



Off-hours Activation of the Cathlab Team: Who Should Push the Button?

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Background

- STEMI is AHA/ESC class I indication for Primary percutaneous coronary intervention (PPCI)
- PPCI is the standard reperfusion strategy in our center (thrombolysis <1%)

Myocardial Infarction

Time is Muscle



Symptoms

Call to EMS

Medical
Treatment

ER

ICCU

Cathlab

Myocytes death

Treatment Delay



Myocardial Infarction

Time is Muscle



Symptoms



Call to EMS



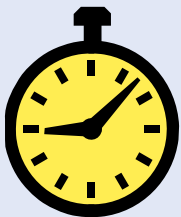
Medical Treatment



Cathlab

Myocytes Death

Treatment Delay

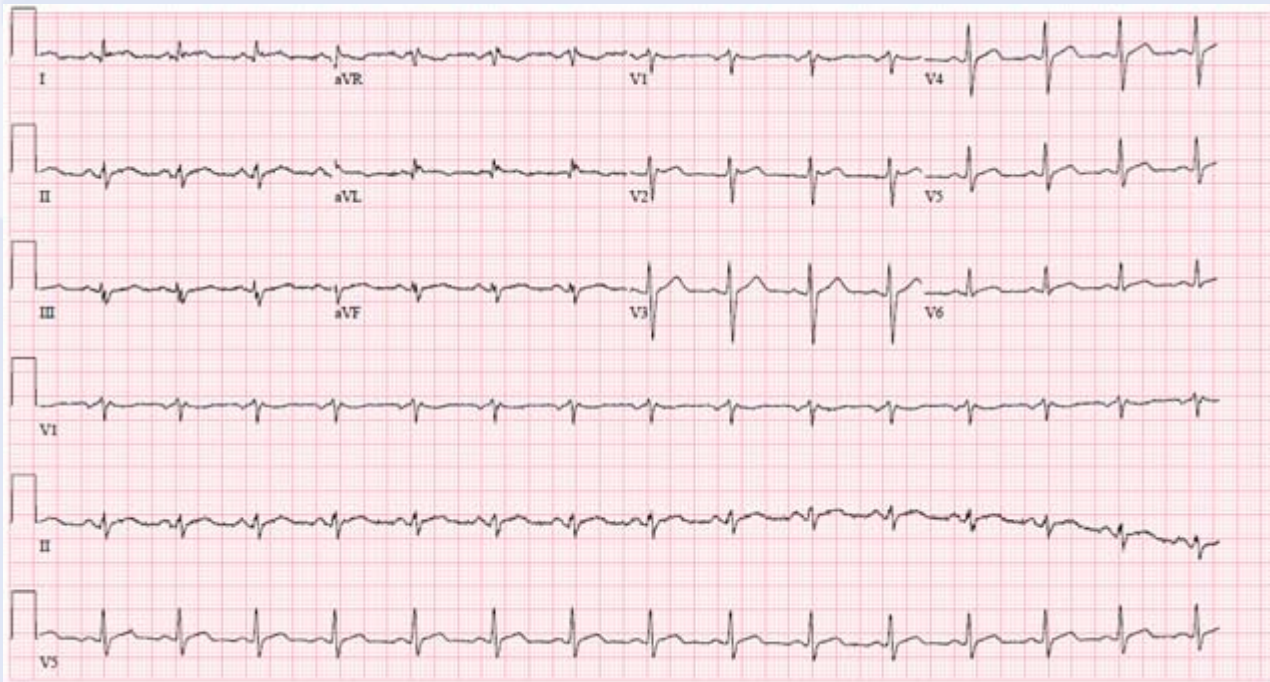


Door to Balloon (ACISIS data)

2008 הדסה	2008 ממוצע בארץ	2002 הדסה	
30 דקות	75 דקות	95 דקות	זמן עד לפתיחת העורק
2.7%	4.1%	5.5%	% תמותה 30 יום

Patient Presentation

- N.C., 52, Severe chest pain, 1 hour (midnight)
- EMS arrives and activates the cathlab for presumed STEMI



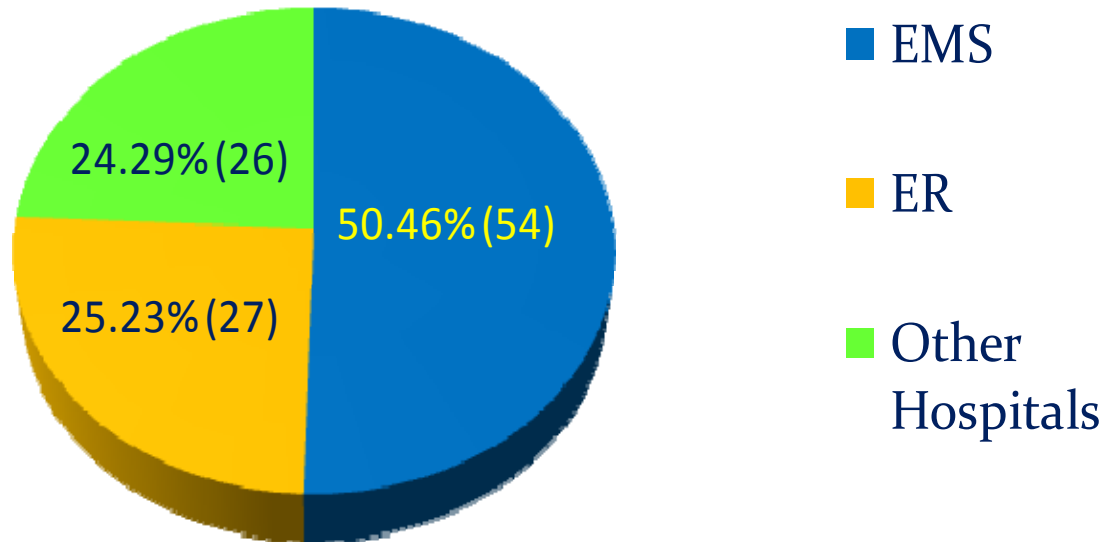
- **Perimyocarditis**
- So, who should “push the button”?



Methods

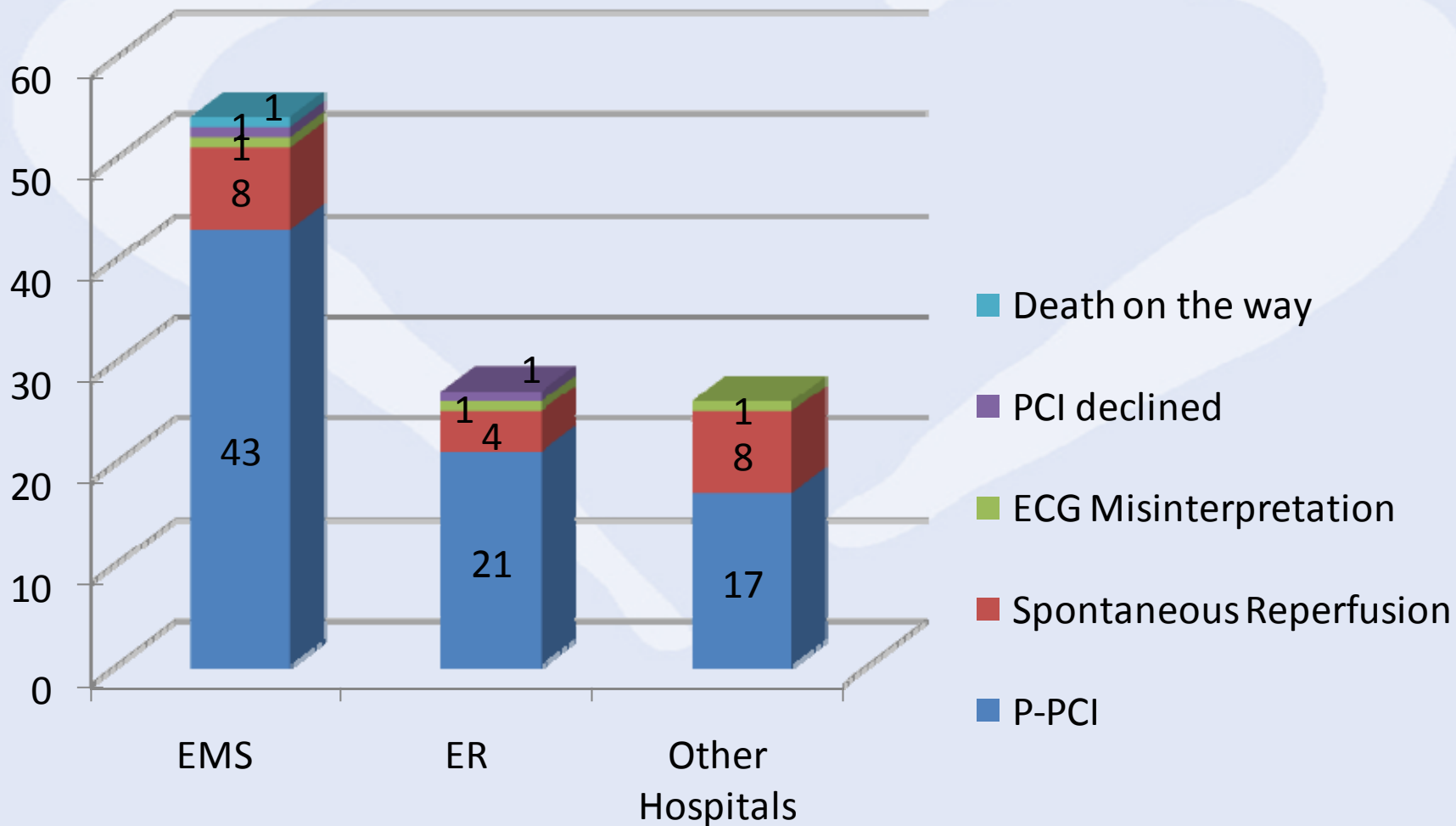
- Retrospective Analysis:
107 consecutive admissions of patients referred for PPCI during off-work hours (nights & weekends).

Patients by Referring site



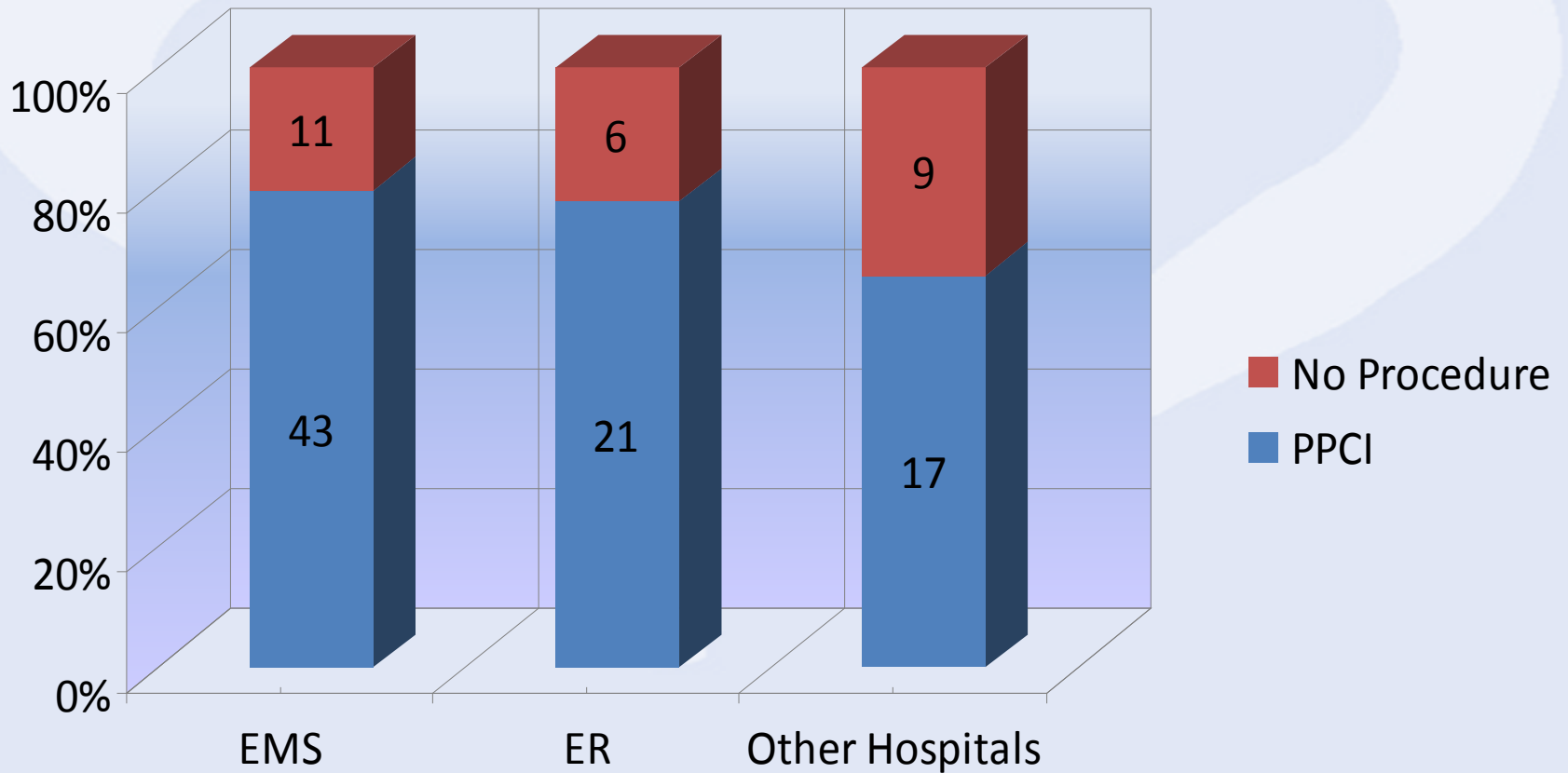
Immediate Results

By referring site

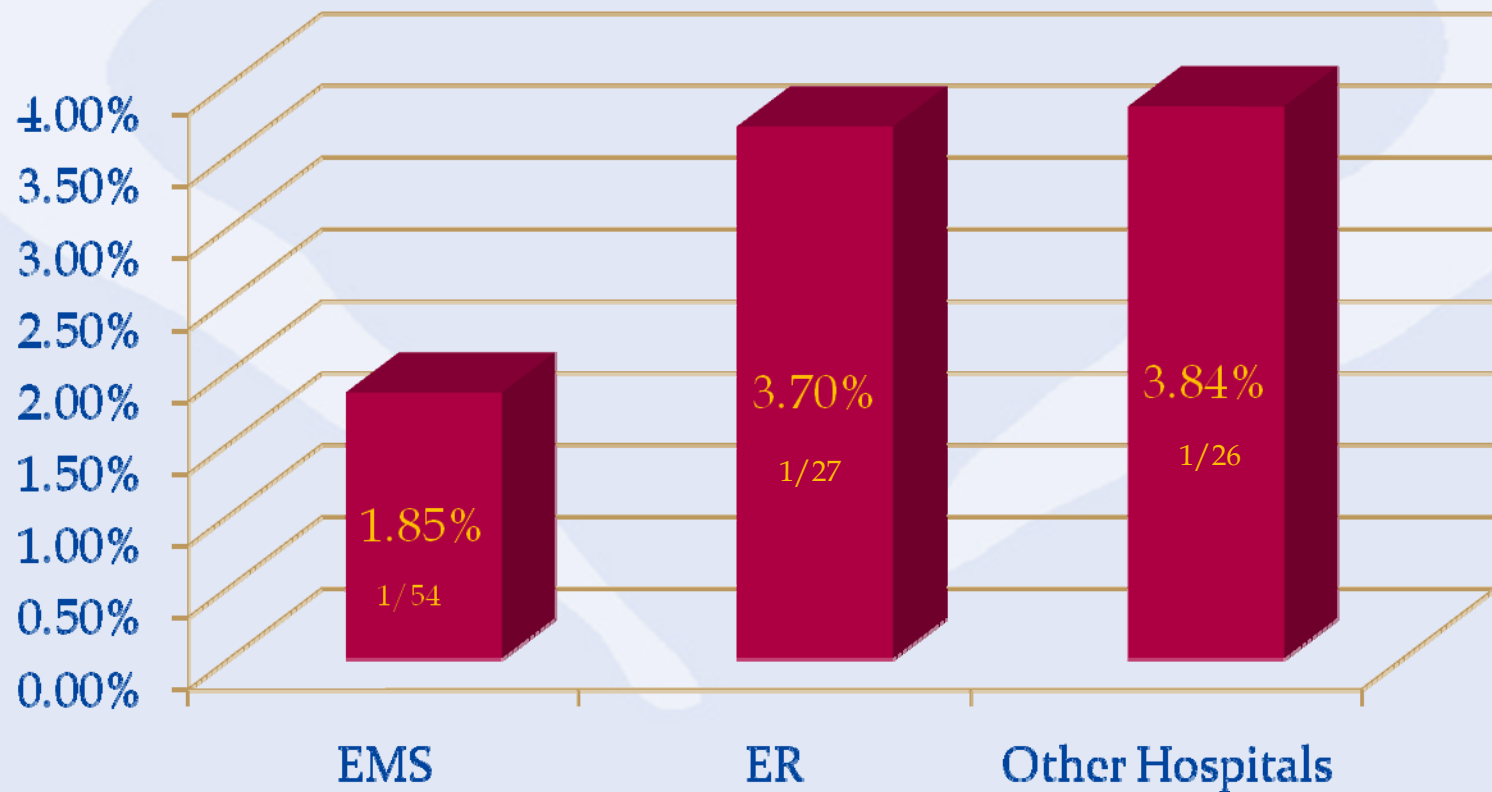


PPCI vs. No Procedure

By referring site



Percentage of Unjustified Cathlab Activation



Worldwide Evidence

- **Effect of prehospital 12-lead electrocardiogram on activation of the cardiac catheterization laboratory and door-to-balloon time in ST-segment elevation acute myocardial infarction.**

Brown JP, Mahmud E, Dunford JV, Ben-Yehuda O.
Am J Cardiol. 2008 Jan 15;101(2):158-61.

- **The positive predictive value of paramedic versus emergency physician interpretation of the prehospital 12-lead electrocardiogram.**

Davis DP, Graydon C, Stein R, Wilson S, Buesch B, Berthiaume S, Lee DM, Rivas J, Vilke GM, Leahy DR.
Prehosp Emerg Care. 2007 Oct-Dec;11(4):399-402.

- **Door to balloon times: streamlining admission for primary percutaneous coronary intervention.**

Swanson N, Nunn C, Holmes S, Devlin G.
N Z Med J. 2010 Feb 19;123(1309):18-25.

Worldwide Evidence

Implementation and Integration of Prehospital ECGs Into Systems of Care for Acute Coronary Syndrome.

“Trained paramedics can identify STEMI with sensitivity ranging from 71% to 97% and specificity ranging from 91% to 100%, and with good agreement between paramedics and emergency department physicians (ranging from 0.59 to 0.73).”

Conclusions

- Activation of the cathlab team for PPCI by EMS personnel:
 - Significantly shortens the time to balloon
 - Associated with a low rate of unnecessary calls
- EMS personnel are righteously those to “push the button”





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