



Qimpro[®]
FOUNDATION

World Quality Month 2020 Celebration

Transforming Patient Safety Culture by operational and Clinical Efficiency for Reducing Door to Balloon Time.

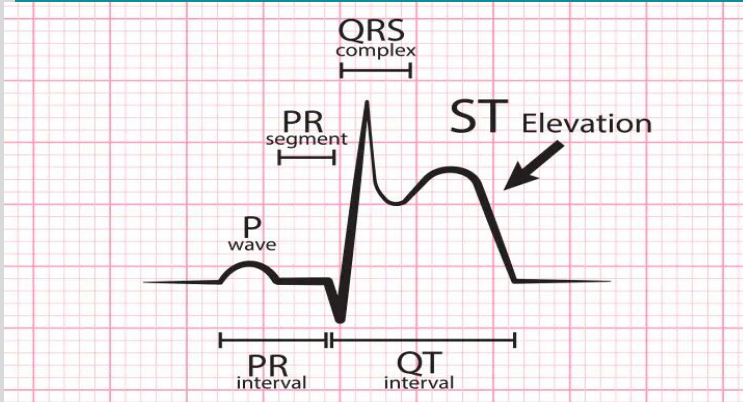


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INTRODUCTION



Heart attacks do not come announced.

Interval from arrival of the patient with ST Elevation Myocardial Infarction at the Emergency Department (ED) & balloon angioplasty of the occluded coronary artery in the cardiac catheterization unit is Door to Balloon time.

American Heart Association recommends DTB time 90 minutes or less for better clinical outcome. The incidence of STEMI is higher (60.6%) and the mortality is more (8.6%) in Indian population than that of developed countries. (Xavier D.,

Pais P., Devereaux P.J. Treatment and outcomes of acute coronary syndromes in India (CREATE): a prospective analysis of registry data. Lancet. 2008;371(9622) [1435e1442] [[PubMed](#)]

In Indian scenario lot of challenges to achieve the standard time of 90 mins due to various reasons.

Huge population is not under health insurance cover

Illiteracy on medical emergency (cardiac arrest)

Lack of transport and emergency medical facilities available on time.

Under development of Emergency Management System in the nation.

PROBLEM DEFINITION

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Healthcare

Aiming to evaluate whether the internationally recommended DTB time of 90 min for Primary Percutaneous Coronary Intervention can be achieved in our hospital and if not to assess the factors that causes delay in achieving the target DTB time as well as whether DTB time of >90 min is associated with adverse outcomes (mortality).

This project is conducted in A J Hospital & Research Centre which is 415 bedded tertiary Care Hospital with 12 bedded coronary Care Unit, & one cathlab Unit. Retrospective data of STEMI cases who underwent PPCI from oct-18 to sept-19 was collected from medical records was collected & analyzed. Patients with Cardiogenic shock and patients with acute MI who underwent thrombolysis were excluded.

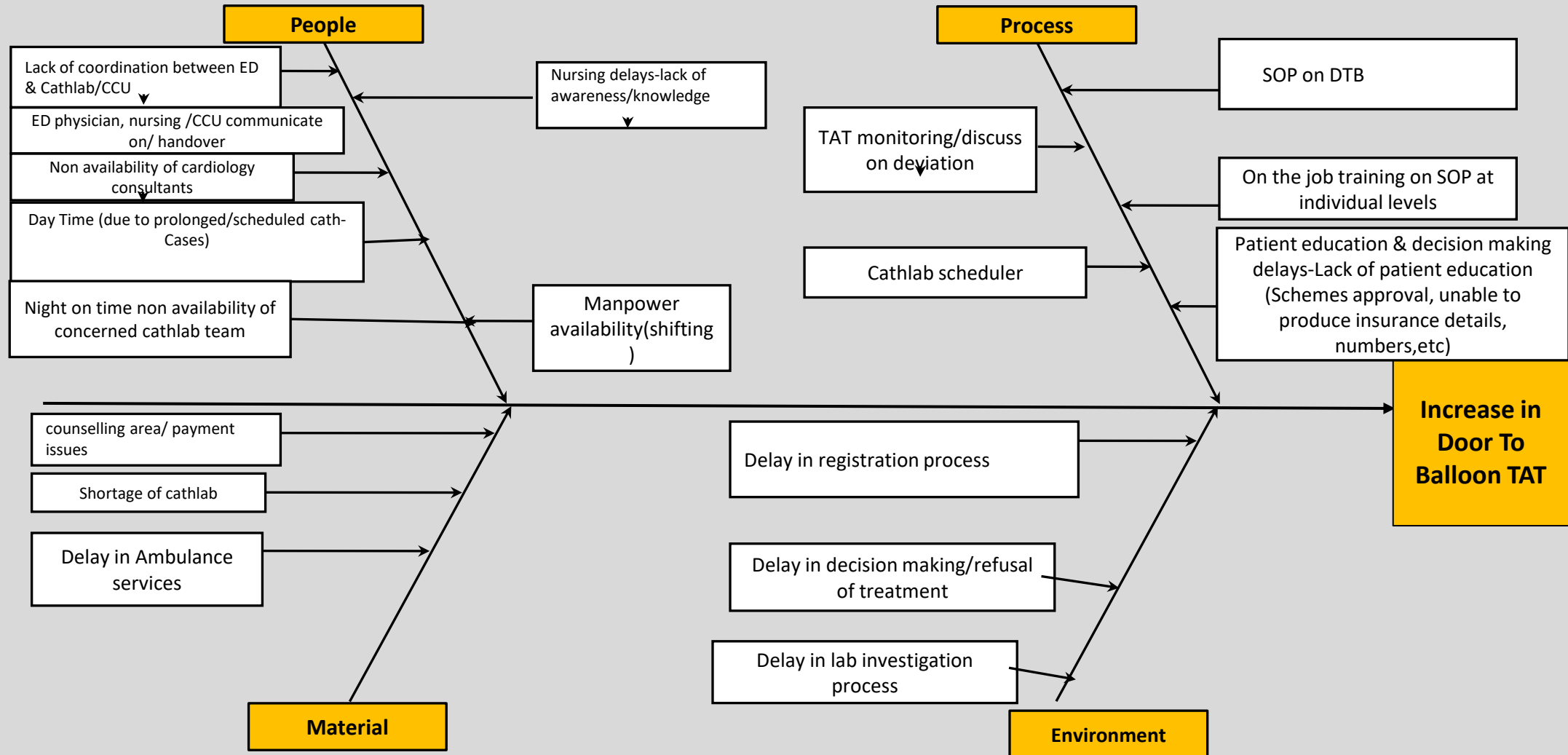
PHASE I Audit - N-282 ,Average time taken form emergency department to cathlab for balloon inflation was 372 min.

Year	N	Avg.in minutes	Std div'n	OUTCOME
Phase I – 1 Year (Nov-18 – Oct 19)	282	372	362	Mortality rate was 2.4% i.e. 7 deaths.

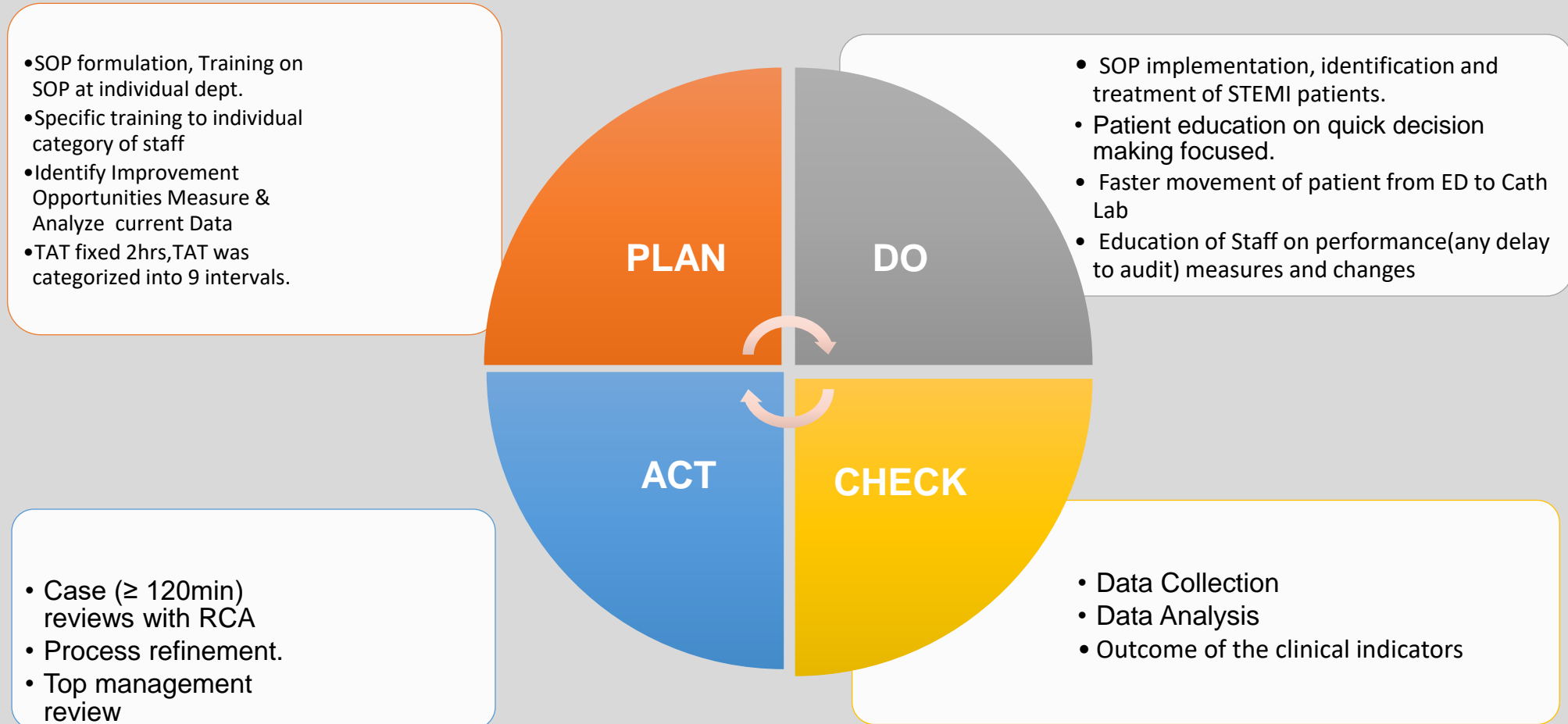
Achieving DTB Time of 90 minutes was a challenge .Keeping in mind our huge milestone to AHA guidelines ,we decided DTB 120 min for in house, we considered it as a phase II study.

PROBLEM DIAGNOSIS

Fish Bone Analysis (Door To Balloon Delays in TAT)



PROBLEM REMEDY



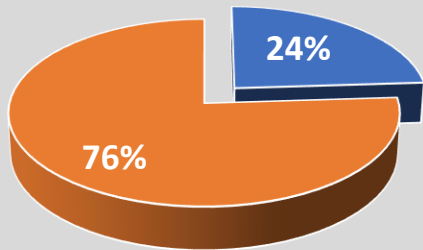
PROBLEM REMEDY

	Set Std (in min) Phase II	Actual Avg (in min)Phase II	SD(in min)
DOOR TO ECG TIME (GOAL <10 MINUTES)	5	4	3
TIME TAKEN FOR STEMI CODE ACTIVATION	2	5	8
STEMI CODE TO CCU TRANSPORT	10	18	32
CCU TO ECHO/BLOOD INVESTIGATION	30	48	48
CCU TO CATHLAB	10	46	75
CATHLAB TO FIRST SHOT	40	33	29
TIME TAKEN FOR THE CONSENT FOR PCI	8	19	8
TIME TAKEN FOR FINANCIAL PROCESS.	10	17	5
TIME TAKEN FROM FINANCIAL PROCESS TO BALLOON/STENT (FIRST PASSAGE OF ANY INTRACORONARY DEVICE)	5	9	9
OVERALL TAT (DOOR TO BALLOON/STENT)	120	199	219

TANGIBLE RESULTS

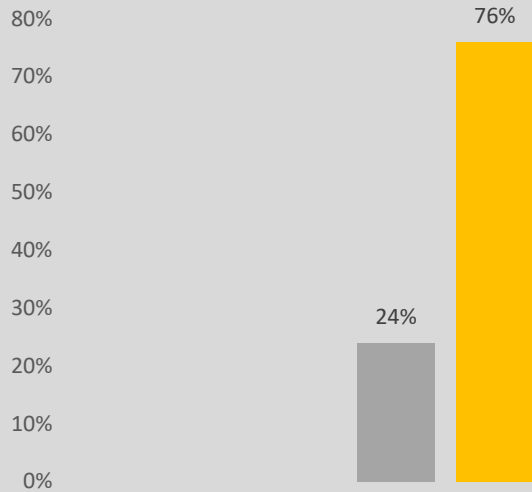
	N		Avg.in minutes	Stddiv'n	OUTCOME
Phase I – 1 Year (Nov-18 – Oct. 19)	282	24% within 120 min.(67 &215)	372	362	Mortality rate was 2.4% i.e. 7 deaths
Phase II – [Pilot Study] (Nov-19 – Feb 20)	108	41%within 120 min.(44 &64)	199	219	Mortality rate was 0% in <120 min (44 cases) and 1.6 % in >120 min 64 cases,1 death)

PHASE I



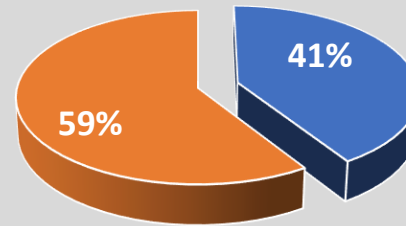
■ ≤120min
■ ≥120min

PHASE I



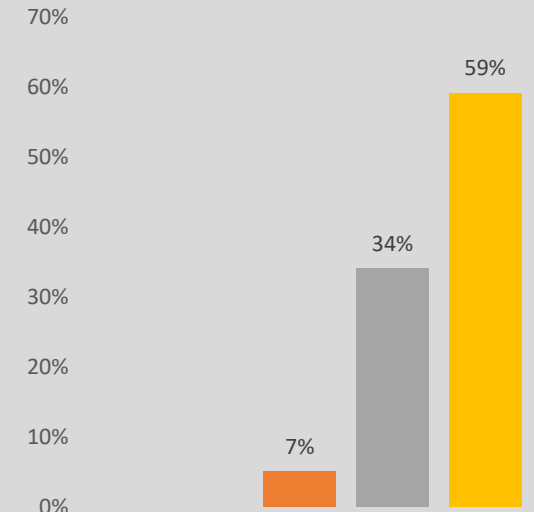
■ <60 ■ 60-90 ■ 90-120 ■ >120

PHASE II



■ ≤120min

PHASE II



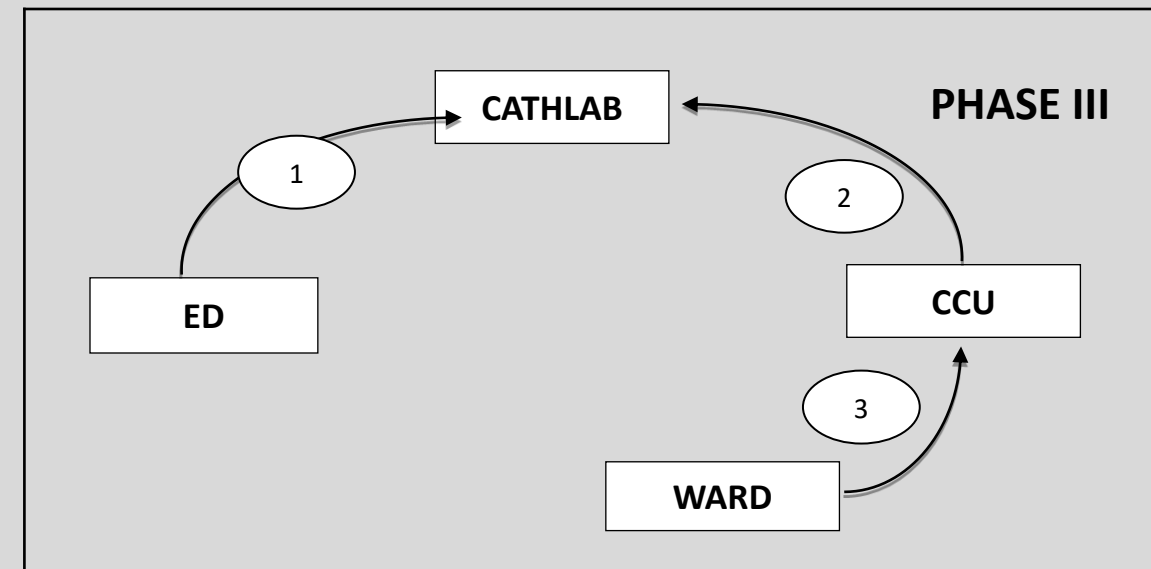
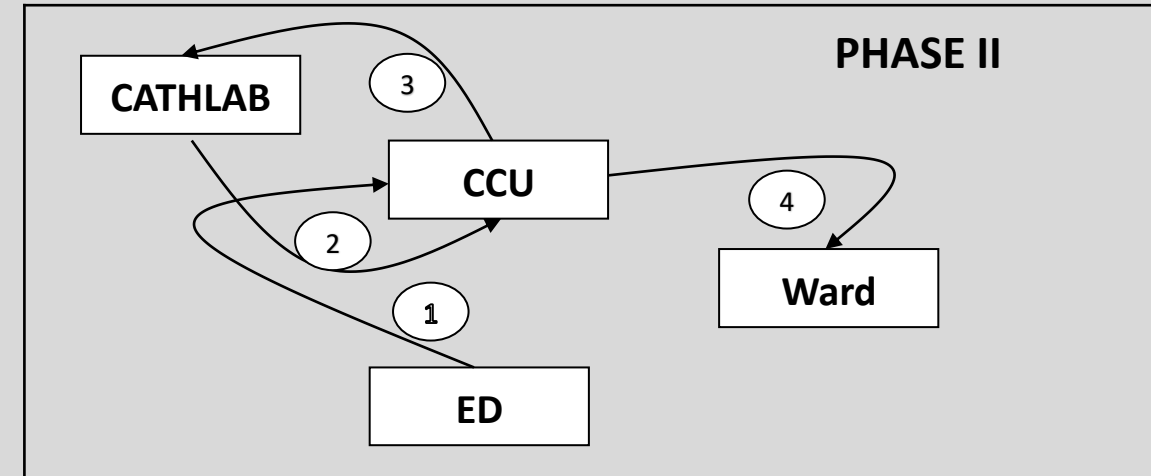
■ <60 ■ 60-90 ■ 90-120 ■ >120

LOCKING THE IMPROVEMENT

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PHASE III

	Set Std (90min)Phase III
Door to ECG /ECHO, blood for investigation, activation of STEMI code & patient preparations	15
Door to cathlab	15
Cathlab To First shot	40
Time taken for patient education & consent for PCI	15
Time taken from first shot to balloon/stent (first passage of any intracoronary device)	5
Overall TAT (Door to Balloon/stent)	90



CLONING THE IMPROVEMENT

QUALTECH PRIZE 2020
Healthcare

- Stroke(ASA Guidelines)
- SOP formulated & implemented.
- Code Stroke 3777 activated.
- Prompt radiological imaging and multi-disciplinary team.

INTANGIBLE RESULTS	RECOMMENDATIONS
<p>The process brought extensive interdisciplinary collaboration to determine best practices and processes to achieve a specific health care goal.</p>	<p>Better Emergency Medical Service facilities and system. Mission Lifeline programs would be instrumental in reducing reperfusion times with Early notifications by paramedics ECG images</p>
<p>Key Performance indicator in the treatment of cardiac arrests.</p>	
<p>Patient safety awareness in Staff with regular training.</p>	
<p>This study encouraged application of ASA guidelines for Neurology department for stroke cases</p>	

Efforts to shorten door-to-balloon
time should apply to all STEMI
patients.

THANK YOU