

A close-up photograph of a young child with dark hair drinking water from a public tap. The child's eyes are closed, and water is splashing around their mouth. The background is dark and out of focus.

## What factors impact the effectiveness of emergency WASH interventions?

The numbers of people affected by natural disasters, disease outbreaks and conflict are on the rise. Water, sanitation and hygiene (WASH) interventions in emergency contexts have been shown to help reduce the risk of disease by providing safe water, reducing open defecation and promoting good hygiene practices. However, the evidence is limited, forcing responders to rely on past experiences or extrapolate evidence from development settings.

A recent 3ie-funded systematic review examined the effectiveness of WASH interventions targeting disaster-affected populations in low- and middle-income countries. This assessed health outcomes; use of health services' non-health outcomes, such as ease of use or quality of life; contextual barriers and facilitators to implementation and adoption; and cost-effectiveness.

### Main findings

- Water dispensers and water treatment for households, and latrines and hygiene promotion were effective at the beneficiary level.
- Pumping wells flooded with seawater is not effective in reducing salinity.
- There was limited evidence that WASH interventions reduce disease risk.
- Simple messages through multiple communication modes, timing of interventions and encouraging community involvement, among other factors, had an impact on the success of emergency interventions.
- At the community level, perceptions and preferences of WASH interventions are influenced by taste and smell of treated water, and ease of use of promoted technologies.
- Communities overestimated impacts of some WASH interventions, such as household spraying and well disinfection.

---

Interventions involving water dispensers, water treatment technologies at the household level, latrines and hygiene promotion were found to be effective at the beneficiary level.



UNICEF ETHIOPIA/2014/NESSITT

---

## Summary of findings

Overall, 13 types of intervention were identified within the WASH spectrum. There was evidence of the efficacy of 12 of the 13 interventions in improving WASH conditions and reducing the risk of disease transmission.

Interventions involving water dispensers, water treatment technologies at the household level, latrines and hygiene promotion were found to be effective at the beneficiary level.

There was strong evidence that pumping wells flooded with seawater is not effective in reducing salinity. Evidence that WASH interventions reduce disease risk is limited. Of the small body of evidence available, use of chlorine to reduce transmission was comparatively well-documented.

Simplicity and timing of interventions, staff experience, community involvement, clear links with previous development interventions and multiple communication modes, including face-to-face communication and radio, had an impact on the success of emergency WASH interventions.

At the community level, perceptions and preferences of WASH interventions were found to be influenced by taste and smell of treated water, and the ease of use of promoted technologies. Radio and face-to-face communication were the preferred mediums for communication of WASH messages. Building trust and responding to communities' concerns, fears and stigmas, can improve programmes.

**Communities were found to often overestimate the impacts of some WASH interventions, particularly household spraying and well disinfection.**

While some cost information was available, its quality was not sufficient to assess cost-effectiveness.

---

Simplicity and timing of interventions, staff experience, community involvement, clear links with previous development interventions and multiple communication modes, including face-to-face communication and radio, had an impact on the success of emergency WASH interventions.

## Implications

The low level of evidence from impact evaluations in this area and the difficulty of undertaking counterfactual evaluations mean that those using less rigorous methods have been included in this review.

### For policy and programming

**Evidence from the field** – These studies also provide valuable information in the absence of data from more rigorous assessments. Low-quality evaluations and grey literature are a valuable resource in establishing field evidence.

**While there is limited evidence from rigorous counterfactual methodologies, field studies provide this across outcomes, themes and multiple contexts.**

**Expectations of reporting and evaluation** – Consistent indicators should be collected to facilitate comparisons between interventions.

**Enabling conditions** – Improved understanding of previous development projects and local social influences would improve emergency interventions. Context and implementation are major factors that impact the effectiveness of these.

While technical efficacy of WASH interventions is generally well-established, effective and rapid behavioural change remains a primary hurdle to many emergency WASH interventions.

### For research

**Intervention gaps** – Additional evidence is needed for interventions, such as bucket chlorination, bulk water treatment, handwashing, household spraying, water trucking, environmental clean-up and formal economic analysis of all WASH interventions.

**Research methods** – Evaluation methodologies that require significant time and resources, such as randomised controlled trials, are not always appropriate or necessary for emergency WASH interventions.

---

**Consistent indicators should be collected to facilitate comparisons between interventions.**

Non-experimental evaluations with consistent methods can also provide sufficient evidence across emergency settings.

**WASH package interventions** – Programmes involving multiple WASH interventions simultaneously are commonly carried out by responders to emergencies. However, these are complex and difficult to research. Complex evaluation strategies, which help investigate synergies and spillover impacts of a combination of WASH interventions, are needed.

**Best practice comparisons** – Numerous best practice and guidance documents are available from UN agencies, donors and responding organisations, but they are often contradictory. An analysis to identify inconsistencies and consolidate what is considered best practice and what is evidence-based is needed to align best practice across the sector.





UNICEF ETHIOPIA/BEVUNET

## What is a systematic review?

3ie-funded systematic reviews use rigorous and transparent methods to identify, appraise and synthesise all of the relevant studies to address a specific review question. Review authors search for published and unpublished studies and use a theory-based approach to say what evidence may be generalised and what is more context-specific. The result is an unbiased assessment of what works, for whom and why.

## About the systematic review

This brief is based on *Short-term WASH interventions in emergency response: a systematic review*, 3ie Systematic Review 33 by Travis Yates, Jelen Allen, Myriam Leandre Joseph, and Daniele Lantagne. This review synthesised findings from 106 published and grey literature papers that evaluated 114 WASH interventions implemented in 39 low- and middle-income countries.

## About 3ie

The International Initiative for Impact Evaluation (3ie) is an international grant-making NGO promoting evidence-informed development policies and programmes. We are the global leader in funding, producing and synthesising high-quality evidence of what works, for whom, why and at what cost. We believe that high-quality and policy-relevant evidence will help make development more effective and improve people's lives.



[3ieimpact.org](http://3ieimpact.org)

[@3ieNews](https://twitter.com/3ieNews)

[international-initiative-for-impact-evaluation](https://www.linkedin.com/company/international-initiative-for-impact-evaluation)

March 2017

[/3ieimpact](https://www.facebook.com/3ieimpact)

[/3ievideos](https://www.youtube.com/3ievideos)

For more information on the systematic review, please contact the Policy, Advocacy and Communication Office  
[paco@3ieimpact.org](mailto:paco@3ieimpact.org)