

Basic Training: BLS Use of the 12-Lead ECG

Eagles XIV– Feb 2012

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EMS System for Metropolitan Oklahoma City & Tulsa



1,100 square miles

Population

- 1.6 million day

- 1.2 million night

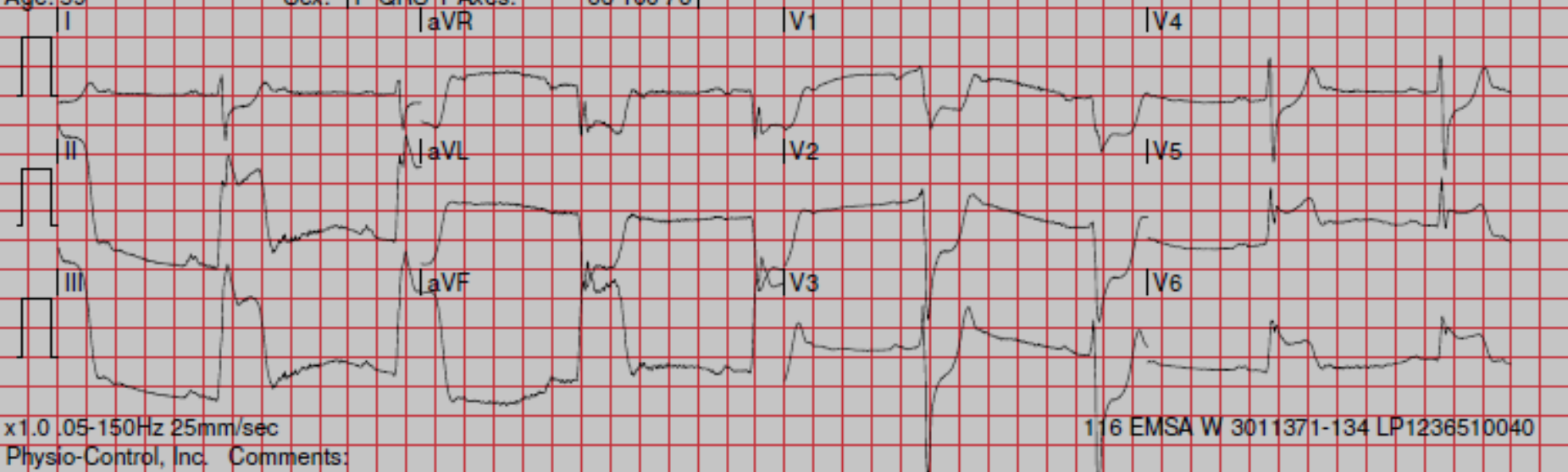
180,791 calls (2011)

134,503 transports (2011)

74% transports



Name: [REDACTED] 12-Lead 1 HR 50bpm Abnormal ECG **Unconfirmed**
ID: 073110113087 7/31/2010 11:33:32 Sinus bradycardia with 1st degree AV block
Patient ID: 10109473 PR 0.210s QRS 0.146s Rightward axis
Incident ID: QT/QTc: 0.488s/0.444s Nonspecific intraventricular block
Age: 59 Sex: P-QRS-T Axes: 66 100 76





911 call to ED arrival



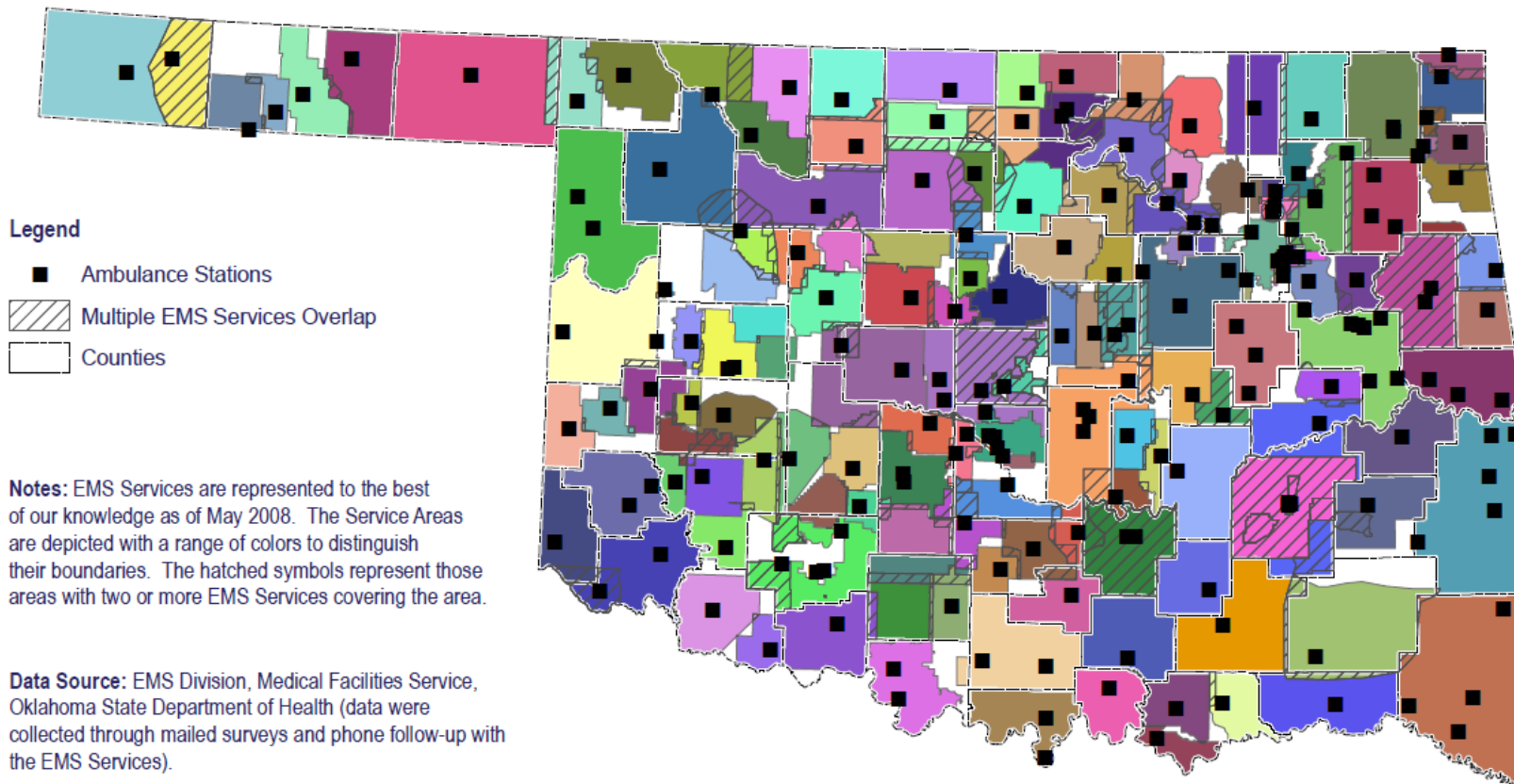


University of Oklahoma Statewide EMS 12-Lead ECG Survey

- Standardized IRB-approved phone survey
- 185 licensed EMS transport agencies
- 185 agencies data obtained (**100% response**)



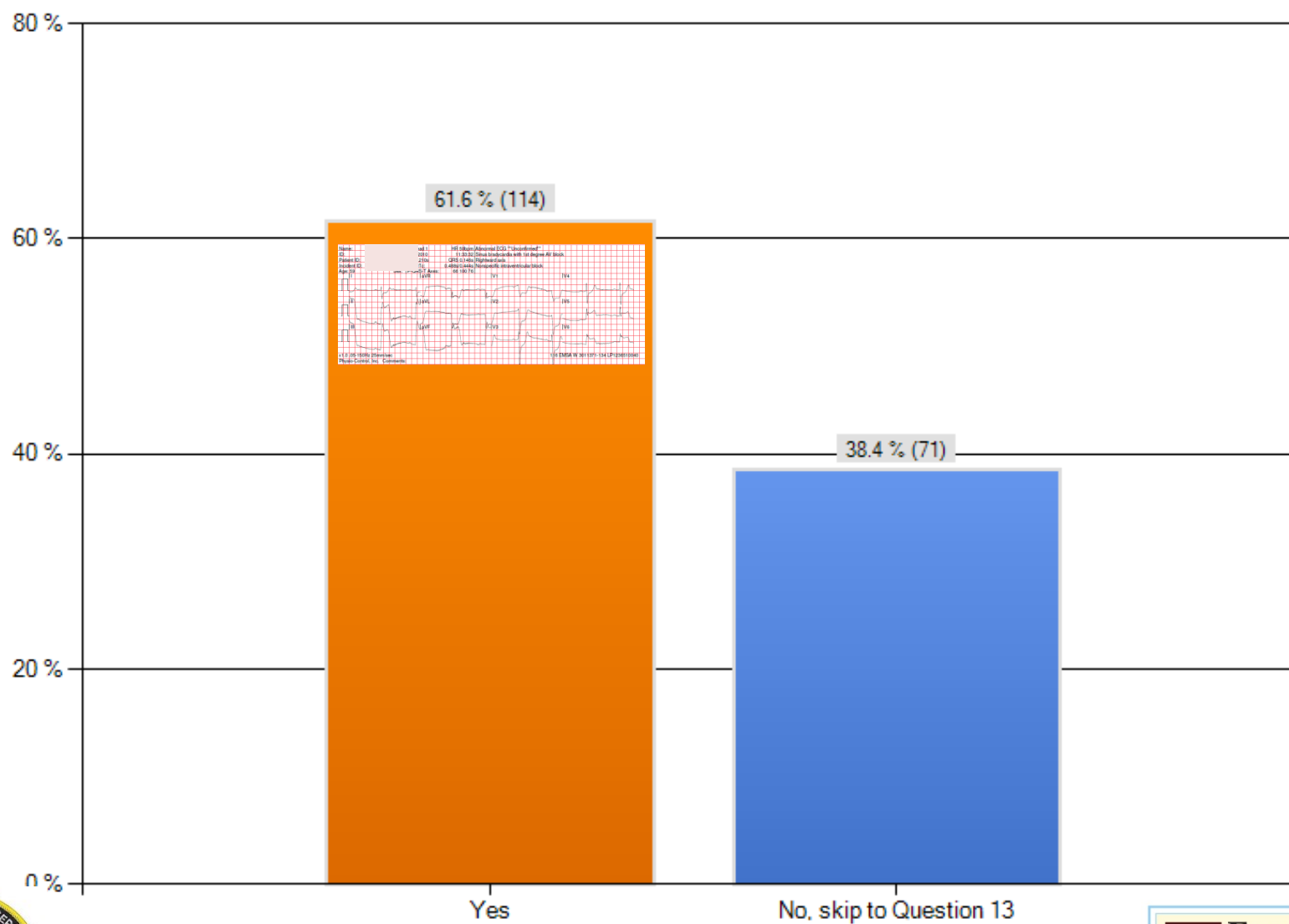
EMS Services in Oklahoma



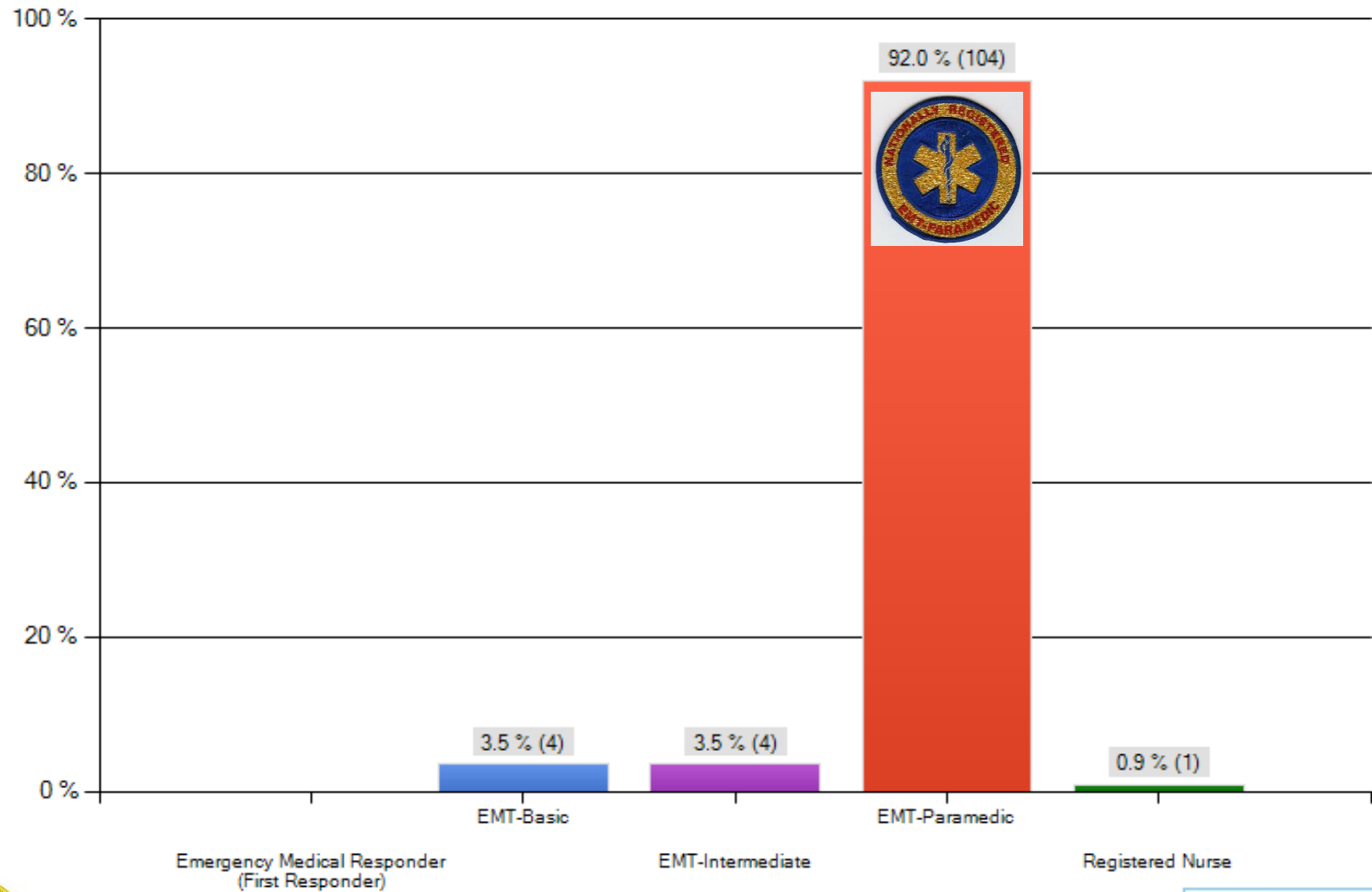
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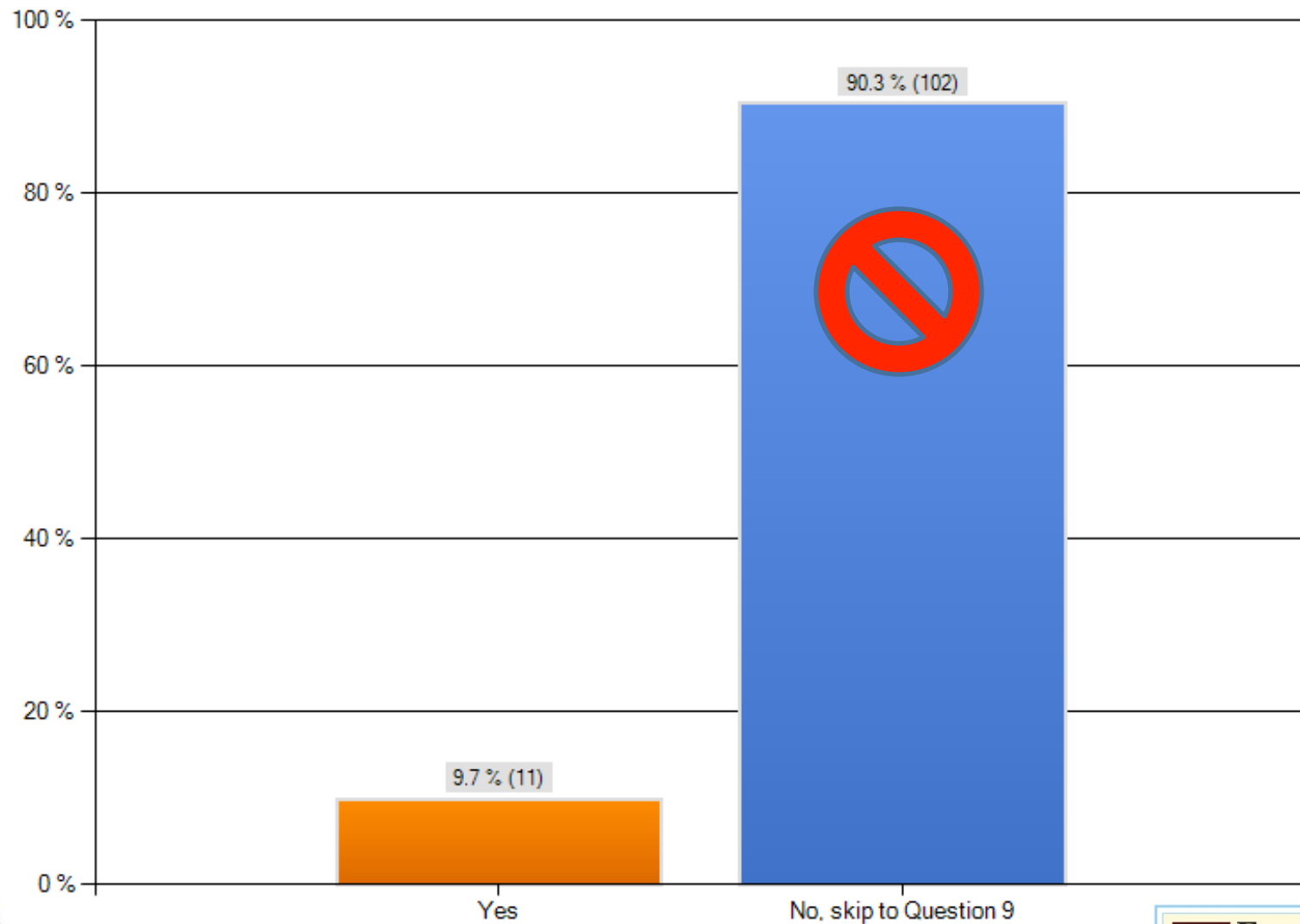
Does your EMS agency have the ability to acquire a 12-lead ECG?



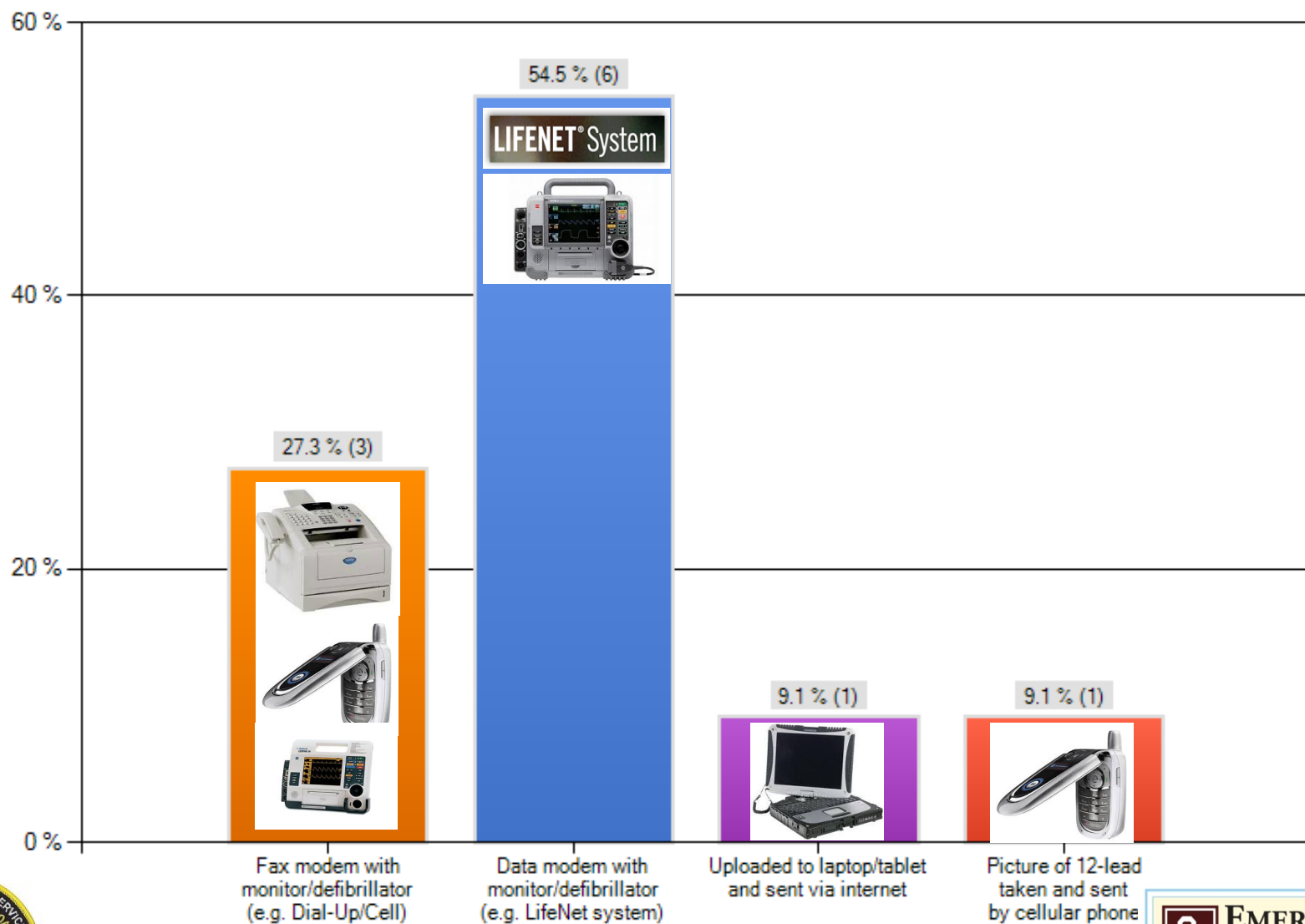
Which provider level most commonly applies the electrodes and obtains the 12-lead ECG?



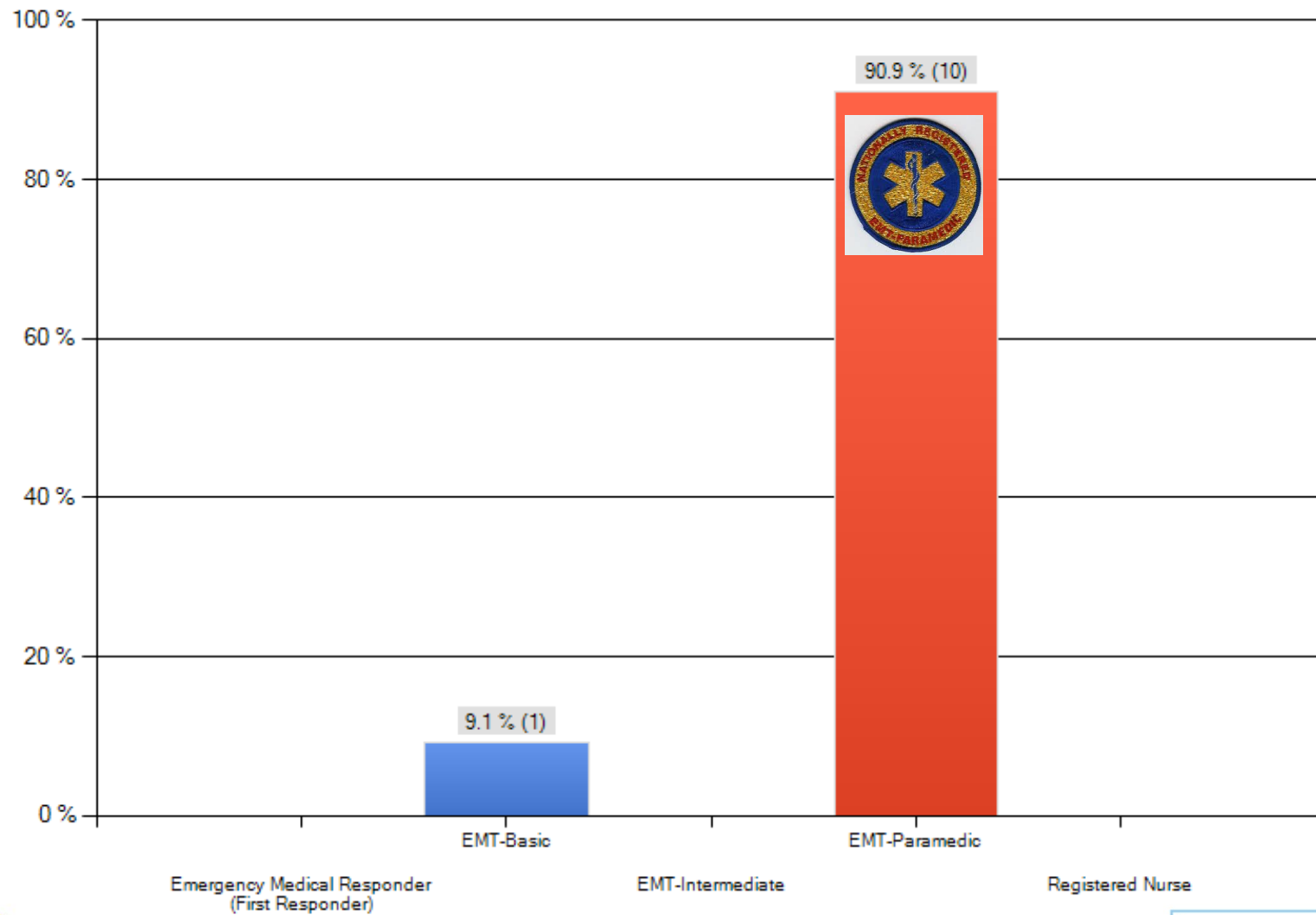
Does your EMS agency transmit 12-lead ECGs to receiving hospitals?



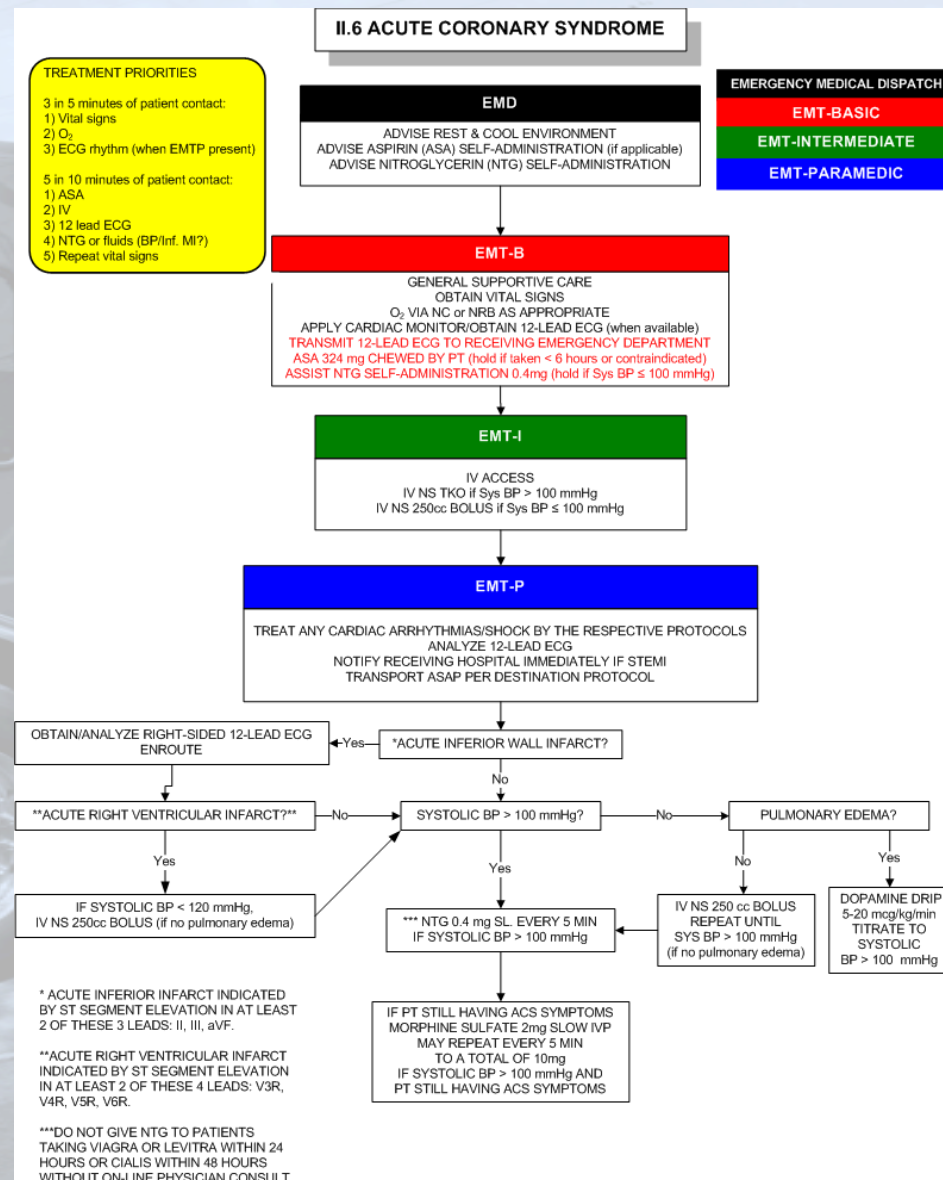
What mechanism(s) does your agency utilize to transmit 12-lead ECGs?



Which provider level most commonly transmits the 12-lead ECG?



The Role of the EMT-Basic in ACS?



The Role of the EMT-Basic in ACS

EMT-B

GENERAL SUPPORTIVE CARE

OBTAIN VITAL SIGNS

O₂ VIA NC or NRB AS APPROPRIATE

APPLY CARDIAC MONITOR/OBTAIN 12-LEAD ECG (when available)

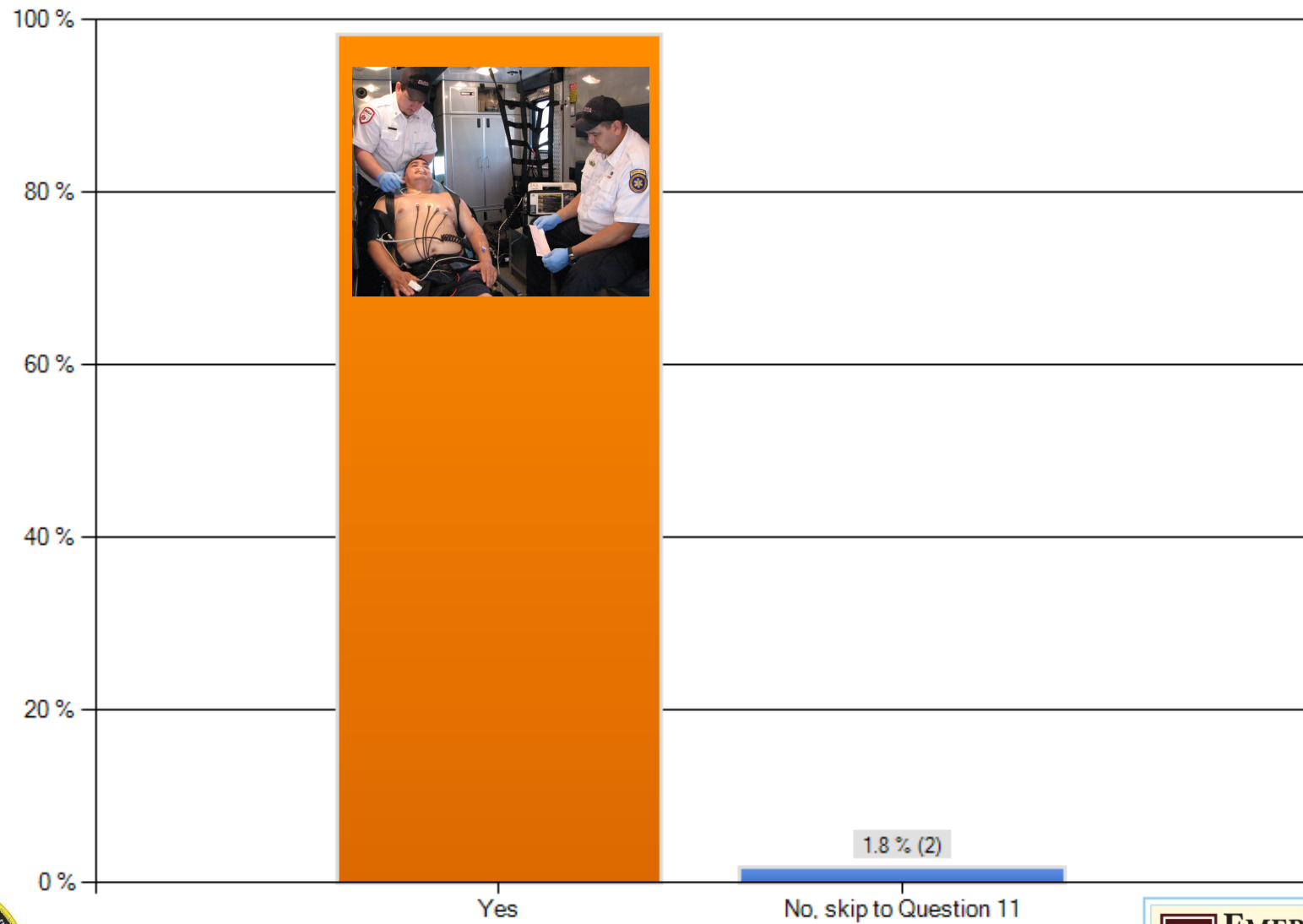
TRANSMIT 12-LEAD ECG TO RECEIVING EMERGENCY DEPARTMENT

ASA 324 mg CHEWED BY PT (hold if taken < 6 hours or contraindicated)

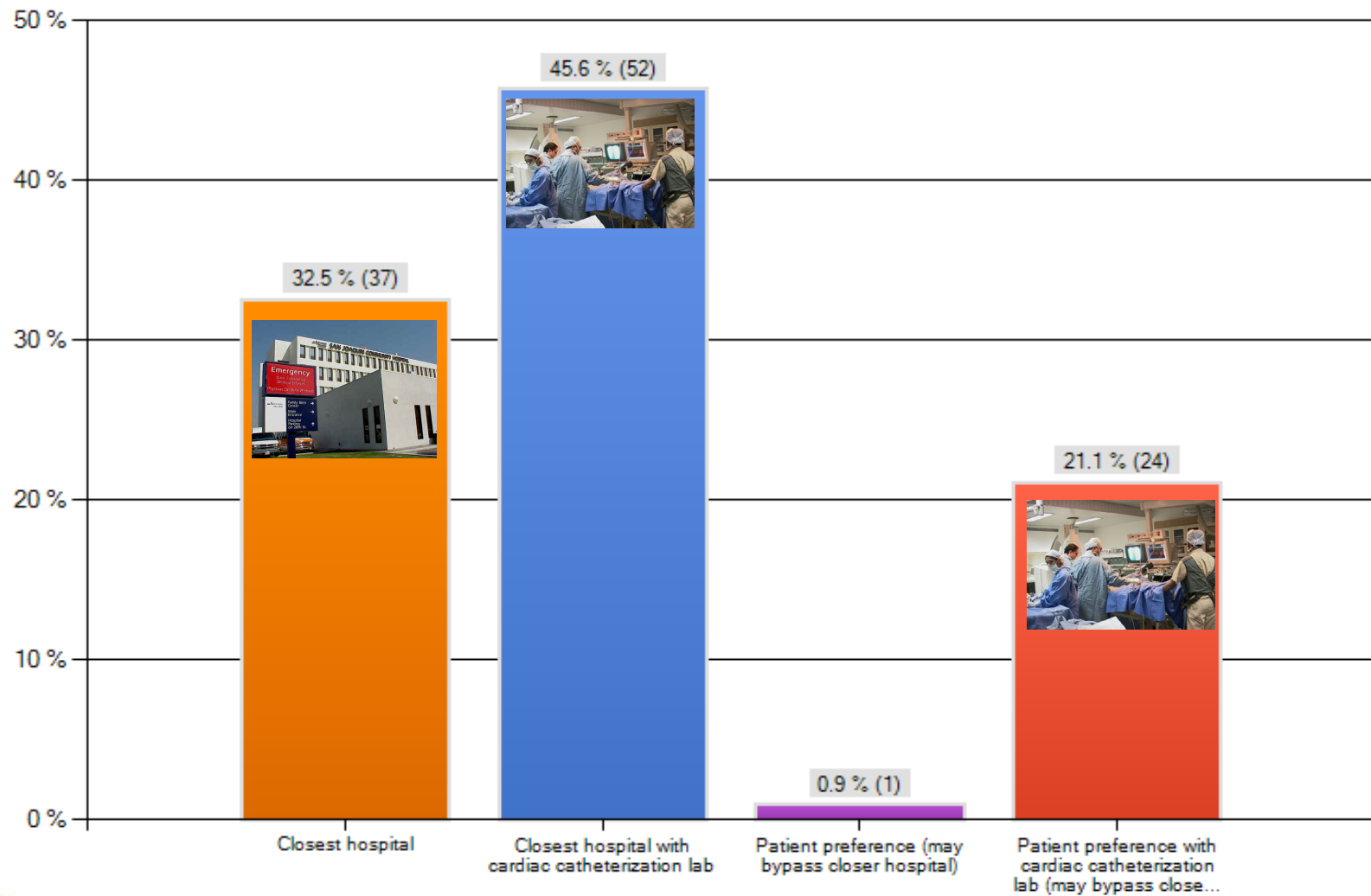
ASSIST NTG SELF-ADMINISTRATION 0.4mg (hold if Sys BP ≤ 100 mmHg)



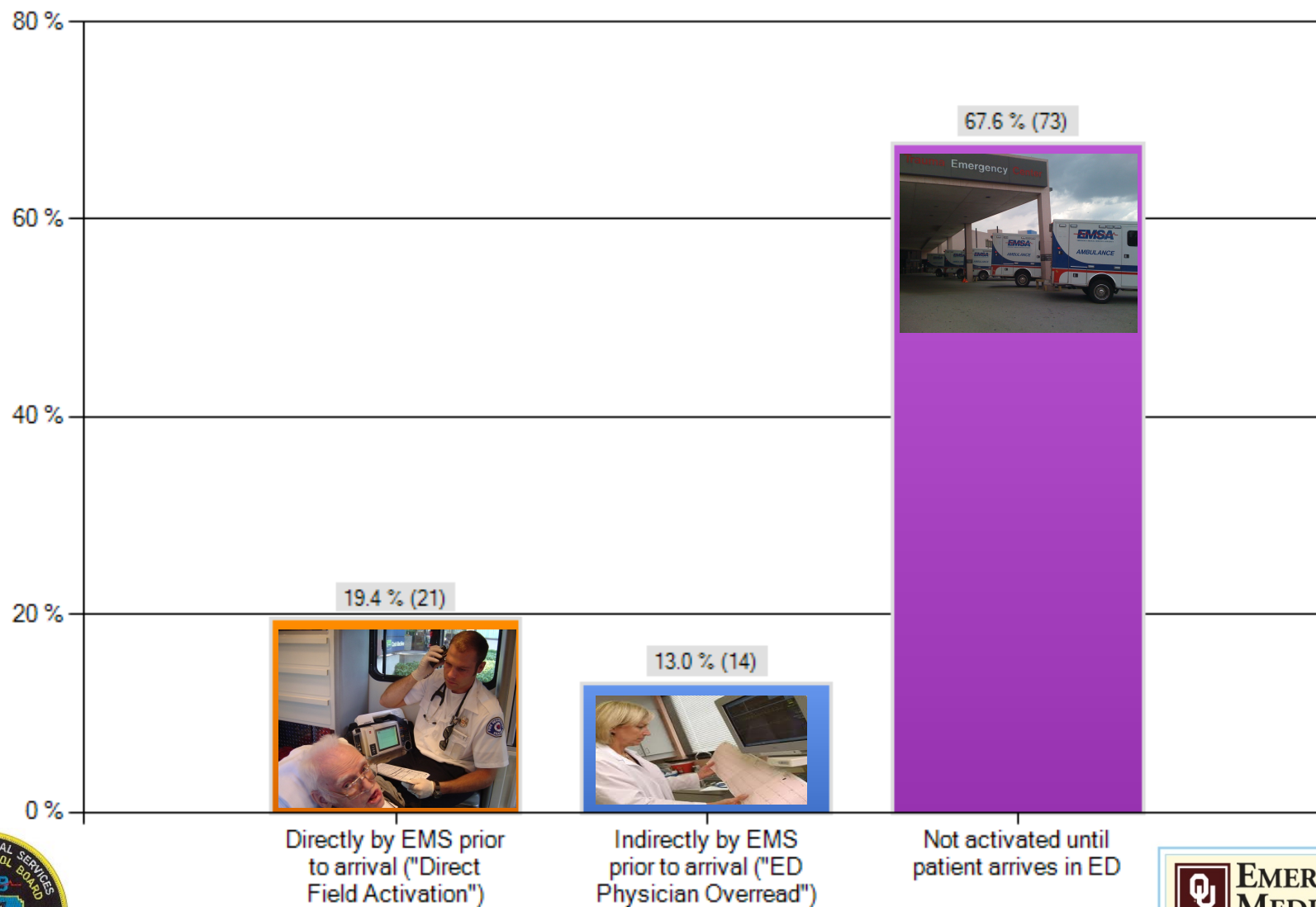
Do your EMS providers interpret 12-lead ECGs?



If an ST elevation myocardial infarction (STEMI) is suspected on the 12-lead ECG, where does your EMS agency most commonly transport the patient?



**For suspected STEMI patients transported to hospitals with cardiac catheterization lab ability,
how is the lab most commonly activated?**





5 Critical Events in EMS STEMI Care



1- System Activation



2 – Event Data Capture



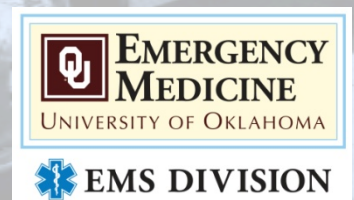
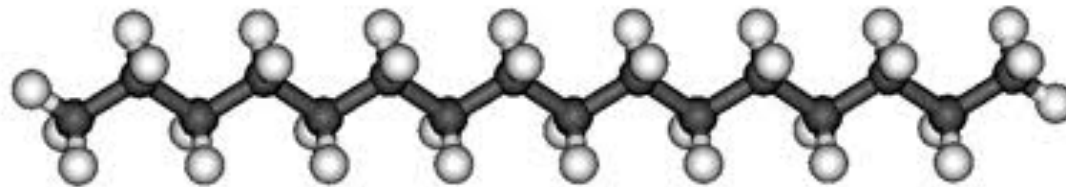
3 – Event Data Communication



4 – Destination Determination



The Most Critical EMS Chemical for STEMI



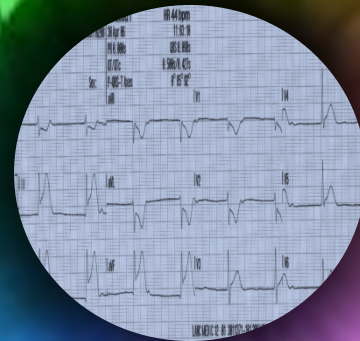
5 – STEMI Definitive Care



EMS: STEMI Vision 20/20

Where are we
headed?

5 Summary Points



**1. Enthusiasm for clinical outcomes
(and analysis of those outcomes)
will transcend organizations, time
intervals, & geographic boundaries.**

**Electronic data archiving and
manipulation must support
meaningful impact studies.**



2. The literature guiding us will change....so must we.

American Journal of Emergency Medicine (2011) 29, 437–440



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The
American Journal of
Emergency Medicine

www.elsevier.com/locate/ajem

Brief Report

Transmission of 12-lead electrocardiographic tracings by Emergency Medical Technician–Basics and Emergency Medical Technician–Intermediates: a feasibility study[☆]

Howard A. Werman MD^{a,b,*}, Robert Newland EMT-P^c, Brad Cotton EMT-P, RN, MD^c



Werman et al Findings

- 55 EMT-Basics or EMT-Intermediates in rural Ohio
- 89/90 (99%) pts with correct lead placement
- 89/90 (99%) pts with successful ECG sent
 - No change in scene time
- 85/89 (95.5%) sent ECGs “readable diagnostic quality”





3. The role of the ECG in ACS care will expand. Technology (and pricing) must support expansion.



**4. Regional STEMI networks are essential in saving time.
EMS will play increasingly critical roles in developing and maturing these networks.**



5. The 2020 STEMI will be treated as a system response, not a passage “down the chain” of agencies and events. EMS will be better recognized for its integral role within the system.





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