

# Sharing and Teaching ECGs to Minimize Infarction (STEMI)

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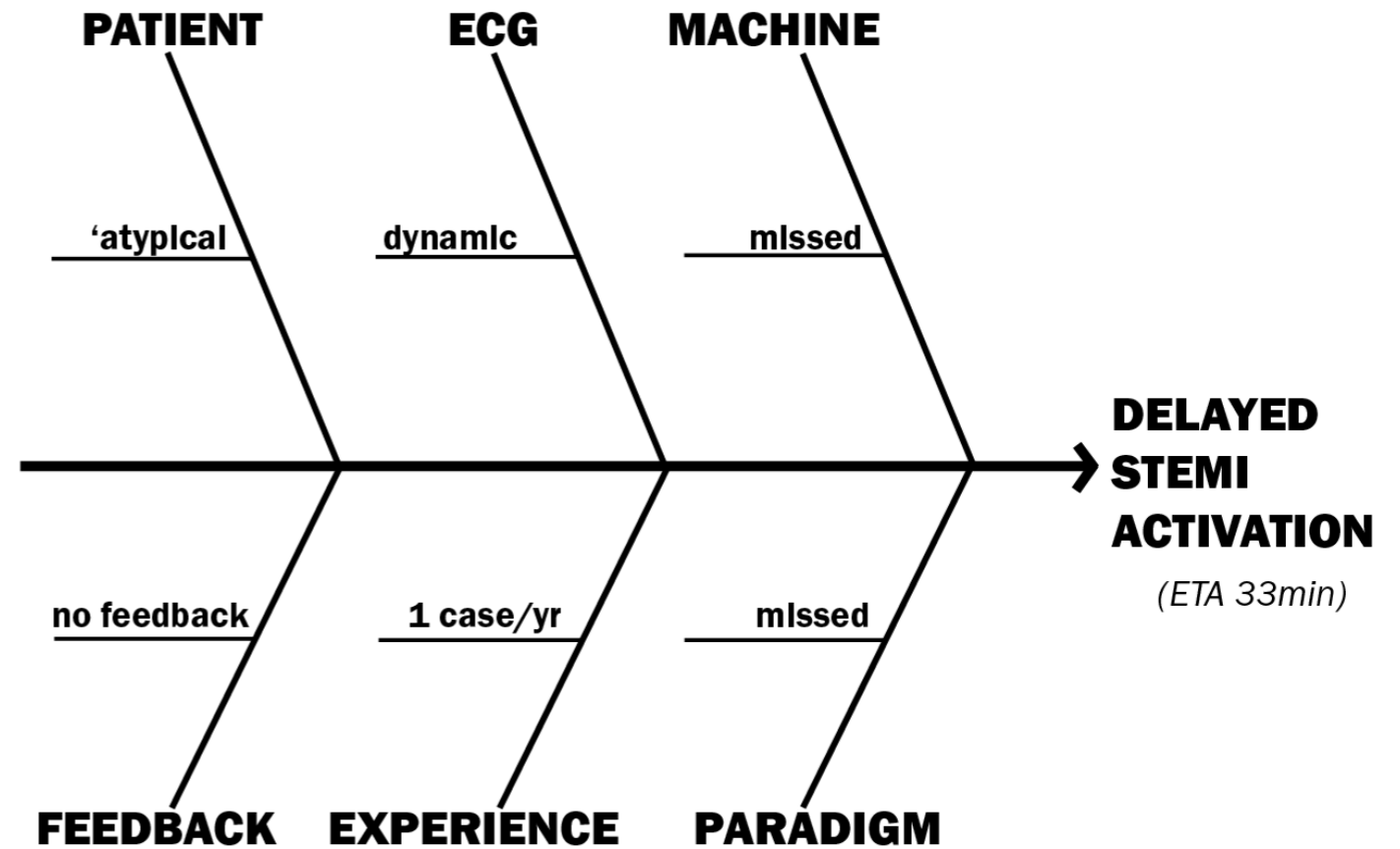
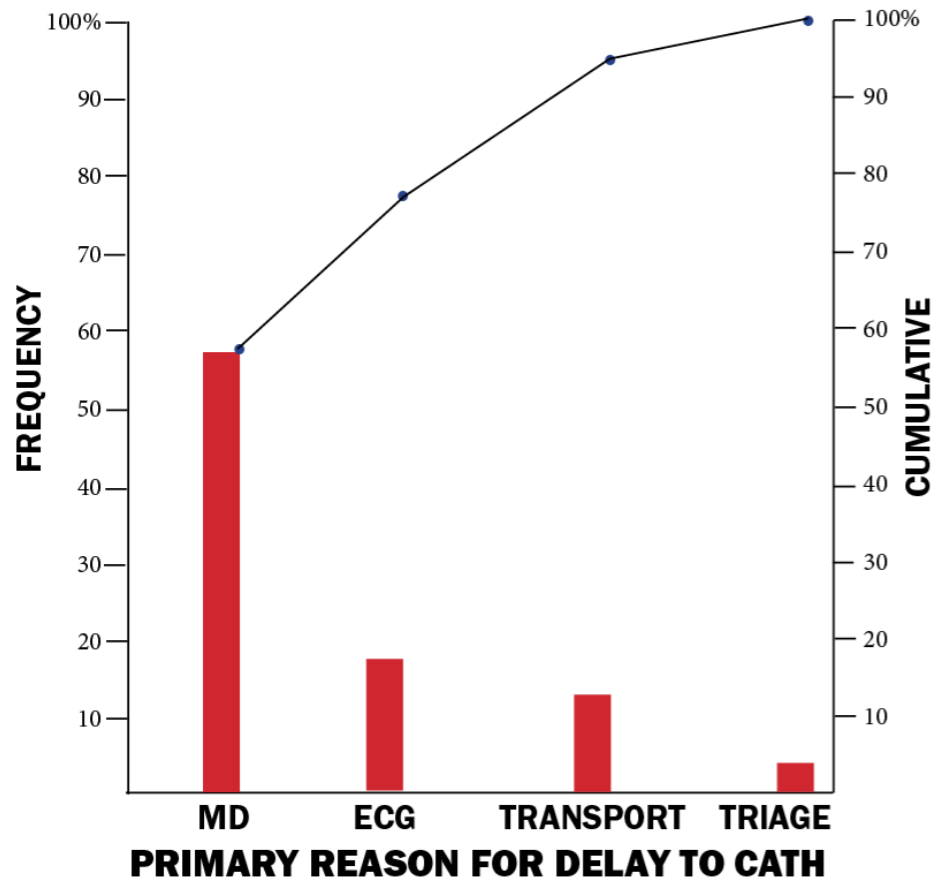
**C-QuIPS**  
Centre for Quality Improvement  
and Patient Safety

# Project idea

- 30% “False STEMI” → characterize
  - 15% false positive = unavoidable
  - 10% concerning = difficult decision
  - 5% misread = avoidable (already on target)
- 70% “True STEMI”
  - 63% cath <90 min
  - 37% cath >90 min = opportunity → characterize



# Root causes analysis



# Aim statement and measures

- Aim:

Using weekly web posts to provide collective feedback to emergency physicians, we will reduce the ECG-To-Activation time by 10 minutes over 6 months without increasing ‘false STEMI’

- Measures

- Outcome: from DTB to ETA

- Process: website engagement

- Balancing: STEMI activation without culprit lesion



# PDSA cycles

## 1. Survey: assess interest

- 87% interest in website
- suggest grand rounds

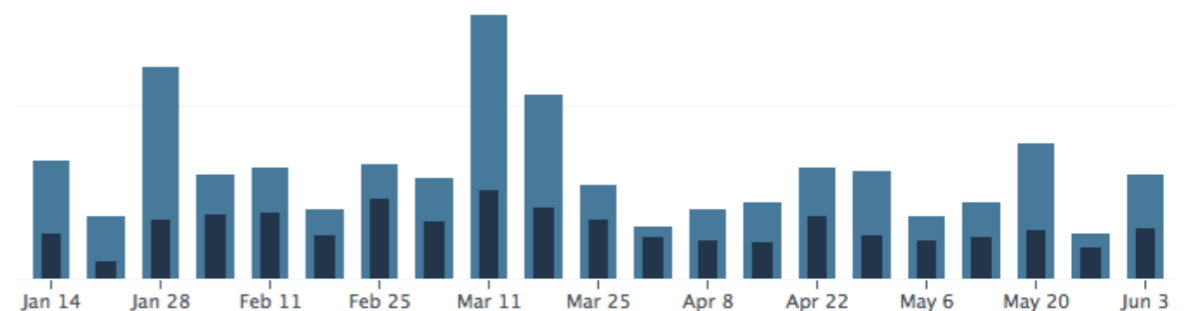
## 2. Website launch: assess engagement

- 100 views first two weeks
- informal poll support weekly posts

## 3. Website ongoing: sustain

1200 views in 5 mo = 60/wk

550 visitors = 27.5/wk

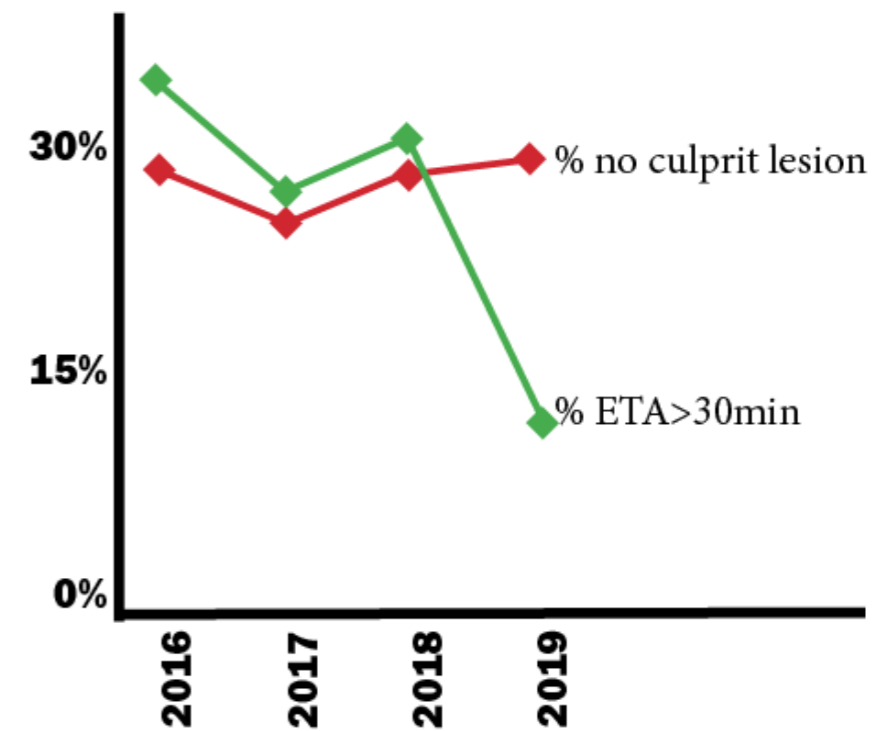
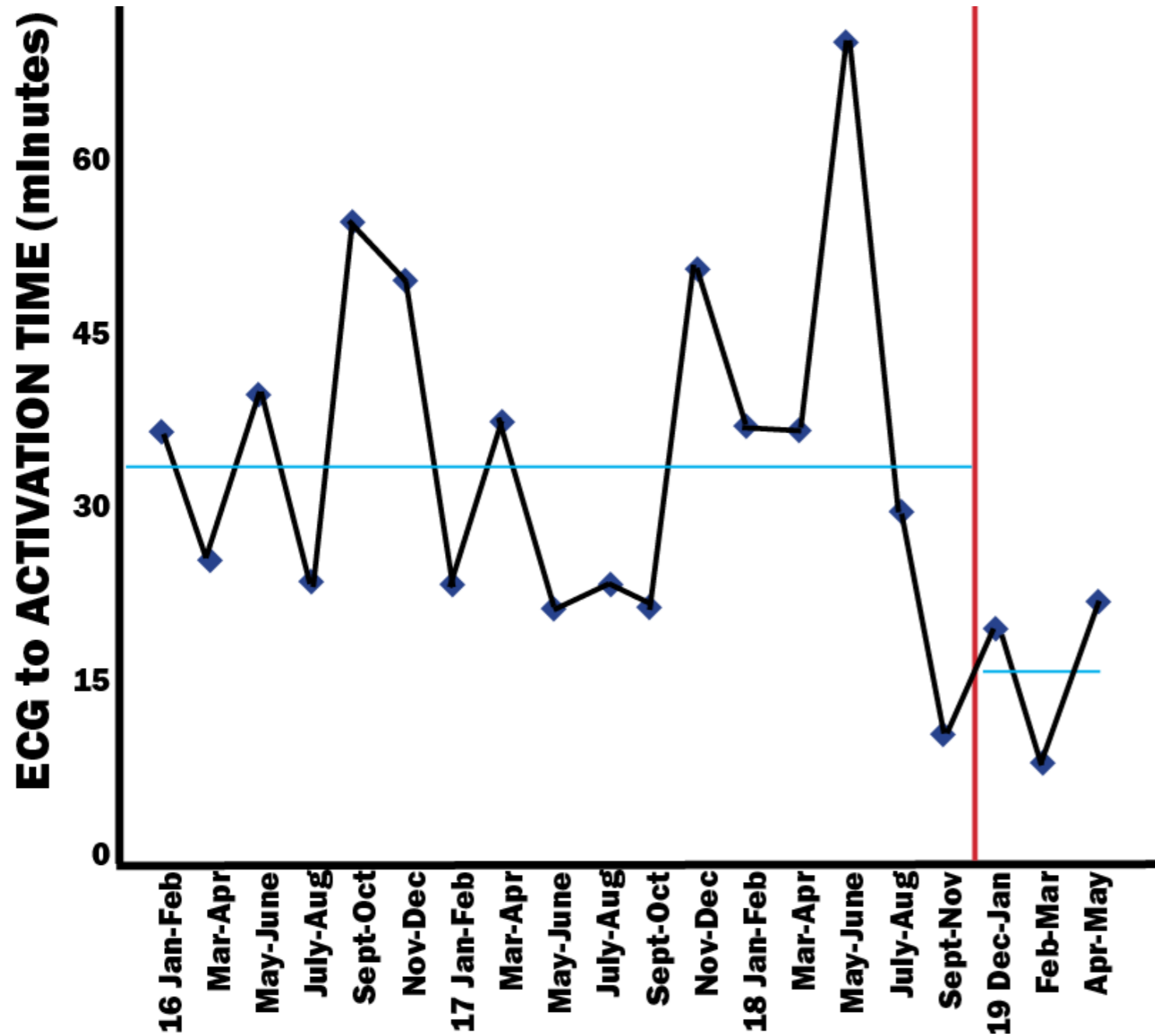


# Evaluation: diagnostic criteria

- 188 culprit lesion 2016-present
  - 41% first ECG “STEMI negative” by machine
    - Including 3.5% “normal”
  - 36% first ECG “STEMI negative” by criteria
    - 87% had signs of acute coronary occlusion
      - STEMI-equiv: posterior MI, aVR, LBBB+Sgarbossa, deWinter
      - Subtle: anterior, inferior, Q wave + acute occlusion
    - 13% no signs of occlusion
      - 7% dynamic
      - 6% refractory symptoms



# Evaluation: intervention



# Conclusion

- Confirm
  - Automated interpretation is unreliable
  - Traditional STEMI criteria are limited
  - New signs can add significantly to diagnosis
- Demonstrate
  - Local feedback/education can reduce diagnostic delay without increasing activations without culprit lesions
  - ETA can be used as quality metric
- Next steps:
  - Continue project, focus common “STEMI neg” patterns
  - Work with cardiology: App to enhance joint decision-making

