

# ACUTE CARDIAC READY HOSPITAL DESIGNATION WEBINAR

Wednesday, January 26, 2022, at 12 noon

Provided by the STEMI Coordinator group

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# OBJECTIVES

- Describe the Acute Cardiac Ready Hospital Designation process
- Prepare your STEMI referring hospital to be recognized as an Acute Cardiac Ready Hospital
- Use the Cardiac System of Care registry- GWTG: CAD to collect and review your facility's STEMI data
- Apply QI hospital concepts to your cardiac program

# ACUTE CARDIAC READY HOSPITAL (ACRH) DESIGNATION



## North Dakota Acute Cardiac Ready Hospital Designation Criteria

### PRE-HOSPITAL CARE

- ☐ Collaboration with local EMS to allow for pre-hospital activation of STEMI process
- ☐ Documentation supporting hospitals reaching back to EMS to provide patient outcomes, what went well, opportunities for improvement on cardiac arrest calls (feedback forms, integration of quarterly meetings, etc.)
- ☐ EMS to provide current contact information to hospital facility

### EMERGENCY ASSESSMENT OF STEMI PATIENTS

- ☐ ED triage protocol that includes a stat ECG (<10 minutes after arrival) for patients with Acute Coronary Syndrome (ACS) based signs and symptoms, including atypical presentations
- ☐ ED treatment protocol(s) for diagnosis and treatment of the STEMI patient
- ☐ STEMI activation plan
- ☐ STEMI Team with required experience or competency/skills validation in STEMI care
- ☐ STEMI Team ACLS certified
- ☐ STEMI Team response to bedside <20 min.
- ☐ Acute Cardiac Team members have one-hour training and education annually specific to STEMI recognition, identification, treatment, and transfer (not including BLS or ACLS recertification)

### TREATMENT

- ☐ Documentation of reperfusion strategy(ies) (Fibrinolytics vs Primary PCI)
- ☐ Protocol that outlines each step in STEMI treatment and transfer process that follows current clinical practice guidelines (Examples include goal metrics for Door to ECG within 10 minutes of arrival, Door to transport activation and Door-in to Door-out within 45 minutes, Arrival to Thrombolytics within 30 minutes)
- ☐ Documentation by provider on why the patient did not receive fibrinolytic therapy
- ☐ Provide STEMI order sets which include current clinical practice guidelines
- ☐ Inclusion/exclusion criteria, risks/benefits/alternatives to IV fibrinolytic documented in the patient record by provider consistently

### FIBRINOLYTIC THERAPY

- ☐ Provide order sets/protocols for fibrinolytic therapy administration
- ☐ Documentation of fibrinolytic checklist use
- ☐ Documentation of the process in place when the STEMI patient is not eligible for fibrinolytic therapy
- ☐ Documentation of annual Tenecteplase (TNK) administration refresher for STEMI Team
- ☐ IV TNK available 24/7 (Recommend: 2 doses TNK available)

### TRANSFER PROCESS

- ☐ Transport plans or agreement for STEMI patient to be transferred to a PCI capable center
- ☐ Documentation where expected length of stay in ED for STEMI patients transferred for PCI  $\geq$  45 minutes (Door-in to Door-out)

### PERSONNEL

- ☐ STEMI Coordinator name and leadership roles specific to STEMI Systems of Care
- ☐ Name of Medical Director/Physician Champion and leadership roles specific to STEMI Systems of Care
- ☐ Designated smoke free campus

### PROCESS IMPROVEMENT

- ☐ STEMI activation log
- ☐ Process improvement documentation, keeping track of quality metrics and addressing outliers, why the metric is an outlier, and what has been done to improve outliers
- ☐ Report metric data at interdisciplinary meeting (including EMS personnel), can be built into an already existing quarterly meeting or can be a meeting on its own.
- ☐ Use of cardiac registry with capabilities for state reporting
- ☐ Performance improvement program must include, but not limited to, tracking the following metrics:
  - ☐ Door to ECG within 10 minutes
  - ☐ STEMI positive ECG to EMS transport activation within 10 minutes
  - ☐ Door to fibrinolytics (in fibrinolytic eligible patients)  $\leq$  30 minutes
  - ☐ Door-in door-out time (length of stay)  $\leq$  45 minutes
  - ☐ Aspirin given prior to transfer
  - ☐ Loading dose of Plavix or Brilinta prior to transfer
  - ☐ Loading dose of weight-based Heparin
  - ☐ If fibrinolytics given, initiation of Heparin drip
- ☐ Review of hospital and pre-hospital STEMI care

### RECOMMENDATIONS:

- ☐ Documentation supporting annual public awareness campaign provided to community
- ☐ Outreach to local dispatch regarding pre-arrival CPR instruction
- ☐ Participation in Cardiac Arrest Registry to Enhance Survival (CARES)

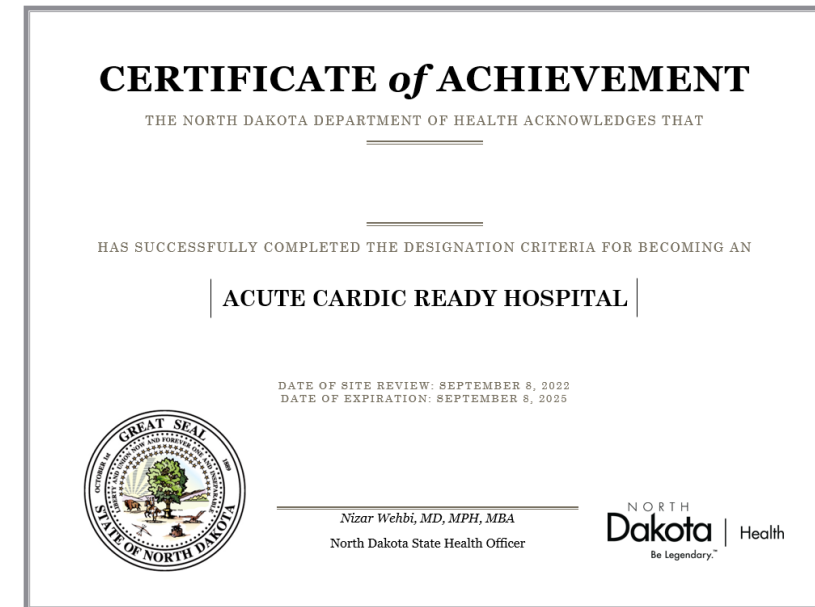
# ACUTE CARDIAC READY HOSPITAL DESIGNATION

- Meets requirement of Century Code 23-47: Acute Cardiovascular Emergency Medical System
  - Creates hospital standards for designation, evaluation, and quality improvement
- Statewide cardiac registry selected: Get with the Guidelines-Coronary Artery Disease (GWTG-CAD)
- Modeled after the Acute Stroke Ready Hospital designation process



# ACUTE CARDIAC READY HOSPITAL DESIGNATION PROCESS

- Prepare your facility to become Acute Cardiac Ready by implementing the ACRH designation criteria
  - Analyze-Where your facility stands regarding the criteria and where does your facility need to be?
  - Develop a comprehensive performance improvement program
  - Utilize GWTG: CAD
- Complete and submit your application to become an ACRH
- Schedule an ACRH Site Visit with the State Cardiac Coordinator
- Become an Acute Cardiac Ready Hospital!



# ACRH APPLICATION

- Once you have verified your hospital meets ACRH designation criteria, apply!
- Application can be found on Department of Health Division of Emergency Medical Systems website at:
  - [North Dakota Cardiac System of Care Hospital Designation | Department of Health \(nd.gov\)](#)
- Currently, the application is online and can be submitted by email to Christine Greff, State Cardiac Coordinator at [cgreff@nd.gov](mailto:cgreff@nd.gov)
  - The application process will eventually be electronic

**NORTH Dakota | Health**  
Be Legendary.™

**ACUTE CARDIAC READY HOSPITAL DESIGNATION APPLICATION**  
Division of Emergency Medical Systems  
1720 Burlington Dr – Suite A • Bismarck ND 58504-7736  
701-328-2388 • 701-328-0357 (t) • [dems@nd.gov](mailto:dems@nd.gov) • [health.nd.gov](http://health.nd.gov)  
SFN (12/2021)

INSTRUCTIONS: This form must be submitted in its entirety with all required documentation to be considered for designation.

Facility Name		Telephone Number	
Street Address / PO Box	City	State	Zip Code
The above-named facility is requesting Designation Re-designation Not eligible for designation as an Acute Cardiac Ready Hospital (ACRH) in the state of North Dakota. If applicant is not eligible for designation, they are required to only complete page 1.			
CEO/Administrator (print)			
Signature		Date	
Chief Medical Officer (print)			
Signature		Date	
Medical Director of Cardiac Program (print)			
Signature		Date	
Director of Nursing/CNO			
Telephone Number		Email	
STEMI Coordinator (name, credentials, and title)			
Telephone Number		Email	
Address	City	State	Zip Code
Email		Telephone Number	

For DEMS Use Only

Designation Number	
Date Issued	
Approved By	
Processed By	Process Date



# ACRH SITE VISIT

- Virtual option utilized during pandemic
- Intended timeline is an estimate
- Agenda times vary for virtual vs. in-person visit

## Acute Cardiac Ready Hospital Designation Virtual Site Visit Agenda

8:30–9:15 am	Welcome and Introductions Opening Session <ul style="list-style-type: none"><li>✓ Cardiac Program Presentation</li><li>✓ STEMI Quality Metrics Presentation</li><li>✓ Question and Answer</li></ul>	Cardiac Program Leadership Team Hospital Administration Hospital Departmental staff NDDoH staff and Reviewer EMS
9:15–10:00 am	Hospital Tour <ul style="list-style-type: none"><li>✓ Ambulance garage or entrance, Helipad</li><li>✓ Ambulatory entrance</li><li>✓ ED, Triage, EMS radio report areas, Pharmacy (how you store tenecteplase), Lab</li><li>✓ ICU/floor (if admit tenecteplase)</li></ul>	Cardiac Program Leadership Team NDDoH staff and Reviewer Departmental staff (when department visited)
10:00–10:30 am	Provider-to-Provider Interaction	Cardiac Program Leadership Team, NDDoH staff and Reviewer, MD Reviewer, ACRH Provider
10:30–10:45 am	Break	Gather staff, secure location for Case Review
10:45–12:00 pm	Case Review (Tracer Activity)/Working Lunch <ul style="list-style-type: none"><li>✓ Tenecteplase given and transferred</li><li>✓ Tenecteplase given and admitted (OR non-Tenecteplase admitted)</li><li>✓ Other cardiac transfers</li></ul>	Cardiac Program Leadership Team NDDoH staff and Reviewer Staff to navigate EMR as needed
12:00–12:30 pm	Data and Performance Improvement Session <ul style="list-style-type: none"><li>✓ Data presentation</li><li>✓ Case review process: how do you identify and look at cases</li></ul> PI process: how do you turn case review into performance improvement activities	Cardiac Program Leadership Team NDDoH staff and Reviewer Abstractor Quality Department staff
12:30–1:00 pm	Pre-conference Session (closed)	NDDoH staff and Reviewer
1:00–1:30 pm	Closing Session Verbal Report Provided by Site Reviewer	Cardiac Program Leadership Team Hospital Administration Hospital Departmental staff NDDoH staff and Reviewer EMS



# ACRH SITE VISIT-WHAT TO PREPARE

- Must provide PowerPoint presentation on Cardiac Program to reviewers during opening session of site visit
- Your Cardiac/STEMI Coordinator will be provided with a document on what to submit prior to your virtual site visit.
  - Must be submitted electronically no later than two weeks before site visit
  - Includes, but is not limited to STEMI treatment and transfer protocols, activation log, activation plan, Acute STEMI Team education, STEMI order sets, IV fibrinolytic checklist, performance improvement program documentation





# ND CARDIAC GUIDELINES

- ND Cardiac System STEMI, NSTEMI, & Acute Coronary Syndrome Guide has been updated/revised
- Please keep your DON and Coordinator contact information updated

**ND Cardiac System STEMI, NSTEMI, &  
Acute Coronary Syndrome Guide**



# PRE-HOSPITAL CARE

- Collaboration with local EMS to allow for pre-hospital activation of STEMI process
- Documentation supporting hospitals reaching back to EMS to provide patient outcomes, what went well, opportunities for improvement on cardiac arrest calls (feedback forms, integration of quarterly meetings, etc.)
- EMS to provide current contact information to hospital facility



# EMERGENCY ASSESSMENT OF STEMI PATIENTS

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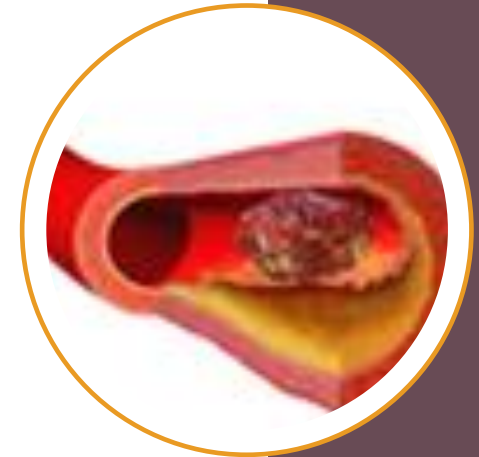
# EMERGENCY ASSESSMENT OF STEMI PATIENTS

- STEMI team with required experience or competency/skills validation in STEMI care
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- Acute Cardiac Team members have one-hour training and education annually specific to STEMI recognition, identification, treatment and transfer (not including BLS or ACLS recertification)
  - Examples



# TREATMENT

- Documentation of reperfusion strategy Fibrinolytic vs Primary PCI
- Protocol that outlines each step in STEMI treatment and transfer process, following practice guidelines which include the following:
  - Fibrinolytic: Goal of Fibrinolytic Administration  $\leq 30$  minutes
  - Primary PCI: Transferred out for primary PCI  $\leq 45$  minutes of arrival. (Door-In Door-Out)
    - When transferring for primary PCI, first medical contact to PCI must be a total of  $\leq 120$  minutes
- Should have a plan with your receiving center what the typical strategy will be



# TREATMENT

- Documentation by provider on why the patient did not receive fibrinolytic therapy
- Provide STEMI order sets which includes current clinical practice guidelines
  - These will include your stat ECG, O2, IV, Labs, ASA, Fibrinolytic, Heparin, nitroglycerin, P2Y12, and transfer orders as needed.
- Inclusion/exclusion criteria, risks/benefits/alternatives to IV fibrinolytic documented in the patient record by provider consistently



# FIBRINOLYTIC THERAPY

- Ensure the order sets are current and available to providers
  - This makes it easier for everyone
- Contraindication list MUST be completed prior to administration of any lytic drug
  - Absolute vs relative
- If for any reason, the patient is not eligible for lytics, document “why”, i.e., head bleed 4 years ago

## **ABSOLUTE CONTRAINDICATIONS FOR FIBRINOLYSIS (TNK) IN STEMI**

1. Any prior intracranial hemorrhage
2. Known structural cerebral vascular lesion (e.g., arteriovenous malformation)
3. Known malignant intracranial neoplasm (primary or metastatic)
4. Ischemic stroke within 3 months except acute ischemic stroke within 3 hours
5. Suspected aortic dissection
6. Active bleeding or bleeding diathesis (excluding menses)
7. Significant closed-head or facial trauma within 3 months
8. Chest Pain/Symptom Onset > 12 hours

## **RELATIVE CONTRAINDICATIONS FOR FIBRINOLYSIS: (TNK) IN STEMI**

1. History of chronic, severe, poorly controlled hypertension
2. Severe uncontrolled hypertension on presentation (SBP more than 180 or DBP more than 90 mmHg)
3. History of prior ischemic stroke more than 3 months, dementia, or known intracranial pathology not covered in contraindications
4. Traumatic or prolonged CPR (over 10 minutes)
5. Major surgery (within last 3 weeks)
6. Recent internal bleeding (within last 2-4 weeks)
7. Noncompressible vascular punctures
8. Streptokinase/anistreplase: prior exposure (more than 5 days ago) or prior allergic reaction to these agents
9. Pregnancy
10. Active peptic ulcer
11. Current use of anticoagulants: the higher the INR \_\_\_\_\_
12. Symptom Onset > 6 hrs. prior to presentation consult Cardiology



# FIBRINOLYTIC THERAPY



- Document what the plan is for the patient; transport out? Keep at your facility?
- What education do you have for a staff competency to administer TNKase?
  - Yearly refresher must be documented
- Facility Pharmacy/ED must have 24/7 access to TNKase

# TRANSFER PROCESS



Transportation to a PCI  
Center



Door-in to Door-Out

- <45 min
- TNK

# PERSONNEL

- STEMI Coordinator role
- Physician Leadership/Medical Director role



# PROCESS IMPROVEMENT

**EXAMPLE**

- STEMI activation log
- Process improvement documentation
- Report metric data at interdisciplinary meetings
- Use state cardiac registry
- Review hospital and pre-hospital STEMI care

Name:

Date:

Objective:

Metric (GWTG: Measure):

Analysis:

Action:

Barriers:

Next Step:

Timeline:

# PROCESS IMPROVEMENT

- Quality Metrics:
  - Door to ECG within 10 minutes
  - STEMI positive ECG to EMS transport activation within 10 minutes
  - Door to fibrinolytics  $\leq 30$  minutes
  - Door-in door-out time (length of stay)  $\leq 45$  minutes
  - Aspirin given prior to transfer
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  - Loading dose of weight-based Heparin
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# RECOMMENDATIONS

- Documentation of supporting annual public awareness campaign provided to community
- Outreach to local dispatch regarding pre-arrival CPR instruction
- Participation in Cardiac Arrest Registry to Enhance Survival (CARES)

*Adult Out-of-Hospital Chain of Survival*





# QUALITY IMPROVEMENT UTILIZING GWTG-CAD: HOSPITAL CONCEPTS & APPLICATIONS

Basic Tenets of Quality Improvement  
Using GWTG-CAD to Drive Improvement  
Continuous Quality Improvement  
Resources & Activities



Mindy is a Sr. Quality Manager for Quality, Outcomes Research, and Analytics with the AHA Quality Improvement Team. Mindy manages Stroke and Cardiac accounts in ND, SD, and MN, and leads AHA's strategic vision for rural care.

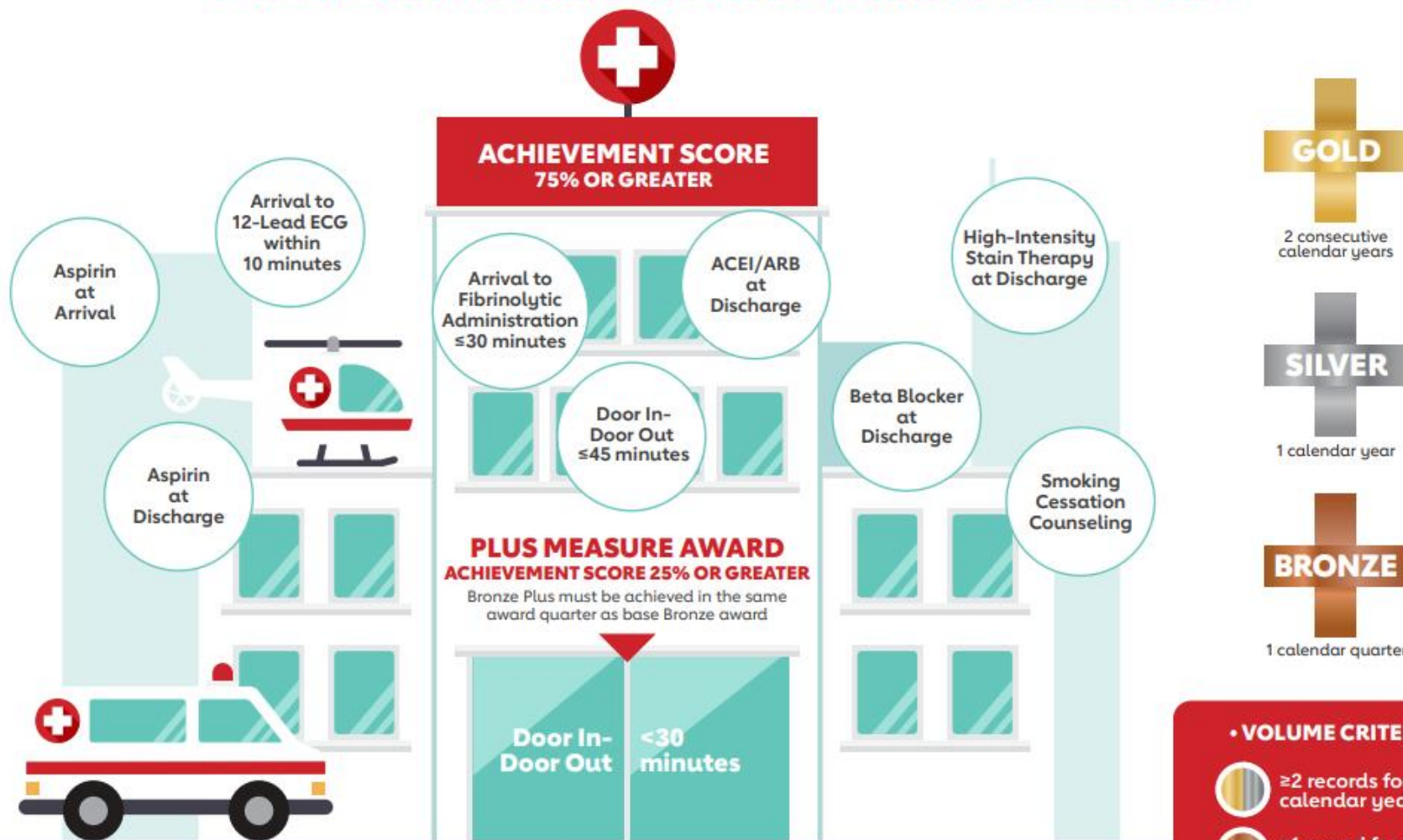
Mindy joined the Midwest region of the AHA in 2011 as Director of Mission: Lifeline ND.

Mindy Cook BSN  
Senior Quality Improvement  
Manager  
National Rural Health  
Quality, Outcomes Research &  
Analytics American Heart  
Association National Center  
[Mindy.Cook@heart.org](mailto:Mindy.Cook@heart.org)



**2022**  
**HOSPITAL RECOGNITION CRITERIA**  
(based on 2021 data)

## MISSION: LIFELINE STEMI REFERRING HOSPITAL



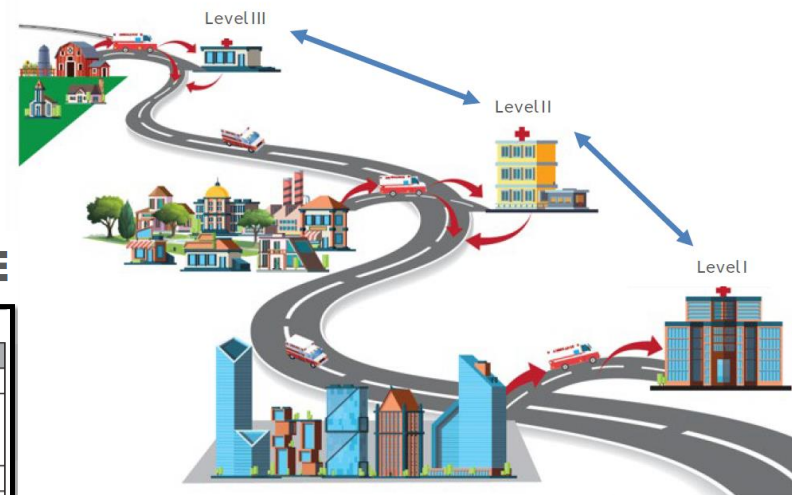
• **VOLUME CRITERIA** •

- ≥2 records for the calendar year
- >1 record for the calendar year

# HEART ATTACK HOSPITAL CERTIFICATION



## CARDIAC SYSTEM OF CARE



## RECOMMENDED LEVELS OF HEART ATTACK CARE

**Table 4. Level of Care Characteristics\***

Heart attack level	AHAR hospital	PHAC	CHAC
Alternative name of heart attack level	Level III	Level II	Level I
Designation characteristics	24/7/365 STEMI referring hospital	24/7/365 PCI capable	24/7/365 STEMI receiving center: cardiac surgery on site, cardiogenic shock, advanced hemodynamic support, OHCA support
Annual PCI volume (institutional), n†‡	NA	≥150	≥400
Annual primary PCI institutional volume, n‡	NA	≥36	≥36
Annual PCI volume (provider), n‡	NA	≥50	≥50
Annual primary PCI volume (provider), n‡	NA	≥11	≥11
Circulatory support (IABP)	NA	Required	Required
Advanced circulatory support (e.g. ECMO, LVAD)	NA	Not required	Required
Cardiac surgery on site	NA	Not required	Required
Cardiogenic shock support	NA	Not required	Required
Comprehensive post arrest care, including TTM	TTM required	TTM required	Comprehensive post arrest care TTM required
Rapid response team	NA	Required	Required
Cardiothoracic intensive care unit	NA	Not required	Required
Coronary intensive care unit	NA	Required	Required
Cardiac rehabilitation services	Locally available	Locally available	Locally available
Fibrinolytic administration capability	Required	Required	Required
National AMI data registry participation	Required	Required	Required
Transfer agreement	Required transfer agreement in place with Level I or Level II facilities	Required transfer agreement in place with Level II (PHAC) when advanced levels of critical care needed	Required transfer agreements in place to accept patients from Level II and III facilities requiring advanced care
Regional system of care engagement	Required	Required	Required
Other criteria			Air medical transport with advanced circulatory support (e.g. ECMO, LVAD) services

# GWTG CORONARY ARTERY DISEASE (CAD) REGISTRY

## GWTG: CAD Registry Login

START ENROLLMENT TODAY BY  
EMAILING

[KAY.JOHNSON@HEART.ORG](mailto:KAY.JOHNSON@HEART.ORG)

& [MINDY.COOK@HEART.ORG](mailto:MINDY.COOK@HEART.ORG)

## ON DEMAND GWTG-CAD TRAINING

RURAL GET WITH THE GUIDELINES® - CORONARY  
ARTERY DISEASE DATA ABSTRACTION SERIES

[SESSION 1: ACCURATELY ABSTRACTING TRANSFER PATIENT  
DATA INTO THE REFERRAL FORM](#)

[SESSION 2: EFFECTIVELY USING REPORTS TO DRIVE  
QUALITY IMPROVEMENT IN A NON-PCI CAPABLE HOSPITAL](#)

## ND ACRH Performance Metrics

- DOOR TO ECG WITHIN 10 MINUTES
- STEMI POSITIVE ECG TO EMS TRANSPORT ACTIVATION WITHIN 10 MINUTES
- DOOR TO FIBRINOLYTICS (IN FIBRINOLYTIC ELIGIBLE PATIENTS) <30 MINUTES
- DOOR-IN DOOR-OUT TIME (LENGTH OF STAY) < 45 MINUTES
- ASPIRIN GIVEN PRIOR TO TRANSFER
- LOADING DOSE OF PLAVIX OR BRILINTA PRIOR TO TRANSFER
- LOADING DOSE OF WEIGHT-BASED HEPARIN IV
- IF FIBRINOLYTICS GIVEN, INITIATION OF HEPARIN DRIP

## References

2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction

<https://doi.org/10.1161/CIR.0b013e3182742cf6> Circulation. 2013;127:e362–e425

Systems of Care for ST-Segment–Elevation Myocardial Infarction: A Policy Statement From the American

Heart Association <https://doi.org/10.1161/CIR.0000000000001025> Circulation. 2021;0:CIR.0000000000001025



# Getting started: Patient Entry

## Inclusion Criteria:

- Confirmed STEMI or NSTEMI after presenting with signs and symptoms consistent with AMI
  - May be confirmed by elevated Troponin, CK-MB peak >4%, or ECG evidence of AMI
- Patients evaluated for STEMI or NSTEMI at your hospital even if they transfer, expire or leave against medical advice (AMA)
- Patients with STEMI or NSTEMI who refuse treatment or have "Do Not resuscitate" orders

## Exclusion Criteria:

- Patients <18 years of age
- Patients with AMI who are transferred to your hospital >24 hours after arrival at first/outside hospital
- Patients presenting to hospital with signs and symptoms not consistent with AMI that are later diagnosed with AMI
  - Example: Patient presents with ankle injury and is evaluated for possible fracture, but is later diagnosed with AMI
- Patients with ECG results stated as "old" or "suspected MI" without any positive cardiac markers



## Getting Started: ICD-10-CM Diagnosis Codes

The following list of ICD-10-CM codes can be used to determine facility's AMI population:

- *121.01 – 121.09 ST Elevation myocardial infarction (STEMI) of anterior wall*
- *121.11 – 121.10 ST Elevation myocardial infarction (STEMI) of inferior wall*
- *121.21 – 121.29 ST Elevation myocardial infarction (STEMI) of other sites*
- *121.3 ST Elevation (STEMI) myocardial infarction of unspecified site*
- *121.4 non-ST Elevated Myocardial infarction (NSTEMI)*
- *121.9 Acute Myocardial infarction, unspecified*





# GETTING STARTED: ENTERING OTHER CARDIAC DIAGNOSES

YOUR FACILITY MAY CHOOSE TO ENTER PATIENTS WITH OTHER DIAGNOSES PERTAINING TO ACUTE CORONARY SYNDROME SUCH AS UNSTABLE ANGINA OR CORONARY ARTERY DISEASE INTO GWTG – CAD.

-ONLY RECORDS IDENTIFIED AS STEMI, STEMI EQUIVALENT, OR NSTEMI WITH POSITIVE CARDIAC BIOMARKERS IN THE FIRST 24 HOURS ARE INCLUDED IN THE INITIAL PATIENT POPULATIONS AT THIS TIME

PATIENT RECORDS WITH AN INPATIENT AMI OR DIAGNOSIS OF MYOCARDIAL INFARCTION TYPE 2, 3, 4A, 4B, 4C OR 5 AND WITHOUT A CODE FROM THE ICD-10-CM LIST ON THE PREVIOUS SLIDE **SHOULD NOT** BE ENTERED INTO THE REGISTRY



# Data Entry

GWTG-CAD Referring Facility Form

December 2021

FORM SELECTION	Legend: BOLD = Required (required when shown in eCRF) Updates in yellow highlight
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Patient ID: _____	
Demographics <span style="float: right;">Demographics Tab</span>	
Special Identifiers	
STEMI Band ID: _____	
STEMI Band Not Documented: <input type="checkbox"/>	
<input type="checkbox"/> Patient not admitted at this facility and transferred out to another acute care facility? <input type="radio"/> Yes <input type="radio"/> No	
Demographics	
Sex: <input type="radio"/> Male <input type="radio"/> Female <input type="radio"/> Unknown	
Patient Gender Identity: <input type="radio"/> Male <input type="radio"/> Female <input type="radio"/> Female-to-Male (FTM)/Transgender Male/Trans Man <input type="radio"/> Male-to-Female (MTF)/Transgender Female/Trans Woman <input type="radio"/> Genderqueer, Neither Exclusively Male nor Female <input type="radio"/> Additional Gender Category or Other <input type="radio"/> Did not Disclose	
Other Patient Gender Identity	
Patient-Identified Sexual Orientation: <input type="radio"/> Straight or heterosexual <input type="radio"/> Lesbian or gay <input type="radio"/> Bisexual <input type="radio"/> Queer, pansexual, and/or questioning <input type="radio"/> Something else; please specify <input type="radio"/> Don't know <input type="radio"/> Declined to answer	
Other Patient-Identified Sexual Orientation: _____	
Date of Birth: ____/____/____	
Patient Zip Code: _____	
Race and Ethnicity	
Race: <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Black or African American <input type="checkbox"/> White <input type="checkbox"/> Asian <input type="checkbox"/> Asian Indian <input type="checkbox"/> Chinese <input type="checkbox"/> Filipino <input type="checkbox"/> Japanese <input type="checkbox"/> Korean <input type="checkbox"/> Vietnamese <input type="checkbox"/> Other Asian <input type="checkbox"/> Native Hawaiian or Pacific Islander <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Guamanian or Chamorro <input type="checkbox"/> Samoan <input type="checkbox"/> Other Pacific Islander <input type="checkbox"/> UTD	
Hispanic Ethnicity <input type="radio"/> Yes <input type="radio"/> No/UTD	
If Yes, <input type="checkbox"/> Mexican, Mexican American, Chicano/a <input type="checkbox"/> Another Hispanic, Latino or Spanish Origin <input type="checkbox"/> Cuban <input type="checkbox"/> Puerto Rican	

GWTG-CAD Referring Facility Form

December 2021

Admin Tab			
Administrative			
Arrival Date/Time: ____/____/____ : ____			
Diagnosis			
Cardiac Diagnosis:	<input type="radio"/> Confirmed AMI – STEMI <input type="radio"/> Confirmed AMI – non-STEMI <input type="radio"/> Coronary Artery Disease	<input type="radio"/> Confirmed AMI – STEMI/non-STEMI unspecified	<input type="radio"/> Unstable Angina <input type="radio"/> Other

Pre-Hospital/Arrival Tab	
Pre-Hospital	
Means of transport to first facility:	<input type="radio"/> Air <input type="radio"/> Ambulance <input type="radio"/> Walk-in
EMS Agency name/number:	_____
Run/Sequence number:	_____
Pre-Hospital Time Tracker	
EMS First Medical Contact:	____/____/____ : ____
Date/time of Initial 911 Call for Help:	____/____/____ : ____
Destination Pre-arrival alert or notification:	____/____/____ : ____
Method of 1st notification:	<input type="radio"/> ECG Transmission <input type="radio"/> Phone call <input type="radio"/> Radio <input type="radio"/> ND
Transfers	
Transport requested:	____/____/____ : ____
Facility the patient was transferred to: _____	
Mode of transport <input type="radio"/> Air <input type="radio"/> Ambulance	Inter-facility transport EMS Agency name/number: _____
ECG	
1 <sup>st</sup> ECG Date/Time: ____/____/____ : ____	
1 <sup>st</sup> ECG obtained:	<input type="radio"/> Prior to Hospital Arrival <input type="radio"/> After First Hospital Arrival
1 <sup>st</sup> ECG Non-System Reason for Delay:	<input type="checkbox"/>
STEMI or STEMI Equivalent?	<input type="radio"/> Yes <input type="radio"/> No
If yes, ECG revealed: <input type="radio"/> ST Elevation <input type="radio"/> Isolated Posterior MI <input type="radio"/> LBBB	
If yes, STEMI or STEMI equivalent first noted: <input type="radio"/> First ECG <input type="radio"/> Subsequent ECG	
If subsequent ECG, Date/Time of positive ECG: ____/____/____ : ____	
ECG Finding When Not STEMI or STEMI Equivalent: <input type="radio"/> Old Left Bundle Branch Block <input type="radio"/> ST depression (New or Presumed New) <input type="radio"/> Transient ST elevation <input type="radio"/> T-Wave Inversion (New or Presumed New) <input type="radio"/> None of the above	
Arrival	
Symptom onset Date/Time: ____/____/____ : ____	
Patient Current Medications	<input type="radio"/> Dabigatran <input type="radio"/> Rivaroxaban <input type="radio"/> Apixaban <input type="radio"/> Warfarin <input type="radio"/> None <input type="radio"/> ND
Aspirin within 24 hours of arrival? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Contraindicated	

# Data Entry

GWTC-CAD Referring Facility Form December 2021

Positive cardiac biomarkers in the first 24 hours? <input type="radio"/> Yes	
Initial Troponin value <input type="text"/> ng/mL <input type="text"/> ng/L <input type="text"/> ug/L <input type="text"/> pg/mL	
Initial Troponin - ND <input type="checkbox"/>	
Date/Time of initial troponin results: <input type="text"/> / <input type="text"/> / <input type="text"/> : <input type="text"/> : <input type="text"/> <input type="checkbox"/> Unknown	
Active bacterial or viral infection at admission or during hospitalization:	<input type="checkbox"/> None/ND <input type="checkbox"/> Bacterial Infection <input type="checkbox"/> Seasonal Cold or Flu <input type="checkbox"/> Emerging Infectious Disease <input type="checkbox"/> MERS <input type="checkbox"/> SARS-COV-1 <input type="checkbox"/> SARS-COV-2 (COVID-19) <input type="checkbox"/> Other Infectious Respiratory Pathogen
Patient Medical History:	<input type="checkbox"/> Atrial Fibrillation <input type="checkbox"/> Atrial Flutter <input type="checkbox"/> Cancer <input type="checkbox"/> Cerebrovascular Disease [parent] If yes, <input type="checkbox"/> Stroke [child] If yes, <input type="checkbox"/> TIA [child] <input type="checkbox"/> Currently on Dialysis <input type="checkbox"/> Diabetes Mellitus <input type="radio"/> Type 1 [child] <input type="radio"/> Type 2 [child] <input type="radio"/> ND [child] <input type="checkbox"/> Dyslipidemia [parent] If yes, <input type="checkbox"/> Familial Hypercholesterolemia [child] <input type="checkbox"/> Emerging Infectious Disease [parent] <input type="checkbox"/> MERS [child] <input type="checkbox"/> SARS-COV-1 [child] <input type="checkbox"/> SARS-COV-2 (COVID-19) [child] <input type="checkbox"/> Other Infectious Respiratory Pathogen <input type="checkbox"/> Heart Failure <input type="checkbox"/> Hypertension <input type="checkbox"/> Peripheral Artery Disease <input type="checkbox"/> Prior CABG [parent], If Yes, Most Recent CABG Date <input type="text"/> / <input type="text"/> / <input type="text"/> [child]; <input type="checkbox"/> Prior MI <input type="checkbox"/> Prior PCI [parent], If Yes, Most Recent PCI Date <input type="text"/> / <input type="text"/> / <input type="text"/> [child]
New Diagnosis During this Admission	
Diabetes Mellitus <input type="radio"/> Yes <input type="radio"/> No	
History of Smoking? <input type="radio"/> Yes <input type="radio"/> No	
History of vaping or e-cigarette use in the past 12 months? <input type="radio"/> Yes <input type="radio"/> No/ND	
Height <input type="text"/> cm	Weight <input type="text"/> kg

GWTC-CAD Referring Facility Form December 2021

Hospitalization Tab		
Reperfusion		
Thrombolytics? <input type="radio"/> Yes <input type="radio"/> No	If yes, Dose Start Date/Time: <input type="text"/> / <input type="text"/> / <input type="text"/> : <input type="text"/> : <input type="text"/>	Documented non-system reason for delay-thrombolytics? <input type="radio"/> Yes <input type="radio"/> No If yes, reason (check all that apply) <input type="checkbox"/> Cardiac Arrest <input type="checkbox"/> Intubation <input type="checkbox"/> Need for additional PPE for suspected/confirmed infectious disease <input type="checkbox"/> Patient refusal
Risk-Stratification Score Documented? <input type="checkbox"/> EDACS <input type="checkbox"/> GRACE <input type="checkbox"/> HEART <input type="checkbox"/> SYNTAX Score		<input type="checkbox"/> TIMI <input type="checkbox"/> Other <input type="checkbox"/> No Risk-Stratification Score Documented
Grace Risk Score: <input type="text"/>	TIMI Risk Score: <input type="text"/>	Heart Score: <input type="text"/>
Health Related Social Needs Assessment		
During this admission, was a standardized health related social needs form or assessment completed?		<input type="radio"/> Yes <input type="radio"/> No/ND
If Yes, identify the areas of unmet social need (select all apply)	<input type="checkbox"/> Education <input type="checkbox"/> Employment <input type="checkbox"/> Financial Strain <input type="checkbox"/> Food <input type="checkbox"/> Living Situation/Housing <input type="checkbox"/> Mental Health	<input type="checkbox"/> Personal Safety <input type="checkbox"/> Substance Use <input type="checkbox"/> Transportation Barriers <input type="checkbox"/> Utilities <input type="checkbox"/> None of the areas of unmet social needs listed were identified

Discharge Tab	
Discharge Information	
Discharge Date/Time: <input type="text"/> / <input type="text"/> / <input type="text"/> : <input type="text"/> : <input type="text"/>	
Discharge Disposition:	1 - Home
	2 - Hospice-Home
	3 - Hospice-Healthcare Facility
	4 - Acute Care Facility
	5 - Other Health Care Facility
	6 - Expired
	7 - Left Against Medical Advice/AMA
	8 - Not Documented or Unable to Determine (UTD)
Comfort Measures Only <input type="radio"/> Yes <input type="radio"/> No If Yes, Date/Time <input type="text"/> / <input type="text"/> / <input type="text"/> : <input type="text"/> : <input type="text"/>	
Comments:	

# DEMOGRAPHICS TAB

## REQUIRED (BOTH STANDARD AND REFERRAL FORM):

- PATIENT NOT ADMITTED AT THIS FACILITY AND TRANSFERRED OUT TO ANOTHER ACUTE CARE FACILITY?
  - This question triggers the shortened "Referral Form" if the answer is "Yes"
- PATIENT SEX
- DATE OF BIRTH
- RACE AND ETHNICITY

## OPTIONAL (BOTH STANDARD AND REFERRAL FORM):

- STEMI BAND ID (SPECIAL IDENTIFIER. MAY BE USED IF STATE OR EMS AGENCIES USE A SINGLE PATIENT ID TO TRACK PATIENTS THROUGHOUT THE SYSTEM)
- PATIENT GENDER IDENTITY AND SEXUAL ORIENTATION
- ZIP CODE
- PAYMENT SOURCE

# ADMIN TAB

## REQUIRED:

### *REFERRAL FORM (TRANSFERRED PATIENTS)*

{NO ELEMENTS}

### *STANDARD FORM (ADMITTED PATIENTS)*

- ADMISSION DATE

## OPTIONAL:

### *REFERRAL FORM (TRANSFERRED PATIENTS)*

- CARDIAC DIAGNOSIS

### *STANDARD FORM (ADMITTED PATIENTS)*

- ATTENDING PHYSICIAN/PROVIDER NPI
- LOCATION PATIENT FIRST EVALUATED
- CARDIAC DIAGNOSIS
- ENROLLED IN CLINICAL TRIAL DURING HOSPITALIZATION?

# PRE-HOSPITAL/ARRIVAL TAB

## REQUIRED:

### *REFERRAL FORM (TRANSFERRED PATIENTS)*

- MEANS OF TRANSPORT TO FIRST FACILITY
- FIRST ECG DATE/TIME
- ECG SHOWED STEMI OR STEMI EQUIVALENT?
- PATIENT CURRENT MEDICATIONS
- ASPIRIN WITHIN 24 HOURS OF ARRIVAL
- ACTIVE BACTERIAL OR VIRAL INFECTION AT ADMISSION OR DURING HOSPITALIZATION?

### *STANDARD FORM (ADMITTED PATIENTS)*

- TRANSFERRED FROM OTHER FACILITY?
- POSITIVE CARDIAC BIOMARKERS IN FIRST 24 HOURS?

## OPTIONAL:

### *REFERRAL FORM (TRANSFERRED PATIENTS)*

- EMS ELEMENTS (IF APPLICABLE)
  - FMC, time of 911 call, pre-arrival alert time, method of first notification, Transportation details
- SYMPTOM ONSET DATE/TIME
- PATIENT MEDICAL HISTORY
- VAPING/TOBACCO USE IN LAST 12 MONTHS
- HEIGHT/WEIGHT

### *STANDARD FORM (ADMITTED PATIENTS)*

- HR, BP, CARADIOGENIC SHOCK DETAILS ON FMC (IF APPLICABLE)
- INITIAL SERUM CREATININE
- INITIAL TROPONIN VALUE

# EXPLORE THE LIBRARY

## ▼ Reports & Measures

[Mission:Lifeline Regional Report Glossary](#)  
[GWTG-CAD Receiving Center Measures](#)  
[GWTG-CAD Referring Hospital Measures](#)  
[GWTG-CAD NSTEMI Measures](#)  
[GWTG-CAD STEMI Risk Adjusted Measure Description](#)  
[GWTG-CAD Descriptive Measures](#)  
[STEMI Receiving Center Measure Logic and Rationale](#)  
[STEMI Referring Center Measure Logic and Rationale](#)  
[NSTEMI-ACS Measure Logic and Rationale](#)

## ▼ Coding Instructions

[GWTG-CAD Coding Instructions](#)

## ▼ Case Report Forms (eCRF)

[GWTG-CAD CRF](#)  
[GWTG-CAD Referring Facility CRF](#)

## ▼ User Guide & Training

[IRP User Guide](#)  
[Training Video- Logging in and Navigation](#)  
[Training Video- Facility Forms](#)  
[Training Video- Custom Lists](#)  
[Training Video- Custom Fields](#)  
[Downloading Report Visualizations](#)

## ▼ Other Resources

### REPORTS & MEASURES:

- **DESCRIPTIONS AND INCLUSION/EXCLUSION CRITERIA FOR MEASURES**
  - Reference these when reviewing patient fallouts or excluded patients to gain insight
- **MEASURE LOGIC AND RATIONALE**
  - Citations of evidence-based guidelines to support measures in GWTG - CAD
- **MISSION: LIFELINE REGIONAL REPORT GLOSSARY**
  - Review in-depth details behind the M:L Regional Report

### CODING INSTRUCTIONS:

- **DATA DEFINITIONS AND EXAMPLES FOR ENSURING ACCURACY WHEN ABSTRACTING DATA INTO PATIENT CHARTS**
  - Not recommended to print, the coding instructions also remain accessible from each patient chart via hyperlinked chart headers

### CASE REPORT FORMS (ECRF):

- **GWTG-CAD REFERRING FACILITY CRF FOR PATIENTS TRANSFERRED OUT**

### USER GUIDE & TRAINING:

- **IRP USER GUIDE**
  - Explore how to navigate the technology platform
- **TRAINING VIDEOS**
  - Short videos provide an overview on properly setting up your account for maximum success and ease of use



# Quality Improvement Concepts

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# Plan, Do, Study, Act

## Six Aims for the Healthcare System



1. **Safe:** Care should be as safe for patients in healthcare facilities as in their homes;
2. **Effective:** The science and evidence behind health care should be applied and serve as the standard for the delivery of care;
3. **Efficient:** Care and service should be cost-effective, and waste should be removed from the system;
4. **Timely:** Patients should experience no waits or delays in receiving care and service;
5. **Patient-centered:** The system of care should revolve around the patient, respect patient preferences, and put the patient in control;
6. **Equitable:** Unequal treatment should be a fact of the past; disparities in care should be eradicated.

# Frameworks for Quality Improvement

- Plan – Do – Study – Act (PDSA)

# Plan, Do, Study, Act

## Start by Asking 3 Questions



1. What are we trying to accomplish?
2. How will we know that a change is an improvement?
3. What changes can we make that will result in an improvement?

# **Plan, Do, Study, Act**

Example Real World Study



Quality Improvement in  
time to 12 L ECG acquisition in  
STEMI and NSTEMI patients

# Plan, Do, Study, Act

Based on those questions -

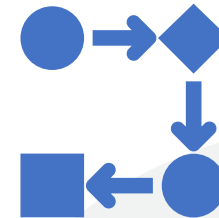


## Select a Team

Internal – ED clinical staff (provider, nursing, registration, lab, radiology etc.)

External (Local EMS)

Someone with no knowledge of the process



## Draft an AIM Statement

What are we trying to accomplish?

How will we know what changes is an improvement?

What changes can we make that will result in an improvement?

# Plan, Do, Study, Act



## AIM Statement

The purpose of this project was to improve rates of detection of acute myocardial infarction (STEMI and NSTEMI) through early acquisition of a 12 L ECG in patients who presented with cardiac and noncardiac chest pain. (Chest pain as defined by pain, pressure, tightness, or discomfort in the chest, shoulders, arms, neck, back, upper abdomen, or jaw as well as shortness of breath and fatigue)

Our primary aim was that by (xx Date) 75% of ED patients presenting with “chest pain”, would receive a 12L ECG within 10 min of arrival.



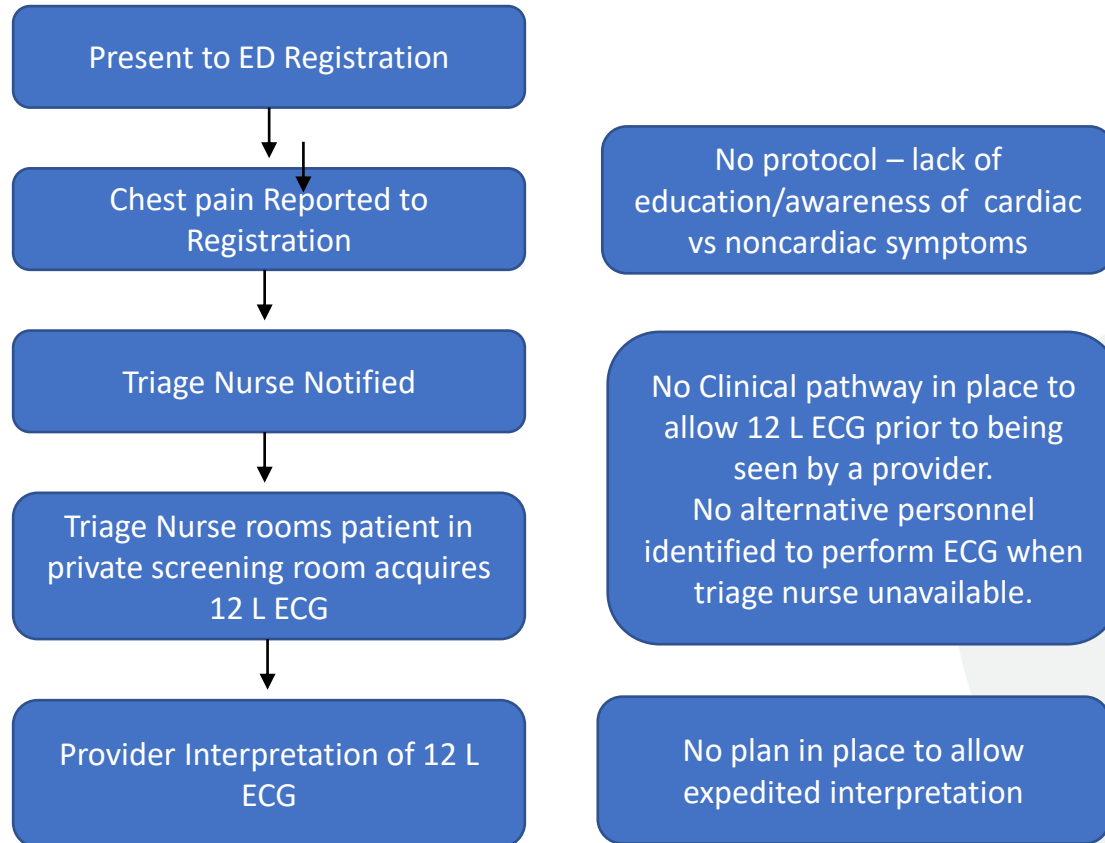
# Plan, Do, Study, Act



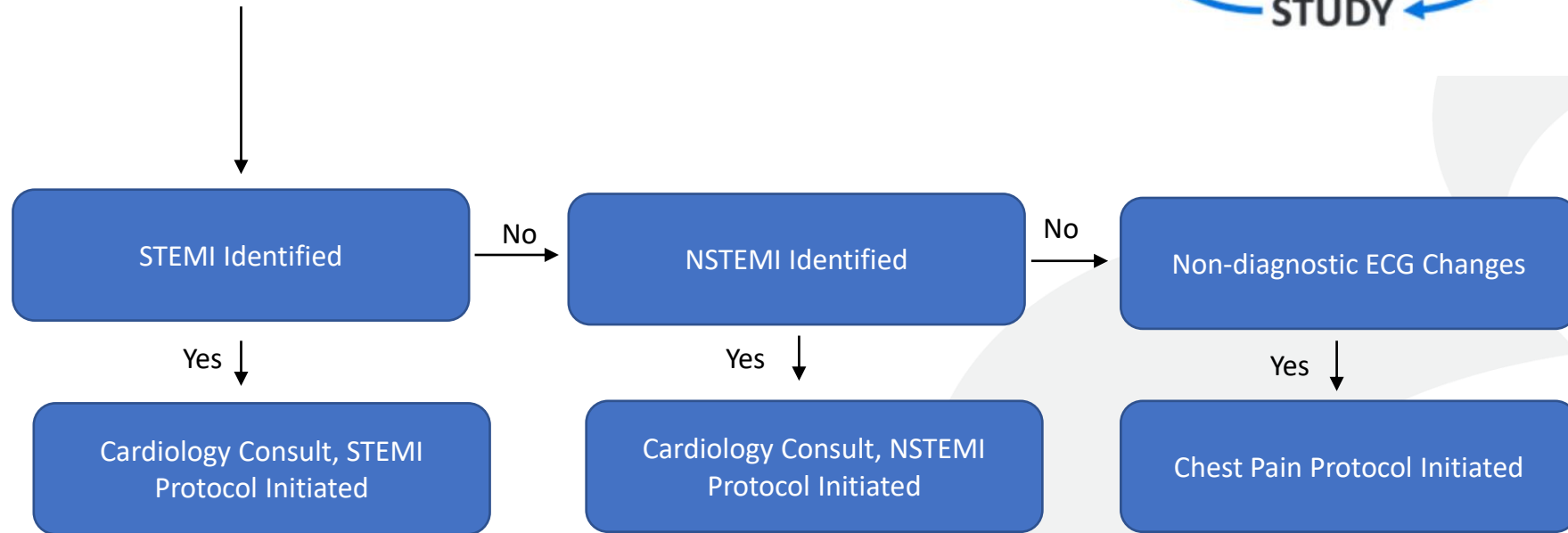
Describe Current  
Context and Process  
(Current State)

- Examine your current process. Start by asking the team these basic questions:
  - How are we doing now?
  - How do we do it?
  - What are the major steps in the process?
  - Who is involved in identifying a need, ordering and performing the 12 L ECG?
  - What do they do?
  - What is done well?
  - What could be done better?

# Plan, Do, Study, Act



# Plan, Do, Study, Act



Process map to understand the logistics behind the delivery and interpretation.

# Plan, Do, Study, Act



## Describe the Problem

Acute myocardial infarction patients are at risk for irreversible myocardial cell damage or death (necrosis). ED physicians identified widespread variation and significant delays in delivery of cardiac assessment in chest pain patients, suggesting an urgent need to develop a consensus and a protocolized approach.

# Plan, Do, Study, Act



## Identify Causes and Alternatives

- Analyze Causes
- Develop Alternatives
  - "If we do \_\_\_\_\_, then \_\_\_\_\_ will happen."

Focus on WHERE, HOW, and WHEN to do a 12 L ECG with chest pain patients.

# Plan, Do, Study, Act

## Stage 2: Do



Start to implement your action plan. Be sure to collect data as you go, to help you evaluate your planning.



# Plan, Do, Study, Act

## Stage 2: Do



### *PDCA cycle 1*

- **'How' and 'when'** to activate chest pain protocol: A standard chest pain protocol for ED patients presenting suspected cardiac symptoms was established.
  - A list of cardiac symptoms was provided to registration desk attendant which allowed patient prioritization including immediate nurse triage and 12 L ECG.
  - Triage nurse to be paged when a patient presented with any cardiac symptoms
  - Dedicated private room identified to obtain ECG's
  - ECG machine docked in predefined location in ED that team is all aware of
  - Standing chest pain order in place that allows nursing to obtain an initial ECG

# Plan, Do, Study, Act

## Stage 2: Do

### *PDSA cycle 1*

- **'Where'** to assess: A dedicated area was identified to store the 12 L ECG machine and supplies that also accommodated patient privacy and positioning.
- Chest pain symptom awareness posters were placed throughout the ED.
- Training was initially delivered face-to-face, Cardiac Coordinator to the ED clinical team (registration personnel, nurses, lab technicians, and providers).
- The registration staff and nurses were vital in identifying patients requiring ECG monitoring.
- All members of the ED clinical team could apply a 12 L ECG monitor as and when necessary.
- The overall responsibility of ensuring sufficient training and transcription of the results lay with core members of cardiac team.



# Plan, Do, Study, Act

## Stage 3: Study



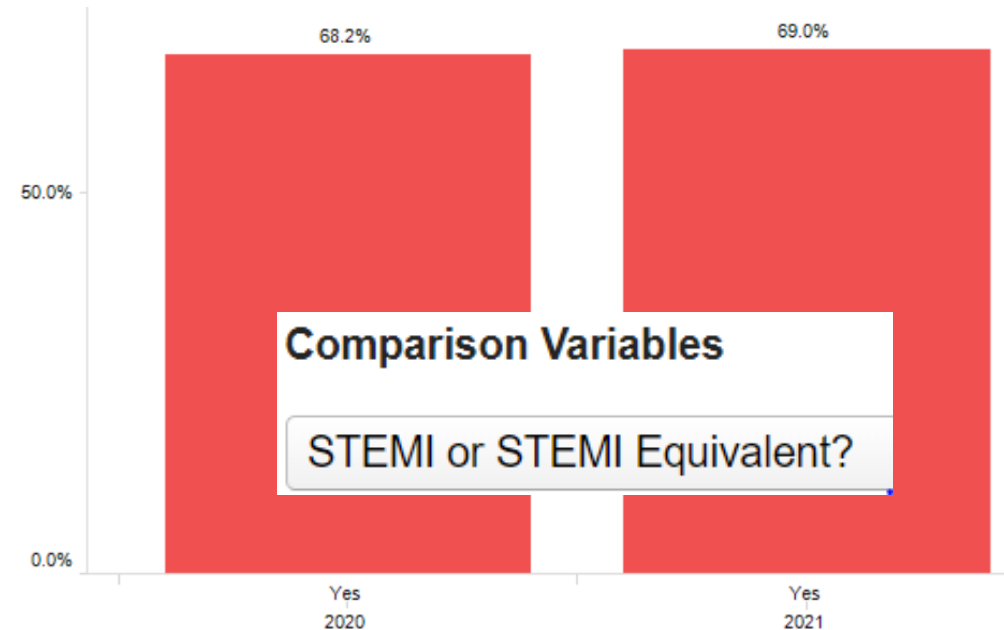
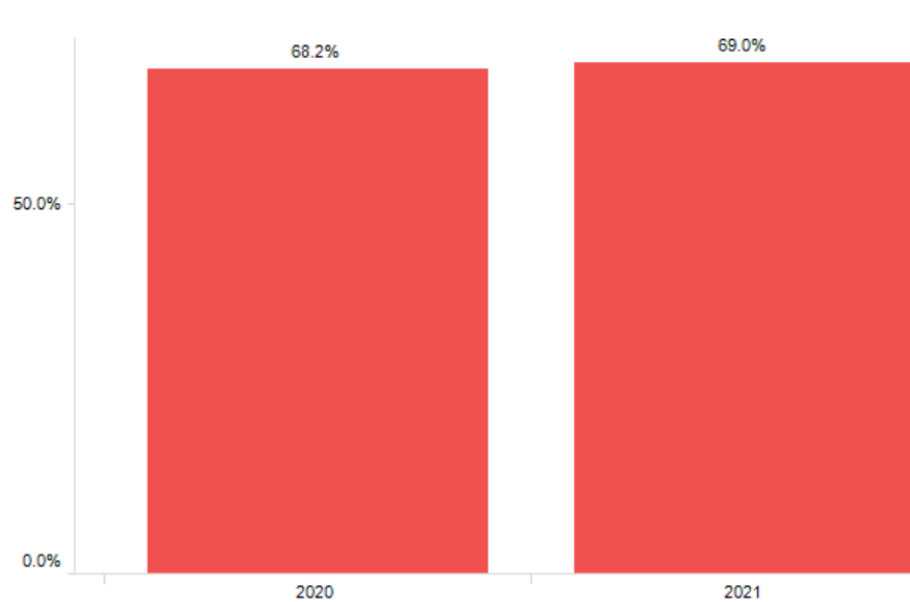
- Using the aim statement drafted in **Stage 1: Plan**, and data gathered during **Stage 2: Do**, determine:
  - ✓ Did your plan result in an improvement? By how much/little?
  - ✓ Was the action worth the investment?
  - ✓ Do you see trends?
  - ✓ Were there unintended side effects?
- You can use a number of different tools to visually review and evaluate an improvement, like a [Pareto chart](#), [control chart](#), or [run chart](#).
- You can run your Get With The Guidelines – CAD data pre and post intervention to evaluate results.

# Plan, Do, Study, Act

## Stage 3: Study



STEMI Receiving Center Achievement Measures »  
AHACAD6: ECG within 10 minutes of Arrival at this Receiving Center

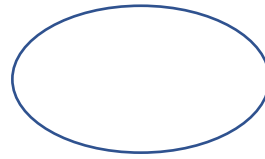


Comparison Variables

STEMI or STEMI Equivalent?

# Plan, Do, Study, Act

## Stage 4: Act



- If your team determined the plan resulted in success, **standardize** the improvement and begin to use it regularly. After some time, return to **Stage 1: Plan** and re-examine the process to learn where it can be further improved.
- If your team believes a different approach would be more successful, return to **Stage 1: Plan**, and **develop** a new and different plan that might result in success.



## Teams

- C-Suite buy In (accountability from the top down)
- Develop frontline champions
- Integrate QI Principles to onboarding materials

## Reports

- Unit/Physician Report Cards
- Dashboards (red, yellow, green)
- Present data/QI plan throughout organization (ED, hospitalist , cardiology, nursing)
- Develop accountability matrix

## Science

- Explain the “why” behind data collection/QI process
- Provide scientific rationale
- Improved Quality=Improved Patient Outcomes
- Provide real world examples

## Engagement

- Trivia
- Unit Report cards to foster “competition”
- Rewards: food, lapel pins etc.



# Resources & Activities

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# Resources Available

Your American Heart Association Quality Improvement Consultant can provide resources for your initiatives

- [Mindy.Cook@heart.org](mailto:Mindy.Cook@heart.org)

NAHQ – National Association of Healthcare Quality

# Training & Onboarding

Tool/Resource	Description	How to Access
AHA Statements & Treatment Guidelines	A library of AHA Statements & Treatment Guidelines, available in pdf, AHA Guidelines on-the-go mobile app and pocket cards.	<a href="#">AHA Statements &amp; Treatment Guidelines</a>
AHA Online Professional Education Center	An online professional education platform, with CME & non-CME opportunities for healthcare professionals.	<a href="#">AHA Online Professional Education Center</a>
GWTC-CAD Webinars	A library of archived workshops and webinars focused on evidence-based care & best practices, hosted through the GWTC-CAD program.	<a href="#">GWTC-CAD Workshops and Webinars</a>
GWTC-CAD Program Resources	A compilation of patient and provider resources, including AFib awareness materials, patient education, and professional podcasts.	<a href="#">GWTC-CAD Program Resources</a>
Peer Sharing of Best Practices	Opportunities to connect with peer hospitals, to discuss challenges & share best practices around specific care processes.	Hospitals and GWTC-CAD Quality Improvement Manager connect on opportunities.
QI Support from AHA Staff	Support from local AHA Quality Improvement Manager may include trainings on the Infosario Registry Platform (IRP), guidance on AHA Statements & Treatment Guidelines, and assistance on data abstraction & reporting.	Hospitals and GWTC-CAD Quality Improvement Manager connect on opportunities.

## Where Can I Locate the Guidelines in Order to “Get With the Guidelines”?

AHA Achievement and Quality Measures focus on Guideline Based Therapy  
that can be the most impactful for Patient Outcomes

**STEMI Guidelines Link:**

[2013 STEMI Guidelines](#)  
[2015 STEMI/PCI Update](#)

**NSTEMI Guidelines Link:**

[2014 NSTEMI Guidelines](#)

**Clinical Performance Guidelines Link:**

[2017 Clinical Performance &  
Quality Measures for  
STEMI/NSTEMI](#)

[2021 STEMI Systems of Care Policy Statement](#)

**Chest Pain Guidelines Link:**

[2021 Chest Pain Guideline](#)



[AHA Guidelines On-The-Go by  
American Heart Association](#)

# Patient Resources

## Patient resources

### Heart Attack Tools and Resources

- [Heart attack warning signs infographic \(PDF\)](#)
- [Patient information sheets: heart attack](#)  
What is a heart attack?  
How will I recover from my heart attack?  
What are the warning signs of heart attack?  
What is dual antiplatelet therapy (DAPT)?
- [The details on cardiac rehabilitation](#)
- [Lasting change: Healthy for Good](#)
- [Watch, Learn and Live animations library](#)

Manage your condition with these tools:

Heart attack discharge worksheet [English \(PDF\)](#) | [Spanish \(PDF\)](#)

Cardiac rehabilitation referral card [English \(PDF\)](#) | [Spanish \(PDF\)](#)

Downloadable medication tracker [English \(PDF\)](#) | [Spanish \(PDF\)](#)

Infographic: Five ways to lower your risk of a second heart attack [English \(PDF\)](#) | [Spanish \(PDF\)](#)



## HEART ATTACK: DON'T WAIT FOR A SECOND

### 5 Ways to Lower Your Risk of a **SECOND** Heart Attack

- 1

**TAKE YOUR MEDICATIONS**  
 Take medications as your doctor prescribed. They help you avoid another heart attack. Forgetting to take a dose or get a refill can lead to big health problems.


- 2

**FOLLOW-UP WITH YOUR DOCTOR**  
 Getting better means working together with your healthcare team. See your doctor within 6 weeks of your heart attack to help keep your recovery on track.


- 3

**PARTICIPATE IN CARDIAC REHAB**  
 Cardiac rehabilitation improves your physical and emotional recovery by increasing your physical fitness, helping you adopt heart-healthy living, and addressing sources of stress.


- 4

**MANAGE RISK FACTORS**  
 Common risk factors include smoking, high cholesterol, high blood pressure and diabetes. Use medications and lifestyle changes to lower your risk of another heart attack.


- 5

**GET SUPPORT**  
 Sharing your journey to recovery with family, friends and other survivors can help reduce anxiety and loneliness.



Act now to prevent another heart attack. Visit [heart.org/heartattackrecovery](https://heart.org/heartattackrecovery) to learn more.

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# THANK YOU



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