

## THE CHALLENGE

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



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: BANGALORE, INDIA



POPULATION: 12 million people

- People with no health insurance are estimated to be **78%** of the population
- People with only a middle school education or less are estimated to be **34%** of the population
- People with low incomes are estimated to be **44%** of the population



The HeartRescue Global project, including HeartRescue India, was based on the Diffusion of Innovations theory of change, where Bangalore 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 India that improvements in care for STEMI patients are possible.

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



In the community, partnerships with schools and community groups, social marketing materials, and a toll-free telephone number with trained emergency dispatchers increased community awareness about heart attack symptoms and the need to take rapid action when they happen.



EMS interventions included improved clinical protocols, a new nurse-paramedic motor scooter first responder system, and training for doctors, EMS dispatchers, and other staff.



For hospitals, a new Hub and Spoke referral system and quality improvement programs enhanced access and quality of care for STEMI patients. A STEMI patient registry data system provided feedback to EMS and hospital staff to track progress.

## 2015-2020

### HeartRescue India Selected Achievements



- 263** Physicians trained
- 2,920** Nurses, paramedics, and other non-physician staff trained
- 1,010** STEMI patients treated, tracked, and assessed for quality of care in the patient registry

### For the STEMI quality measures in the registry

#### Some quality measures showed improvement, e.g.

Percent of patients arriving at the hospital by ambulance instead of by walk-in increased from **0% to 48%**

Percent of patients receiving reperfusion, the evidence-based treatment for STEMI, increased from **33% to 56%**

Percent of patients discharged from the hospital with statins increased from **67% to 100%**

#### While other quality measures stayed about flat, e.g.

Percent of patients with time from symptom onset to first reperfusion  $\leq$  180 minutes changed from **15% to 14%**

Percent of patients discharged from the hospital with a follow-up appointment started at **75%** and ended at **75%**



**10** local schools participated in education for HeartRescue India

**1,820** 8th and 9th grade students trained

**5,674** people screened for heart disease risk, educated on the symptoms of heart attack and the need for timely care when they happen, enrolled in the HeartRescue India database, and given the phone app.

## HeartRescue India Accomplishments



**Patient registry implemented to track data** on the numbers of STEMI patients and quality measures covering the community, EMS, and hospital settings of care. The quality measures assessed adherence to clinical pathways and discharge protocols. Ongoing data feedback to hospitals and local partners identified opportunities for improving care and reducing the time to diagnosis and treatment.



**Community education** through Help Desks, multimedia information outreach, community events, training programs for local doctors, and partnerships with schools and NGOs.



**New nurse-paramedic motor scooter first responder service** to speed EMS response for people with heart attack symptoms.



**Improved EMS and hospital clinical protocols** for patient assessment, triage, emergency department order sets, and clinical process optimization for cardiac catheterization, post-procedure care, discharge, and follow-up.



**New foundation and local government partnerships** to sustain HeartRescue India funding and support scaling this model to other cities and regions in India.

## Learnings



**Documented gender disparity in STEMI treatment**, where women represented only 22% of the total number of patients in the STEMI patient registry. This is a gap for future improvement.



**Training offers valuable skills to health care workers but leads to challenges for retaining them.** More effective ways for motivating staff to remain in their jobs will need to be part of the interventions for future programs.



**Plan for major data collection and data quality challenges.** Additional data quality control and more intensive follow up to fix data problems should be planned for future programs.



**Large amounts of time and resources are needed to change community behaviors and medical treatment systems.** We were not able to achieve as much improvement in the community and medical system quality measures as we had hoped. Additional types of interventions should be tested in future programs.



## PARTNERS FOR IMPROVING SYSTEMS OF CARE

**Ramaiah Medical College**, ranked among the best medical schools in India and one of the oldest private tertiary care teaching hospitals in Bangalore

**University of Illinois at Chicago**, a leader in the U.S. HeartRescue program

**RTI International**, one of the leading non-profit research institutes in the world



## CLINICAL SITES

### Two Hub Hospitals

MS Ramaiah Hospital  
Suguna Hospital

### Five Spoke Hospitals

Santosh Hospital  
People Tree Hospital  
Aveksha Hospital  
Ananya Hospital  
Sreenivasa Hospital