



Increasing healthcare continuity during floods

Summary

Between 2019 and 2024, the Philippine Red Cross (PRC) worked together with rural communities in the Municipality of Mangatarem, the Philippines, to strengthen the continuity of healthcare services during and after floods. Limited healthcare access due to obstructed roads and bridges, especially for the most remote households, was addressed through building local first aid capacity and by bringing healthcare services to communities through the use of bicycles. Community healthcare volunteers now mobilize locally to treat flood-related injuries and illnesses and maintain ongoing support to vulnerable community members such as pregnant women.

Our approach

Using the Flood Resilience Measurement for Communities (FRMC), now the Climate Resilience Measurement for Communities (CRMC), the PRC identified a need to strengthen the continuity of healthcare for remote community members during floods. Healthcare facilities based in the municipal capital and neighbouring communities are often inaccessible due to damaged roads and bridges. By working with communities and local authorities, creative solutions were developed to localize healthcare services during and following floods.

Facts and figures



Cost:
PHP 650,000



Time:
Eight to 12 months



Key inputs:
Training materials and personnel, healthcare equipment and medicine, and additional items to extend reach, for example, bicycles with sidecars



Easy to replicate?
Yes



Philippines



Visit the Solutions Finder to see more
Solutions from the Alliance

Find us on LinkedIn »
Visit ZCRAlliance.org »

What was the problem?

Rural communities in the Municipality of Mangatarem are dispersed, meaning that distances to health centres can be significant. This can be challenging at any time, but during and following hazard events, damage to roads and bridges can make access even more difficult. As a result, vital health services for vulnerable groups are interrupted, and flood-related injuries and illnesses are not effectively addressed at the local level. At the same time, the hazard events themselves can increase the need for health services, often at a time when external support is delayed.

What was the solution?

Data collected throughout the FRMC process indicated key resilience gaps, including minimal first aid knowledge at the local level and reduced healthcare access during floods, which is exacerbated by transportation interruptions and limited external flood-response capacity.

To strengthen healthcare access during floods, the PRC facilitated community-based health and first aid training with diverse sectors of the community, covering theoretical and practical exercises on life-saving measures and the prevention and treatment of diseases. Furthermore, community members learned about effective communication strategies to increase awareness amongst the wider population and were provided with vital equipment and supplies, such as resuscitation mannequins and first aid kits, to enhance local healthcare services as well as to promote the replication of training throughout the population.



Mobile healthcare bikes are delivered to community healthcare volunteers in Dorongan Valerio, Pangasinan, August 2023. Photo: Philippine Red Cross

Subsequently, the PRC led a participatory analysis that brought authorities together with the local population to identify, plan, and operationalize creative solutions for strengthening healthcare continuity during floods. Considering the significant obstacles to getting in and out of the communities during floods, the process in the Municipality of Mangatarem focused on the effective activation and mobilization of trained health volunteers within each community. Communities devised a model to take healthcare services directly to local families through the use of bicycles, and, as a result, the mobile health clinics were born.

How does it increase resilience?

The combination of increasing first aid capacity, fostering collective responsibility, and developing and operationalizing sustainable healthcare provision strategies generates important changes to community resilience. First, the continuity of healthcare services is strengthened during floods as well as year-round, especially for the most vulnerable groups and those living in remote areas. Second, life-saving skills can be



Philippine Red Cross volunteers take part in a first aid competition to strengthen their skills following community-based first aid training, November 2023. Photo: Philippine Red Cross



Climate Resilience Measurement for Communities (CRMC)

The Climate Resilience Measurement for Communities (CRMC) is a data-driven process, complemented by a web-based tool and mobile app, which helps communities to evaluate and measure how resilient they are to climate hazards. Using the results, they can identify and implement resilience-building interventions and run additional measurements to track improvements.

Find out more: ZCRAlliance.org/crmc



Philippine Red Cross volunteers take part in a first aid competition to strengthen their skills following community-based first aid training, November 2023. Photo: Philippine Red Cross

applied locally to treat flood-related injuries caused by debris or by moving objects, preserving life and health before external support services arrive. Gastro-intestinal and skin conditions caused by contact with contaminated flood water and vector-borne diseases that tend to surge in the aftermath of a flood can also be prevented and treated at the household and community levels.

Success story

Trained community members in the Municipality of Mangatarem use bicycles to provide healthcare and first aid services throughout the community, ensuring the most vulnerable and remote families are included.

“Our mobile health clinics started when we couldn’t reach some of our most vulnerable community members ... while previously we couldn’t support those in need during floods, now we can go to them quickly”

Nora Camacho, Dorongan Valerio

Other benefits:

- A more localized health system can expand and improve local health services during normal times, including immunization campaigns and attention for pregnant women, leading to a healthier population more able to withstand shocks such as floods.
- A mobile health system can also be leveraged to facilitate the local dissemination of risk information and flood alert messages, increasing the uptake of preventative measures to save lives and reduce loss and damages.

Common conditions for success:

Q: *Is this intervention appropriate for other communities?*

A: Increasing the availability of healthcare services in each community may include leveraging different modes of transport such as bicycles, boats, or rafts, targeting a different issue such as language barriers, or diversifying to new methods of service delivery online.

Q: *What conditions are needed for the interventions?*

A: In addition to time and resources from communities and local authorities, creative thinking and an openness to doing things differently were key to the success of this intervention.

Q: *Was there anything special about the communities where the interventions were effective?*

A: Bicycles are a common mode of transport in the community of Dorongan Valerio, and therefore most people are comfortable using them.



First aid training carried out with school students in Pasig City, May 2023. Photo: Philippine Red Cross

Expert view

"I'm happy because the solution is unique. Building a health centre is a good intervention, but if there's no land and there's a problem with healthcare access, what do you do? Here, bicycles became the solution. What I'm most proud of is that it came from the community themselves."



Steven Emer Laranjo,
Disaster Preparedness and Risk
Reduction Technical Officer,
Philippine Red Cross



First aid training carried out with school students in Pasig City, May 2023. Photo: Philippine Red Cross

! Lessons learnt

- Working together with communities to understand resilience gaps and opportunities ensures that solutions are locally led and contextually relevant. In this case, that meant looking beyond infrastructure and reviewing and rethinking existing processes and systems.
- Volunteer retention is an ongoing challenge. Engage first with enthusiastic community members that can inspire others.
- Ensure the sustainability of equipment by assigning clear responsibilities for operation and maintenance over time.

Get in touch

If you have any questions, contact:
Criselda Longga, Manager,
Disaster Management Services,
Philippine Red Cross
criselda.longga@redcross.org.ph

For more resilience solutions, visit:
ZCRAlliance.org/solutions

Follow us on LinkedIn and sign up
to our newsletter



Further reading

CIWEM (2024) 'Rural Flood resilience in Pangasinan. Zurich Alliance. CIWEM. The ripple effect', [video].

<https://zcralliance.org/resources/item/rural-flood-resilience-in-pangasinan/>

ZRFA and IFRC (2024) 'Enhancing flood resilience: insights from the Philippines: final report on the flood resilience program'.

<https://zcralliance.org/resources/item/flood-resilience-in-philippines-final-program-report/>



The Zurich Climate Resilience Alliance is a multi-sectoral partnership, powered by the Z Zurich Foundation, focused on enhancing resilience to climate hazards in both rural and urban communities. By implementing solutions, promoting good practice, influencing policy and facilitating systemic change, we aim to ensure that all communities facing climate hazards are able to thrive. [Find out more at ZCRAlliance.org](https://ZCRAlliance.org)

In partnership with:



Powered by: **ZURICH** Foundation

© 2025 Zurich Climate Resilience Alliance

The Zurich Climate Resilience Alliance is funded by Zurich Insurance through the Z Zurich Foundation; however, the views expressed do not necessarily reflect the company's official position.