-reported data in grey literature (Rohwerder, 2014; Yates et al., 2018a). As hygiene kits are commonly implemented, and there is significant guidance on NFI distributions from UN agencies and international NGOs, these results suggest hygiene kit distributions are governed by 'best practice' rather than 'evidence-based approaches'. This lack of evidence does not indicate hygiene kit distributions are ineffective, but rather indicates research on hygiene kit effectiveness is needed to determine how best to implement hygiene kit programming.

Since the review in December 2019, two additional documents have been published providing evidence on hygiene kits in humanitarian response. The first described a programme where household disinfection kits were distributed to cholera patients and caretakers in the Democratic Republic of the Congo (D'Mello-Guyett et al., 2020), similar to Gartley et al. (2013). Beneficiaries reported high use rates of materials; however, beneficiaries reported wanting a greater quantity of items and transportation of kits to remote project locations in DRC delayed the overall project. The second document summarized monitoring results from a national hygiene kit strategy developed by the WASH Cluster in Myanmar (Domini et al., 2021). It was found that hygiene kit distributions need to consider local context, including population mobility, local markets and availability of products, and household expenses and debt. Programmatically, it was recommended to: adapt hygiene kit distributions to local contexts, continue to distribute hygiene kits in protracted contexts to identified at-risk households, distribute disposable pads (which were preferred by women), and continue revising and improving national level strategy and monitoring tools. Both documents described weak methodologies with limited scope to a single country, and are consistent with results described above. However, Domini et al. (2021) described a successful national-level methodology to collect monitoring data over time that could be replicated.

The limited evidence base for hygiene kit distributions is particularly stark compared to the evidence base for MHM and cash-based programming (CBP) identified in the systematic review. The volume of documents was an unexpected finding on topics related to hygiene kit programmes, but are not mutually exclusive, as kits are often distributed in conjunction with other programming. As hygiene kits are distributed worldwide, research is needed to further investigate how to effectively distribute hygiene kits in the most appropriate contexts.

While hygiene kits are widely distributed, we identified that there is no clear definition for what a hygiene kit is. Interviewees described 20 'hygiene kits' with different purposes and materials. The universal utility and adaptability of hygiene kits creates a vague definition of the intervention; this contributes to undermining the evidence base. This challenges a working 'common understanding' among stakeholders and creates hurdles for future evaluations, as language and scope is not standardized. Based on our review and interviews, we created a typology of

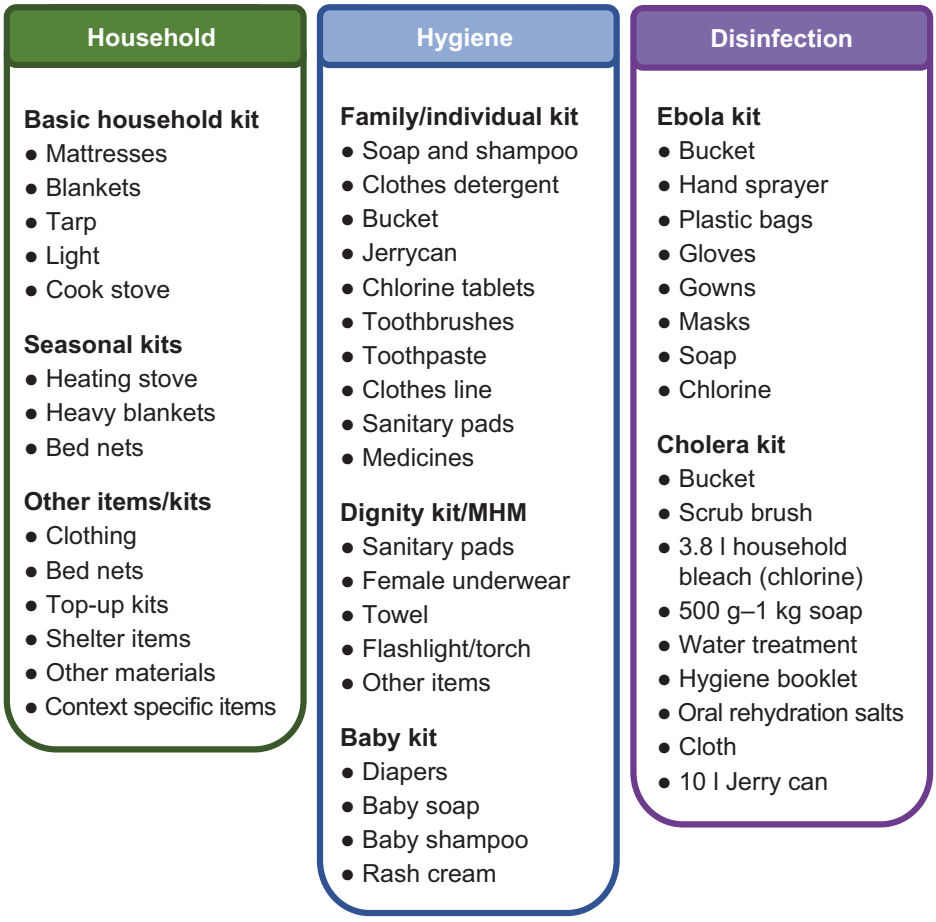

Figure 2 Recommended typology of kits distributed in humanitarian contexts
Note: Some contexts may require different or additional items.

NFI distributions, including household kits, hygiene kits, and disinfection kits. Common kit names and materials are described in Figure 2. Stakeholders using hygiene kits may have different expectations; beneficiary needs differ by context and timing; and hygiene kits are often connected to MHM, MBP, HWT, and other NFI distributions. Clear definitions on what is, or is not, a hygiene kit intervention will support future evaluations and evidence by increasing direct comparisons. Stakeholder expectations should also be defined with the intended duration of the kits and what is expected from the programme side once consumables are finished. Overall, understanding how kits fit into wider programme or early recovery objectives is needed.

Additionally, a Theory of Change (ToC) was created based on findings from the systematic review and KIIs (Figure 3). The ToC has common activities by both Kitters and Responders, along with basic assumptions to achieve impact from hygiene kit

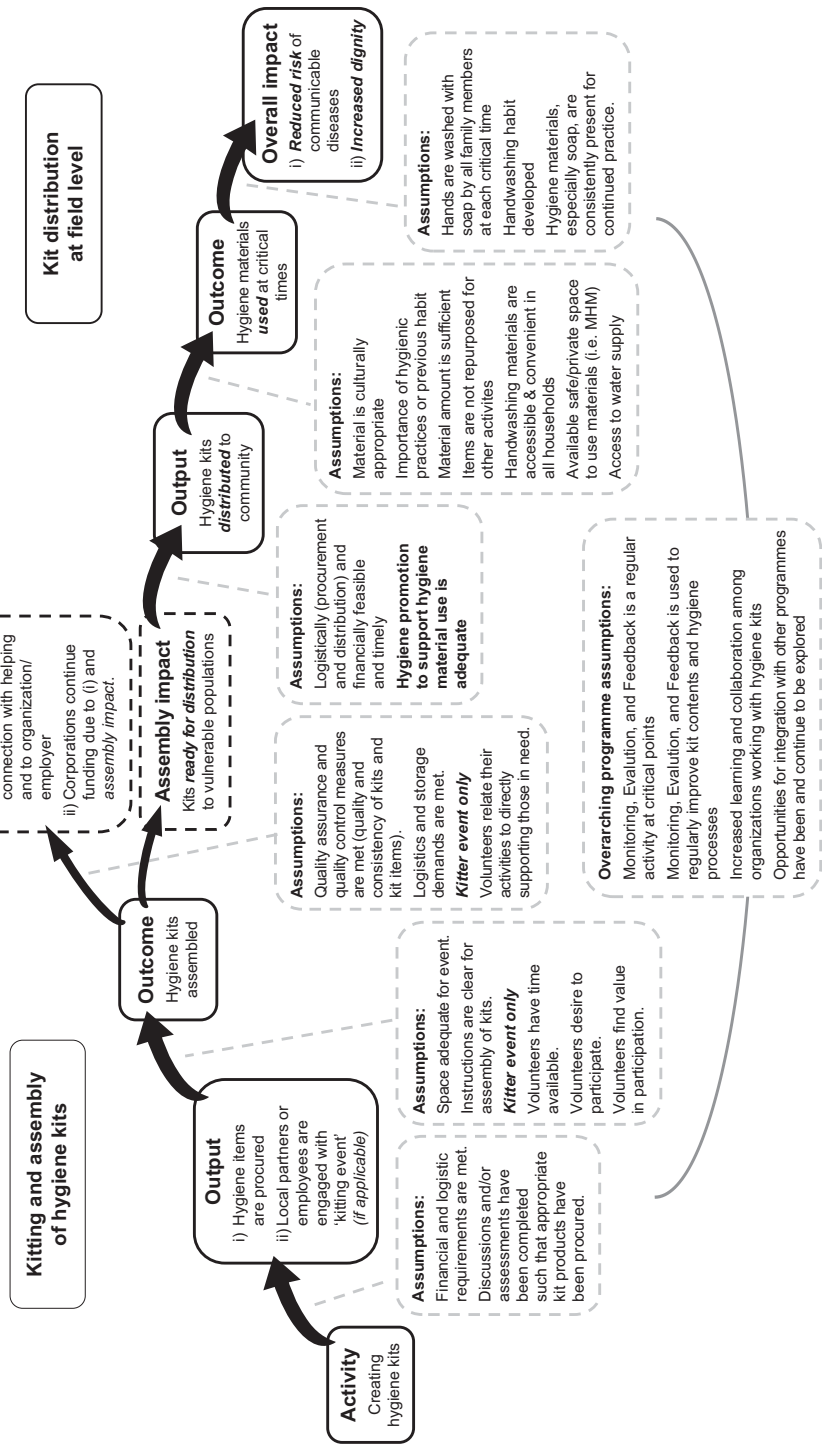

Figure 3 Proposed theory of change for hygiene kits

distributions. A unified ToC that includes both groups of organizations is intended to provide a common foundation for the many different types of organizations working with the distribution of short-term emergency hygiene kits. The assumptions described in the figure were identified to be necessary for overall programme success, and this ToC is inclusive, highlighting that hygiene kits are also a tool to establish beneficiary trust, as well as providing access to hygiene materials and dignity. Future research around hygiene kits could be based on specific components of this ToC.

Based on our results, four recommendations emerged for more successful hygiene kit distribution: 1) understand the local context, cultural norms, and specific preferences by incorporating beneficiary consultation and feedback; 2) ensure the type and quantity of items that beneficiaries need are being provided considering the context and other programming; 3) ensure hygiene kits are the appropriate option for the context, compared to another programmes such as CBP; and 4) work with coordination mechanisms in the context (e.g. the WASH Cluster) to harmonize kit materials, delivery, and programme monitoring.

Limitations to our work include the following: 1) the systematic review comprised predominately grey literature with poorly described methodologies; 2) a globally comprehensive list of humanitarian organizations was not searched in the systemic review; 3) one key informant may not represent the views of their entire organization; 4) organizations interviewed may not represent the wider humanitarian community; 5) language on hygiene kits differed between organizations, so had to be clarified by the interviewer; and 6) the traditional humanitarian donor perspective was not collected. Despite these limitations, we believe the summary of results to be representative based on concurrence with previous work.

Conclusion

We completed a systematic review and key informant interviews to summarize information about a commonly implemented, but severely under-researched WASH intervention in humanitarian contexts: hygiene kit distributions. Overall, we found that hygiene kit distributions are governed by 'best practice' rather than 'evidence-based approaches'. This limited evidence base for hygiene kit distributions is particularly stark compared to the more robust evidence base for MHM and MBP programming. As a common definition of hygiene kits was lacking, we present a typology for hygiene kits in the future. Based on our results, we recommend hygiene kit programming consider the following: 1) understand the local context, cultural norms, and preferences by incorporating beneficiary consultation and feedback; 2) ensure the type and quantity of items that beneficiaries need are being provided; 3) ensure hygiene kits are the appropriate option for the context, and consider partnering with MHM and MBP programming; and 4) work with context-specific coordination mechanisms to harmonize kit materials, delivery, and monitoring.

Appendix

Table A1 Peer-reviewed documents

Author and date	*Location*	*Project*	*Method*	*Hygiene kit findings*
Gartley et al. (2013) *Household disinfection kits for cholera prevention in Haiti*	**Haiti**	1,884 household disinfection kits with specific hygiene messaging	208 households, sequential sampling	98% of HH self-reported using the kit '... the distribution of simple kits, with readily available cleaning products and materials, combined with health promotion is easy, feasible and valued by the target population'
Spina et al. (2018) *Water treatment and hygiene intervention in response to a HEV outbreak in Chad*	**Chad**	Chlorination of water points, hygiene kit distribution (10,000 kits), hygiene promotion	392 households, cross-sectional survey	99% of HH self-reported receiving a kit 98% of HH self-reported using laundry soap included in the kit 99% of HH self-reported using bathing soap included in the kit
Vaillancourt (2016) Kit management in humanitarian supply chains	**Global**	Global reflection of UNICEF kits. Medical kits, hygiene kits, education kits	14 interviews with UNICEF staff	'... managing multiple kits needs a diverse set of resources and competencies, strong collaboration for proper preparedness and a thorough follow up for monitoring and evaluation' 'Developing additional kits with standards that can be shared between major organizations would further help ensure that performance improvement can be shared easily across supply chains'

Table A2 Grey literature

Organization and date	*Location*	*Project*	*Method*	*Hygiene kit findings*
NRC (2014)	**Jordan**	Hygiene kit distribution	Survey of 105 beneficiaries	77% stated quantity was not enough 70% reported the quality of items were good No reported selling of items
Oxfam (2014)	**Lebanon**	Hygiene kits, winterization kit, vouchers, cash for rent, water system repair	Internal reports and assessments, desk review	Monitoring data found >85% beneficiaries expressed satisfaction with quality and quantity of items Over 20% of beneficiaries were unaware of the time and date of distribution of hygiene kits

(Continued)

Table A2 Continued

ACF (2012)	**Pakistan**	Safe water, household latrines, 3,000 hygiene kits, and other activities including cash-for-work	Mixed-method with 400 households, 35 focus group discussions	'The hygiene kits contained useful items ... and were well received by the beneficiaries' Latrines, hygiene kits and hygiene promotion sessions had clearly increased communities' practices related to safe hygiene and sanitation
ACF (2018)	**Iraq**	Water system rehabilitation, 3,600 hygiene kits, hygiene promotion, water trucking	Satisfaction survey 1% of distributed households, project evaluation with 59 households	88–92% satisfied with item quantity and quality One-time distribution 'not enough' Cash-based programming would have been better 34% of respondents indicated they would have found other items more useful than those in the hygiene kits, 27% wanted cash instead
Rohwerder/ DFID (2014)	**Global**	NFIs and hygiene kits for women and girls	Desk review and expert consultation	'not a strong evidence base', mostly grey literature ... existing literature agrees on the importance of providing NFIs that meet the basic and protection needs
Ferron/Oxfam (2017)	**Global**	NFIs in emergency response (15 Oxfam programmes)	Desk review and staff discussion	A key finding identifies the balance between in-kind NFIs and market-based approaches: – 'All Oxfam's humanitarian WASH responses consider the provision of NFIs as a key programme intervention' – '... the argument for not using cash must be clearly documented'

Keyword searches

'hygiene kit'

'hygiene items'

'disinfection kit'

'cholera kit'

'non-food items'

'nonfood items'

'ebola kit'

'core relief items'

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