THE CHALLENGE

Cardiovascular Diseases, including heart attacks and other diseases, are the leading cause of death in Brazil.

Severe heart attacks, known as ST-elevation myocardial infarctions (STEMIs), are especially difficult to treat since rapid response is needed to reduce damage to the heart muscle and save lives. Emergency medical services (EMS) and hospitals are often unable to respond fast enough with evidence-based care for patients suffering from STEMIs.

THE GOALS

Improve access, quality of care, and the speed of response in the EMS and hospitals to provide better care for severe heart attacks.

Increase community awareness of the symptoms of heart attack and the need for patients and families to act quickly to contact the EMS when those symptoms happen.

THE CITY: VITÓRIA DA CONQUISTA, BAHIA, BRAZIL

POPULATION: **400,000**

Low income people are estimated to be **43%** of the population

Illiterate people are estimated to be **13%** of the population

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The HeartRescue Global project, including HeartRescue Brazil, was based on the Diffusion of Innovations theory of change. Vitória da Conquista served as an early adopter of interventions to improve access, quality of care, and the speed of response for STEMI victims. This demonstrated to other cities in Brazil that improvements in care for STEMI patients are possible.

HeartRescue Brazil conducted interventions to improve heart attack care in three settings, including the community, EMS, and hospitals.

In the community, education was conducted through community health workers about heart attack symptoms and the need for patients and families to take rapid action to get to a hospital when those symptoms happen.

Clinical protocols and training for treatment of severe heart attacks were developed and implemented in the EMS and in the hospitals to improve access, quality of care, use of evidence-based treatments, and reduce the time to treatment once patients were in the healthcare system.

A STEMI patient registry data system provided feedback to EMS and hospital staff to track progress.

2018–2020 HeartRescue Brazil
Selected Achievements

349 community health workers trained

116 school teachers trained in heart attack symptoms and first aid for heart attacks

7,273 students educated in heart attack symptoms and first aid for heart attacks

STEMI patient registry data collection began in late 2019 but was interrupted in 2020 by the COVID-19 pandemic after only limited data collection had been completed. Data collection for the initial 54 STEMI patients provides initial quality measure data.

Of the STEMI patients in the registry

48% **arrived** at the hospital **by ambulance** instead of by walk-in

50% **had the time** from their heart attack symptom onset to first medical system contact **below the target of 90 minutes**

39% **received reperfusion**, the evidence-based treatment

86% had no adverse events in the hospital (heart failure, stroke, bleeding requiring transfusion)

48% had **ejection fraction assessed** in the hospital

15% were **discharged** from the hospital **with beta blocker medications**

13% were **discharged with statin medications**

HeartRescue Brazil
Accomplishments

STEMI patient registry and quality improvement data system implemented to track data on the numbers of STEMI patients and quality measures on their access and treatment covering the community, EMS, and hospital settings of care.

Community education through local community health workers, that built on the Medtronic Foundation's prior HealthRise project in Vitória da Conquista.

Schools education through a curriculum developed on recognizing the symptoms of heart attack, first aid for heart attacks, and how patients and families can respond quickly when those symptoms happen, that was approved by the Vitória da Conquista local government for all of the high schools.

Increased the number of calls to the SAMU 192 emergency call center for chest pain from 35 to 96 per quarter.

Improved hospital care protocols and processes, including heart attack clinical guidelines implementation and training.

Learnings

Data quality problems varied among the participating hospitals, so the project developed individualized methods for following up and improving medical chart documentation for STEMI patients at each hospital. This is also an area for continuing future improvement.

There were delays for many months in obtaining IRB approvals. Future projects should start IRB applications earlier and identify ways to shorten the process.

Building on established projects creates many benefits for continuity and connections. The good reputation of the prior HealthRise project and the backing of its staff proved valuable for gaining support for HeartRescue Brazil from local government staff and medical providers in Vitória Da Conquista. Former HealthRise staff also provided training to community health workers, school teachers, and students, and worked with hospitals on data collection for HeartRescue Brazil.