



# Emergency Department Evaluation of Patients With Possible ACS



Heart House  
Roundtables

# Defining the landscape for troponin testing

# Key Question

- Who Should Have a Troponin Measured?

Chest pain is the second most common cause of all emergency department visits, accounting 5.2% of all ED encounters

## **Top Patient Conditions Resulting in Malpractice Claim**

1985-2011 (PIAA n= 6522)

1. Symptoms involving abdomen/pelvis

**2. Chest Pain, not further defined**

**3. MI, acute**

4. Appendicitis

5. Injury to multiple parts of the body

6. Meningitis

7. Fingers alone, open wound

8. Headache

9. Disorders of soft tissue

10. Dyspnea and other respiratory abnormalities

# Indirect Evidence-EKG

- older than 30 years with chest pain
- older than 50 years with syncope, weakness, rapid heart beat and difficulty breathing or shortness of breath
- age  $\geq 30$  years with chest pain
- age  $\geq 50$  years with shortness of breath, altered mental status, upper extremity pain, syncope, or generalized weakness
- age  $\geq 80$  years with abdominal pain or nausea/vomiting.

Ann Emerg Med. 2000 Dec;36(6):554-60

Am Heart J. 2012 Mar;163(3):372-82

# **On the Relative Value of an Assay Versus That of a Test**

A History of Troponin for the Diagnosis of Myocardial Infarction\*

Robert L. Jesse, MD, PhD

**“When troponin was a lousy assay it was a great test, but now that it’s becoming a great assay, it’s getting to be a lousy test.”**

# Troponin Testing in Practice

- Great assay - highly accurate and reproducible with limited ( $< 10\%$ ) variability
- Great test - tool with measurable impact on clinical decision making
  - Diagnosis
  - Management
  - Prognosis
    - Better yet, prognostic value





# SAFE vs Effecient



# Real world application

- Troponins are ordered as part of Standing designated orders
- Troponins are ordered as part of a provider in triage
- Troponins are ordered as part of a complete evaluation

# ED use of troponins

- Diagnosis
  - The fear of missing an “Atypical” presentation

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EDITORIAL

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MEDICINE®

**Atypical Chest Pain—It's Time to Be Rid of It**

# ED use of troponins

- Prognosis
  - No data to comparing clinician judgement of “sick”
  - No data comparing to other markers of “sick”

# Conclusion

- Various providers order troponins
- No guideline on who needs them
- Fear is driving over-testing
- Use should drive the diagnosis of myocardial ischemic secondary to coronary artery disease