Assessing and improving cities' emergency response plans

Many cities across the world are at high risk of mass casualty events but do not have the tools needed to assess their preparedness for such events – gaps are only revealed when a disaster occurs.

This study, 'Measuring Urban Capacity for Humanitarian Crisis: Piloting an Urban Health Response System Assessment Tool', led by Johns Hopkins University between 2017 and 2020, developed a new tool to assess and improve a city's emergency response plans.

Tested in three high-risk cities, recommendations were provided to policymakers to improve their performance, allowing cities to work towards fulfilling global commitments. The study helped to increase the capacity of local actors in the participating cities, and mobilised resources towards preparedness. The tool is now being tested in more cities across the world, with the evidence supporting the securing of resources from the humanitarian partner on the study, the International Committee of the Red Cross (ICRC). The study contributed to the humanitarian evidence base and influenced ICRC's strategic approach to disaster response.

Title: Measuring Urban Capacity for Humanitarian Crisis: Piloting an Urban Health Response System Assessment Tool

Location: Karachi (Pakistan), Fortaleza (Brazil) and Port Harcourt (Nigeria)

Study type: Mixed methods tool development

IMPACTS

- Advanced the knowledge and understanding of operational staff and city leaders who participated in the study
- Influenced the strategic approach of IFRC and their approach to research
- Developed and validated a robust, evidence-based humanitarian tool

RESEARCH IMPACT LEARNING

- The value of strong core partnerships and shared goals in research co-production
- Directly engaging policymakers in testing of policy-relevant tools to inform development

BACKGROUND

Most cities in the world are vulnerable to at least one type of natural or man-made disaster, putting them at high risk of mass casualty events. Global commitments such as the Sustainable Development Goals (SDGs) and the Sendai Framework for Disaster Risk Reduction provide direction and targets to improve a city's emergency response, but tools are lacking for city health authorities to test their emergency medical response plans and compare their performance with other cities. Guidelines or protocols in some cases exist, but capacity gaps are not known until a disaster occurs.

Karachi (Pakistan), Fortaleza (Brazil) and Port Harcourt (Nigeria) were identified as three cities at high risk of mass casualty events, providing ideal contexts to participate in this study. Recurring global disasters have generated a general appreciation for the problem and motivated the participation, interest and action from researchers and academic stakeholders across these cities.

"[The study] came in at the right time when many cities across the world were grappling with recurring disasters"
– Prof. Rogério Giesta, Universidade Federal do Ceará in Fortaleza, Brazil

THE STUDY

The study developed a robust, evidence-based and policy-driven tool to test a city's emergency response plans, called City's Assessment of Mass Casualty Emergency Response and Action (CAMERA). Designed to objectively measure and score the lifesaving capabilities of an urban health system in the aftermath of a mass casualty event, it helps health authorities to improve disaster response plans before a disaster occurs. It can also be used to track and compare performance over time.

The CAMERA tool was developed based on mixed-methods research comprising a literature review, in-depth key informant interviews, and structured engagement with global and local experts. As such, the design was needs-based and built on existing evidence. The initial literature review identified key gaps and then a robust framework, CAMERA, was developed to address them.

The tool was developed using information collected from three high-risk cities around the world: Karachi (Pakistan), Fortaleza (Brazil) and Port Harcourt (Nigeria). It was tested in three stages: implementation (with assessment of internal consistency through surveys), validation through a disaster drill, and testing for policy relevance in these three cities, though COVID-19 prevented disaster drill testing in Fortaleza. For example, in Port Harcourt, this drill was a simulated collapse of a multistorey building, with members of the Nigerian Red Cross acting as civilians with traumatic injuries. Cities were given a percentage score across a range of metrics at scene, ambulance, hospital and city authority levels.

FINDINGS

Testing of the tool in the three cities demonstrated its reliability and feasibility, and testing in the two disaster drills provided further validity and reliability.
All three cities tested showed critical gaps in their preparedness for a mass casualty event, including in their frameworks and management structures to oversee and coordinate the emergency response. Findings in all three cities helped to identify concrete and actionable evidence on areas for policy and operational improvements. As a result, the study team made recommendations to policymakers on improving their response in terms of hospital preparedness, ambulance services and command/communication.

COMMUNICATIONS AND ENGAGEMENT

Multi-sectoral collaboration was key to the success of the study. Stakeholders were mapped across research, policy and practice for each city. Some pre-existing relationships facilitated this collaboration, providing networks and resources to influence the study direction as well as the engagement activities. ICRC specifically was a valuable partner organisation offering wide networks, the credibility and expertise to lead the testing and validation of the tool and engage city authorities, and, later, resources to expand the deployment of the tool. Their programming expertise, combined with the knowledge of city researchers, allowed for substantive reflections which improved the tool's relevance at each iteration.

While the study team planned for extensive engagement with decision-makers and policymakers at the city authorities, connecting them with respective academic entities for local ownership and sustainability, this was unfortunately not achieved due to time, cost and high turnover of city officials. Nevertheless, engagement with academia in each city was good and, given many of these have advisory roles and responsibilities supporting city policymakers, this shows promise for supporting city authorities in the future and endorsing the tool. This will facilitate localisation of processes, findings and impacts.

"[It was important that local researchers get directly involved because] they would be the ones to support city authorities to take this agenda forward by providing technical backstopping" – Rogério Giesta, Universidade Federal do Ceará, Fortaleza

Meetings with all stakeholders, crucially academic partners, were regularly held, and a multi-country consortium convening 11 teams from across all three participating countries was essential for sharing learnings between cities.

The results of the tool's assessment in each city were provided both in-person and via virtual platforms. At the international level, findings were disseminated at an international event co-hosted by the Geneva Cities Hub and internally throughout the ICRC.

UPTAKE AND IMPACT

The study demonstrated the reliability and feasibility of a tool for assessing the preparedness of a city for a mass casualty event. Evidence indicates that it advanced the knowledge and understanding of city leaders in the three participating locations. Recommendations provided to policymakers as a result of the study were well received, and all three cities now have concrete steps to improve their performance. These are allowing cities to work towards fulfilling their global commitments, such as SDGs and the Sendai Framework for Disaster Risk Reduction. A key stakeholder in Nigeria reported that the study directly supported the government to fulfil its global commitments under the SDG framework.

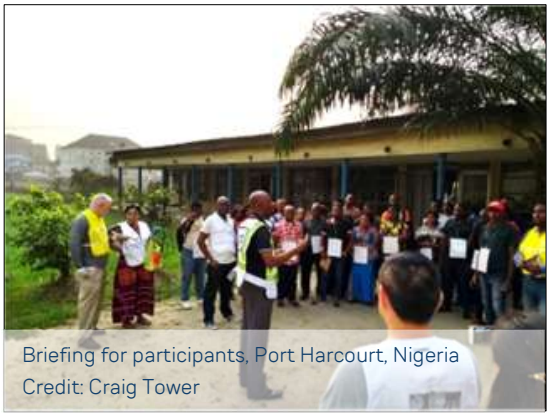
"CAMERA has laid the foundation for us to efficiently and effectively meet those [SDG] targets" – Dr Patrick Echem, Port Harcourt City, Nigeria

The capacity of several local actors in the three participating cities were strengthened as a result of the study, including academics and researchers, urban planners and some frontline responders. The study also helped to mobilise resources towards preparedness for mass casualty events. In Fortaleza, local teams are now able to undertake drills and assess their preparedness without the oversight of the study team.

ICRC has reported that uptake of the tool in cities globally is in the very early stages and that sustained engagement is needed for policy change. ICRC has announced that, together with its national partners, it will test the tool in more cities in Pakistan, in Lagos in Nigeria, and in cities in Lebanon. This, in itself, is raising awareness of the need for better preparedness and providing continued learnings for the humanitarian community.

The study also contributed to the humanitarian evidence base by developing and validating a robust, evidence-based tool. It has influenced the ICRC's approach to humanitarian responses, and strengthened linkages between research, policy and programming.

"[As a result of the partnership with the study team, ICRC currently has a] deliberate strategy to strengthen the evidence for all our operations and to promote this research in the different departments or sectors" – Micaela Serafini, Head of the Health Unit, ICRC



Briefing for participants, Port Harcourt, Nigeria
Credit: Craig Tower

RESEARCH IMPACT LEARNING

THE VALUE OF STRONG CORE PARTNERSHIPS AND SHARED GOALS IN RESEARCH CO-PRODUCTION

Despite operational challenges caused by the global pandemic, the study was still able to produce results and engage key stakeholders in dissemination and uptake activities, including through webinars and other remote communications efforts. A strong core partnership was essential for continuing to deliver the project during such challenging times.

DIRECTLY ENGAGING POLICYMAKERS IN TESTING OF POLICY-RELEVANT TOOLS TO INFORM DEVELOPMENT

Focusing on the policy relevance of the tool as part of the testing phase, and directly engaging policymakers in the results, ensured that the results responded to policy needs and priorities. This is likely to prove an important element in the future uptake of the CAMERA tool. However, greater global and national attention on urban preparedness will be important to stimulate political will and cement the long-term impact of this research. This study is a first step in what is likely to be a long journey of change as the CAMERA tool continues to be tested and used in other settings.

PARTNERS

Johns Hopkins University School of Medicine; ICRC Switzerland; ICRC Pakistan; APPNA Public Health Institute; Universidade de Fortaleza; University of Port Harcourt

ABOUT ELRHA

Elrha is a global organisation that finds solutions to complex humanitarian problems through research and innovation. This study was funded by Elrha's Research for Health in Humanitarian Crises (R2HC) Programme which aims to improve health outcomes by strengthening the evidence base for public health interventions in humanitarian crises.

R2HC is funded by the UK Foreign Commonwealth and Development Office (FCDO), Wellcome, and the Department of Health and Social Care (DHSC) through the National Institute of Health Research (NIHR).

R2HC captures detailed case studies through a process that triangulates and validates evidence on uptake and impact. The case study methodology and full version of this summary case study including references are available on request.

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