CHARITY ENTREPRENEURSHIP

Reducing Diarrhoeal-related Deaths through Targeted Sanitation Interventions

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RECOMMENDED

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Ambitious Impact Research Report

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Contributions: *The primary author for this report was Morgan Fairless (Research Director, Ambitious Impact), with support from Vicky Cox (Senior Research Manager, Ambitious Impact). We thank all people consulted for this report for their contributions.*

Ambitious Impact (AIM) *exists to enable more effective charities to exist worldwide. We strive to achieve this goal through our extensive research process and Incubator Program. We give talented potential entrepreneurs two months of cost-covered, intensive training designed by founders for founders. Our talented researchers and entrepreneurs identify evidence-based, high-impact interventions and help founders find a co-founder to launch the idea and reach scale.*

Note to readers: *Our research is geared toward AIM decision-makers and program participants. Through these reports, we attempt to find the best ideas for our incubation programs. Given our commitment to focusing on recommended ideas, reports on those not recommended for incubation can often be less polished.*

For questions *about the research, please contact Morgan Fairless at* morgan@charityentrepreneurship.com.

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Reducing Diarrhoeal-related Deaths through Targeted Sanitation Interventions / Summary

Description

We reviewed a highly targeted mobile health Water, Sanitation, and Hygiene (WASH) intervention modality that identifies diarrhea patients in the hospital and delivers an intervention package including a bedside sensitization module, some cheap WASH commodities (including chlorine tablets), and SMS and Interactive Voice Response (IVR) messaging for a year post-hospitalization.

Counterfactual impact

Cost-effectiveness analysis: We primarily rely on GiveWell's back-of-the-envelope cost-effectiveness analysis and calculations made by the team trialing these interventions. We think this intervention will likely surpass our cost-effectiveness bar (likely under 2023 USD 100 per DALY equivalent averted with GW moral weights; see analysis here).

Scale this charity could reach: We think this is a scalable intervention. Limiting factors will likely be burden and cost-effectiveness (we expect this to be cost-effective in urban or semi-urban areas with large hospitals). Ensuring fidelity to the model and monitoring when delivered by workers outside the organization's control may be a challenge.

Potential for success

Robustness of evidence: The evidence largely comes from a series of well-conducted randomized trials (CHoBI7 and PICHA7) delivered in Bangladesh and the DRC. Our concerns with these studies are minimal, and we believe there is sufficient evidence to merit further tests of the model at scale (discussion here).

Theory of Change (ToC): The ToC is relatively simple, requiring case identification in the facility, delivery in the facility, and a mobile health (mHealth) component thereafter. Experts we spoke to felt this was a model worth testing (see ToC here). A new organization could test pairing this model with a chlorination voucher system to test scaling strategies (discussion here). Careful testing is necessary to investigate what components of the intervention model drive effects.

Neglectedness

Neglectedness: Given the relative novelty of this intervention, we do not expect to encounter many organizations implementing it. We note there is significant work in the WASH space, but we expect there are still neglected areas, especially given the large burden of diarrheal disease (see here).

Geographic assessment: We identified several priority countries where we think a new organization could operate. We are not concerned by potential limitations in geographic selection (see discussion of our model here).

Other

Expert views: Our conversations helped us gain confidence in the research underpinning the intervention logic, feasibility of implementation, and ToC.

Implementation factors: No implementation factors stood out to us as critical to our decision regarding recommendation. Implementing this idea will require some risk appetite.

Reducing Diarrhoeal-related Deaths through Targeted Sanitation Interventions / Crucial Considerations

Have we conducted enough research to recommend this intervention?

We are trialing a new approach in which we partly rely on research by other organizations or researchers we trust and align with. This review partly defers to the work of GiveWell researchers, particularly concerning the cost-effectiveness analysis.

Deferring to other research carries certain risks, particularly because it may mean that we repeat mistakes made in the original work and have conducted less research into the intervention ourselves.

These risks are mitigated by a secondary cost-effectiveness carried out by the trial researchers, which broadly aligns with GiveWell's estimate (see here).

On balance, we believe that we have enough information to inform decision-making one way or another. We feel sufficiently confident that we have covered the significant uncertainties we had about this intervention. We do not think there would be much value in duplicating work by strong researchers.

Additionality given existing WASH projects

Delivery of the specific intervention explored in this report remains focused mainly in Bangladesh and the DRC, where it is being evaluated on a small scale in an academic setting. We are somewhat concerned about the effect of additional WASH programming on cost-effectiveness, given that the program will likely overlap with other WASH efforts. However, the targeted nature of this intervention somewhat alleviates these concerns as it is focused on people with poor WASH.

Need for testing and innovation to deploy successfully

Testing and innovation of different intervention packages is a key part of this work. We are encouraged by the evidence and prospective cost-effectiveness, and believe that the ToC is sufficiently sound to allow for testing and design work.

The CHoBI7 and PICHA7 trials have evaluated multiple combinations of WASH intervention components. We expect that a cost-effectiveness-focused organization could identify an optimal bundle by systematically testing different combinations to isolate which components drive the greatest impact.

One promising approach for a new organization would be to pair the core behavior change model with a chlorination voucher system, enabling rapid iteration and testing of scale-up strategies. Because effects likely depend on the interaction between components, careful testing is needed to determine which elements are essential for driving behavioral change and health outcomes.

A strong working relationship with the study team and lead author of the CHoBI7/PICHA7 trials will be useful to enable further learning and testing.

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1 Background

Diarrheal diseases still kill hundreds of thousands of children per year. We investigate an intervention that will identify hospitalized patients with diarrhoeal illness and provide their households with a package of WASH interventions and post-discharge follow-up support. This targeted approach will be particularly effective because household contacts of an index case are at significantly higher risk of contracting diarrhoeal illness than the general population, and secondly, because the experience of a recent, serious case requiring hospitalization is likely to increase the salience of adopting WASH practices within the household. This intervention has been studied in two different contexts through rigorous randomized experiments.

1.1 Context

Ambitious Impact (AIM) exists to increase the number and quality of effective nonprofits working to improve human and animal well-being. AIM connects talented individuals with high-impact ideas. We give potential entrepreneurs intensive training and ongoing support to launch ideas to scale. Our research team focuses on finding impactful opportunities.

We reviewed this idea outside of our regular research rounds. GiveWell brought it to our attention as part of our routine conversations. We decided to fast-track an investigation given its highly promising nature.

1.2 Introduction to the idea and problem

In 2025, GiveWell informed AIM about promising studies evaluating slightly different versions of a targeted handwashing and chlorination promotion program. We felt the idea could be a good fit for our Charity Entrepreneurship Incubation Program and decided to investigate it.

These highly targeted mobile Health (mHealth) Water, Sanitation and Hygiene (WASH) programs are underpinned by two core insights:

1. Households with prevalent diarrheal disease cases, in particular due to cholera, are at a higher risk of contracting diarrheal diseases
2. Households of recently hospitalized patients will be more amenable to behavior change.

Given the significant burden caused by diarrheal disease, especially for childhood mortality, we are very excited to deliver cheap and practical support to families at risk.[1]

The Cholera Hospital-Based Intervention for 7 days (CHoBI7) and Preventative Intervention for Cholera for 7 Days (PICHA7) trials have involved the following components (e.g., George et al. 2019; George et al. 2024):

1. Identification of diarrhea/confirmed cholera cases within a hospital setting
2. Bedside WASH sensitization delivered by a program worker
3. Provision of WASH kit (inc. chlorine tablets, soapy water bottle, handwashing station, safe water jar with lid)
4. Mobile health messaging for a year
5. Household visits at different points in time to reinforce messages and provide more chlorine.

The CHoBI7 and PICHA7 trials (discussed in section 3) have tested different combinations of intervention packages. We expect a cost-effectiveness-focused organization to find an optimal combination of interventions through testing.

[1] For discussions of the burden of diarrheal disease, see Fairless (2023)

2 Theories of change

To deliver this intervention, an organization must identify and reach diarrhea patients and their households in large hospitals, provide an intensive WASH sensitization module bedside, give WASH commodities to the household, and enroll them in an SMS/interactive voice recording program of reminders (and potentially chlorine vouchers). This theory of change (ToC) is internally coherent, and its core steps are underpinned by good theory or evidence.

2.1 Barriers

The main barriers to diarrheal disease prevention identified in the literature are linked to poverty and poor healthcare.

Formative research conducted to design the PICHA7 intervention in the Democratic Republic of the Congo points to the following barriers (Bisimwa et al. 2022). In no particular order, we think the following are common issues faced by families:

- Lack of awareness of cholera and cholera transmission dynamics
- Despite general awareness of handwashing importance, people have difficulties remembering to hand wash, as well as a lack of consistency with reminding children
- Running out of soap or a lack of water is also mentioned, usually due to financial issues
- Common to not have water, to have to walk long distances for water, or to face financial barriers to high-quality, clean water
- Finding and affording chlorine tablets is difficult
- Although people know chlorine is good for germ control, others have noted worries about the taste of chlorinated and boiled water.

This intervention cannot address some of the most significant drivers of diarrheal disease, which are interlinked with the challenges of living in resource-poor settings and without safe and reliable access to WASH facilities. However, it can help households increase their degree of protection.

2.3 Theory of change of this charity

The ToC of the envisioned organization is outlined in Figure 1. Its main focus would be to:

1. Identify patients hospitalized for diarrhea
2. Deliver commodities and education targeting handwashing and water chlorination
3. Ensure long-term uptake, which may include
    a. Household visits (particularly early on) (unlikely to be part of an initial pilot)
    b. A system through which households can have continued access to key health commodities, in particular chlorination tablets (potentially an e-voucher system) (very likely to be part of an initial pilot)

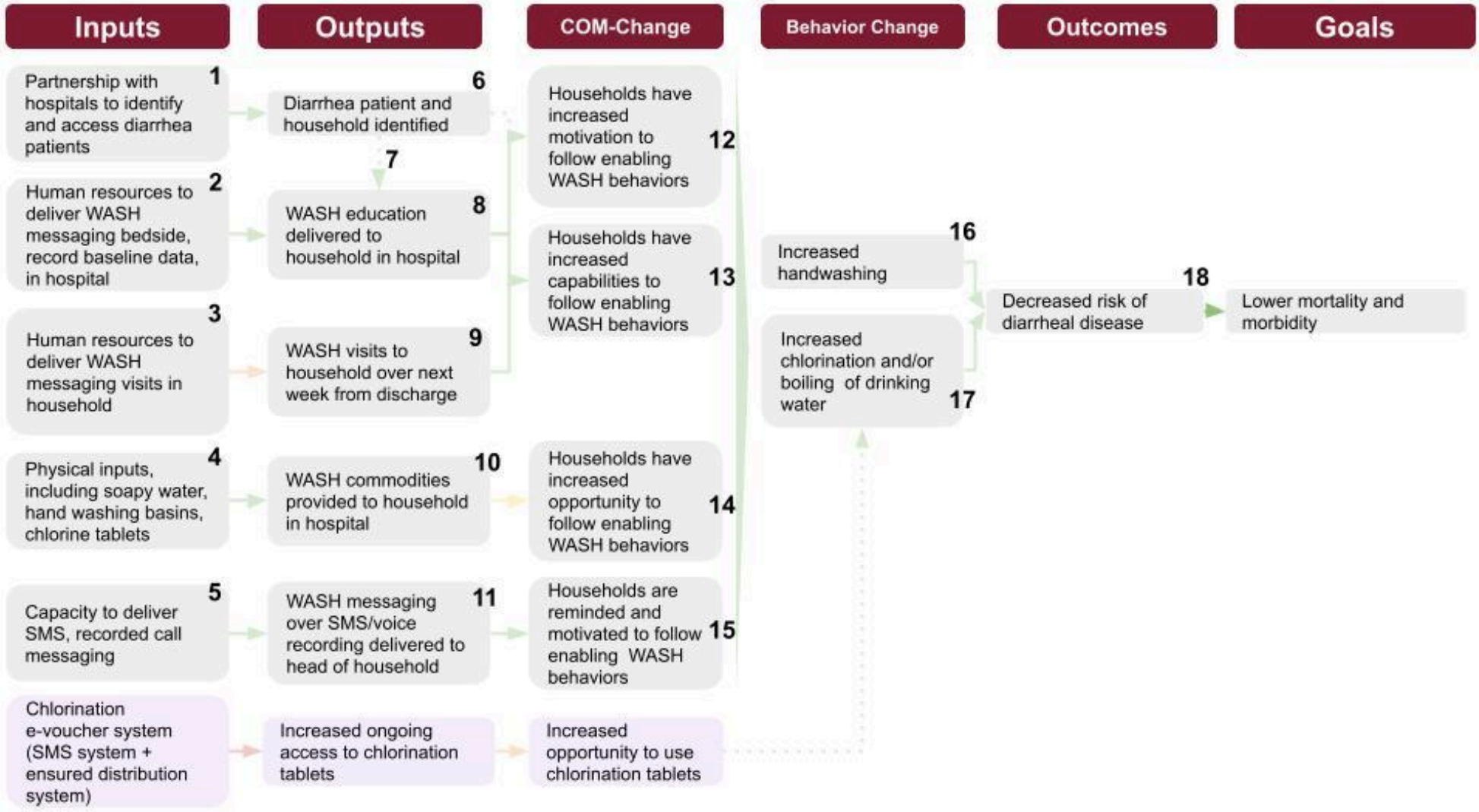

Figure 1: Theory of Change for this intervention (For details on COM-B see here)

Paths to large-scale

The non-profit may find that the most sustainable or tractable path to scale involves working with private healthcare providers or the public sector to change guidelines for the standard treatment of diarrhea to include elements of this intervention.

The reviewed studies compared the intervention considered in this report to standard care in Bangladesh and the DRC, which primarily involved a very short WASH education/sensitization module and provision of or encouragement to use Oral Rehydration Solution.

However, we do not expect a very intensive bedside intervention like this one to be easily integrated into the workload of existing healthcare clinical staff. Utilizing Community Health Workers, health promoters, or digital delivery may be more promising avenues.

2.4 Assumptions and key factors

The numbered list below references numbers in Figure 1.

1. The organization is able to secure partnerships with hospitals, which share candidate households and provide a health worker with access to the households to deliver the intervention (High confidence; HC).
2. The organization can hire and train individuals to reliably deliver WASH messaging, record baseline data (particularly phone numbers), and deliver the health commodities (HC).
3. The organization can hire and train individuals to deliver WASH messaging to households, implying that the workers can reach, gain access to, and converse with the households, providing the messaging reliably. We expect the organization to trial versions of this idea that do not involve household visits (HC).

4. The organization can procure and ensure the ongoing supply of health commodities, particularly chlorine tablets and detergent (Medium confidence;MC).

5. The organization can deliver SMS or voice messages at scale (HC), assuming individuals are reachable (MC).

6. One sustaining conjecture about the intervention is that the high-stress environment and hospitalization due to diarrhea act as enablers for behavior change. We believe this is a sensible conjecture, but we have not conducted any research to test it in detail (HC).

7. Most patients are willing to participate in the program (HC).

8. The education component delivered bedside is supposed to enable increased knowledge of disease transmission and prevention, correct common misconceptions, and motivate caregivers to monitor their children's hand-washing habits (HC).

9. Ongoing visits after hospitalization are expected to reinforce messaging. We are unsure how important these are for the overall reliability of the intervention (HC).

10. The commodities are necessary enablers of the desired WASH behaviors. More pared-back intervention models may include only soapy water and instructions on boiling water and constructing DIY hand-washing stations. We believe there are roughly even odds that further RCTs will be published testing these models, which may be more cost-effective (MC).

11. mHealth component recurrently raises the salience of WASH choices and increases knowledge (HC).

12. Increases in motivation to follow enabling WASH behavior can increase the behavior itself (MC).

13. Increases in knowledge about disease transmission and WASH practices can enable individuals to follow protective behaviors more closely (MC).

14. Free provision of chlorine tablets and other commodities can enable the targeted behaviors and reduce financial barriers to action (HC).
15. SMS or voice-recorded messages are constant reminders to maintain the behavior, raising the salience of water, sanitation, and hygiene in the household (MC).
16. Increased handwashing leads to decreased risk of diarrheal diseases (HC).
17. Improved drinking water safety leads to a decreased risk of diarrheal diseases (HC).

We believe the intervention is feasible and scalable (assumptions 1-5)

The intervention's core components are relatively simple. The organization can probably use non-technical staff to deliver WASH messaging and household visits (if necessary). While we expect that ensuring a sustainable and cheap supply of health commodities may prove difficult in some contexts, we are encouraged by the success of other AIM incubated organizations in resolving supply issues at a small and medium scale.

The health commodities needed are cheap and abundant. Supply routes may be problematic for highly fragile contexts and more remote locations.

In discussions with implementers working in similar spaces, we identified a few complexities that will be important to explore further when designing pilots/scale-up delivery:

- **Touch-point:** Depending on the country and healthcare system, the non-profit will have to decide the best household intake strategy (e.g, what hospital size/level to target). This may affect tractability and staffing models based on the number of households expected to be eligible for the intervention at any given time within the hospital system.

We strongly expect that this intervention can only be delivered cost-effectively in large hospitals that will see a sufficiently large caseload.[2]

- **Labor model**: The non-profit will have to opt for a scalable and cheap staffing model. In some contexts, it may be possible to opt for a model whereby existing health workers (CHWs or health promoters) are engaged to deliver the intervention (either through partnerships with healthcare providers or by engaging them in incentive schemes). In other words, the non-profit may have to hire individuals embedded in the hospital to deliver the intervention separately.

The mHealth component of the intervention is feasible. Several of our incubated organizations deploy mHealth solutions at scale. Given that the organizations identify patients at the hospital, we believe data collection to be simpler than in other mobile messaging interventions we deliver, such as vaccination reminders (Fairless, 2023). In some contexts, we expect that poor mobile penetration will entail challenges for reach. In these cases, in-person or no visits may be possible modifications for those unreachable by phone.

The RCTs we have reviewed that deliver PICHA7 and CHoBI7 show that the intervention is feasible at a very small scale. A process evaluation of the mHealth component for PICHA7 in the DRC showed high fidelity and reach (Sanvura et al., 2025). However, we do not take the RCTs as evidence that the intervention can successfully be delivered at scale.

The intervention is effective at motivating behavior change (assumptions 6-15)

We discuss the merits of the intervention in detail in section 3. Aside from the demonstrated effects on primary outcomes of concern discussed below, some accompanying studies have investigated intermediate outcomes such as

[2] One concern to note about this targeting profile is that national average statistics about the burden of disease are likely to be over-estimating burden in highly urban settings. This will not be uniformly the case, and urban settings will definitely receive cases from a large catchment area (e.g., Fagbamigbe et al., 2021).

knowledge of cholera and other diarrheal disease transmission and found statistically significant and sizable effects on knowledge from the program.[3]

[3] "At the 12-month follow-up, the overall diarrhoeal disease knowledge score was significantly higher in the mHealth with no home visits arm (score coefficient: 0.69, 95% Confidence Interval: 0.36, 1.01, P < 0.0001) and the mHealth with two home visits arm (score coefficient: 1.18, 95% CI: 0.87, 1.49, P < 0.0001) compared with the standard recommendation arm." (Masud et al., 2020, page 1). "We observed a significant increase in cholera knowledge score in the intervention arm compared with the control arm at both the 1-week follow-up {score coefficient = 2.34 (95% confidence interval [CI] = 1.96, 2.71)} and 6 to 12-month follow-up period (score coefficient = 1.59 [95% CI = 1.05, 2.13])." (Saif-Ur-Rahman et al., 2016, page 1)

3 Quality of evidence

The evidence base for this intervention comes from a team that has conducted good-quality randomized experiments in Bangladesh and the DRC. Our review of the trials did not elicit any significant concerns. We are excited to have a team test how to scale the findings.

The evidence evaluated in this report primarily comes from a team trialing the CHoBI7 and PICHA7 programs. These programs are very similar, with names adapted to fit the local context.[4]

Table 1 describes the core studies informing our assessment of the evidence.[5] The trials compared the intervention to standard practice for diarrhea patients in Bangladesh or the DRC (a combination of light touch sensitization and Oral Rehydration Solution promotion).

The studies evaluate similar, but not identical, intervention packages that roughly follow the same interventional logic:

- Targeting after a recent hospitalization
- Pictorial / video education and motivational content promoting safe WASH practices and dismantling common misconceptions
- Lowering barriers to access WASH commodities (in particular, we suspect, water treatment tablets)
- Ongoing reminding and raising of salience (mobile interventions and/or home visits)

On balance, we think the evidence shows sufficient promise to merit careful testing of scale-up modalities to replace standard practice, which, in most low-resource contexts, may involve encouraging ORS use and providing light-touch WASH education.

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[4] "The acronym, chobi, means "picture" in Bangla, for the pictorial WASH modules delivered as part of the program" (...) picha, means "picture" in Swahili because of the pictorial WASH modules included in this program" (Bisimwa et al., 2022, page 2)

[5] Further studies and notes can be found in this live document.

The studies have some key strengths and weaknesses, described below.

Strengths	Limitations
• Well-deployed randomized trials, with only minor implementation challenges • Trialing the same interventional logic in two different contexts • Some more objective outcomes, including measures of stunting • Clinical surveillance, in some cases, six to 12 months post-intervention • In some cases, measures of intervention uptake include unannounced spot-checks • Medium-large samples, in most cases well-powered	• Some core primary outcomes are reliant on self- or caregiver-reporting • Not possible to blind • Some intervention intake outcomes may be biased (such as 5-hour household observations) • Some lack of pre-registration and pre-specified outcomes

Our best understanding is that the core team working on these trials continues testing different intervention modalities. We are encouraged by the potential to glean lessons from their work and experiences and closely collaborate on intervention design.

The trials are accompanied by several publications, including formative studies (George et al., 2019; Zohura et al., 2025; Bisimwa et al., 2022; Thomas et al., 2020) and process evaluations (Sanvura et al., 2025; Masud et al., 2020). We did not review these in detail, but they lend credence to the theory of change (section 2), especially around the feasibility of delivery and how households interact with the information provided through the interventions.

Table 1: Study and program component breakdown

Program components	**George et al.** (2016) **Bangladesh Pilot (2013-14)**	**George et al.** (2021) **Bangladesh CHoBI7 mHealth Trial (2016-19)**	**George et al.** (2024 Preprint) **DRC PICHA7 (2021-23)**	**Most likely design for trial**
In-hospital health promoter visit	Yes	Yes	Yes	Yes
Diarrhea Prevention Package				
Chlorine tablets	3 month supply	1 month supply*	32 tablets[+]	Yes
Soapy water bottle	Yes	Yes		Yes
Safe water vessel	Yes	Yes		Yes
Handwashing station	Yes	Yes		No
mHealth component (12 month)	No	Yes**		Yes
Home visits				
7 days post-discharge	Daily for 7 days	1 arm: Twice (30 minutes) 1 arm: None	Twice (30 minutes)	Unsure
After the first 7	No	No	15 minutes every 3 months	No

Program components	**George et al.** (2016) **Bangladesh Pilot (2013-14)**	**George et al.** (2021) **Bangladesh CHoBI7 mHealth Trial (2016-19)**	**George et al.** (2024 Preprint) **DRC PICHA7 (2021-23)**	**Most likely design for trial**
days				
Reported cost/household	USD 2023 ~58	N/A (Suggests at scale no home visits arm would be USD 2023 ~4)	N/A	We think around 6 USD household

* Households instructed to boil water once supply runs out

** Weekly voice and text messages for 12 months

+ 32 more given during each home visit every 3 months

3.1 Will the intervention affect WASH behaviors?

WASH behaviors such as handwashing and chlorinating drinking water increase post-treatment for up to 12 months. We reviewed three key studies (two peer-reviewed, one pre-print) testing the intervention logic across Bangladesh and the DRC. Given the low number of RCTs and sample size, we are cautious in making broad conclusions about the intervention logic. However, these seem like well-implemented randomized trials that support a logical ToC.

On balance, the studies support the intervention logic. The RCTs find promising uptake of key WASH behaviors, including higher odds of handwashing after key events[6], and chlorinating drinking water (e.g., shown increases in residual chlorine in water in DRC study in George et al., 2024).

Accompanying studies on the RCTs in Bangladesh also provide some support for intermediate outcomes. Some additional studies report significant increases in knowledge about cholera transmission one week and between six to 12 months after the intervention (Saif-Ur-Rahman et al., 2016), and diarrheal disease knowledge 12 months after intervention (Masud et al., 2020). In our conversation, the team behind the studies also noted uptake measures from pilots of other intervention aspects, such as trialing a lower-cost intervention that teaches households how to construct handwashing stations at home. We did not review these studies in detail, but they lend credence to the theorized mechanism within the intervention logic (see section 2).

[6] We have some reservations about desirability bias and/or hawthorne effects with this measure. Measurement here relies on 5 hour household observations and - if we understand the measurement strategy correctly - we find it likely that household members would feel it polite and salient to wash hands with items from the interventions when being observed by a team of researchers. The trial team explained that the observers were not from the implementation team, and did not reveal what exactly they were observing.

Table 2: Selected outcomes from key studies

	George et al. (2021) **Bangladesh CHoBI7 mHealth Trial (2016–19) No home visits**	**George et al.** (2021) **Bangladesh CHoBI7 mHealth Trial (2016–19) 2 home visits**	**George et al.** (2024 Preprint) **DRC PICHA7 (2021-23)**
Handwashing before/after stool- or food-related event (vs. control, 12 month)	OR 1.73 (95% CI 1.08–2.78)	OR 1.02 (95% CI .61–1.69)**	OR: 11.8 (95% CI 6.41, 21.7)
WHO high-risk category for water quality (≥100 CFU/100 mL Escherichia coli) (vs control, 12 month)	OR 0.63 (CI 95% .40–.99)	OR 0.64 (95% CI .41–.99)**	n/a[7]

** No statistically significant difference between the visit and no home visit arms

3.2 Will the intervention lead to reduced diarrheal burden?

The studies show significant effects on several clinical markers, including objective measures of stunting. We believe these findings show tentative promise and merit further testing and iteration to identify drivers of (cost-)effectiveness.

[7] Relative to "WHO water quality guideline of <1 CFU/100 ml of E.coli, the PICHA7 arm had significantly higher water quality compared to the standard arm at all timepoints (Week 1: OR: 6.48, 95% CI: 2361, 16.1 to Month 12: OR: 4.28, 95% CI: 1.83, 10.0). Relative to the WHO free chlorine guidelines for household water treatment, PICHA7 arm households had significantly higher free chlorine >0.2 and >0.5 mg/L compared to the standard arm households at all timepoints (>0.2 mg/L free chlorine: Week 1: OR: 13.7, 95% CI: 7.03, 26.8 to Month 12: OR: 17.5, 95% CI: 8.71, 35.1) (>0.5 mg/L free chlorine: Week 1: OR: 84, 95% CI: 28.2, 250.1, Month 6: OR: 40.3, 95% CI: 13.5, 120.5)." (p.13)

The studies primarily focused on the risk of diarrheal disease, reporting statistically significant reductions for at least one year post-intervention.

Table 3 summarizes key findings from the studies. The prevalence of 12-month diarrhea was significantly lower in all treatment arms. Child growth outcomes had mixed results.

Other studies, like a smaller pilot conducted in Bangladesh in 2013–14 (George et al., 2016) and a report of respiratory health outcomes from the Bangladesh mHealth study, also provide weak support for the effectiveness of the intervention (George et al., 2022).

Table 3: Clinically relevant outcomes

	George et al. (2021) **Bangladesh CHoBI7 mHealth Trial (2016–19) No home visits**	**George et al.** (2021) **Bangladesh CHoBI7 mHealth Trial (2016–19) 2 home visits**	**George et al.** (2024 Preprint) **DRC PICHA7 (2021-23)**
12-month prevalence of diarrhea in children (vs control)	Prevalence ratio (95% CI) <2 y: 0.78 (.65–.93) <5 y: 0.82 (.69–.97) All age groups: 0.82 (.69–.97)	Prevalence ratio (95% CI) <2 y: 0.69 (.58–.83) <5 y: 0.73 (.61–.87) All age groups: 0.71 (.60–.84)**	Prevalence ratio (95% CI) 0-1 y: 0.43 (.35-.53 0-4 y: 0.38 (.31,.46) All age groups: 0.39 (.32-.48)
Stunting (vs control, 12-month timepoint)	aOR (95% CI) <2 y: 0.54 (.31–.96) <5y: 0.66 (.43–1.02)	aOR (95% CI) <2 y: 0.55 (.31–.97) <5y: 0.82 (.53–1.27)	aOR (95% CI) <2 y: 0.97 (.31, 3.06) <5y: 0.45 (.21-.95)
Underweight (vs control, 12-month timepoint)	aOR (95% CI) <2 y: 1.04 (.58–1.87) <5y: 1.06 (.67–1.70)	aOR (95% CI) <2 y: 1.05 (.55–2.00) <5y: 1.00 (.60–1.66)	aOR (95% CI) <2 y: 1.17 (.36-3.83) <5y: 1.11 (.49-2.54)
Wasting (vs control, 12-month timepoint)	aOR (95% CI) <2 y: 1.53 (.73–3.20) <5y: 1.19 (.65–2.16)	aOR (95% CI) <2 y: 1.16 (.53–2.51) <5y: 1.00 (.54–1.85)	aOR (95% CI) <2 y: 0.58 (.03-10.28) <5y: 1.79 (.32-10.09)

** No statistically significant difference between visit and no home visit arms

We are encouraged by finding no difference between the arms that had home visits and those that didn't in the Bangladesh study. This may suggest that a cheaper version of the program with no home visits is a feasible and effective option.

We have some reservations about our conclusions:

- The studies test many different intervention aspects simultaneously (see Table 1). It is not possible to disentangle the effects of different elements. While it would be convenient for cost-effectiveness-minded organizations to

presume the cheapest elements carry the most significant impact, it is certainly possible that this is not the case. Ongoing monitoring and evaluation for rigorous testing will be needed to evaluate the effectiveness of whatever intervention package the organization decides to scale.

- Though well conducted and powered, we prefer interventions with several independent studies or replications. We assign a higher risk to this literature than to others we typically recommend.

4 Expert views

As part of our investigation, we consulted several people who are familiar with this space:

- Dr. Nick Laing, Chief Executive Officer of One Day Health (Public link)
- Dr. Abubakar Umar, Co-founder of Taimaka (Public link)
- Professor Christine Marie George (International Health, Johns Hopkins University Bloomberg School of Public Health) and team.

Our findings from these conversations have influenced our decision-making across the reporting. This section summarises the key findings from the consultations that are not mentioned elsewhere.

Theory of Change and delivery

The interviews increased our confidence in the theory of change underpinning the intervention and intervention logic. We think this is a tractable intervention, with several signals of success from both the piloting and trial teams, which transparently report on acceptability, government interest, and low costs, as well as other actors with implementation experience who view the ToC as intuitive and deliverable.

Scaling this intervention to many beneficiaries will require careful targeting of hospitals with a sufficiently large patient number to remain cost-effective. Nick Laing noted concerns around fidelity to the 30-minute module and whether this time was a realistic target for very busy health workers. We think this is a fair concern, mitigated by the fact that the modules include video and are pictorial, as well as potential alternative delivery models that include embedding staff in facilities.

Scaling potential

The trial team noted other work they are conducting, which leverages similar behavioral and epidemiological insights. It targets households within a diarrheal disease outbreak identified through routine surveillance and provides e-vouchers to those affected. Pilots suggest a high uptake of the vouchers. We think it's possible that the vouchers could also be integrated into the hospital-initiated intervention.

Views on recommendation

All consulted were excited to see AIM incubate an organization delivering this idea. The trial team has been pitching this intervention to non-profit organizations for scaling and is excited about supporting teams where possible. They also work with Bangladeshi and DRC authorities to scale the programs in those settings.

5 Additionality and geographic assessment

This section discusses our considerations of additionality and our review of locations where this idea could be delivered in light of the burden, tractability, and potential additionality.

5.1 Neglectedness

We think there is considerable space to work on the issue of child mortality due to diarrhea, with evident gaps remaining given the significant burden. We are satisfied that this specific intervention remains largely focused on Bangladesh and DRC at a small-scale academic evaluation stage. The trial documentation suggests some interest from those governments in scaling up the intervention, but we have not verified this.

We are somewhat concerned about the effect of additional WASH programming on cost-effectiveness, given that the program will likely overlap with other WASH efforts. However, the targeted nature of this intervention somewhat alleviates these concerns as it is focused on people with poor WASH.

5.2 Geographic assessment

We base our country evaluation on probable cost-effectiveness indicators (% of children under 5, under-5 mortality rate, and diarrheal disease burden). We identify at least 7-10 countries where these indicators are similar to DRC, where this intervention is most cost-effective, according to GiveWell.

Link to our model[8]

Our geographic assessments seek to identify priority countries, which are then explored in depth by the entrepreneurs who take the ideas and implement them.

[8] Reported as of 22.07.2025—-note the models are live and may be subject to tweaks or (in rare occasions) large changes that may not be reflected in the text if carried out after publication.

Our sense when modeling country choices was that decision making would mostly be centered around the burden of diarrheal disease and/or child mortality. We chose a handful of indicators based on our review of GiveWell's cost-effectiveness modeling, using our judgment about what could drive cost-effectiveness for an intervention as described in the report.

Table 4 provides what we think are the top candidate countries for this work.

Table 4: Top country candidates

Country	Population under 5	Household size	UNIGME Under 5 deaths	Mortality Rate <5
Nigeria	14%	4.660	768,479	104.9
Pakistan	13%	6.800	397,325	58.5
Niger	18%	5.920	119,782	114.8
Somalia*	18%	6.160	78,874	104
India[+]	8%	4.380	643,970	27.7
Mali*	17%	5.810	83,597	91.3
Chad*	18%	5.970	78,937	101.1
South Sudan	13%	5.980	31,441	98.7
Guinea	15%	6.390	45,350	95
DR Congo*	18%	5.170	306,481	73.2

* Countries we normally believe are too fragile or dangerous to work in

\+ Note that we think India is likely not a good option, despite scoring highly - the size of the population under 5 makes this intervention considerably more expensive per child treated.

Table 5 describes the criteria used and weights assigned.

Table 5: Criteria used

Criteria	Data source & Manipulations	Strengths/Weaknesses	Weight
% Population <5	UNICEF data for population under the age of 5. Log transformed to smooth out differences between countries.	+ Total addressable population marker - Potentially not a good indicator given focus on mortality	5%
UN IGME Under 5 Deaths (2023)	UN IGME estimates for number of deaths in children under 5 years old (2023)	+ Clear addressable population marker + Reliable data	10%

Criteria	Data source & Manipulations	Strengths/Weaknesses	Weight
		- Some concerns of differences between IGME and GBD estimates	
Household Size	United Nations. Closest available estimate of household size, The average number of usual residents (household members) per household	+ Given most costs are fixed per household, the larger the household the lower the cost per unit of the intervention - Data source is from different years for each country and from different survey approaches	10%
Diarrheal Disease Deaths - Rate (Cholera Etiology)	Global Burden of Disease estimates for deaths due to diarrheal disease by cholera etiology.	+ The studies mostly focused on cholera patients, cholera is highly transmissible - Potentially too narrow for an that would actually address all sorts of WASH issues	15%
Under 5 mortality rate (per 1,000 live births)	World Bank Data Catalogue	+ Good sense of overall burden - Different mortalitaty estimations (GBD / IHMME) often have discrepancies	25%
Beds/10,000	Estimates of hospital density/availability. Data were compiled from the WHO Regional offices and country sources other (e.g., Ministry of Health, National Statistical Office)	+ Narrows to touchpoint in intervention - Potentially not a good proxy for going to the hospital/healthcare clinic due to childhood diarrhea	15%
Fragile States Index	Fragile States Index by The Fund for Peace	+ Proxies tractability looking at a variety of markers - Potentially too broad in scope, leading to some counterintuitive results	20%

Criteria	Data source & Manipulations	Strengths/Weaknesses	Weight
		- National in focus, whereas regions can vary a lot in security profile	

Potential changes to the model

Unsurprisingly, the model is dominated by large countries with large mortality burdens. A team may decide that focusing on cholera transmission is better, and weigh the criteria differently.

Additionally, we can see an argument that one should focus more on drivers for poor WASH, and include a few markers of sanitation and water quality to focus on areas where chlorination should be a focus.

Note: GiveWell's priority countries in their chlorination RFI

- "Highest priority: very high expected cost-effectiveness and significant room for scale (i.e., large rural population).
    - Burkina Faso, Chad, Mali, Nigeria, Niger, Somalia, South Sudan
- Medium priority: very high expected cost-effectiveness and moderate room for scale.
    - Central African Republic, Lesotho, Sierra Leone
- Medium priority: high expected cost-effectiveness and significant room for scale.
    - Benin, Burundi, Cameroon, Ethiopia, Guinea, Madagascar, Malawi, Togo" (GiveWell, 2025, page 5)

6 Cost-effectiveness analysis

We did not conduct a detailed cost-effectiveness model and instead relied on a back-of-the-envelope calculation shared with us by GiveWell. Their analysis puts this intervention at between 5 - 13x cash transfers, with the intervention being considerably more cost-effective in the DRC. We reviewed their model, stress-tested some assumptions, and modeled costs independently.

Our approach to understanding cost-effectiveness in this case relied on GiveWell's assessment. Our approach to vetting cost-effectiveness was thus:

- Review the BOTEC by GiveWell, stress testing their assumptions
- Conduct an independent analysis of costs for delivery using an ingredients approach

6.1 Results

GiveWell estimates a paired-back version of this intervention would be between 5 and 13x their bar, which puts the intervention around or above our bar. They model the intervention for DRC and Bangladesh and find DRC to be more cost-effective, primarily driven by the burden and household size.

The trial team provided their own costs and cost-effectiveness metrics as calculated from the trials, with costs per household member estimated at USD 0.90 and cost-effectiveness at 84 USD per DALY averted for Bangladesh utilizing the low-cost intervention package (see table 1, main determinant of lower cost is the lack of handwashing stations), and 2.99 USD per household member and 41 USD per DALY averted for the DRC.

6.2 Modeling choices

Costs

Based on the published literature, GiveWell modeled costs between USD 0.9 and USD 2.4 per person per year. Our reconstruction of the expenses in 2023 USD did not align precisely, but was roughly in the same ballpark. Our effort to source costs for the intervention led us to believe that the intervention can be delivered for between 2023 USD 1.2 to 1.5 per person (2023 USD 6 to 20 per under-5 child treated).[9]

Effects

Based on our review of GW materials, we think the following factors primarily drive results:

- The 60% increase in risk due to a recent case of diarrhea assigned to household members
- Proportion of the population under five and household size (larger proportions lead to lower cost per child affected)
- Childhood mortality at baseline

This intervention could be cost-effective in several countries based on the population dynamics and burden.

We conducted a short bounded review of some studies to understand the evidence base for the claim that "during the time a diarrhea patient presents at a health facility for treatment, the household members of the patient are at much higher risk of developing diarrheal diseases (> 100 times for cholera) than the general population" (Thomas et al., 2020, p. 2).

On balance, we think it's highly likely that household contacts of an index patient are under increased risk of diarrheal disease relative to the general population.

[9] See here.

Given the underlying causes of (particularly bacterial) infections, such as poor water access and sanitation, which the household shares, this makes sense. Clinical surveillance studies consistently find higher odds of diarrheal disease onset for children who were previously hospitalized or had a household contact with diarrhea (particularly in the previous 7 days) (e.g., Blake et al., 1993; Colombara et al., 2014). Prospective cohort studies also support the existence of a higher risk (e.g., George et al., 2018).

Scaling

Scaling may involve lower labor costs if partnerships with the government or private providers can be established, whereby delivering a version of this intervention is part of standard care for diarrhea patients.

Sensitivity analysis and considerations

This intervention is speculative, mainly relying on the simplicity and soundness of the ToC and accompanying indicative evidence. Though rigorous, the BOTEC conducted by GW is liable to have errors. We knowingly defer to their work in this instance. We believe there is value in putting a cost-effectiveness-minded team to scale and test this intervention, given its potential and very low costs per/person treated.

Table 6: CEA considerations

Reasons this intervention could be more cost-effective than modeled, all else equal.	Reasons this intervention could be less cost-effective than modeled, all else equal.
• The increased risk for household members could be higher than modeled. • The intervention could avert morbidity and mortality due to other diseases, which are not	• The increased risk for household members could be lower than modeled. • The lower-cost intervention design leads to lower effect sizes on outcomes of interest.

Reasons this intervention could be more cost-effective than modeled, all else equal.	Reasons this intervention could be less cost-effective than modeled, all else equal.
modeled explicitly.	

7 Implementation

This section discusses implementation factors that we think are relevant for 1) deciding whether we should recommend the idea and 2) entrepreneurs considering scaling it.

7.1 What does working on this idea look like?

Figure 2 notes how we'd characterize this proposed idea along an explore-exploit continuum.[10] Usually, ideas that closely follow an RCT are more likely to fall closer to "exploit" type programs, where the point is to leverage and replicate. However, given the small number of studies supporting this intervention and the need to narrow down to a scalable model that is still (cost-)effective, we think working on this idea will likely require some creative design around targeting, delivery, and the use of mHealth services.

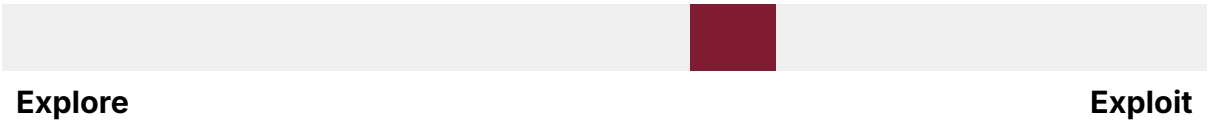

Figure 2: Explore-exploit

Working on this idea will likely involve building partnerships to identify patients and their households (most likely with large secondary or tertiary health facilities). Additionally, it will likely involve managing a large number of program staff who deliver the intervention bedside and gather phone numbers for the final component involving mobile phone SMS and recorded calls.

The logistical complexity of the intervention is likely to increase if the following components are also delivered:

- Household visits, which may involve transportation logistics and more staffing.

[10] Our recommendations can be characterized along a spectrum between exploration and exploitation—ideas closer to exploration require more research and design, and involve riskier bets and wider confidence intervals; ideas closer to the exploit side of things usually have narrower confidence intervals and rely more on replication/expansion of well-developed and concrete interventions.

- A voucher system to redeem chlorine tablets.

7.2 Key factors

This section summarizes our concerns (or lack thereof) about different aspects of a new charity's implementation of this idea.

Table 7: Implementation concerns

Factor	Level of concern
Talent	Low
Access to information	Moderate
Access to relevant stakeholders	Moderate
Feedback loops/Monitoring and Evaluation	Moderate
Execution difficulty/Tractability	Low
Complexity of scaling	Moderate
Risk of harm	Low

Talent

The following backgrounds, skills, or profiles would likely be useful for the co-founders or early hires in this organization:[11]

- Understanding or experience with Monitoring, Evaluation, and Learning for programs and pilots.
- Medical backgrounds
- Experience with mobile phone campaigns and/or mHealth
- Ability to deliver and manage complex partnerships with many stakeholders

[11] We don't believe any of these are must haves.

Access

Information

There are two key pieces of information required to make this intervention work:

- Patient targeting data—who is sick and where?
- Contact data—phone numbers to initiate mHealth intervention

We do not think either of these will prove impossible to access. Mobile penetration will be low in areas with very low resources and may require wider targeting to those sharing phone numbers.

Relevant stakeholders

Based on our organizations' track records, we do not believe access to stakeholders will be a significant challenge. Country of operation selection will likely be influenced by the potential to establish said partnerships.

A strong working relationship with the study team and lead author of the CHoBI7/PICHA7 trials would be useful to enable further learning and testing.

Feedback loops/Monitoring and Evaluation

As noted in our expert conversations, we suspect that monitoring at scale will require considerable effort due to the need to ensure fidelity across the 30-minute bedside intervention across many staff members. This may require mystery patients and other creative solutions to evaluate delivery.

We think the organization will likely need to conduct rigorous evaluations to test and iterate. This is due to the novel nature of this particular intervention modality and the need to find a scalable and cost-effective model.

Tractability

This intervention is tractable and requires staff with low-to-medium skill in human resources and supply chain management and fidelity to the scripted/pictorial and video bedside intervention.

Complexity of scaling

Scaling the intervention will be more complicated, requiring multi-hospital coordination and increased staffing. Monitoring and quality assurance of the bedside component will likely require extensive attention. The mobile health component is easier to scale, given its reliance on digital technologies.

7.3 Remaining uncertainties

- Actual risk levels for households of hospitalized children
- The complexity of targeting - how easy/difficult would it be to target children in secondary or tertiary large hospitals

8 Conclusion

Our decision board decided to recommend this idea for incubation. We are encouraged by the evidence and prospective cost-effectiveness, and believe that the ToC is sufficiently sound to allow for testing and design work.

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