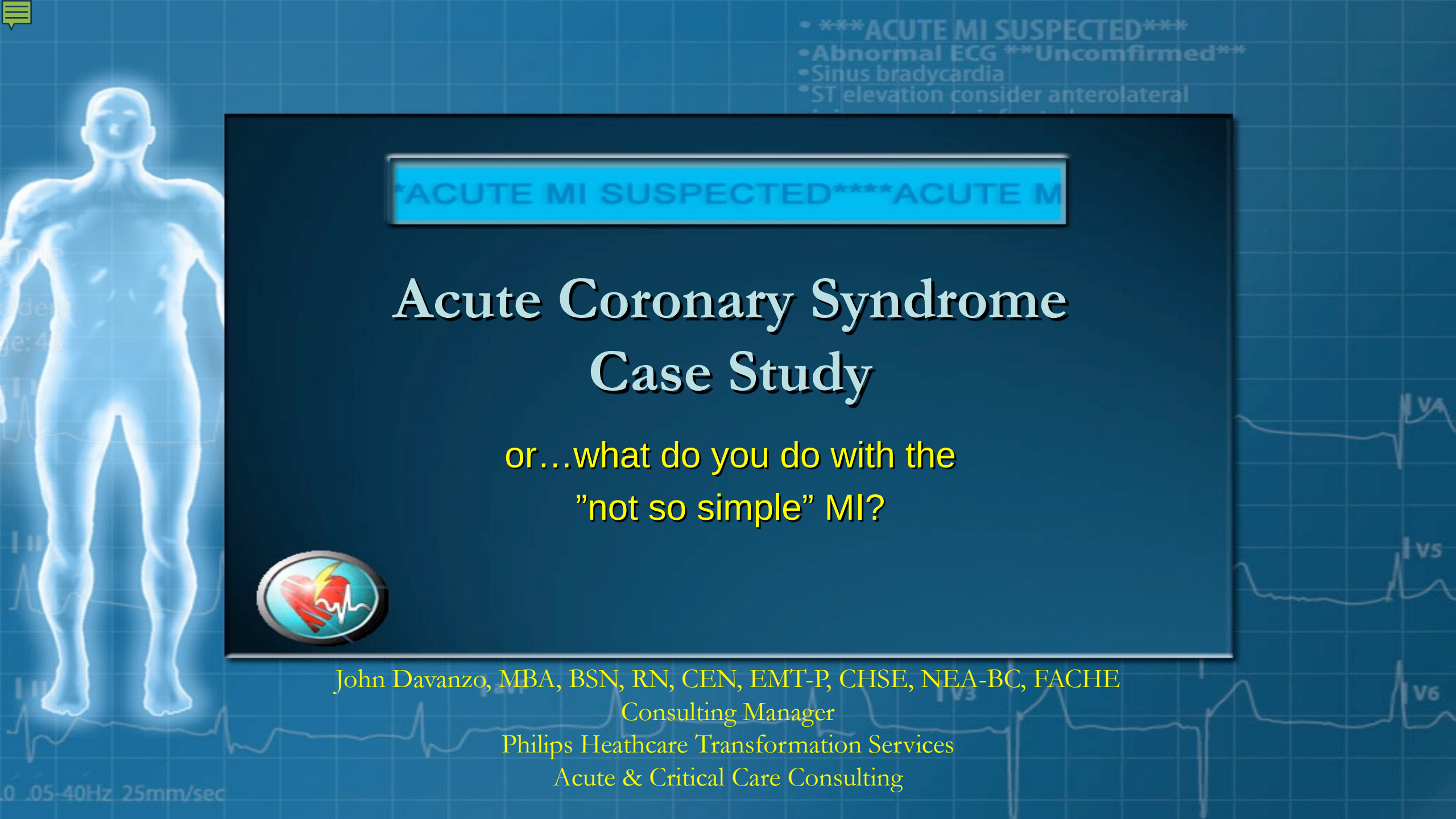

Acute Coronary Syndrome Case Study

or…what do you do with the
”not so simple” MI?

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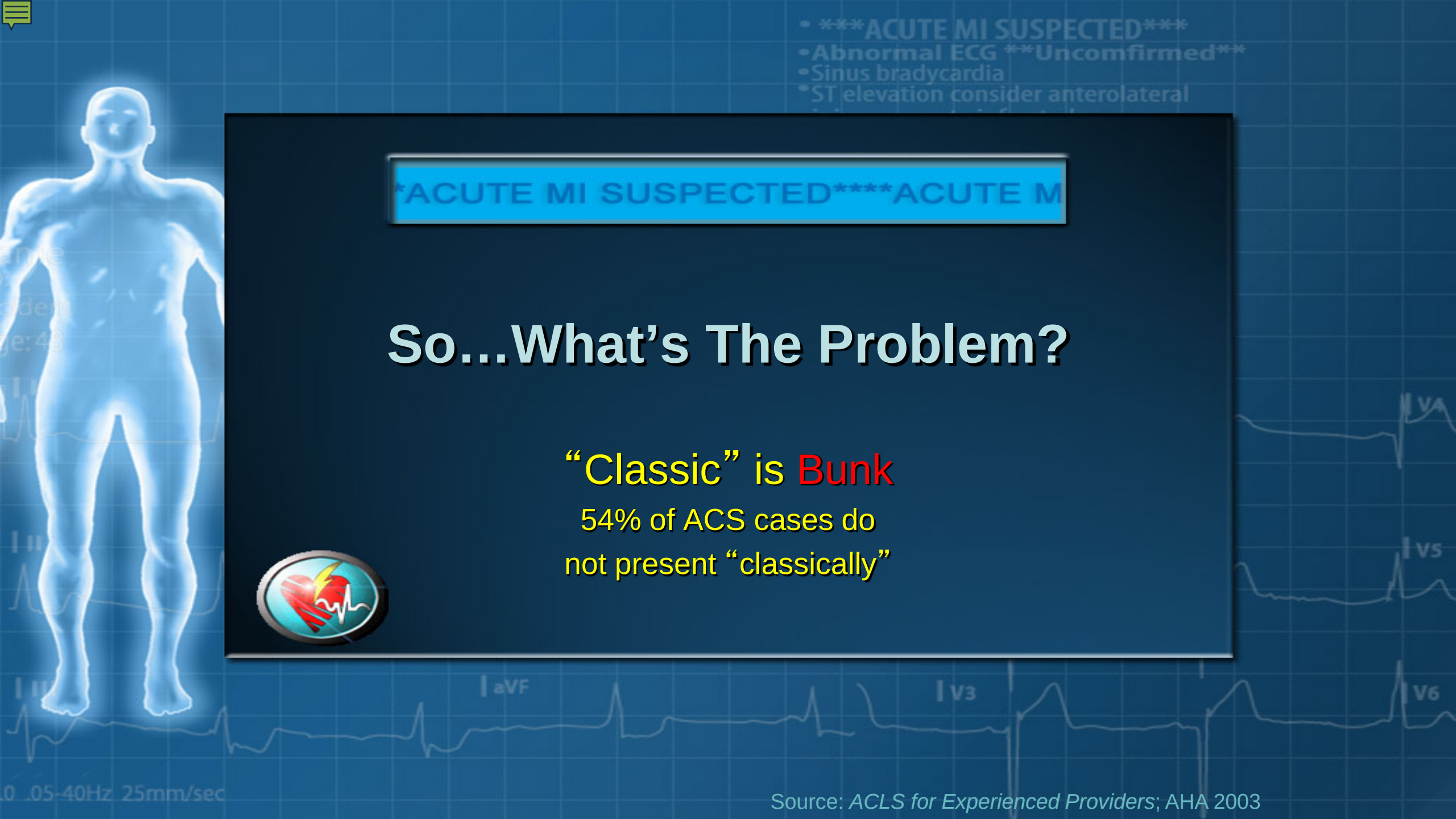
Consulting Manager
Philips Heathcare Transformation Services
Acute & Critical Care Consulting

“Classic” ACS Presentation

Image Source: Google Images

- Chest Pain
  - Substernal
  - Crushing
  - Squeezing
  - “Truck or elephant laying on my chest”
- Short-of-breath
- Diaphoretic



Source: *ACLS for Experienced Providers*; AHA 2003

A.C.S. Case: S.D.

- Alpha 2 and Engine 1 respond to a call for a person who “passed out” at the hair salon. On arrival they are presented with a 73 y/o female who states she “does not want an ambulance” she just got light headed.

- Further discussion reveals the patient “felt faint” and collapsed. According to the hair dresser, she was “not speaking” for about 15 seconds and then looked around and asked “what happened”.

A.C.S. Case: S.D.

Image Source: Patient

- Initial assessment
  - A – Open and patent
  - B – RR 22, “mild SOB”
  - C – Pulse 88
- Additional assessment
  - B/P: 100/60, SaO2: 97%
  - Denies chest pain or pressure

A.C.S. Case: S.D.

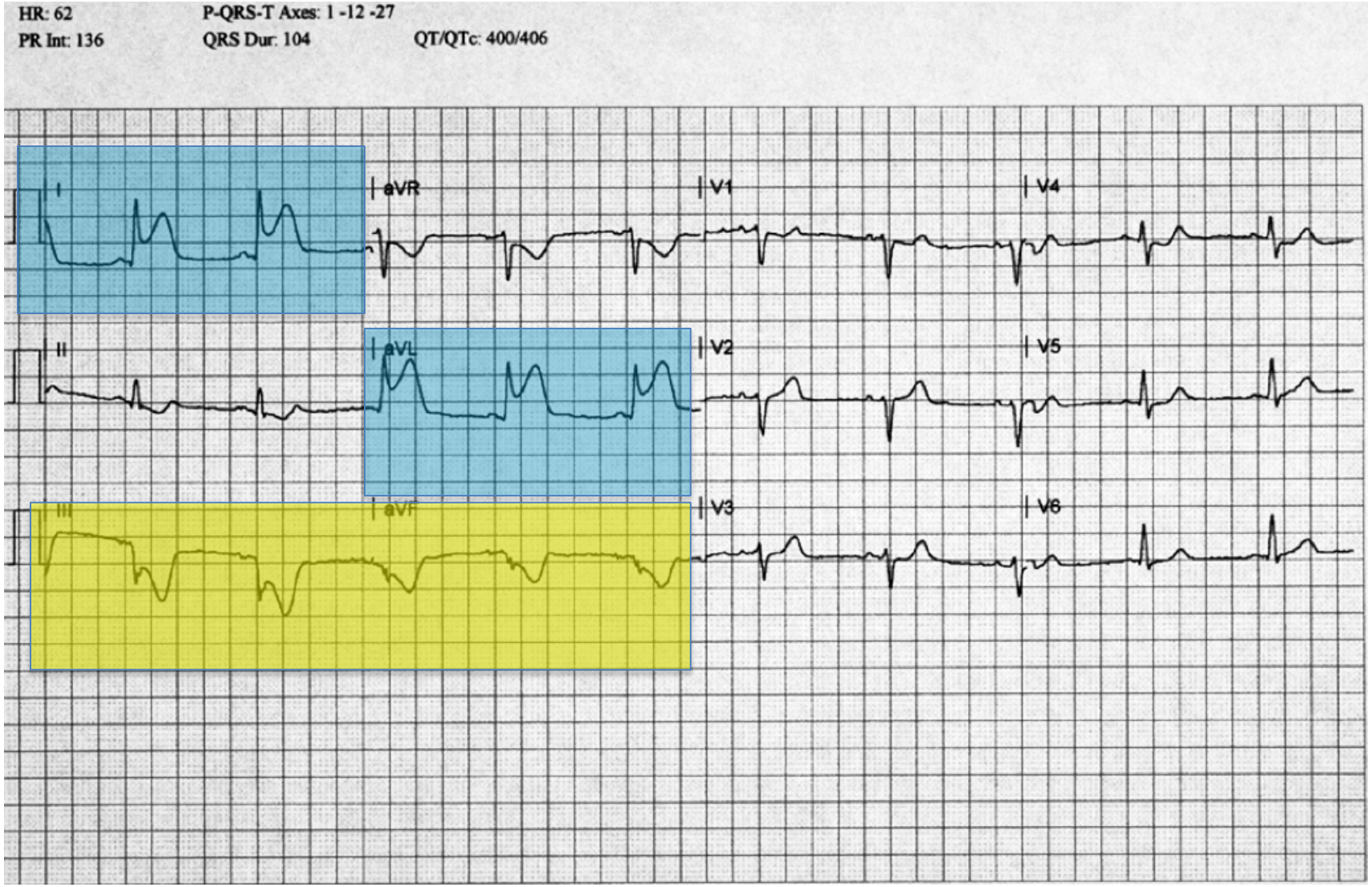
- History
  - Smoker (1 pack/day x 30 years)
  - Angina
  - “Small” MI in 2001
- Medications
  - NitroStat SL
  - Plavix
  - M-Vitamin

Image Source: Google Images

A.C.S. Case: S.D.

- Initial treatment
  - Convince patient to allow medics to continue assessment!
  - 3 Lead / 12 Lead ECG

A.C.S. Case: S.D.


HR: 62
PR Int: 136
P-QRS-T Axes: 1 -12 -27
QRS Dur: 104
QT/QTc: 400/406
I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6

Quick Review: ST Segment / J-Point

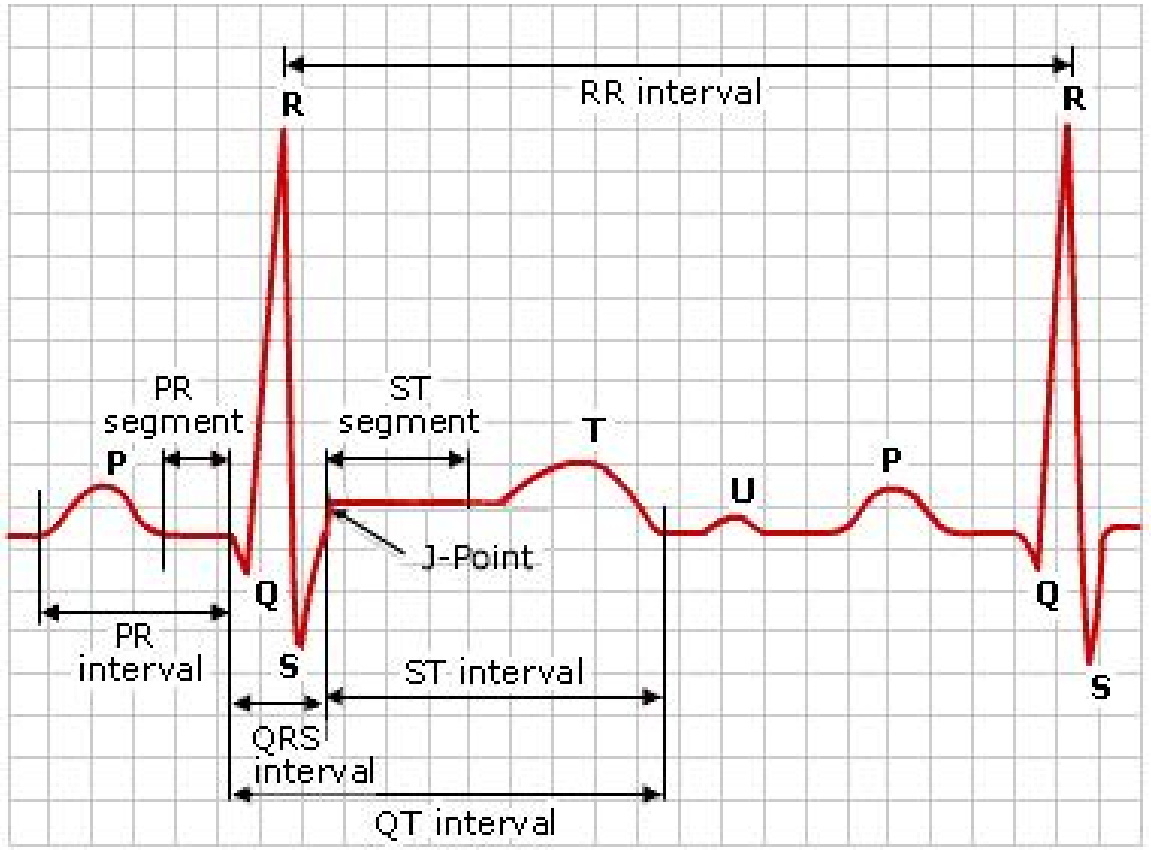


Image Source: Philips

Quick Review: AMI Recognition

- AMI Recognition
  - What to look for
    - ST segment elevation
    - One millimeter or more (one small box)
    - Present in two anatomically contiguous leads
  - Where are you looking

I Lateral	aVR	V1 Septal	V4 Anterior
II Inferior	aVL Lateral	V2 Septal	V5 Lateral
III Inferior	aVF Inferior	V3 Anterior	V6 Lateral

Image Source: Tim Phalen

A.C.S. Case: S.D.

- Initial treatment
  - Convince patient to allow medics to continue assessment!
  - 3 Lead / 12 Lead ECG
  - Oxygen 4L via NC
  - ASA 325mg PO
  - IV 0.9% NS, 18g, LFA
  - Morphine 2mg IVP

A.C.S. Case: S.D.

- Outcome
  - Transported to Regional Cardiac Center
    - Scene time: 20 minutes including treatment discussion
  - Radio report activates cath lab team
  - Time in ED: 10 minutes
  - Door-to-balloon: 65 minutes
  - Two stents placed
  - Patient discharged to home!

“Atypical” Presentation

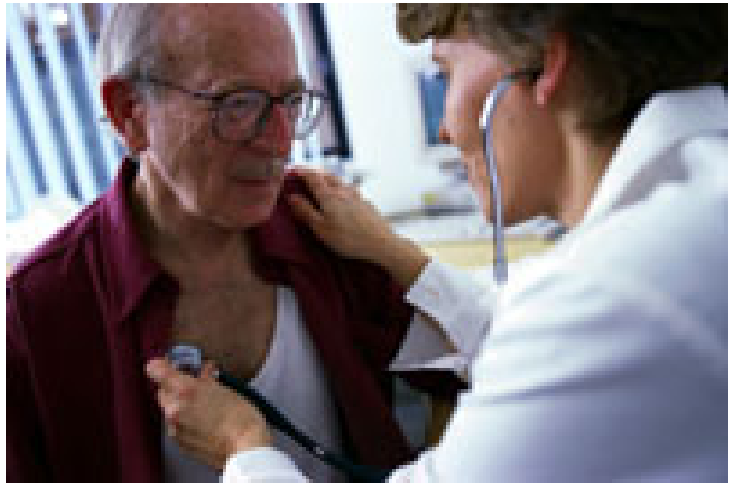


Image Source: Google Images

- “Atypical” is a misnomer
- Often present without pain or
  - Different quality
  - Different location
  - Different duration
  - Different intensity
- Anginal equivalents

Who Presents "Atypically"

Image Source: John Davanzo

- Anyone!
  - Especially suspect those with anginal equivalents
- Most likely
  - Diabetics
  - Postmenopausal women
  - Seniors

Anginal Equivalents

- Shortness of breath
- Dyspnea on exertion
- Diaphoresis
- Weakness
- Fatigue
- Palpitations
- Syncope / Pre-syncope
- Nausea / Vomiting

Image Source: Google Images

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Why is a “false positive” rate important?

Image Source: ImgFlip

Lange, D.C., Rokos, I.C., Garvey, J.L., Larson, D.M., & Henry, T.D. (2016). False activations for ST-segment elevation myocardial infarction. Intervent Cardiol Clin. 5, 451-469. https://doi.org/10.1016/j.iccl.2016.06.002

There is one thing worse than a 0300 false positive…

Image Source: Google Images / ImgFlip

Tiulim, J. Mak, K., & Shavelle, D.M. (2018). ST segment elevation myocardial infarction in patient hospitalized for non-cardiac conditions. Cardiovascular Revascularization Medicine. 19, 17-20. http://dx.doi.org/10.1016/j.carrev.2017.05.021

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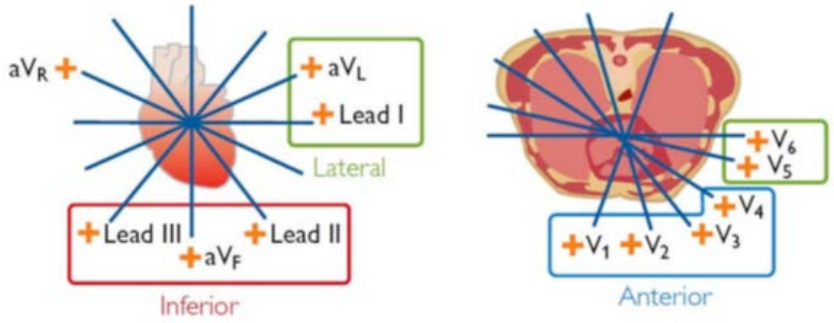
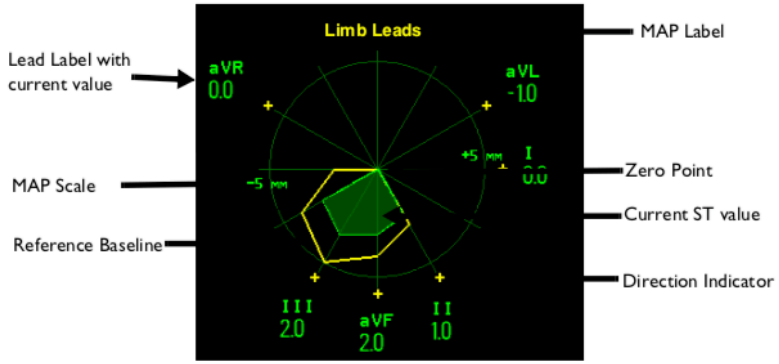
ST Map

- ST Map provides an integrated overview derived from a multi-axis portrait (map) of the ST analysis to help you detect changes in ST values

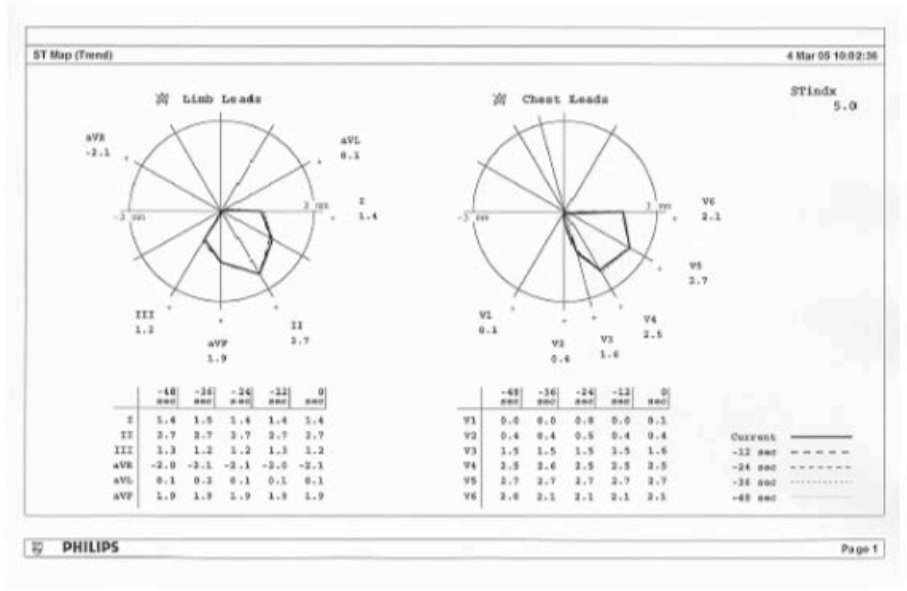




Viewing an ST Map

Image Source: Philips

ST MAP Printouts



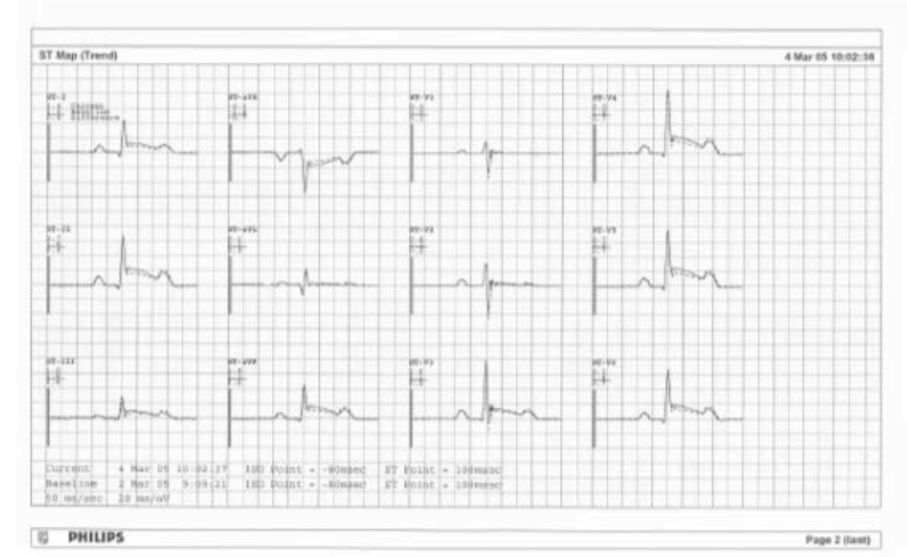


Image Source: Philips

Hopefu "GREAT PRESENTATION. I HAVEN'T SLEPT THAT WELL IN WEEKS." elt like!

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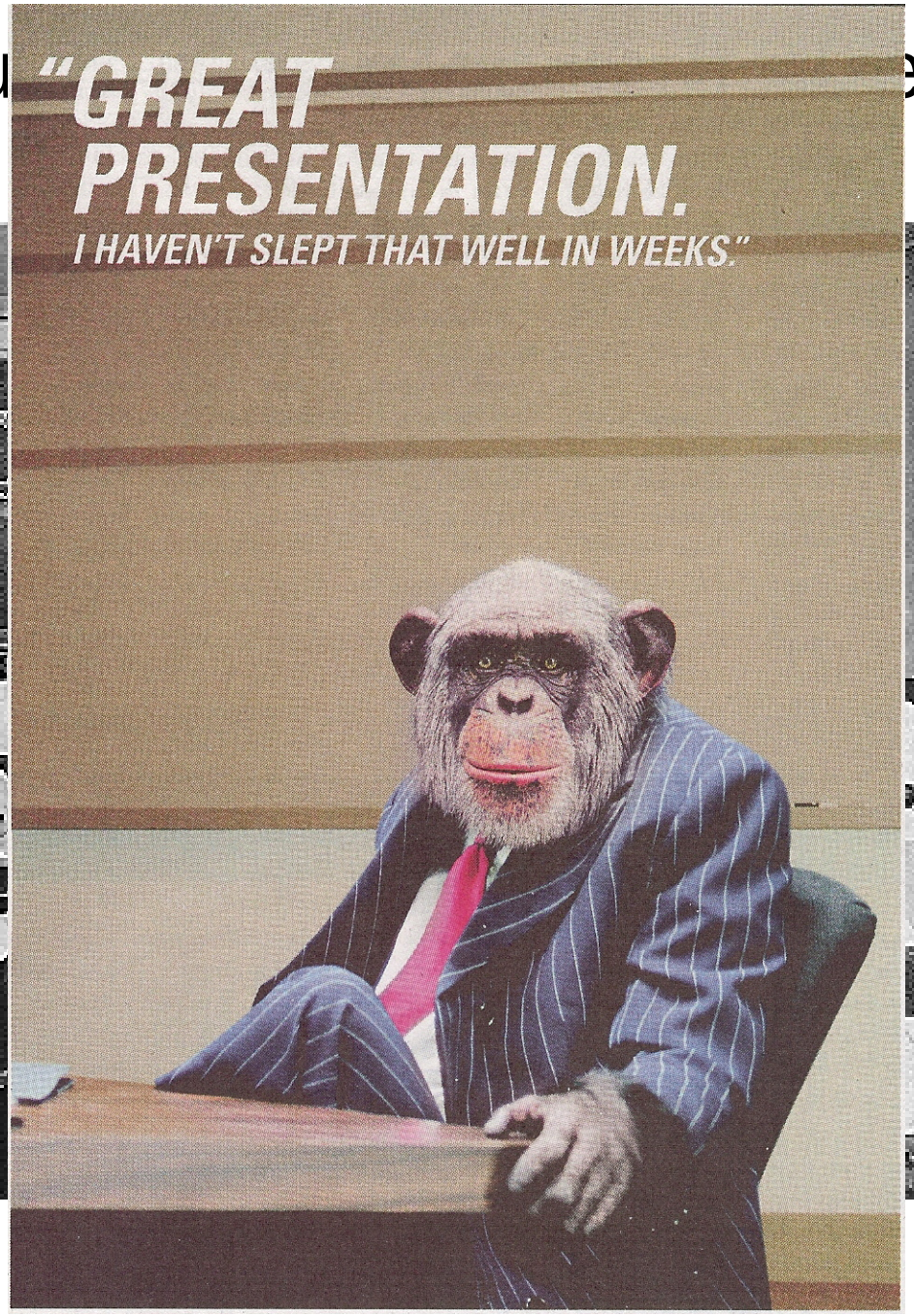

Image Source: Google Images / Career Builder


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