

A safer world in clean hands

Jengu Design Brief August 2018

An initiative by

ARUP

 **BritishRedCross**

LONDON
SCHOOL of
HYGIENE
& TROPICAL
MEDICINE 

Project Background

This project brings together the diverse expertise of the British Red Cross, Arup, Butyl and The London School of Hygiene and Tropical Medicine. Together these partners will develop and distribute a novel hand-washing product that will allow equitable access to effective hand washing, with soap and water, in humanitarian crises. By making hand-washing facilities more universally accessible and easier to use we hope to facilitate hand-washing behaviour change.

The simple act of hand-washing with soap has the potential to make a huge difference in emergencies since it is estimated that approximately 40% of all deaths in the wake of a humanitarian crisis are due to diarrhoeal diseases. Hand-washing has the potential to halve these mortality rates. The development process requires a deep understanding of humanitarian contexts, (including the varied environments in which displacement camps are located), potential stakeholders and its numerous cultural factors, ages and disabilities, and current hand-washing needs and behaviours.

Background to brief

We have drawn on the latest evidence about hand-washing and behaviour change in order to create a product that crisis-affected populations will find intuitive and desirable while also considering the practicalities of product distribution within the humanitarian system.

A set of product requirements was generated by The British Red Cross (1) and The London School of Hygiene and Tropical Medicine (2). Additionally, a team from The BRC and Arup visited the Kyangwali refugee camp in Uganda to better understand the requirements for such a product and to inform the product brief.

Finally, Sian White of LSHTM amalgamated the following product design brief with input from the BRC and Arup teams.

- (1) '2018.04.10 Arup/BRC Product Requirements report'
- (2) 'LSHTM MSM Hand-washing ERU Contexts Gap Analysis report.'
- (3) 'Uganda Travelogue.' Tom Norton.

The design brief

A system approach

We aim is to develop a hand-washing solution that is universally accessible. Therefore, the hand-washing product and its arrangement will need to fit a range of particular humanitarian contexts, geographical locations and local user requirements that one stand-alone product cannot necessarily meet.

To ensure the product is adaptable to meet local circumstances, a 'system' approach to the product is desirable. A system is a limited set of connected things or components that can be varied to meet specific requirements, but will always operate together.

The design brief characteristics has been divided in "Must haves" and "Desirable but not essential". The following areas have been covered:

- General characteristics of the facility
- Water
- Soap
- Hand drying
- Re-use
- Drainage
- Logistics, set up and monitoring
- Maintenance
- Cost

General characteristics of the facility

Must haves	Desirable but not essential
<p>The design must...</p> <ul style="list-style-type: none"> • Encourage people to spend more time washing their hands • Enable both hands to be washed at the same time and rubbed together. • Be easy and acceptable to use for all users • Be attractive and pleasurable to use • Only be suitable for handwashing (e.g. cannot be used for other tasks like dishwashing or water collection) • Be made from durable and resilient materials (e.g. able to withstand sun and rain without rusting or cracking) • Not be able to be broken by users or in transport (ideally it should last at least 12 months with regular use) • Be clearly identifiable as a handwashing facility and its function should be intuitive and transparent • Not be easy to dismantled (e.g. it needs to be attractive to users but not so much so that it's parts are stolen). • Adaptable and customisable (colour/components) to a range of contexts. • Avoid products that might be stereotypically associated with a region of the world. • Be designed for one person to use it at a time but then have a modular approach so that if multiple use is necessary then several facilities can be installed in various configurations. 	<p>Ideally the design should...</p> <ul style="list-style-type: none"> • Include some kind of nailbrush / accessory that would facilitate nail cleaning, but this should not create an opportunity for re-contamination. • Heighten people's awareness of the 'invisible dirt' on their hands. • Heighten people's awareness of the rewards of handwashing: e.g. how attractive, soft, and nice smelling their hands will be after washing with soap or how others will view them more positively because of their handwashing practices. • Heighten the perception that handwashing is normative. • Heighten the association between hand washing and their lives prior to displacement so that it becomes a way for individuals to increase their agency, dignity and regain normality • Incorporate appropriate contextual colours and textures • Include a mirror

Water

Must haves	Desirable but not essential
<p>The design must...</p> <ul style="list-style-type: none"> • Work with a range of water sources (piped, potable, rain water). • Enable water to always be available at the hand washing facility. • Make it easy for all users to refill the water source • Make it evident when the water source is running low and may need replenishing. • Allow a constant flow of water that is sufficient to enable good handwashing (e.g. feels satisfying and pleasant) but not too much so that people worry about water waste. The flow should be consistent throughout the handwashing but the design should allow for a person to vary the duration of the handwashing. Ideally a person will use between 100ml and 500ml per hand wash. • Allow water to be dispensed in a way that minimises second touch recontamination. 	

Soap

Must haves	Desirable but not essential
<p>The design must...</p> <ul style="list-style-type: none"> • Use soap that smells nice and feels nice on hands • Make sure that soap is always available at the facility (that it can't be removed) • Ensure that all users can easily replenish the soap 	<p>Ideally the design should...</p> <ul style="list-style-type: none"> • Encourage the use of liquid soap • Be adjustable so that it could be used with chlorine if necessary.

Hand drying

Must haves	Desirable but not essential
	Ideally the design should... <ul style="list-style-type: none"> • Include a mode of hand drying but this should not create waste, use electricity, be disgusting (e.g. a shared towel) or increase risk of recontamination.

Re-use

Must haves	Desirable but not essential
The design must... <ul style="list-style-type: none"> • Use soap that smells nice and feels nice on hands • Make sure that soap is always available at the facility (that it can't be removed) • Ensure that all users can easily replenish the soap 	Ideally the design should... <ul style="list-style-type: none"> • The design can be re-used within the household using locally available materials.

Drainage

Must haves	Desirable but not essential
The design must... <ul style="list-style-type: none"> • Build in a drainage mechanism and ensure that this is adaptable to a range of geographies • Consider how to prevent water leaks, dripping and waste. • Water does not splash out of the facility onto people's clothes/the floor. 	Ideally the design should... <ul style="list-style-type: none"> • Allow for water re-use

Logistics, set up and mounting

Must haves	Desirable but not essential
<p>The design must...</p> <ul style="list-style-type: none"> • Be able to be transported in a range of transport modes ship/Air/4x4/Bike. • Not have any small (critical) components that could get lost in transport. • Incorporate components which stacking or are collapsible to reduce volume. • Be quick, easy and intuitive to set up with as no more than 2 people • Be able to be set up on uneven terrain remain stable. • Be free standing • Be suitable for use outside a toilet • second touch recontamination. 	<p>Ideally the design should...</p> <ul style="list-style-type: none"> • Be able to be carried by one person. • Be useable in a range of other settings including the kitchen, schools and health centres. • Potentially be mountable • Be located somewhere that allows handwashing to be observed and therefore encourages positive social judgement. • Be easy to disassemble and relocate. • Include additional parts that could 'clip on' later. • Include spare parts which would be sent with the original package. • Be made from components that can be produced cost-effectively at prototype level and during serial production. • Utilise recyclable materials

Maintenance

Must haves	Desirable but not essential
<p>The design must...</p> <ul style="list-style-type: none"> • Be easy to clean. • Have critical parts that are available and sourced locally. 	<p>Ideally the design should...</p> <ul style="list-style-type: none"> • Have all components which are produced locally

Cost

Must haves	Desirable but not essential
<p>The design must...</p> <ul style="list-style-type: none"> • Be perceived by humanitarian actors as good value and worth the investment. 	

Contact us

If you have any further question please send us an email to info@jengu.org.uk or visit jengu.org.uk for more information.

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