

Stent-Save a life

Utilising Global Practices to improve STEMI Networks

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Stent-Save a Life! is a joint initiative between Cardiovascular Solutions for Life, the European Association of Percutaneous Cardiovascular Interventions (EAPCI), a registered branch of the European Society of Cardiology (ESC), and EuroPCR.



Stent - Save a Life! Annual Forum

The Pioneers 2009



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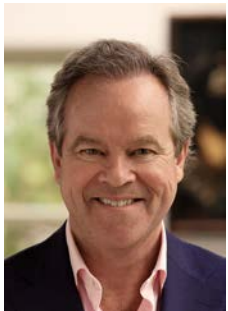


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Global Team



Advisory Board



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- National society
- Healthcare representatives
- Industry

14 years of activity created initiatives in 38 countries



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STEMI India Model

	Door to Needle < 30 min		Pharmaco-invasive 3-24 hrs	
Variable	10 min		10 min	
Onset of patient symptoms	Arrival of patient at hospital / ambulance	EGC	Lysis	
			Transport to PCI capable Hospital	
Variable	10 min		20-30 min	45-60 min
	Door to Balloon < 90 min			
Total Ischemia Time < 120 min				

4 Clusters

- Madras Medical Mission Hospital
 - Metro Specialty hospital
- Stanley Medical College Hospital
 - Tertiary care Government hospital
- CMC Vellore
 - Rural tertiary care hospital
- Kovai Medical Centre and Hospital
 - Urban specialty hospital

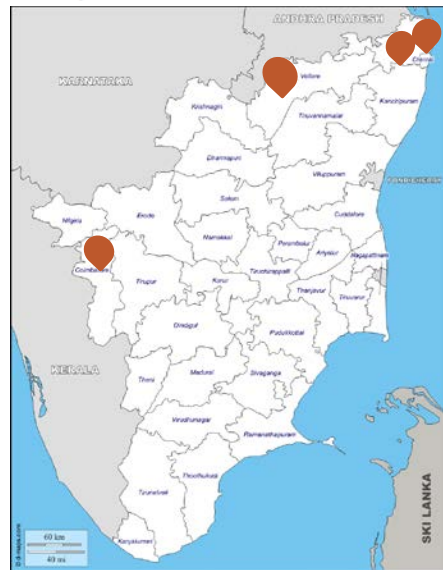
The TN STEMI Program

Research

JAMA Cardiology | Original Investigation

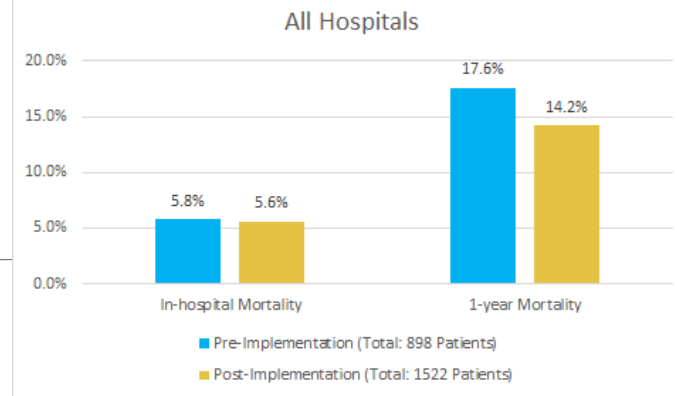
A System of Care for Patients With ST-Segment Elevation Myocardial Infarction in India The Tamil Nadu-ST-Segment Elevation Myocardial Infarction Program

Thomas Alexander, MD; Ajit S. Mullasari, MD; George Joseph, MD; Kumaresan Kannan, MD; Ganesh Veerasekar, MPH; Suma M. Victor, DNB; Colby Ayers, MS; Viji Samuel Thomson, MD; Vijayakumar Subban, MD; Justin Paul Gnanaraj, MD; Jagat Narula, MD, PhD; Dharam J. Kumbhani, MD, SM, MRCP; Brahmajee K. Nallamothu, MD, MPH

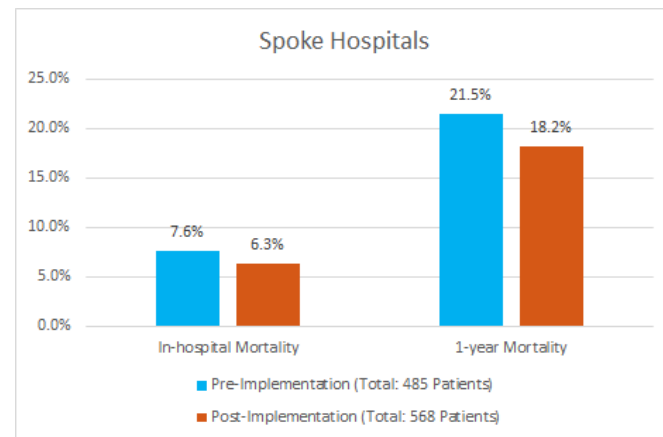


Reduction in Mortality

Outcome	Hub Hospitals, No. (%) (n = 1367)		Spoke Health Centers, No. (%) (n = 1053)		Overall, No. (%)		P Value
	Preimplementation Phase (n = 413)	Postimplementation Phase (n = 954)	Preimplementation Phase (n = 485)	Postimplementation Phase (n = 568)	Preimplementation Phase (n = 898)	Postimplementation Phase (n = 1522)	
In-hospital mortality (n = 2420)	15 (3.6)	49 (5.1)	37 (7.6)	36 (6.3)	52 (5.8)	85 (5.6)	.83
Stroke (n = 2420)	1 (0.2)	1 (0.1)	3 (0.6)	2 (0.4)	4 (0.5)	3 (0.2)	.27
Cardiogenic shock (n = 2420)	8 (1.9)	23 (2.4)	27 (5.6)	26 (4.6)	35 (3.9)	49 (3.2)	.38
Symptomatic ischemia (n = 2420)	1 (0.2)	6 (0.6)	15 (3.1)	10 (1.8)	16 (1.8)	16 (1.1)	.13
1-Year mortality (n = 2020)	48 (13.3)	100 (12.1)	86 (21.5)	79 (18.2)	134 (17.6)	179 (14.2)	.04



1-year follow up: 2,020 patients out of 2,420



1-year follow up: 834 patients out of 1,053

VIEWPOINT

Economic and Societal Impact of a Systems-of-Care Approach for STEMI Management in Low and Middle-Income Countries: Insights from the TN STEMI Program

Varshini Neethi Mohan*, Thomas Alexander†, V. R. Muraleedharan‡, Ajit Mullasari§, Jagat Narula||, Umesh N. Khot¶, Brahmajee K. Nallamothu** and Dharam J. Kumbhani††

The TN STEMI Program was a multicenter, prospective, observational study conducted in Tamil Nadu, India, that assessed the effects of implementing the STEMI India Model for the management of STEMI. We discuss the economic and societal impact in this article. Given that the intervention resulted in an absolute mortality reduction of 3.4%, we calculated a number needed to treat of 30 patients. At an annualized project cost of INR 15.11 million, this approximately calculates to INR 193,749 (USD 3,311) per life saved. The utility of the TN-STEMI Program can be estimated to be 1,108 life-years. This calculates to approximately INR 13,643 (USD 233) per life-year saved. Our estimates will likely be of particular interest to policy makers in low and middle-income countries, where financial and resource constraints pose a perennial public health challenge.

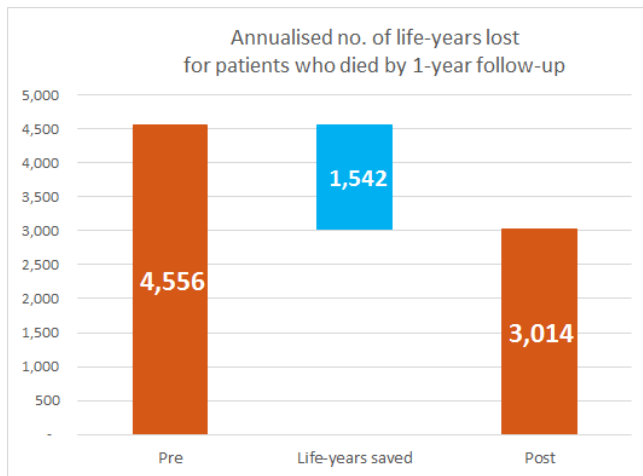
2.5 mn people covered across 3 districts

District	Population	% covered by the TN Pilot Project*	Population covered by the TN Pilot Project
Coimbatore	3,458,045	6%	207,483
Vellore	3,936,331	50%	1,968,166
Chennai	4,681,087	6%	280,865
Total	12,075,463		2,456,513

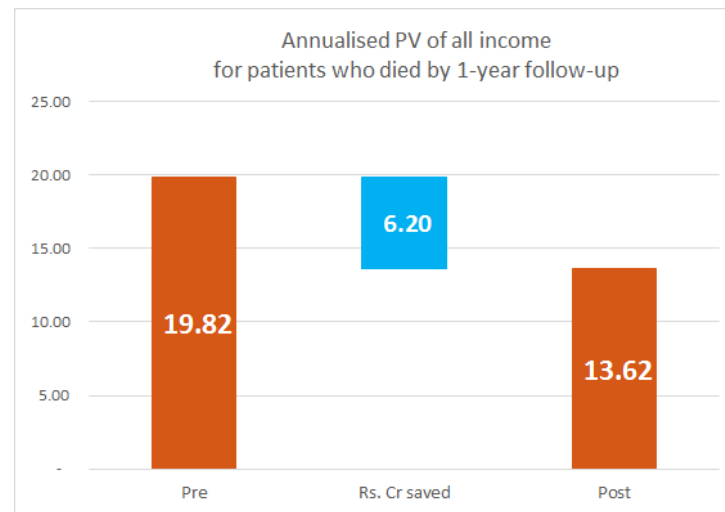


Benefit-Cost Ratio

1,542 life-years saved



Rs. 62 mn saved per year



- Rs 3.58 economic benefit gained per rupee spent

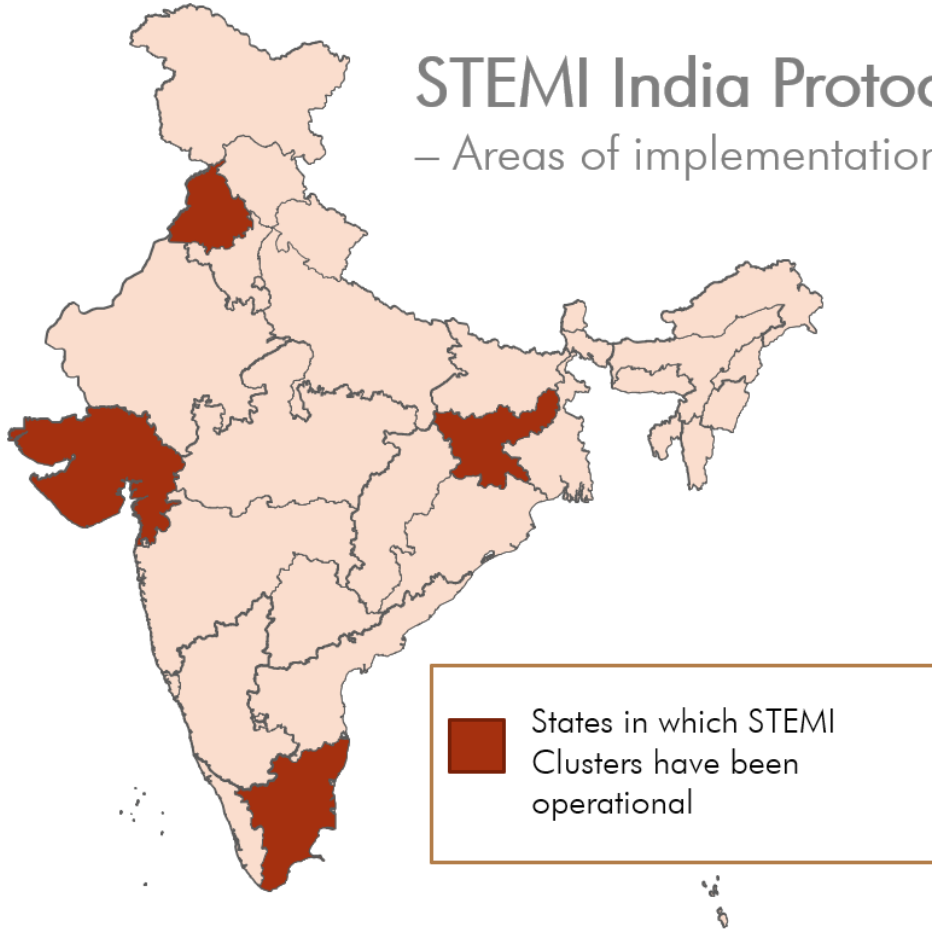
The National Protocol for STEMI

Recommended by

- ICMR
- CSI
- API



STEMI India Protocol – Areas of implementation



The project was successful on several levels:

- At the individual level:

As users of the healthcare system, patients were beneficially impacted by the intervention with outcomes of mortality. (134 [17.6%] vs 179 [14.2%]; $P = .04$)

- At the institutional level:

At the infrastructure level, more patients accessed PCI through the pharmacoinvasive treatment during the intervention as compared to the base case without any increase in fixed costs, indicating the infrastructure throughput was increased. (191 Of 413 {46.3%} vs 601 of 954 {63%}; $P .001$).

Considerable capacity building for staff at spokes which helped train these staff understand and deal with STEMI patients in a better and more appropriate fashion.

- At the society level:

As demonstrated in the cost-benefit analysis, the program was economically beneficial for the state and successful in improving the lives of the citizens that it impacted. Cost benefit ratio is 3.98.

Why the STEMI India Model works



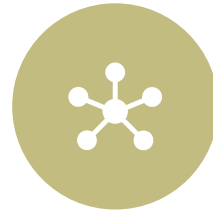
Efficient use of existing resources by setting systems in place



Flexibility allowing for adaptation according to unique conditions in the region



Equips field staff and enables sustainability in the long-run through continuous training



Modular and scalable across the state

2011

Studies Published

HEART
and Education in Heart

Submit this file

Advanced search

2013

2014

2015



Systems of care for ST-elevation myocardial infarction in India: is it time?

Thomas Alexander,¹ Sameer Mehta,² Ajit Mulasari,³ Brahmajee K Nallamothu⁴

ABSTRACT
The prevalence of coronary artery disease and ST-segment elevation myocardial infarction (STEMI) are increasing in India. Although newer publications have focused on improving percutaneous treatment in developing nations, less attention has been placed on the acute management of STEMI. Recent policy changes in India have provided new opportunities to address existing barriers but require greater investment and support in the coming years.

has risen dramatically over the past two decades. Approximately 3–4% of Indians in rural areas and 10–15% in urban areas have CAD.¹ Moreover, Indians are more likely to develop CAD at younger ages during an individual's working years, and as a result, there is an extremely high loss of potentially productive years of life in India. Among working-age adults (35–64 years old), nearly 33 million productive years of life are expected to be lost from CAD by 2030—a number more than twice that of India's population.²

Another reason for concern is the growth of CAD among poor and middle-class Indians, who once it was considered a disease of the wealthy.³ Because this includes the potential relationship between diet and childhood undernutrition and the urban

Coronary artery disease (CAD) is currently the most common, non-infectious disease in India and will affect over 60 million of its people by the year 2030.¹ One of the greatest complications of CAD is ST-elevation myocardial infarction (STEMI), a life-

Open Access

Protocol for a prospective, controlled study of assertive and timely reperfusion for patients with ST-segment elevation myocardial infarction in Tamil Nadu: the TN-STEMI programme

Thomas Alexander,¹ Suma M Victor,² Ajit S Mulasari,³ Ganesh Veerasekar,⁴ Kala Subramaniam,⁵ Brahmajee K Nallamothu,³ for the TN-STEMI Programme Investigators

To cite: Alexander T, Ajit SM Mulasari, et al. (2014) Protocol for a prospective, controlled study of assertive and timely reperfusion for patients with ST-segment elevation myocardial infarction in Tamil Nadu: the TN-STEMI programme. *BMJ Open*, 4(1):e005192. doi:10.1136/bmjopen-2013-005192

ABSTRACT

Introduction: Over the past two decades, India has witnessed a staggering increase in the incidence and mortality of ST-elevation myocardial infarction (STEMI). Indians have higher rates of STEMI and younger populations that suffer from it when compared with developed countries. Yet, the recommended reperfusion therapy with fibrinolytics and percutaneous coronary intervention is available only to a minority of patients. This gap in care is a result of financial barriers, limited healthcare infrastructure and poor knowledge and accessibility of acute medical services

for biomedical research on human participants) as laid down by the Indian Council for Medical Research. All participating hospitals will all obtain local ethics committee approval of the study protocol and written informed consent will be obtained from all participants. **Objectives and results:** Our findings will be reported through scientific publications, research conferences and public policy forums aimed at state and local governments in India. If successful, this model can be adopted to other areas of India as well as to other ST-STEMI systems of care in low-income and middle-income countries across the world.

Developing a STEMI System of Care for Low- and Middle-Income Countries The STEMI-India Model

Thomas Alexander,¹ Ajit S. Mulasari,² Jagat Narula³

Gandhinagar, India; Chennai, India; and New York, NY, USA

Coronary artery disease (CAD) is a major contributor to death and disability in India, and its overall prevalence has risen dramatically over the past 2 decades. Current data show that 3% to 4% of Indians in rural areas and 10% to 15% in urban areas have CAD.¹ Furthermore, the patients with CAD in the Indian subcontinent appear to be at greater risk of acute presentations of CAD, present 20 years early with acute events, and demonstrate worse outcomes following such events.

Data about contemporary trends in ST-segment elevation myocardial infarction (STEMI) patients come from CREATE (Treatment and Outcomes of Acute Coronary Syndromes in India), a large clinical registry of acute coronary syndrome patients from 40 large hospitals in 10 regions and cities across India.² Among the >20,000 patients enrolled in CREATE, over 60% had STEMI, a proportion that is substantially higher than in North American and European registries.^{3,4} Thirty-four percent of the STEMI patients were <50 years of age. STEMI patients had a lower socioeconomic status than did non-STEMI patients. The median time from the onset of symptoms to hospital arrival was 300 min in STEMI patients, a substantially longer delay than reported in developed countries. Approximately 60% received thrombolysis, and nearly 40% underwent percutaneous coronary

intervention. In this study, the district had only 1 hospital with a cardiac catheterization laboratory and cardiac resuscitation services. This hospital was designed as the hub for a network across several referral hospitals in the district. Protocols were developed for the management of STEMI patients based on estimated ground transport times of 50 min and classified as "near" or "far" from the hub.

The initial launch of the STEMI-India model study involved voluntary participation by referring physicians and cardiologists who were advised to follow 1 of 2 strategies based on distances from the referral to hub hospital.

1. Primary PCI: STEMI patients presenting to near and far hospitals, including the hub hospital, were referred for primary PCI with a goal for first medical contact to symptom onset of between 90 and 120 min.
2. Pharmacotherapeutic approach: Patients presenting to

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journal homepage: www.elsevier.com/locate/hlj

CSI Forum: Consensus Statement

Framework for a National STEMI Program: Consensus document developed by STEMI INDIA, Cardiological Society of India and Association Physicians of India

Thomas Alexander^{a,*}, Ajit S. Mulasari^b, Zuzana Kaifoszova^b, Umesh N. Khot^c, Brahmajee Nallamothu^d, Rao G.V. Ramana^e, Meenakshi Sharma^f, Kala Subramaniam^g, Ganesh Veerasekar^h, Suma M. Victorⁱ, Kiran Chand^j, P.K. Deb^k, K. Venugopal^l, H.K. Chopra^m, Santanu Guhaⁿ, Amal Kumar Banerjee^o, A. Muruganathan Arumugam^p, Mantosh Panja^q, Gurpreet Singh Wander^r

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2017

Circulation

2020

WHITE PAPER

Resource and Infrastructure-Appropriate Management of ST-Segment Elevation Myocardial Infarction in Low- and Middle-Income Countries

Endorsed by Indian Council of Medical Research (ICMR), Public Health Foundation of India (PHFI), Population Health Research Institute (PHRI), Latin America Telemedicine Infarct Network (LATIN), Pan-African Society of Cardiology (PASCAR), South Africa Society of Cardiovascular Intervention (SASCI), and STEMI-India Task Force Writing Committee for Management of ST-Elevation MI in LMIC

ABSTRACT: The 143 low- and middle-income countries (LMICs) of the world constitute 80% of the world's population or roughly 5.86 billion people with much variation in geography, culture, literacy, financial resources, access to health care, insurance penetration, and healthcare regulation. Unfortunately their burden of cardiovascular

Y. Chandrashekar, MD, DM
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KEYWORDS

Abstract

Appropriate and timely management of ST-elevation myocardial infarction is a major challenge in develop-

Dr Thomas Alexander

Research

JAMA Cardiology | Original Investigation

A System of Care for Patients With ST-Segment Elevation Myocardial Infarction in India The Tamil Nadu-ST-Segment Elevation Myocardial Infarction Program

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A Unified Strategy for Success:

- State Government buy-in critical
- Public-Private partnership with Ayushman Bharat Health Insurance scheme accredited private hospitals
- Public Education
- Funding re-perfusion therapy
- Ambulance infrastructure and paramedic training
- STEMI Diagnosis using Tele ECG
- Training programs - Doctors, Paramedics and Nurses
- Choosing the right Model based on Infrastructure and manpower mapping
- STEMI Hospital accreditation
- An independent Agency for Implementation
- Central control centre - participation of a 25/7 critical care specialists and all stakeholders for coordination
- Governance structure - Periodic review meetings of stakeholders



A Unified Strategy for Success:

Government buy-in:

- The Government's cooperation and will to implement a state-wide STEMI program is probably the most critical and difficult component in initiating a STEMI program in LMIC.
- Public hospital participation is key to equity in STEMI Care delivery
- Governments control multiple key components of the program

Public Education:



Successful strategies need to be tailored to the local social and cultural milieu. These messages should be part of a sustained campaign rather than for short periods Strategies that could work include:

- Multimedia campaigns through local TV channels and FM radio utilising local language and themes.
- Targeting the vulnerable population, for example, patients attending an NCD clinics.
- Increasing awareness among school children, especially whose parents are from the lower socioeconomic or educational background.
- Targeted strategies crafted to address the gender gap should also be a priority.
- Focusing on typical symptoms in the elderly and women will also improve early presentation of this subgroup.

Public Private partnership:



Many countries do not have adequate public hospitals with tertiary care facilities:

- Do not wait to start a program till public facilities are upgraded.
- Utilise spare capacity that may be available in the private healthcare systems.
- Ensure that these private facilities are accredited to treat patients with social/government insurance, thereby ensuring 'universal coverage'..

Financing Reperfusion Therapy:



- This is a major barrier to timely treatment in the LMIC.
- The challenge to fund treatment for the large numbers of BPL patients in LMIC can be tackled utilizing some form of social insurance schemes, like the PMJAY scheme in India.
- lytic therapy may be available free of cost in public hospitals.
- treatment including ambulance transfer and PCI, when appropriate, should be included in BPL insurance schemes.
- should also ensure financing the post-discharge medications and
- consider integrating this with app-based follow-up to ensure medication compliance and lifestyle advice

Ambulance Infrastructure:

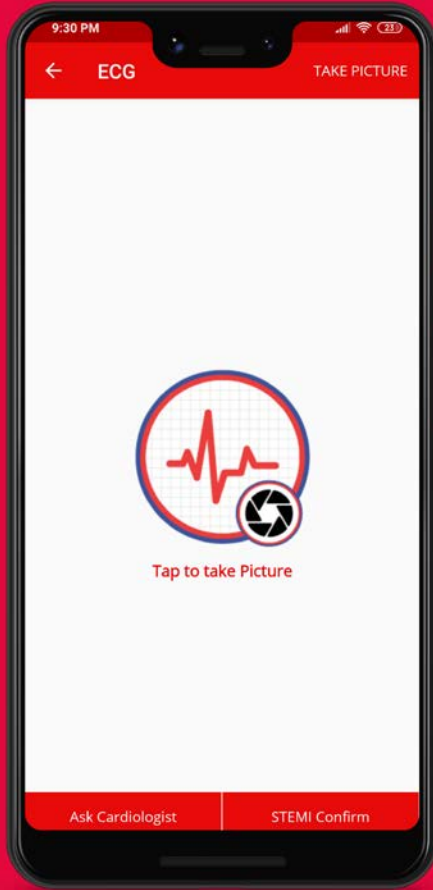


- Enabling a unified protocol across the state-nominated ambulance network will ensure that STEMI patients receive appropriate care in the ambulances.
- Ensure primary pick transfer to a STEMI-ready hospital and inter-facility transfer.
- Control centre: Include ambulance services

STEMI Diagnosis:



- Diagnosis of STEMI, in the ambulance by a paramedic or in a spoke hospital by a primary care doctor who only occasionally manages ACS patients, is difficult.
- Transmission of the ECG to the hub hospital for STEMI confirmation
- Utilizing a dedicated Tele-ECG service could be useful and reduce delays.
- There are multiple commercially available ECG machines with built-in transmission capability.



Training Programs for Capacity Building:



- The training requirements for spokes and hubs are entirely different.
- Spokes require more intensive and frequent training.
- Since staff transfers and attrition rates are high, periodic refresher courses are often needed.
- Hub hospitals, which are already skilled at thrombolysis and PCI, require only a yearly update of newer techniques and guidelines
- Training of nurses and paramedics should be integral to this program

Selection of an Appropriate Model of Care:



- The STEMI India Model of combining Primary PCI with pharmacoinvasive treatment in a Hub and Spoke fashion may be appropriate in urban and semi-urban locations.
- However more remote areas and those without basic infrastructure may need to be developed initially as purely thrombolytic centres.

WHITE PAPER



Resource and Infrastructure-Appropriate Management of ST-Segment Elevation Myocardial Infarction in Low- and Middle-Income Countries

Endorsed by Indian Council of Medical Research (ICMR), Public Health Foundation of India (PHFI), Population Health Research Institute (PHRI), Latin America Telemedicine Infarct Network (LATIN), Pan-African Society of Cardiology (PASCAR), South Africa Society of Cardiovascular Intervention (SASCI), and STEMI-India Task Force Writing Committee for Management of ST-Elevation MI in LMIC

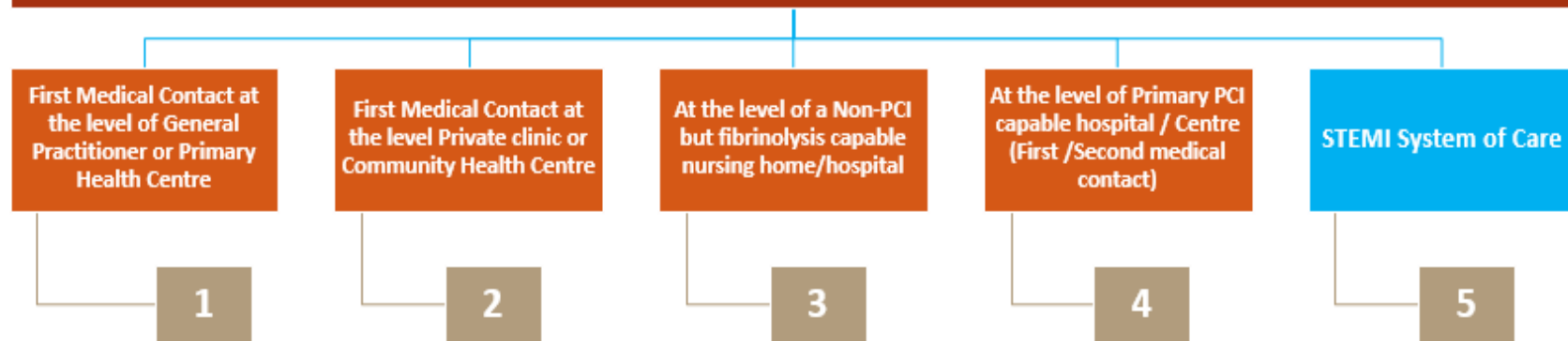
ABSTRACT: The 143 low- and middle-income countries (LMICs) in the world constitute 80% of the world's population or roughly 6 billion people with much variation in geography, culture, climate, financial resources, access to health care, insurance penetration, and healthcare regulation. Unfortunately, their burden of cardiovascular disease in general and acute ST-segment-elevation myocardial infarction (STEMI) in particular is increasing at an unprecedented rate. Compounding the problem, outcomes remain suboptimal because of a lack of awareness and a severe paucity of resources. Evidence-based treatment has dramatically improved the outcomes in high-income countries. However, no such focused recommendations exist for LMICs, and the unique challenges in LMICs make implementing Western guidelines unfeasible. Thus, structural solutions tailored to their individual local needs and resources are needed.

Y. Chandrashekhar, MD, DM, Thomas Alexander, MD, DM, Ajit Mullasari, MD, DM, Dharam J. Kumbhani, MD, MPH, Samir Alam, MD, Erick Alexanderson, MD, PhD, Damodar Bachani, MD, MPH, Jacobus Cornelius Wilhelmus Badenhorst, MD, Ragavendra Baliga, MD, Jeroen J. Bax, MD, PhD, Deepak L. Bhatt, MD, MPH, Eduardo Bossone, MD, PhD, Roberto Botelho, MD, PhD, Rabindra Nath Chakraborty, MD, DM, Richard A. Chazal, MD, Rupinder Singh Dhaliwal, PhD, Habib Gamra, MD, Sivadasan Pillai Hari Krishnan, MD, DM, Mohamed Jeilan, MD, MRCP, David Ian Kettles, MD, Sameer Mehta, MD, Padhinare P. Mohanan, MD, DM, Christoph Kurt Naber, MD, PhD, Nitish Naik, MD, DM, Mpiko Ntsekhe, MD, MPhil, PhD, Harun Argwings Otieno, MD, PhD, Prem Pais, MD, Daniel José Piñeiro, MD, PhD, Dorairaj Prabhakaran, MD, DM, MS, K. Srinath Reddy, MD, DM, MS, Mustafa Redha, MD, Ambuj Roy, MD, DM, Meenakshi Sharma, MD, Robert Shor, MD, Frederik Adriaan Snyders, MBChB, MMed, Jack Weii Chieh Tan, MBBS, MMed, MRCP, C. Michael Valentine, MD, B. Hadley Wilson, MD, Salim Yusuf, OC, and Jagat Narula, MD, PhD

Levels of Care based on Infrastructure and Manpower:

1. PHC/Health and Wellness Centre – Level 1
2. Community Health centre – Level 1 or 2 (?3)
3. District Hospital- Level 3
4. Medical College Hospital/Tertiary care centre – Level 3 or 4

Patients with chest pain/suspected of AMI self-referring to First Medical Contact (FMC) or transferred from another facility



Level 1 Facility:

- Has a General Practitioner-level physician,
- may or may not have EKG facility and may be able to transmit EKG on mobile or WhatsApp-like platforms,
- can measure vitals,
- has access to basic medicines like aspirin, oral beta blockers.
- No thrombolysis facility.

Level 2 Facility:

Level 3 Facility:

Level 4 Facility:

Level 5 Facility

Scenario



Patient with chest pain suggestive of ACS

Recognition of Symptoms

Mode of Presentation

Walk in

Ambulance Transfer



Facility

1

PHC / Doctor's Clinic

No ECG available

Management

Chewable/Soluble Aspirin 325 mg
Stat
(non enteric-coated)

Transfer

Direct transfer (without ECG) if high
index of suspicion of MI or unstable

Needs confirmation of STEMI

Destination

Closest
reperfusion
centre

STEMI
Confirmed

Closest facility with
ECG



Note: *Preferable to transfer patient using a monitored ambulance
Medical facilities in isolated geographies to try to acquire ECG with transmission capabilities

STEMI Guidelines for LMICs: Level I Facility Point of Contact

Level 1 Facility:

Level 2 Facility:

- Has a General Practitioner-level physician,
- has EKG facility and can transmit EKG on mobile or WhatsApp like platforms,
- can measure vitals,
- has access to basic medicines like aspirin, clopidogrel, LMWH, & oral beta blockers.
- No thrombolysis facility but can develop one with investment and training.

Level 3 Facility

Level 4 Facility:

Level 5 Facility

Scenario



Patient with chest pain suggestive of ACS

Recognition of Symptoms

Presentation

Walk in

Ambulance Transfer



Transfer for ECG confirmation from another centre – PHC / Doctor's Clinic

Facility

2

CHC / Hospital with ECG

No reperfusion capabilities

Management

ECG taken within 10 minutes of arrival

Diagnosis of STEMI not confirmed

Diagnosis of STEMI confirmed onsite

Transmitted to higher facility for STEMI confirmation

*Troponin if available
*Repeat ECG after 15 minutes X 4 and then as needed

Diagnosis of STEMI confirmed

STEMI confirmed 

*Chewable/soluble aspirin 325 mg stat – If not given already
*Clopidogrel: 300 mg if patient ≤ 75 yrs or 75 mg if patient > 75 yrs
*High-dose Statin: Atorvastatin 80 mg or Rosuvastatin 40 mg

Transfer

Ambulance Transfer



Destination

Closest reperfusion centre

STEMI Guidelines for LMICs: Level II Facility Point of Contact

Level 1 Facility:

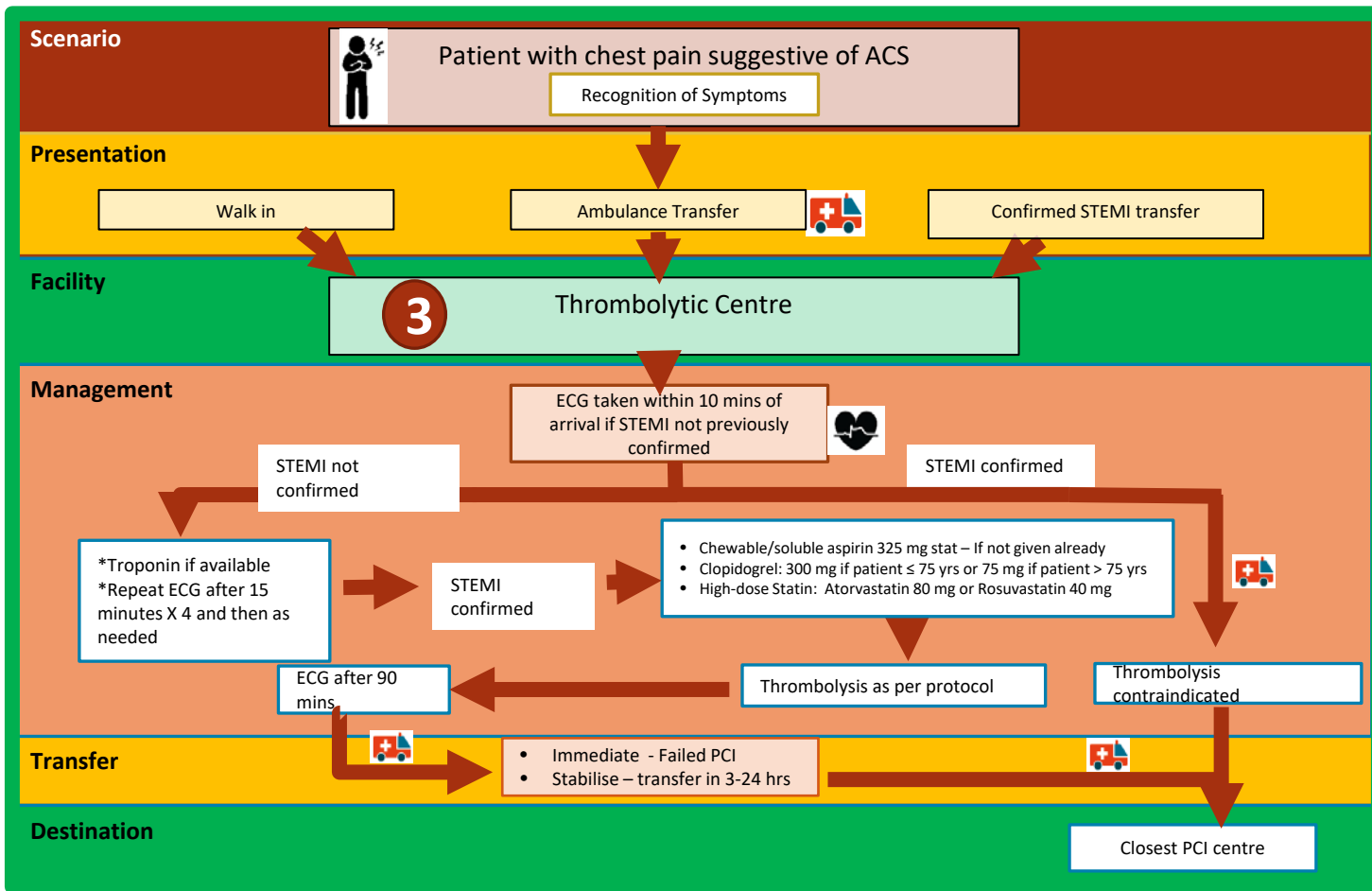
Level 2 Facility:

Level 3 Facility:

- Fibrinolysis capable but Non-PCI capable centers.
- Has a General Practitioner or higher-level physician expertise capable of diagnosing STEMI confidently, assessing appropriateness for thrombolysis and provide therapy.
- Has access to all necessary medications like anticoagulation, aspirin, clopidogrel, ACE-Inhibitors & oral beta blockers.
- May have echocardiographic facility.

Level 4 Facility:

Level 5 Facility:



STEMI Guidelines for LMICs: Level 3 Facility Point of Contact

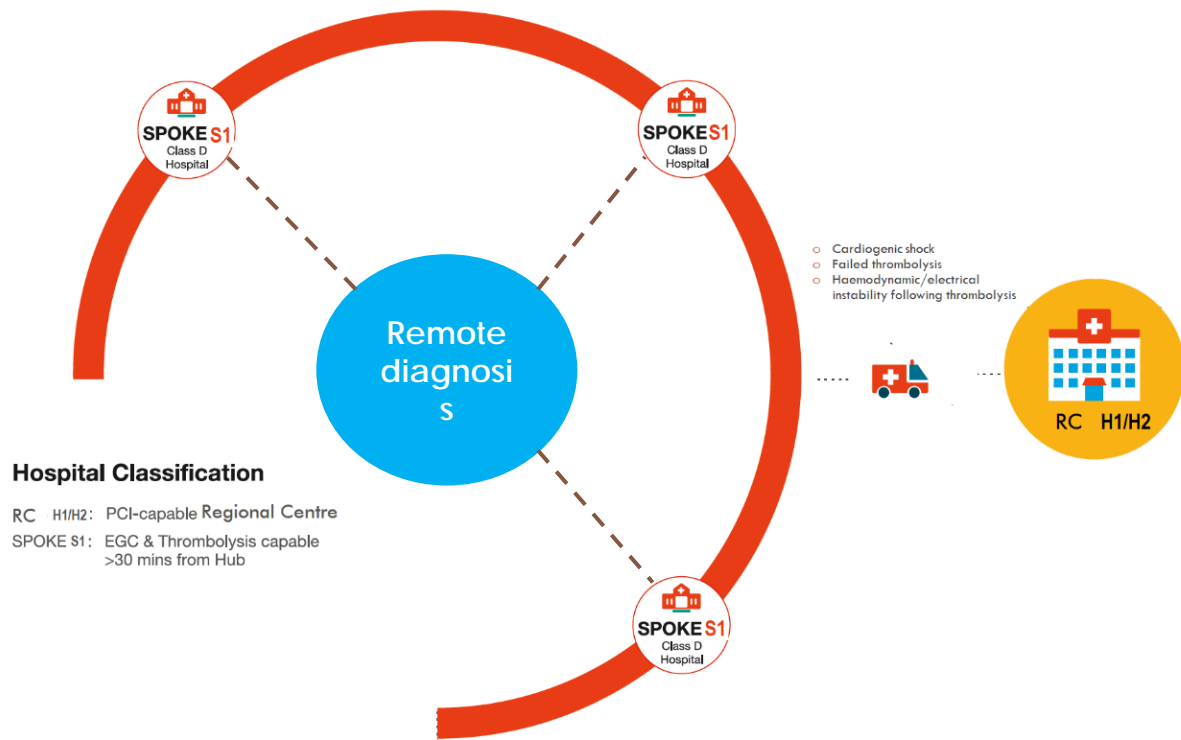


Model 1

WHEN THE DISTRICT HAS NO TERTIARY HOSPITALS WITHIN A
DRIVING DISTANCE OF 2 HOURS

The Tele-ECG Thrombolysis-only Model

- For regions where cath lab is further than 2 hours away
- Links created
 - Remote diagnosis of STEMI through the STEMI Kit
 - Spokes all linked to the closest available tertiary centre for remote diagnosis and for follow-up care if necessary



The Thrombolysis-only STEMI India Model

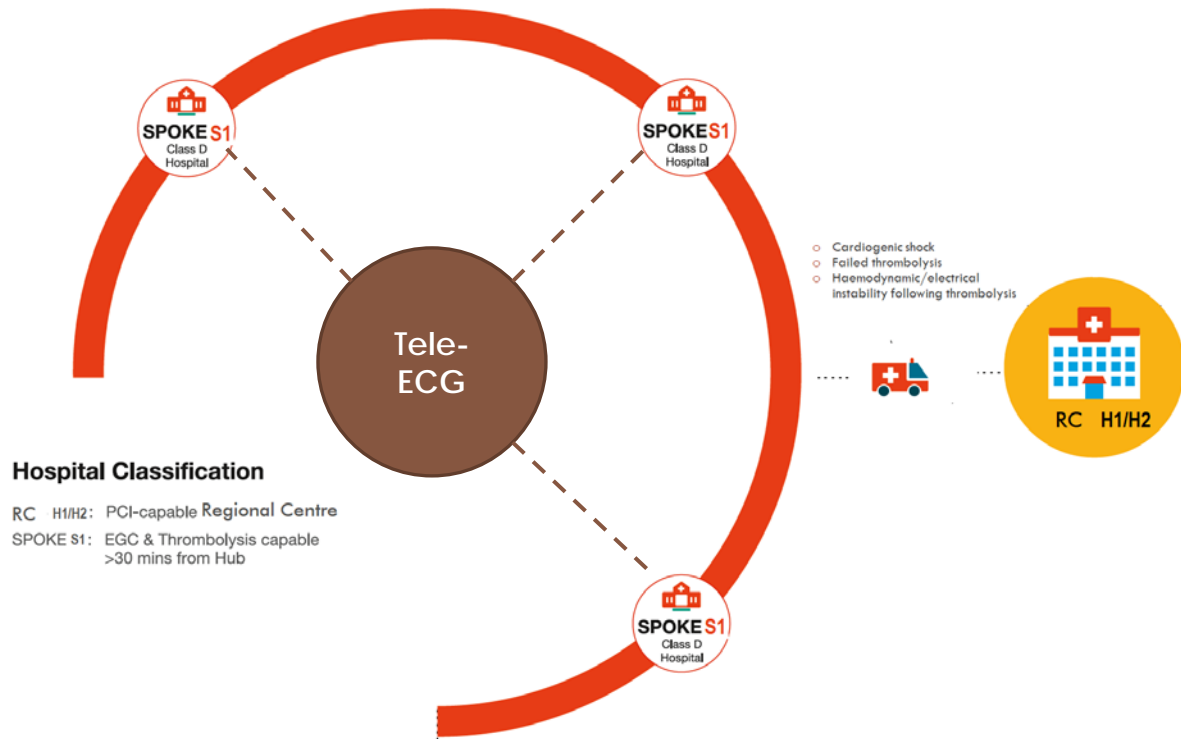
○ Links created

- Remote diagnosis of STEMI through the STEMI Kit
- Spokes all linked to the closest available tertiary centre for remote diagnosis and for follow-up care if necessary

○ Linkages built on

- Electronic Data Communication
- Management Protocols
- Insurance reimbursement
- Dedicated EMS Network

The STEMI India Model



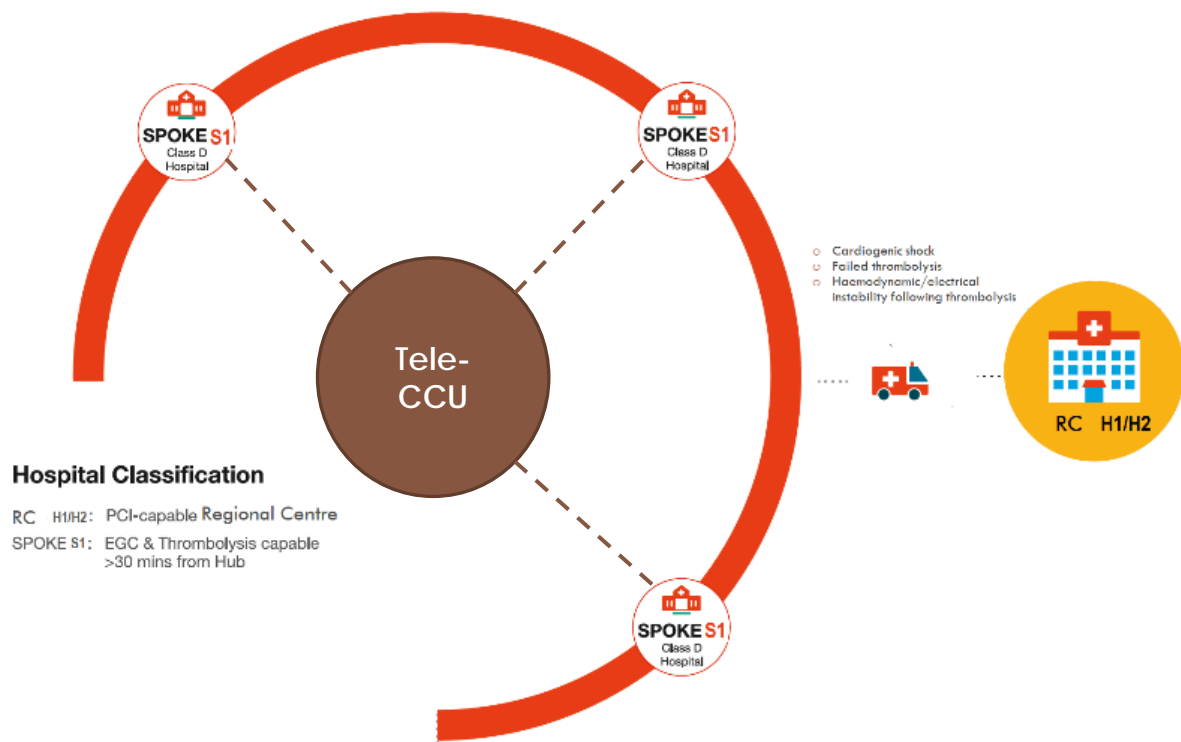
The Tele-CCU Thrombolysis- only STEMI India Model

○ Links created

- Remote diagnosis and handholding through AV and other appropriate channels for management of MI
- Spokes all linked to the closest available tertiary centre for remote diagnosis and for follow-up care if necessary

○ Linkages built on

- Electronic Data Communication
- Management Protocols
- Insurance reimbursement
- Dedicated EMS Network



Level 1 Facility:

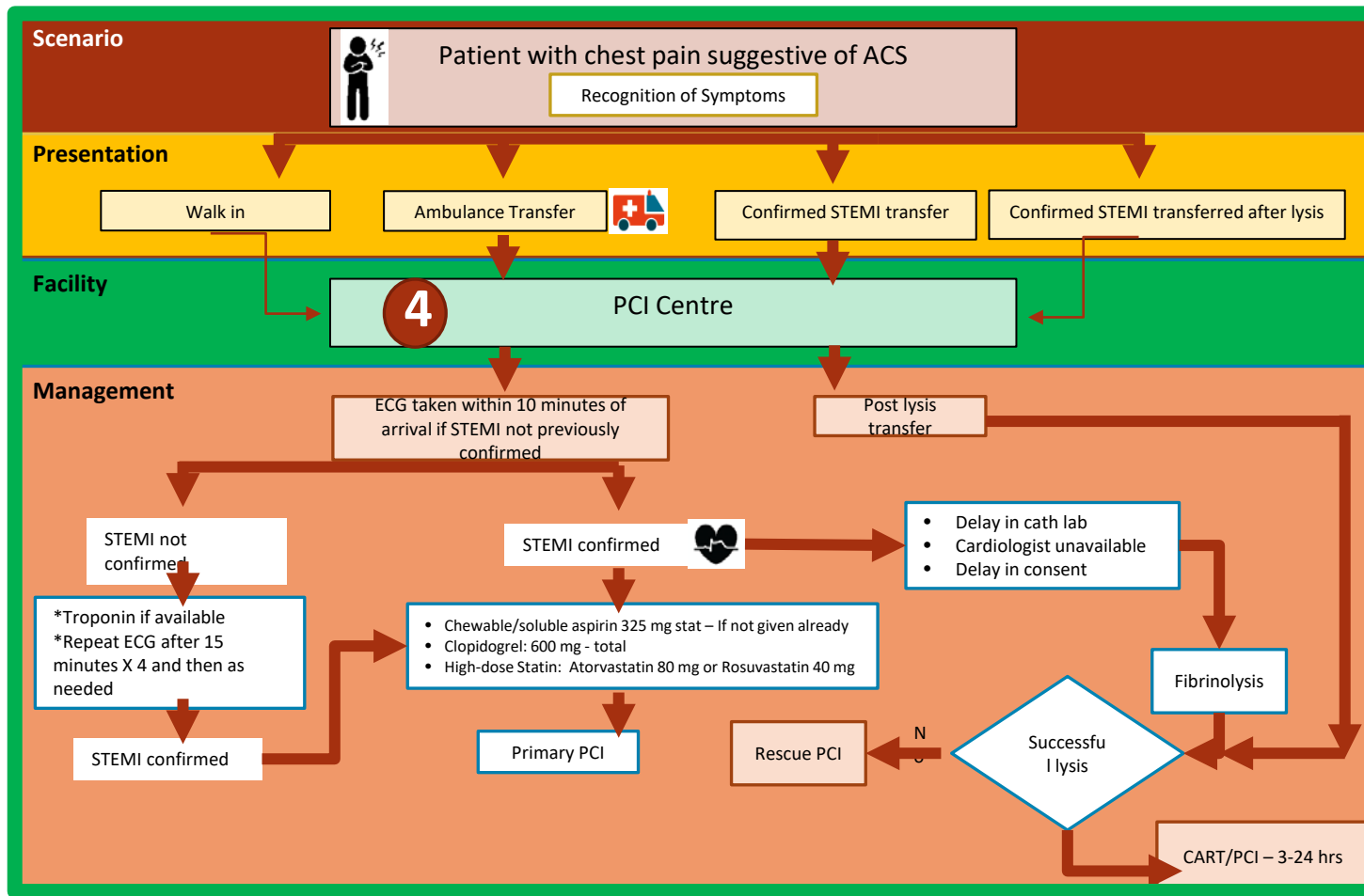
Level 2 Facility:

Level 3 Facility:

Level 4 Facility:

- Full-service facility capable of providing care consistent with International Standards.
- Has primary PCI capability which may or may not be 24/7.
- If PCI is not logistically possible, they can rapidly provide thrombolysis, pharmaco-invasive therapy and full post MI care.

Level 5 Facility



STEMI Guidelines for LMICs: Level 4 Facility Point of Contact

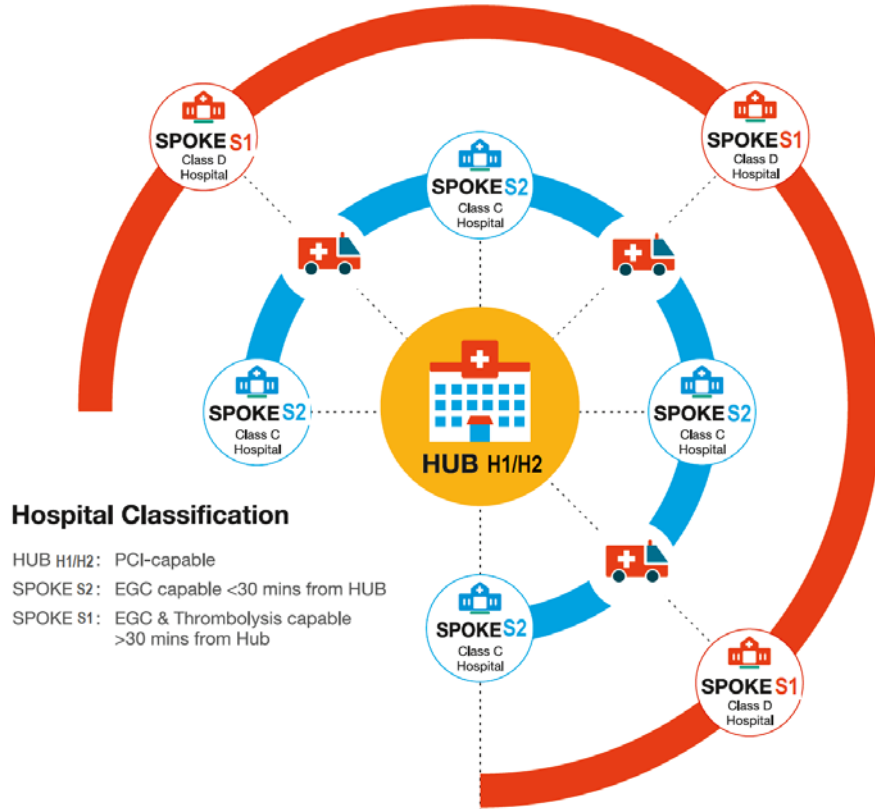


Model -2

WHEN THE DISTRICT HAS A TERTIARY HOSPITALS WITHIN A DRIVING
DISTANCE OF 2 HOURS

The Standard STEMI India Model

- Cluster created
 - Hub-and-spoke model
- Linkages built on
 - Electronic Data Communication
 - Management Protocols
 - Insurance reimbursement
 - Dedicated EMS Network





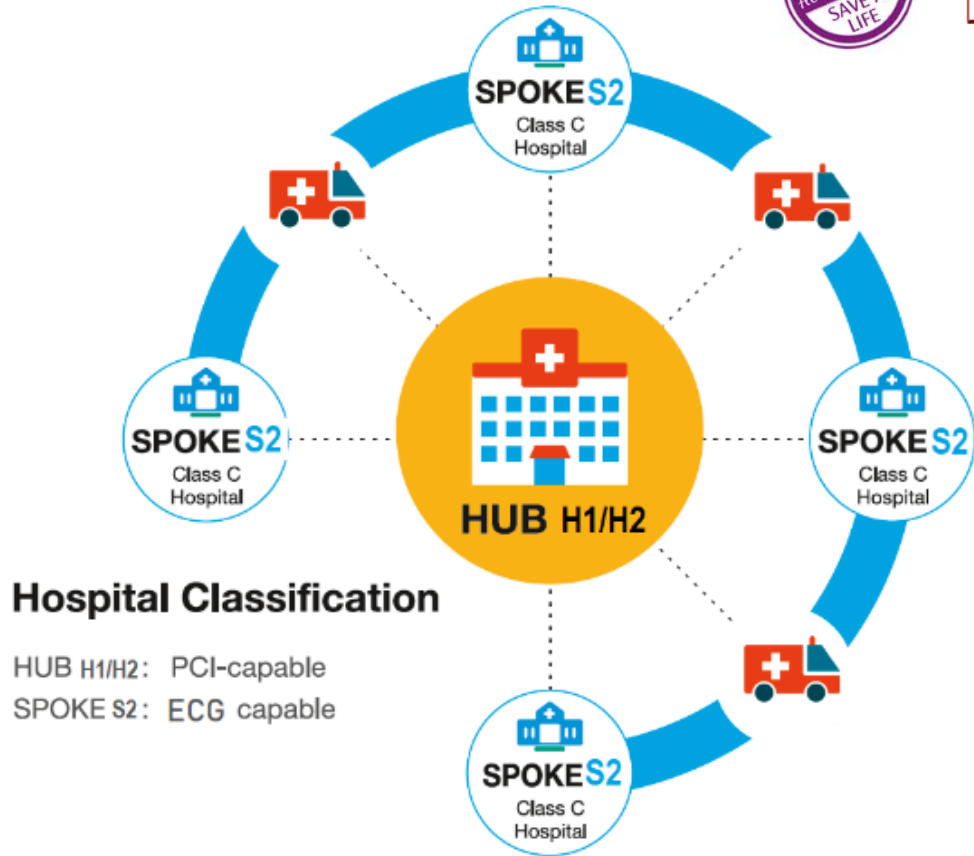
Model -3

PRIMARY PCI MODEL

Model 3

The Primary PCI STEMI India Model

- Up to 15 ECG-capable (S2) hospitals linked to a tertiary care centre with a cath lab (H1/H2) within 30 minutes' driving distance
- ECG machines and appropriate software installed in hospitals and ambulances
- Periodic and continuous training provided
- Tele-ECG support available
- All patients diagnosed with STEMI at S2 immediately transferred in ambulances to H1/H2 for primary PCI



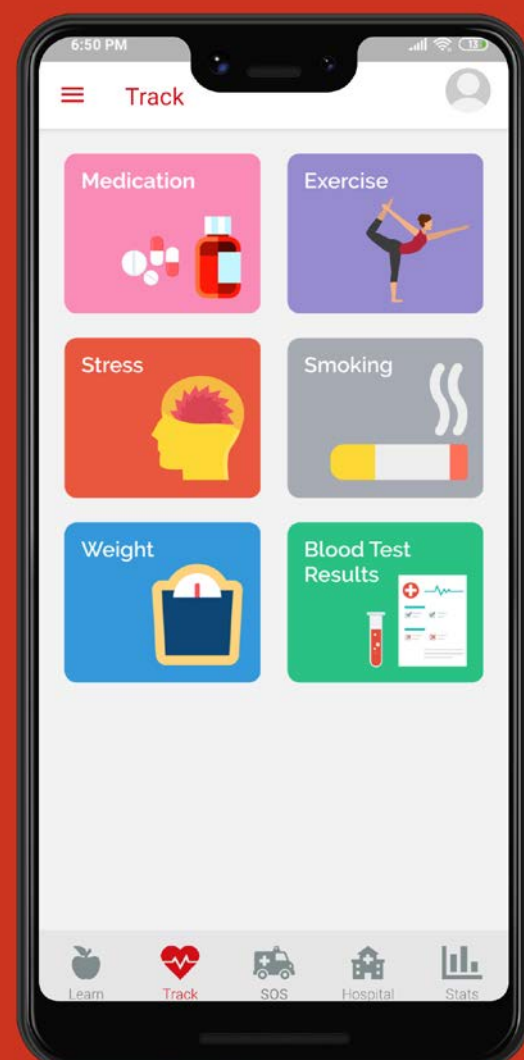
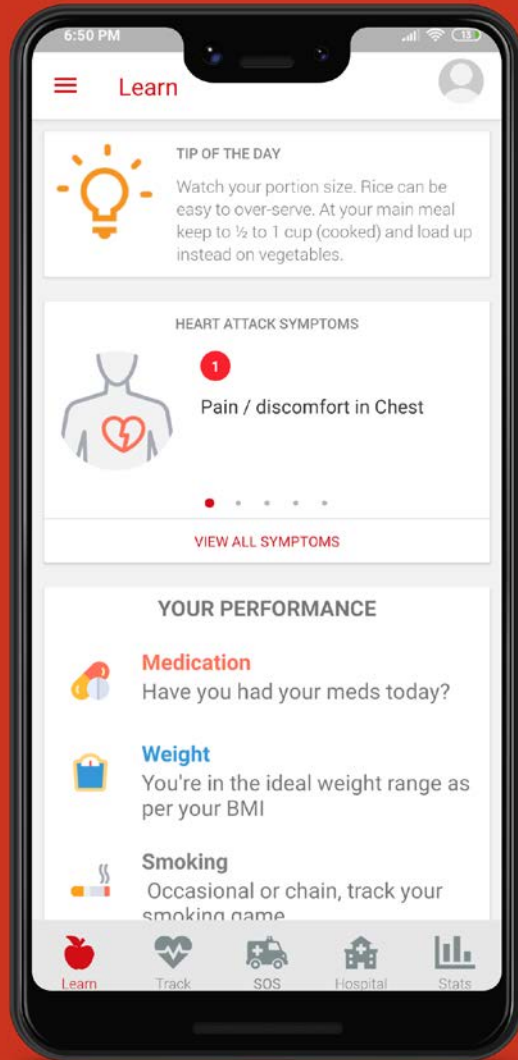
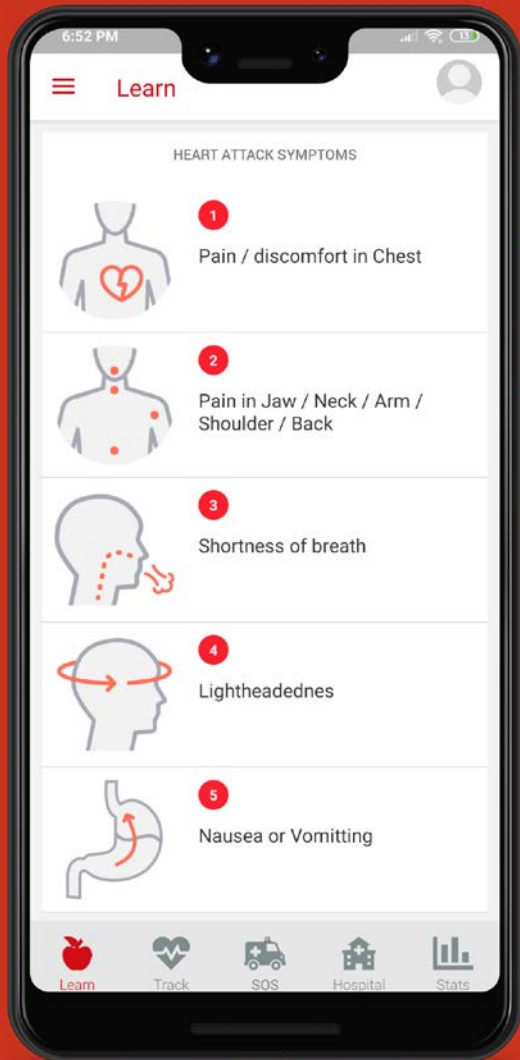
STEMI Hospital Designation:

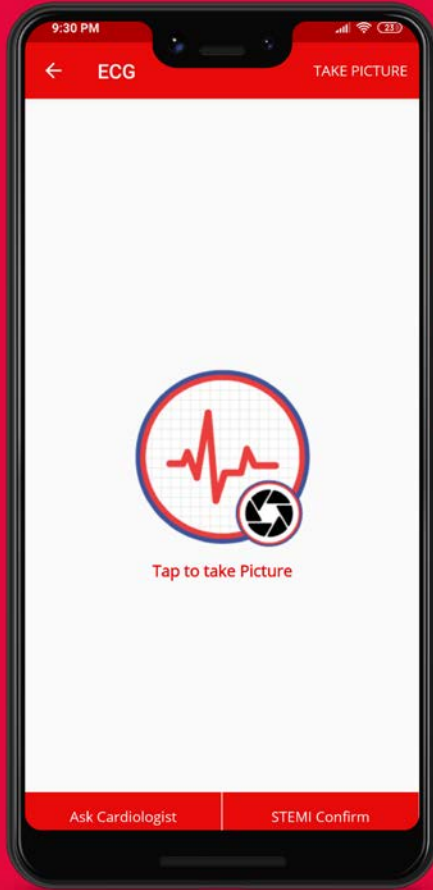


- Legislative and regulatory measures, in association with local scientific bodies, could accredit hospitals to manage STEMI based on infrastructure, manpower and training criteria.
- Mandatory process-of-care measures for quality improvement.
- STEMI-Ready hospitals: Designation of participating hospitals as "Heart Attack Accredited Centres" helps to ensure that patients in that geography know where to go in case of chest pain. This would reduce delay and ensure protocol-based treatment and prompt re-perfusion and appropriate triage.
- Public-Private participation

Digital tools, Data Collection, Audit and Analysis:

- Standardised Digital tools for data collection with calibrated increase in complexity and data points.
- Monthly reports to the spokes and hubs using this and helps to run the program smoothly.
- Gap analysis to identify issues to focus on and thereby improve outcomes
- Dashboard - Realtime data analytics and trends







STEMI INDIA

Not secure | stemi-meanstack.pptssolutions.com/Patient-View/Discharge-Transfer/5dee1abf26ecf30ef57d583f

Apps Intel Wireless LAN (...) Bookmarks Dell Sent Mail - tomalex... Aosta | BackBone -... r. n Inbox (1,787) - tom... kerala psc 2018 exa... Other bookmarks

STEMI INDIA
Management of ST Elevation Myocardial Infarction

Logged in as **Super Admin**

Home > Patient-Records > Patient-View

Patient Details Thrombolysis PCI In Hospital Summary **Discharge & Transfer** Follow Up

Patient Name : **Mohamed** Patient ID : **05010850070**

Death **Discharge Medications** Discharge / Transfer

Discharge Medications In This Hospital

Aspirin	<input type="button" value="Yes"/>	<input type="button" value="No"/>	Clopidogrel	<input type="button" value="Yes"/>	<input type="button" value="No"/>
Prasugrel	<input type="button" value="Yes"/>	<input type="button" value="No"/>	Ticagrelor	<input type="button" value="Yes"/>	<input type="button" value="No"/>

Type here to search

21:33 09-12-2019



General

Thrombolysis

PCI

TIMI Risk Score

Report

☒ Pre ☐ Post

All Cluster

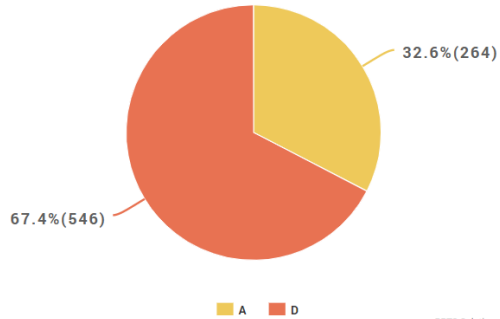
All Class

All year

Enrollment

Total Enrollments:810

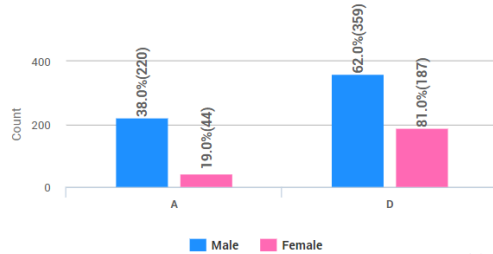
Implement : PRE



PPTS Solutions

Gender of Patients

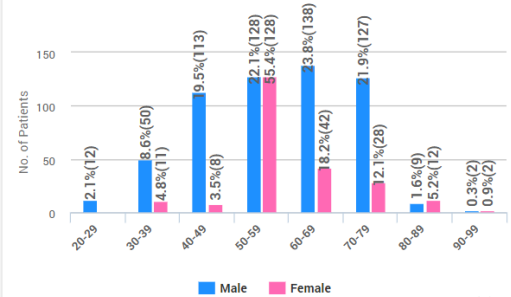
Total Male : 579 (71.48%)
Total Female : 231 (28.52%)
Implement : PRE



PPTS Solutions

Age & Gender Statistics

Total Male:579
Male Mean:56.85
Total Female:231
Female Mean:59.67
Implement : PRE



PPTS Solutions

Control Centre:



- Control centre with representatives of critical stakeholders to quickly resolve urgent issues.
- These could include representatives from insurance, ambulance services and hospital services.
- Critical care specialist - 24/7 - on call for urgent consultations, ECG abnormalities or triage queries.

An Independent STEMI Coordinating Agency /Task Force:



- An independent agency, team or department with capability to work with the various government entities and departments, ambulance services and the different types of hospital is critical to run a well-coordinated program.
- Independent agency for Data collection, gap analysis and monthly report generation
- improvement in infrastructure and the migration from purely thrombolytic centres to a hub-and-spoke model can be seamlessly implemented.

Coordination and stakeholder engagement:



- Periodic meeting of the various stakeholders is critical to the success of the program.
- Periodic visits by the "hub" doctors to the spokes help to improve coordination as does prompt feedback after each transfer of a patient to the hub.
- A monthly stakeholder meeting needs to be held, even if it is web-based, to discuss issues, present results and solve problems.
- An umbrella implementation committee comprising the important stakeholders. This is critical to ensure smooth operations and to ensure rapid resolutions of problems.

Thank you