

# Rapid response teams: A UNICEF experience

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## Introduction to the rapid response teams

In recent cholera outbreaks, UNICEF has increased the use of Rapid Response Teams (RRTs) to support the WASH sector with the aim of reducing or ‘slowing down’ disease transmission as quickly as possible. RRTs have been used as part of the response to cholera outbreaks in countries such as Haiti, Yemen, Somalia, South Sudan and the Democratic Republic of the Congo, with the scope of these teams varying widely.

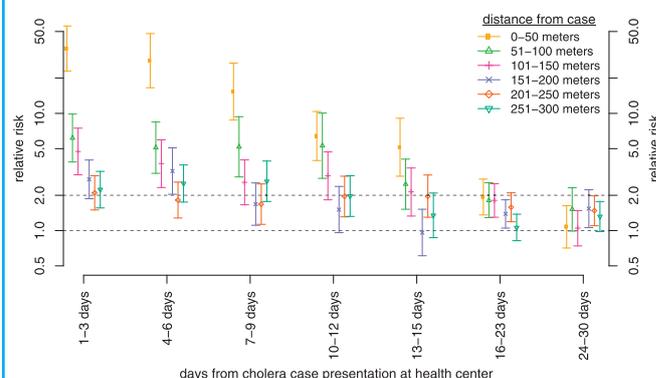
Through the systematic use of surveillance systems and available epidemiological data, RRTs target cholera-affected households and at-risk populations in the community. The RRT model is evidence-based and provides an integrated and harmonized package, delivered through case-area targeted interventions (CATI) aimed to reduce local transmission from person-to-person or transitory environmental contamination.

UNICEF has significantly promoted and invested in RRTs for cholera control. The organization recently conducted a series of descriptive studies and reviews to better understand and document the different types of models in use. UNICEF is committed to supporting further research on the RRTs model, recognizing the knowledge gaps associated with measuring its effectiveness and impact, along with its cost-efficiency. By disseminating key findings and learnings from these efforts to the broader humanitarian community, UNICEF aims to promote replication of the RRT model in outbreaks and cholera-prone areas.

### Exposure to cholera: proximity to and time lapse of transmission risks<sup>1</sup>

**Within 50 meters of a cholera case people are 36 times more likely to contract cholera.**

**There is a higher risk of contracting the disease within the first three days, while the risk exists up to 23 days after a case presents within this perimeter.**



<sup>1</sup> Debes, Amanda K., et al., ‘Cholera cases cluster in time and space in Matlab, Bangladesh: Implications for targeted preventive interventions’, *International Journal of Epidemiology*, vol. 45, no. 6, December 2016, pp. 2134–2139. <<https://doi.org/10.1093/ije/dyw267>>

## Comparative analysis of Rapid Response Teams

The RRT model is embedded in a comprehensive alert-response strategy that includes multiple layers of engagement with households, communities and healthcare facilities, providing a wide range of complementary actions to support the control and prevention of cholera transmission. The RRTs are established and trained teams, usually comprising two to four people from government partners or non-governmental organizations. At the household level, the RRTs undertake a 'cordon sanitaire' for every suspected case. They provide an integrated and harmonized WASH intervention within 48 hours, which targets a 50 to 100-meter radius around the affected household (often between 10 and 20 houses) depending on habitat density. This aims to cut the transmission of the disease in and around the affected household.

The WASH intervention includes key activities such as immediate investigation and active case identification<sup>2</sup>, household disinfection<sup>3</sup>, water quality monitoring, delivery of hygiene promotion sessions, and distribution of a cholera kit. At the community level, RRTs conduct a rapid assessment of the WASH situation to identify potential risk factors, 'quick fixes' of existing WASH infrastructure, and provide temporary chlorination of water systems and points (public or private). The operational and performance aspects of the RRTs model in *Haiti, Yemen and Zimbabwe* have been summarized (see *Table 1*).

**Table 1.**  
**Comparative analysis of RRT models in Haiti, Yemen and Zimbabwe**

	Haiti	Yemen	Zimbabwe
Team composition	Four members. <sup>4</sup> Total of 57 teams in 10 departments. 'Mixed-teams', with multi-sectoral team members from government partner (Ministry of Public Health and Populations: (MSPP) équipes mobiles d'intervention rapide (EMIRA)) and non-government organizations.	Two members. Between 400 – 850 teams in 22 governorates. Non 'mixed-teams', with WASH-only team members from government partner (General Authority for Rural Water Supply Projects: (GARWSP)).	Four members. Total of eight teams. 'Mixed-teams', with multi-sectoral team members from government partner (Harare Health Division, Environmental-Health Officers) and non-government organizations.
Activation	1 suspected case = 1 alert = 1 response.	'Cluster of cases' = 20 cases or more in one geographical area over a one-week period (aimed to reach 25 per cent of cases).	1 suspected case = 1 alert = 1 response.
Response time	In 2018, 85 per cent of suspected cases were responded to within 48 hours, and 75 per cent within 24 hours. 95 per cent response rate for suspected cases.	In 2018, 3 per cent of suspected and confirmed cases were responded to within 24 hours; 43 per cent within 24 to 48 hours and 23 per cent within 48 to 72 hours. 32 per cent response rate for suspected cases and 83 per cent confirmed cases.	In 2018, 73 per cent of suspected cases responded to within 48 hours.
Response coverage	10 to 20 households per case.	20 to 21 households per day.	10 to 20 households per case.
Scope of action to affected household and in the 'cordon sanitaire'	<ul style="list-style-type: none"> <li>• Immediate investigation and active case identification</li> <li>• Oral chemoprophylaxis</li> <li>• Household disinfection</li> <li>• Water quality monitoring</li> <li>• Hygiene promotion sessions</li> <li>• Cholera kit distribution</li> </ul>	<ul style="list-style-type: none"> <li>• Immediate investigation and active case identification</li> <li>• Household disinfection</li> <li>• Water quality monitoring</li> <li>• Hygiene promotion sessions</li> <li>• Cholera kit distribution</li> </ul>	<ul style="list-style-type: none"> <li>• Immediate investigation and active case identification</li> <li>• Household disinfection</li> <li>• Water quality monitoring</li> <li>• Hygiene promotion sessions</li> <li>• Cholera kit distribution</li> </ul>
Scope of action in the community	<ul style="list-style-type: none"> <li>• Quick assessment of water and sanitation situation in affected areas</li> <li>• 'Quick fixes' of existing WASH infrastructure</li> <li>• Chlorination of water sources</li> <li>• Intensified community engagement and hygiene awareness in public places, food markets, schools, churches, special gatherings, etc.</li> <li>• Preventive interventions in areas with the presence of risk factors (e.g., high rainfall, prolonged drought, poor WASH conditions, mass gatherings, etc.) of active cholera transmission</li> </ul>		
Costs	US\$10,234 <sup>5</sup> per team, per month, including salaries and incentives, car rental, fuel and maintenance, and materials and supplies, and operational and administrative costs for UNICEF.	US\$2,400 for urban teams to US\$ 3,000 <sup>6</sup> for rural teams, per month, including salaries and incentives, and car rental, fuel and maintenance, and operational and administrative costs for GARWSP, materials and supplies.	US\$2,600 to US\$5,600 <sup>7</sup> including car rental, fuel and maintenance (as needed).

2 In Haiti, close contacts receive oral chemoprophylaxis administered by the health component of the RRTs, supported by the MSPP's EMIRA.

3 Specifically targeting traces of excreta and vomit, toilets, patients' clothing, etc.

4 This can increase to five, pending inclusion of a member from MSPP's EMIRA.

5 This is the total cost, including administrative costs associated with UNICEF and non-government organizations. The operational cost estimate is US\$6,800 per month, per team (e.g., rental car, fuel and maintenance: US\$2,500 and salaries: US\$4,300 for one team lead, two hygiene promoters or community mobilizer and one driver).

6 Including rental car costs, the monthly cost ranges from US\$2,400 to US\$3,000 for urban and rural teams, respectively.

7 This does not include salaries as staff members are from Harare municipality. It also does not include administrative costs associated with UNICEF.

## Effectiveness and performance of Rapid Response Teams

The use of the RRT model has demonstrated that it provides an indispensable mechanism for supporting cholera response and prevention activities in Haiti, Zimbabwe and Yemen.

In **Haiti**, the prediction of a potential increase ranging from 40,000 to more than 200,000 cases was the driving factor that led to setting-up and activating of RRTs in June 2013.<sup>8</sup> UNICEF collaborated with the MSPP's to launch 'mixed teams' from MSPP's EMIRA and non-governmental organizations (mainly Action Contre la Faim, the Agency for Technical Cooperation and Development, and Solidarités International) for the roll out of 57 RRTs.<sup>9</sup> The results from a recent study on the effectiveness of RRTs "strongly suggest that a coordinated CATI strategy was significantly effective in mitigating and shortening cholera outbreaks in Haiti". Looking at 456 cholera outbreaks across Haiti from January 2015 to December 2017, the study finds that "a first complete CATI  $\leq 1$  day reduced accumulated cases by 74 per cent (58 to 84), and outbreak duration by 64 per cent (42 to 78)".<sup>10</sup> As part of the nationwide comprehensive alert-response strategy over the past four years, RRTs played a significant role in achieving the near elimination status, with no positive cholera cases being reported since February 2019 by Haiti's MSPP.<sup>11,12</sup>



In **Zimbabwe**, during the second month of the outbreak, there was a noted reduction in daily cholera incidence. Even so, a plateau in the new case numbers over several weeks suggested a high likelihood of interpersonal transmission, which was the driving factor that led to setting-up and activating the RRTs in October 2018. UNICEF collaborated with Centers for Disease Control and Prevention and built on existing City of Harare's Environmental Health Division teams with support from non-governmental organizations (mainly GOAL and Oxfam) for the roll out of eight RRTs.<sup>13</sup> From November 20 to December 19, 2018, the day that the last suspected case was reported, the RRTs responded to 179 suspected cases out of 233 reported cases (i.e., 77 per cent, of which 73 per cent were responded to within 48



hours). They reached an average of 14 households for every suspected case, and provided 2,135 households with water treatment and hygiene materials, and investigated 167 community drinking water sources.

In **Yemen**, the driving factor that led to setting-up and activating the RRTs in August 2017 was the cumulative caseload, comprising 621,209 cases since October 2016, with predictions of a potential increase into the millions.<sup>14</sup> UNICEF collaborated with GARWSP, which operates under the Ministry of Water and Environment, for the roll out of between 450 and 800 teams. From January to April 2019, the RRTs responded to 73 per cent of the confirmed cases. However, due to context specific constraints, the response time could not be properly assessed, nor the correlation between cholera incidence and interventions by RRTs. Despite these limitations, as part of the nationwide comprehensive alert-response strategy, there is recognition that RRTs contributed to slowing transmission rates. This was achieved through the pre-positioning of teams, materials and supplies in at-risk areas based on rainfall predictions. This was coupled with large-scale preventative WASH actions through key interventions, such as the distribution of 30,993 hygiene kits and more than two million chlorine tablets in April 2019.<sup>15</sup>



8 Rinaldo, A. et al. (2018), 'Reassessment of the 2010–2011 Haiti Cholera Outbreak and Rainfall-Driven Multiseason Projections', *Proceedings of the National Academy of Sciences of the United States of America*, vol. 109, no. 17, pp.6602–6607, 12 September. <[www.ncbi.nlm.nih.gov/pmc/articles/PMC3340092](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3340092)>

9 Oxfam was also part of the RRT model until June 2018.

10 Michel, Edwige, et al., 'Effectiveness of Case-area Targeted Response Interventions Against Cholera: A quasi-experimental study in Haiti', December 2017. <[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3304278](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3304278)>

11 Over the last 2.5 years, two targeted oral cholera vaccine (OCV) campaigns were conducted in two districts, Mirebalais and Saint Michel de l'Attalaye, covering 130,000 people.

12 MSPP (2019). Rapport du Réseau National de Surveillance Cholera, 29<sup>ème</sup> semaine épidémiologique 2019. <<http://mspp.gouv.ht/site/downloads/Profil%20statistique%20Cholera%20%2029SE%202019.pdf>>

13 Environmental health teams were already in place and tasked with conducting case investigations during the initial stage of cholera outbreak.

14 WHO (2017), 'Cholera Situation in Yemen, August', 12 September 2017. <[http://applications.emro.who.int/docs/EMROPub\\_2018\\_EN\\_20431.pdf?ua=1](http://applications.emro.who.int/docs/EMROPub_2018_EN_20431.pdf?ua=1)>

15 Ministry of Water and Environment (2019). Emergency Operation Room Monthly Report, April 2019.

## Replication of the Rapid Response Teams



The use of the RRT model has demonstrated that it provides an indispensable mechanism for supporting cholera response and prevention activities in **Haiti, Zimbabwe and Yemen**. To support the replication of RRT models in different countries and contexts, particularly in outbreak settings, it is important to note the key factors required to create an enabling environment for the RRTs in **Haiti, Yemen and Zimbabwe**. The most significant factors include:

- Interest and willingness among national and local authorities is required to ensure an effective response and facilitates systematic adherence to the comprehensive alert-response strategy, further reinforcing information-sharing, coordination and accountability.
- Strong coordination between stakeholders, including national and local level authorities, coordination mechanisms, such as the Health and WASH Cluster, and community leaders, facilitates timely information management and sharing.
- Strong information management, including a robust surveillance system and timely sharing of epidemiological data, based on a well-defined alert system to support the activation and deployment of teams.

- Early detection at the beginning of an outbreak and prompt use of RRTs plays a critical role in avoiding further spread of the disease, and is further reinforced through the support and leadership of national authorities.
- Availability of well-trained personnel in multi-sectoral teams, that include health, WASH and communication for development, with the flexibility to increase or decrease resources in response to cholera incidence and to remain agile in reacting to the 'moving target' of identified cholera hot-spots.
- Availability of materials and supplies, logistics support, and pre-positioning of items in secure and space-efficient warehouses, is required to support timeliness of interventions.
- Predictable, flexible and timely funding is essential for the RRTs and should be sustained over time. Contingency funding established with donors through a national mechanism for emergency funding is required in the absence of permanent funding sources.



UNICEF, *Global review of water, sanitation and hygiene (WASH) components in rapid response mechanisms and rapid response teams in cholera outbreak settings – Haiti, Nigeria, South Sudan and Yemen*, UNICEF, New York, 2019.

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