

# CATRAC Mission: Lifeline Cardiac Care Workgroup

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# Time Line

/fib arrest

| 117 hours - EMS arrival

| 146 hours - Air ambulance arrival

| 157 hours - pt denies CP

| 216 hours - pt vomits large amount brown emesis

| 225 hours - Landed at NAMC

| 235 hours - to cath lab

| 241 hours - pt on cath lab table

| 248 hours - case started

| 302 hours - first balloon inflation

# Time Line

/fib arrest

117 hours - EMS arrival

146 hours - Air ambulance arrival

## Hospital Phase

rown emesis


225 hours - Landed at NAMC

235 hours - to cath lab

241 hours - pt on cath lab table

248 hours - case started

302 hours - first balloon inflation



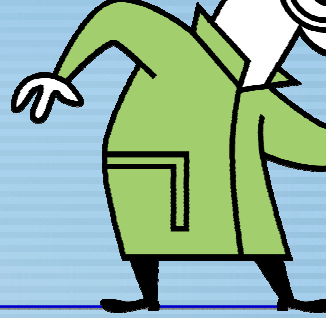
**D2B = 37 min**

# Is there a problem?

Depends on your perspective

- Cardiologist whose last D2B time was 30 minutes.
- ED doctor who took 60 minutes just making contact with someone to take the STEMI patient.
- EMT who did not have anyone available to immediately discuss a bothersome presentation with or did not have the equipment.
- A patient who failed to recognize that he/she was actually having a heart attack.
- A patient whose interhospital transfer time was 100 minutes.

# Look Beyond The D2BT



40% patients with acute MI die before reaching the ED *door*

20% of reperfusion eligible patients do not receive reperfusion treatment.

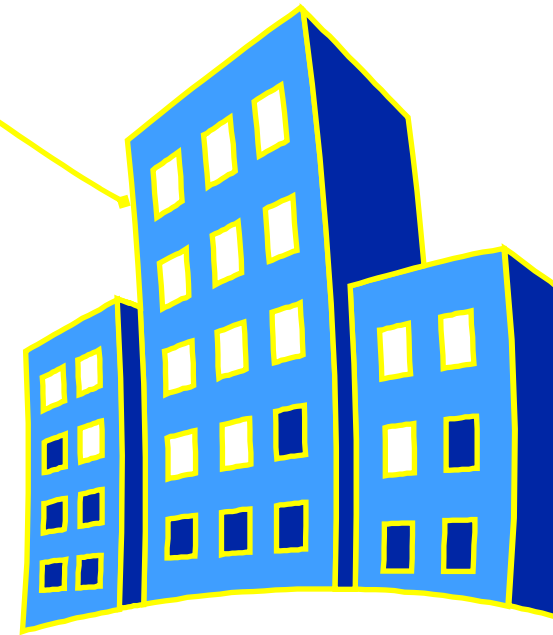
Some STEMI patients are not counted

Should parameter be symptom **onset** to balloon time (R2R, E2B) ?



# Rokos 2009

- 10 independent, prospective observational registries. ( 72 hospitals serving 20 million people)
- Data--> **all** consecutive pts with PH-ECG diagnosis of STEMI.
  - excluded STEMI patients who self-transported to the emergency department (ED) or underwent inter-hospital transfer.
- **Paramedics:**
  - Perform PH-ECG
  - Transport to nearest PPCI hospital
  - Activate cath lab



< 90 min

STEM  
Receiv

# Bypass Protocol

# STEMI Receiving Center Criteria

PPCI-capable hospital with on-site CTS

Interdepartmental policies directed at providing rapid PPCI (rapid lytics --> plan B)

Each SRC hospital expected to receive all STEMI pts identified by EMS

CCL available 24/7

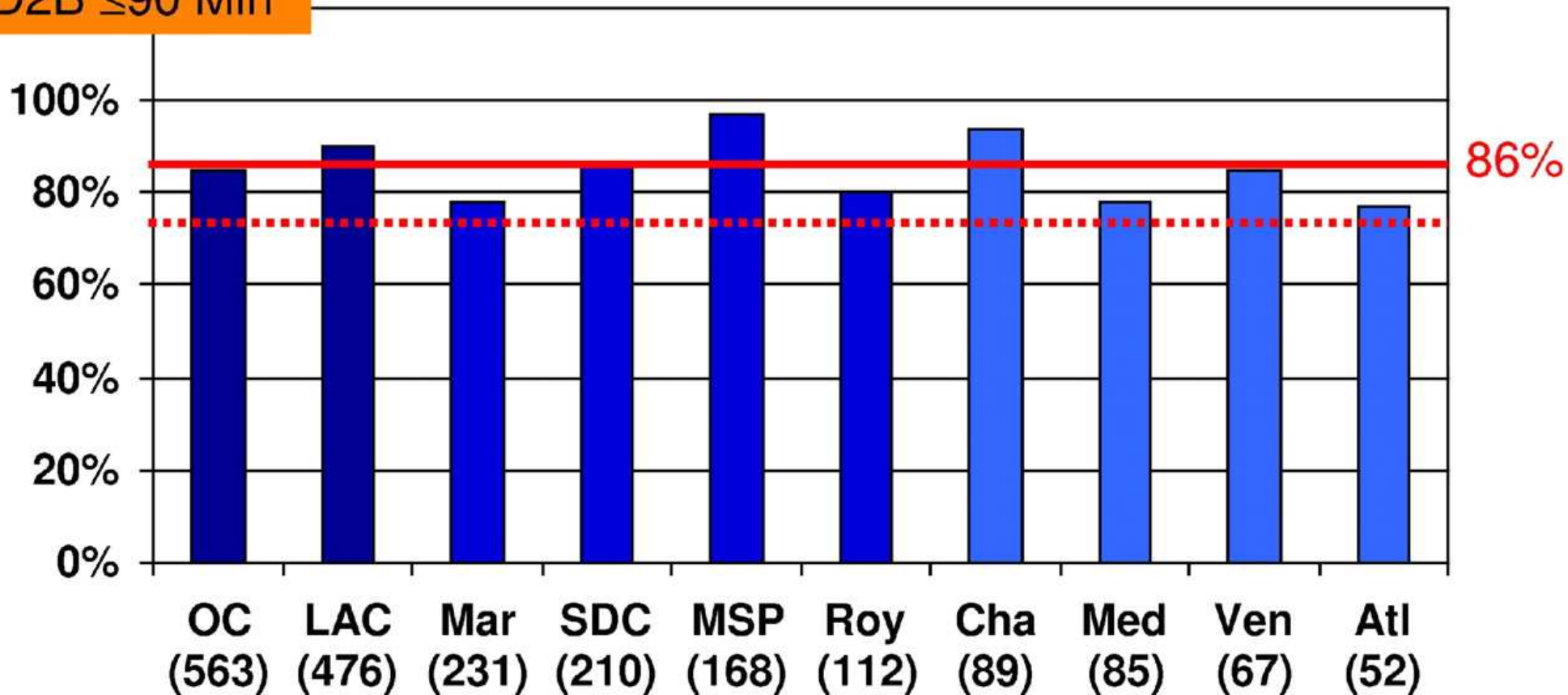
Hospital based multidisciplinary

# Regional SRC Network Criteria for Pre-hospital Cardiac Triage

- Paramedics equipped with 12-lead PH-ECG machines to diagnose acute STEMI in all pts who call 9-1-1 and have symptoms of acute ischemia.
- Paramedics transport pts with presumed STEMI per PH-ECG to nearest designated SRC.
- Parallel processing
- SRC submit D2B times to a central agency providing oversight for the SRC network.
- Regional multidisciplinary committee evaluates D2B times to promote CQI.

# D2B $\leq$ 90 Min by Region

Rate (%) of  
D2B  $\leq$ 90 Min



Rokos, I. C. et al. J Am Coll Cardiol Intv 2009;2:339-346

## Results

- Paramedics transported 2712 pts directly to a PPCI hospital.
- 76% pts received PPCI.
- D2B less than 90 minutes --> 86% of time.
- E2B less than 90 minutes --> 68% of time.

# Los Angeles County SRC Network Rate of D2B $\leq 90$ min

Rate (%) of D2B  $\leq 90$  Min

100%

Strong association between high rates of D2B  $< 90$ min and SRC network implementation is clinically significant

80%

0%

pre-SRC    Dec (19)    Jan (39)    Feb (5)

Rokos, I. C. et al. .

at 4 major  
ed a  $< 50\%$   
ported pts.  
ates of D2B  
entation is  
clinically significant, and is unlikely to be  
caused by unmeasured cofounders across 30  
different hospitals in LA county.

# Notable comments

- 💡 “Regions implementing a prehospital triage system for STEMI patients consistently reduce time to PCI”
- 💡 “The director of the regional emergency services is the ideal person to coordinate setting up a regional STEMI system.”
- 💡 “Primary PCI-capable hospitals must recognize that the emergency services are responsible for the delivery of approximately one-half of all STEMI patients, and thus they are in a unique and powerful position to foster collaboration among competing hospitals and drive quality in a region”
- 💡 No good data for inter-hospital transfer STEMI patients.



STEMI Referring



STEMI Referring



STEMI  
Receiving

# Treat & Transfer Protocols

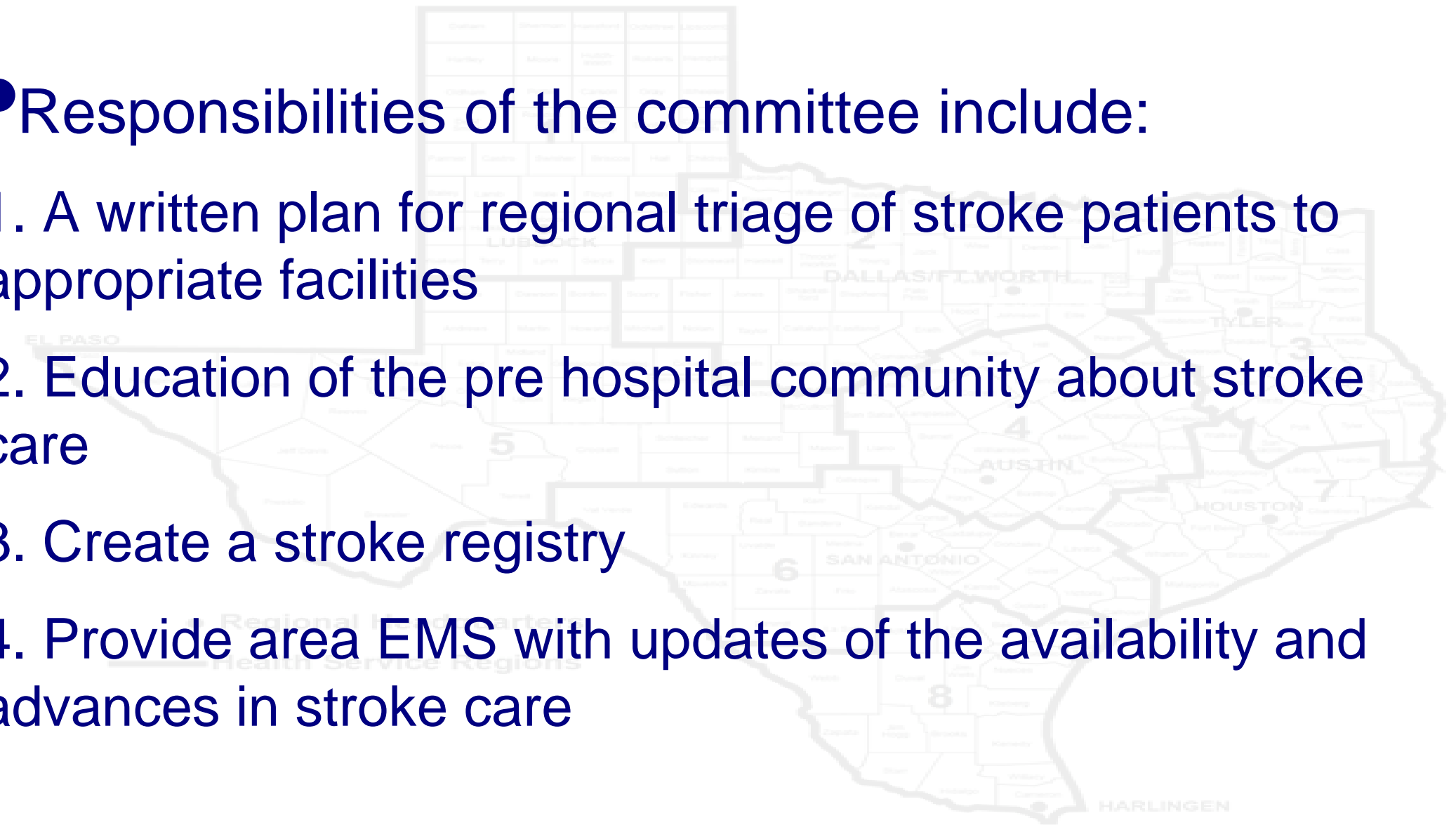
**“Not My Job”**



# CAI RAC Stroke Committee

Responsibilities of the committee include:

1. A written plan for regional triage of stroke patients to appropriate facilities
2. Education of the pre hospital community about stroke care
3. Create a stroke registry
4. Provide area EMS with updates of the availability and advances in stroke care



# Potential Spin-Off

## Benefit

- Education --> patient, paramedics, doctors and other health providers
- Expand the application of the network for treatment of:
  - High risk Non-STEMI patients
  - Cardiopulmonary arrest patients
  - Aortic dissection
  - Pulmonary embolism
  - Childhood asthma



# Summary

- A great deal of progress has been made in our 11 county area.
- There is significant need for improvement.
- We have capable talented people who can develop a successful Regional STEMI Network.
- This morning is a huge first step
- Many hands make less work.



# Parking and Other Items

