General Outline

1. Unintended Consequences
2. False activation is not harmless
3. Method to improve detection
4. Importance of the Story
5. What are the Eagles Doing?
• Trained and equipped to provide early defibrillation (I)
• Administration of ASA (I)
• Perform a 12 lead ECG (IIa)
• Review a reperfusion checklist (IIa)
• Written protocol to guide destination (I)

1980
1996
1999
2002
2005
2008
2011
2014

• Regional system of STEMI care (I)
• 12 lead at site of FMC (I)
• Transport to a PCI capable center (I)

• Unchanged from 1996 Guidelines

• Availability of 911 Access (I)
• Availability of an EMS system staffed to treat cardiac arrest (I)
• 12 lead telemetry (IIb)
Door to Balloon in 120 Minutes or Less
Who Should Interpret the ECG

Paramedic

Cardiologist

Computer

ER Physician
Missing Piece Concept

Feedback

[Image: Diagram showing a missing piece in a puzzle, representing feedback as the missing element in a concept.]
## Performance Analysis

<table>
<thead>
<tr>
<th>EMS</th>
<th>Hospital</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
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<tr>
<td>Yes</td>
<td>Yes</td>
<td>16</td>
<td>2</td>
<td>18</td>
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<tr>
<td></td>
<td>No</td>
<td>0</td>
<td>1,835</td>
<td>1,835</td>
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<td></td>
<td>Total</td>
<td>16</td>
<td>1,837</td>
<td>1,853</td>
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- **Sensitivity**: 94%
- **Specificity**: 100%
- **False Positive**: 11%
- **False Negative**: 0%
How & Why?
# STEMI Alert: It’s not just the ECG

<table>
<thead>
<tr>
<th>Story</th>
<th>ECG</th>
<th>STEMI Alert?</th>
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<tbody>
<tr>
<td>Convincing</td>
<td>Convincing</td>
<td>Yes</td>
</tr>
<tr>
<td>Convincing</td>
<td>Meh...</td>
<td>Yes</td>
</tr>
<tr>
<td>Meh...</td>
<td>Convincing</td>
<td>Yes</td>
</tr>
<tr>
<td>Meh...</td>
<td>Meh...</td>
<td>No</td>
</tr>
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</table>
Pt is a 61 YOF CC of Weakness. Pt states she was walking to the bathroom when she suddenly felt ill and weak then proceeded to have a syncopal episode and fell to the ground. Pt denies any recent illness, no Chest pain, Shortness of Breath, abd pain, vomiting, diarrhea, extremity pain. Pt states she takes morphine for diabetic neuropathy but states there is no way she took too much.

VS: BP 65/41, HR 92, RR 30, SpO2 93%, EtCO2 37

Tx: ASA, IV 500 ml
Meh Story + Meh ECG = NOT STEMI
Informal Eagles’ Survey
STEMI and EKGs
N=34
Are cardiology and cath lab activated solely on EMS call (or is activation determined by ED)?

Answered: 34    Skipped: 0

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
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</thead>
<tbody>
<tr>
<td>Yes</td>
<td>55.88%</td>
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<tr>
<td>No</td>
<td>44.12%</td>
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If yes, does someone else other than EMS read to activate?

Answered: 31  Skipped: 3

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
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<tbody>
<tr>
<td>Yes</td>
<td>58.06%</td>
</tr>
<tr>
<td>No</td>
<td>41.94%</td>
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<tr>
<td>TOTAL</td>
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</table>
Require Specific ST Morphology?
Do you transmit EKGs?

Answered: 34    Skipped: 0

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
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<tbody>
<tr>
<td>Yes</td>
<td>85.29%</td>
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<tr>
<td>No</td>
<td>14.71%</td>
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<td>TOTAL</td>
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</table>
Do you transmit EKGs directly to cardiology?

Answered: 32  Skipped: 2

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
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<tbody>
<tr>
<td>Yes</td>
<td>31.25%</td>
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<tr>
<td>No</td>
<td>68.75%</td>
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</table>
Do you bypass ED in most or all cases and go directly to cath lab?

Answered: 34  Skipped: 0

<table>
<thead>
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<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
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<tbody>
<tr>
<td>Yes</td>
<td>41.18%</td>
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<tr>
<td>No</td>
<td>58.82%</td>
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<tr>
<td>TOTAL</td>
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</table>
Do you use STEMI criteria of 1mm in contiguous limb leads, precordial 2mm V2V3 (males) 1.5 mm V2V3 (females) AHA/ACC criteria?

Answered: 34    Skipped: 0

- Yes
- No
- Other (please specify)
Is chest pain/pressure or anginal equivalent such as SOB required for activation?

Answered: 34  Skipped: 0

Yes

No
What level of “overtriage”, alerts without intervention are considered tolerable in your system?

Answered: 33  Skipped: 1

- 10% or less
- ≤15%
- ≤20%
- ≤25%
- Sky’s the limit
Do you have any questions?
For More Information

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