



The Clock is Ticking: Median Time to Electrocardiogram in the Emergency Department. How Do You Compare?

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Today's Objectives



Review the Emergency Department (ED) Time to ECG National Guidelines.



Discuss best practices and strategies used to reduce the Median Time to ECG in the ED .



Identify methods used by hospitals to communicate with the staff and committees on quality measures.

ECG = electrocardiogram

Chest Pain in the United States

- Chest pain accounts for approximately six million visits to the ED in the U.S. annually.
- Chest Pain is the second most common ED complaint.
- There are many causes and related signs and symptoms of chest pain.
- Chest pain could be due to various causes such as heart, respiratory, gastrointestinal, and mediastinal diseases, pleuritic pain, etc.

Why the Focus?

- Timely ECGs assist in identifying ST-segment elevation myocardial infarction (STEMI) patients and impact the choice of reperfusion strategy (Peacock, 2007).
- The Time to ECG measure identifies the median time to ECG for acute myocardial infarction (AMI) or chest pain patients and potential opportunities for improvement to decrease the median time.

Common AMI Symptoms

- Pain or discomfort in the chest
- Lightheadedness, nausea, or vomiting
- Jaw, neck, or back pain
- Discomfort or pain in the arm or shoulder
- Shortness of breath

Atypical Cardiac Symptoms

- Epigastric pain
- Indigestion
- Burning, stabbing, or pleuritic pain
- Increasing dyspnea in the absence of chest pain
- Psychiatric disorders (i.e., anxiety attack)

ECG Guidelines

American College of Cardiology
American Heart Association



Guidelines recommend patients presenting with chest pain or symptoms suggestive of STEMI have a 12-lead ECG performed within 10 minutes of ED arrival (Krumholz et al., 2008).

OP-5: Median Time To ECG

- Median time from ED arrival to ECG (performed in the ED prior to transfer) for AMI or chest pain patients (with Probable Chest Pain).
- Includes patients that were transferred from the ED to inpatient status (in-house or elsewhere) or discharged directly from the ED.

OP = Outpatient

OP-5 Measure Population

INCLUSION CRITERIA	
Evaluation and Management (E/M) Code for ED Encounter	Appendix A, OP Table 1.0
Discharge Code for Acute Care Facility	4a: Inpatient 4d: DOD or VA Hospital
ICD-10 CM Principal Diagnosis Code (AMI) or ICD-10 CM Other Diagnosis Codes	Appendix A, OP Table 1.1 or Appendix A, OP Table 1.1a
Patient received 12-Lead ECG	Date, Time, Arrival Time
Patient Age	≥18 years of age

DOD = Department of Defense
VA = Veteran's Administration

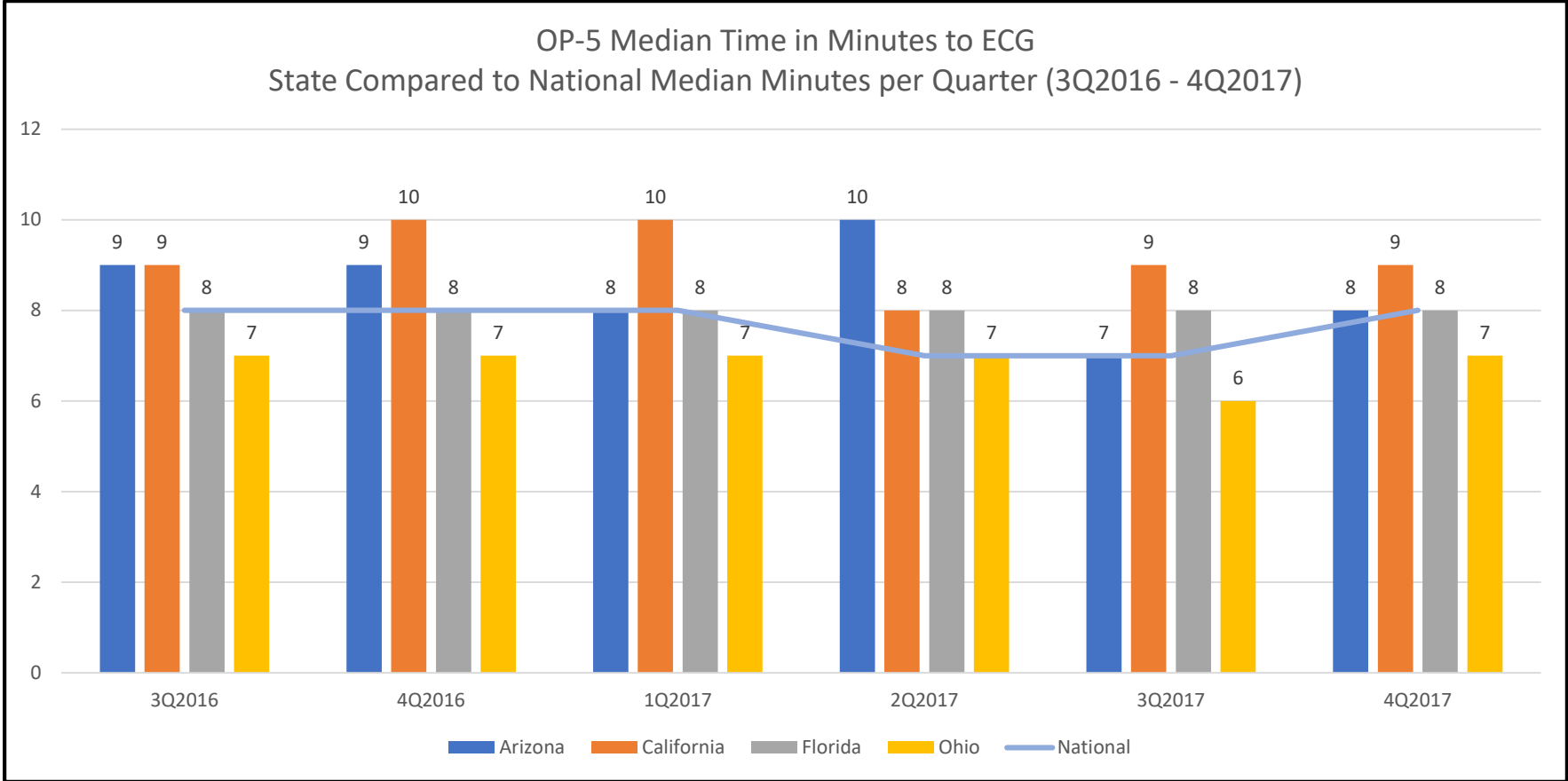
Polling Question: Median Time to ECG

- What is your hospital's median time to ECG?
 - Zero to 3 minutes
 - Four to five minutes
 - Six to seven minutes
 - Eight to ten minutes
 - Greater than 10 minutes

Polling Question: Completing ECG Responsibility

- Who is responsible for completing the ECG in your hospital?
 - Nurse or licensed practical nurse (LPN)
 - Respiratory therapist
 - Nursing technical assistant, certified nursing assistant, or other personnel in the ED trained to do the 12-lead ECG

State Comparison



OP-5 Measure Barriers/Challenges

- No established protocol/policy
- Limited number of staff trained to do ECG
- No triage nurse
- Lack of ED team engagement
- Lack of education on protocols/policies


Polling Question: Major Barrier

- What is/was the major barrier in your facility to getting the ECG time to the national median time?
 - No established protocol/policy
 - Lack of education on protocol/policy
 - Limited number of staff members
 - No triage nurse
 - Lack of ED staff member engagement




Teaming Up and Cleaning Up.... For Accurate Data Reporting

Let's Measure Up for Quality!



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CENTERS FOR MEDICARE & MEDICAID SERVICES.



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Documentation Essentials

OP-5 Time to ECG

Collected for patients ≥ 18 years old with AMI or Chest Pain

Patient received a 12-lead ECG within the 60 minutes prior to Emergency Department (ED) arrival. (EMS)

Document: A "12-lead ECG" was performed by EMS AND an accurate date and time when the ECG was performed.

Includes: Verification that ECG performed outside of ED was a "12-lead" AND date and time it was performed.

Rationale: When the pre-arrival ECG is a 12-lead, patient *Time to ECG* = zero minutes.

Patient received one or more 12-lead ECG(s) while in ED.

Document: Accurate date and time of when each ECG was performed.

Rationale: If multiple ECGs are performed, the ECG performed closest to patient's arrival time will be used.

Additional Information

Verification of electronic date and time stamp on every ECG performed in the ED against **actual** date and time is essential for accurate measurement.

Before or within 10 minutes of ED arrival

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Let's Measure Up for Quality!

4Q17 HOQR National Medians and Averages

OP-1 Median Time to Fibrinolysis National Median: 30 Minutes	If more than 30 minutes, ask: <ul style="list-style-type: none"> • Was Fibrinolytic Therapy (FT) started by EMS? • Was there > 1 episode of FT? • Is there a documented Reason for Delay in FT? • Is Arrival Time accurate? • Is this the Initial ECG Interpretation?
OP-2 Fibrinolytic Therapy Within 30 Minutes National Rate: 56.6%	If less than 56.6 percent, review OP-1 items and ask: <ul style="list-style-type: none"> • How many patients had UTD for Arrival Time, or for Fibrinolytic Administration Time/Date? • How many patients did not have a documented Reason for Delay in FT?
OP-3 Median Time to Transfer National Median: 61 Minutes	If more than 61 minutes, ask: <ul style="list-style-type: none"> • Is this the Initial ECG Interpretation? • Is there evidence of fibrinolytic administration? • Was the patient specifically transferred for a coronary intervention? • Is there an order to admit to Observation?
OP-4 Aspirin at Arrival National Rate: 95.0%	If less than 95.0 percent, ask: <ul style="list-style-type: none"> • Was an Aspirin or Aspirin-Containing product noted as taken within 24 hours before ED arrival (at home, by EMS, or in a transfer facility)? • Is there a documented reason Aspirin or Aspirin-Containing product was not given?
OP-5 Median Time to ECG National Median: 8 Minutes	If more than 8 minutes, ask: <ul style="list-style-type: none"> • Was a 12-lead ECG performed ≤60 minutes prior to ED arrival? • If there was more than one ECG performed in the ED, is this the earliest? • Is the ECG strip time valid—is ECG machine time always verified?
OP-18B ED Arrival to ED Discharge National Median: 134 Minutes	If more than 134 minutes, ask: <ul style="list-style-type: none"> • Is there an order for Observation? • Was the patient receiving care in the ED, under the care of ED services, or awaiting transport at the documented time of ED departure?
OP-20 Door to Diagnostic Evaluation National Median: 19 Minutes	If more than 19 minutes, ask: <ul style="list-style-type: none"> • What is the earliest documentation indicating the MD/APN/PA or other credentialed provider had direct contact with the patient? • Is there nursing documentation of an earlier contact time?
OP-21 Median Time to Pain Management National Median: 49 Minutes	If more than 49 minutes, ask: <ul style="list-style-type: none"> • Did the patient initially refuse pain medication or was the pain medication initially withheld? • For patients ≥18 yrs old, were they initially treated with oral pain medication? • Did the patient take, or was he given, pain medication prior to ED arrival?
OP-23 Head CT or MRI Scan Interpretation National Average: 72.5%	If less than 72.5 percent, ask: <ul style="list-style-type: none"> • Was Time Last Known Well ≤120 minutes prior to ED arrival? • Is the Time Last Known Well the most recent episode? • Are there more than one Time Last Known Well episodes? Are there more than 1 head CT or MRI scan results?

Let's Measure Up for Quality! (cont.)

National Median Time: 8 minutes for 4Q2017
(Lower median time is better.)



OP-5

Median Time to ECG

National Median: 8 Minutes

If more than 8 minutes, ask:

- Was a 12-lead ECG performed ≤ 60 minutes prior to ED arrival?
- If there was more than one ECG performed in the ED, is this the earliest?
- Is the ECG strip time valid—is ECG machine time always verified?



Best Practices and Strategies: The Clock Is Ticking

Strategies, Pt.1

- Educate the ED first point of contact to alert ED staff when patients present with chest pain or other complaints associated with acute coronary syndrome in order to facilitate ECG.
- Staff member immediately delivers the ECG to an emergency physician for interpretation.
- Cross-train staff members to perform ECG.

Strategies, Pt.2

- Create chest pain protocols/standing orders based on national clinical guidelines.
- Reeducate staff.
- Perform annual competency training.
- Share quality measure data results with staff members to drive quality improvement.

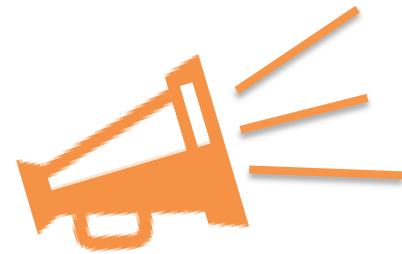
Strategies, Pt.3

- Verification of 12-Lead ECG done by EMS handoff to ED practitioner upon arrival to ED.
- Promptly identify patients requiring ECG through nurse interview prior to registration or provide necessary training to registration personnel.
- Use overhead paging to alert staff members that a patient with chest pain is on the way.

Share and Compare

Q. How can staff be informed as to how well they compare to the national benchmark for ECG timing?

A. *Communicate,
Communicate,
Communicate!*



Communication Best Practices for Quality Improvement

- Create an ongoing and consistent practice of case reviews when ED quality measures are missed.
- Provide timely feedback to staff members.
- Educate staff members on a regular basis.
- Refer to a dashboard display of the quality measures at the unit level.
- Share a Patient Safety and Quality internal newsletter.

Communication of Best Practices for Quality Improvement

Review quality measures in various meetings:

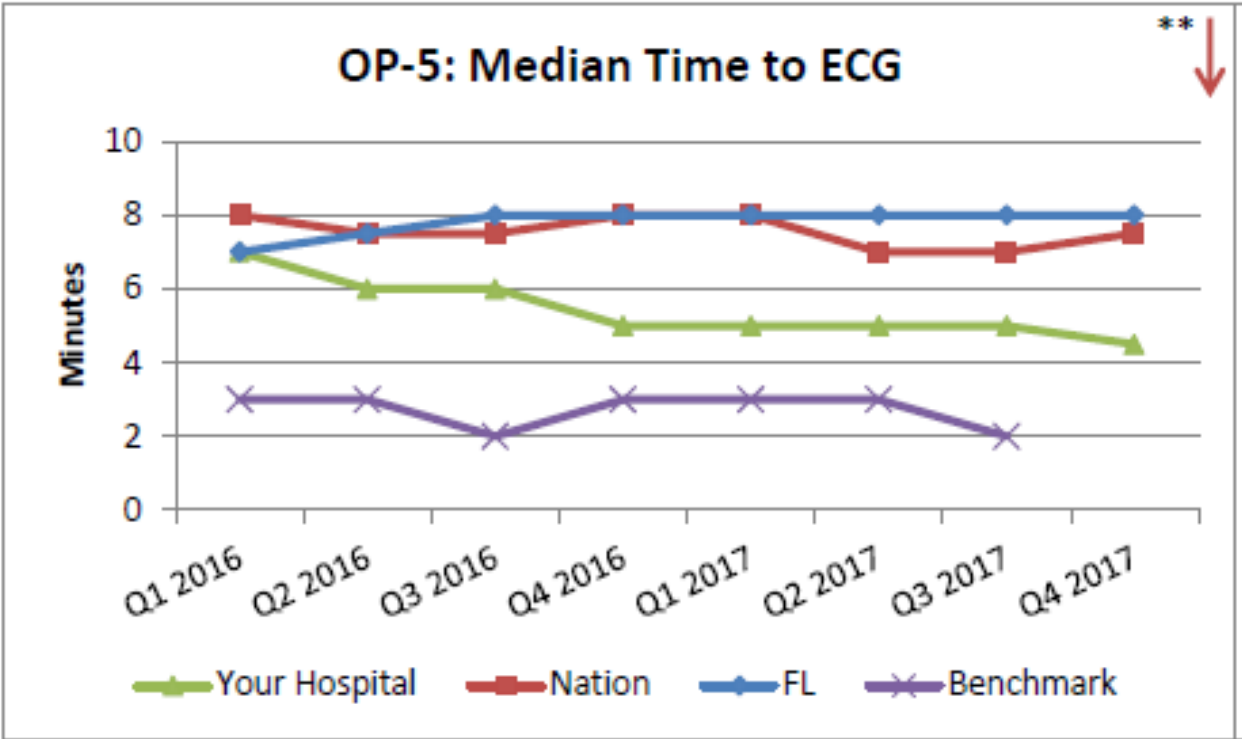


- Hospital Board of Directors
- Medical Executive Committee
- Hospital Quality Committee
- Departmental
- Nursing and frontline staff member

Sample of Data Display

This measure shows the average number of minutes it took before outpatients with chest pain or possible heart attack had an ECG. Standard of Care is within 10 minutes.

Lower is better.



Summary

Success in meeting measures:

- Educate team on goals and measures.
- Ensure the abstractor stays updated on program.
- Develop ideas to improve the process by brainstorming with frontline staff members.
- Remain patient-focused.

Benefits of Working with HSAG

Quality improvement on individual quality measures by providing:

- Technical assistance
- Education
- Tools and resources
- Support





Thank You!

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