



Emergency Heart Attack Care of the Acute Coronary Syndrome Patient

Physicians and Advanced Practice Providers

Tell Me About EHAC

Early **H**ear**A**tta**C**are (**EHAC**) is a program at Mon Health to assist the staff in prompt recognition and treatment of our patients who may be showing early warning signs and symptoms of possible acute coronary syndromes (ACS).

Goals of the MHMC Chest Pain Center

- To deliver prompt high quality cardiac care to those patients who may be experiencing possible Acute Coronary Syndromes
- To help the patient recover and maintain a cardiac healthy lifestyle
- To be a resource to the staff and patients in the care of cardiac related disease/illness

Goals of the MHMC Chest Pain Center

- Review of the most current AHA standards in the care of the Acute Coronary Syndrome (ACS) patient.
- Review of Order sets, risk stratification and documentation for all levels of care and transition of the cardiac patient.

Risk Stratification

Two forms of Risk Stratification are used at MHMC:

- HEART score in Emergency Department for admission purposes/consults.
- TIMI score on ALL admissions/intra-facility transfers and direct admissions.

Risk Stratification

- Stratification of patient assures that the ACS patient receives the appropriate care, is admitted to the appropriate floor and alerts the medical staff of the probability of a potential future cardiac related event.
- Stratification should occur with any change in patient condition and be used as a guide for transition of care.

Risk Stratification HEART

The HEART Score for Chest Pain Patients in the ED		
History	<ul style="list-style-type: none"> • Highly Suspicious • Moderately Suspicious • Slightly or Non-Suspicious 	<ul style="list-style-type: none"> • 2 points • 1 point • 0 points
ECG	<ul style="list-style-type: none"> • Significant ST-Depression • Nonspecific Repolarization • Normal 	<ul style="list-style-type: none"> • 2 points • 1 point • 0 points
Age	<ul style="list-style-type: none"> • ≥ 65 years • > 45 - < 65 years • ≤ 45 years 	<ul style="list-style-type: none"> • 2 points • 1 point • 0 points
Risk Factors	<ul style="list-style-type: none"> • ≥ 3 Risk Factors or History of CAD • 1 or 2 Risk Factors • No Risk Factors 	<ul style="list-style-type: none"> • 2 points • 1 point • 0 points
Troponin	<ul style="list-style-type: none"> • ≥ 3 x Normal Limit • > 1 - < 3 x Normal Limit • ≤ Normal Limit 	<ul style="list-style-type: none"> • 2 points • 1 point • 0 points
Risk Factors: DM, current or recent (<one month) smoker, HTN, HLP, family history of CAD, & obesity		
Score 0 – 3: 2.5% MACE over next 6 weeks → Discharge Home		
Score 4 – 6: 20.3% MACE over next 6 weeks → Admit for Clinical Observation		
Score 7 – 10: 72.7% MACE over next 6 weeks → Early Invasive Strategies		

Risk Stratification TIMI

TIMI RISK SCORE for UA / NSTEMI

HISTORICAL		POINTS	RISK OF CARDIAC EVENTS (%) BY 14 DAYS IN TIMI 11B*		
PRESENTATION			Risk Score	Death or MI	Death, MI or Urgent Revasc
Age ≥ 65		1	0/1	3	5
≥ 3 CAD risk factors (FHx, HTN, ↑ chol, DM, active smoker)		1	2	3	8
Known CAD (stenosis ≥ 50%)		1	3	5	13
ASA use in past 7 days		1	4	7	20
			5	12	26
			6/7	19	41
Recent (≤ 24H) severe angina		1			
↑ cardiac markers		1			
ST deviation ≥ 0.5mm		1			
RISK SCORE=Total Points (0-7)					

*Entry criteria: UA or NSTEMI defined as ischemic pain at rest within past 24H, with evidence of CAD (ST segment deviation or +marker)

For more info go to www.timi.org

Antman et al JAMA 2000;284:835-842

EKGs

The clock starts with onset of symptoms.

The staff are being instructed to obtain an EKG within 10 minutes of ACUTE onset of symptoms.

The staff are also instructed to activate RAPID RESPONSE.

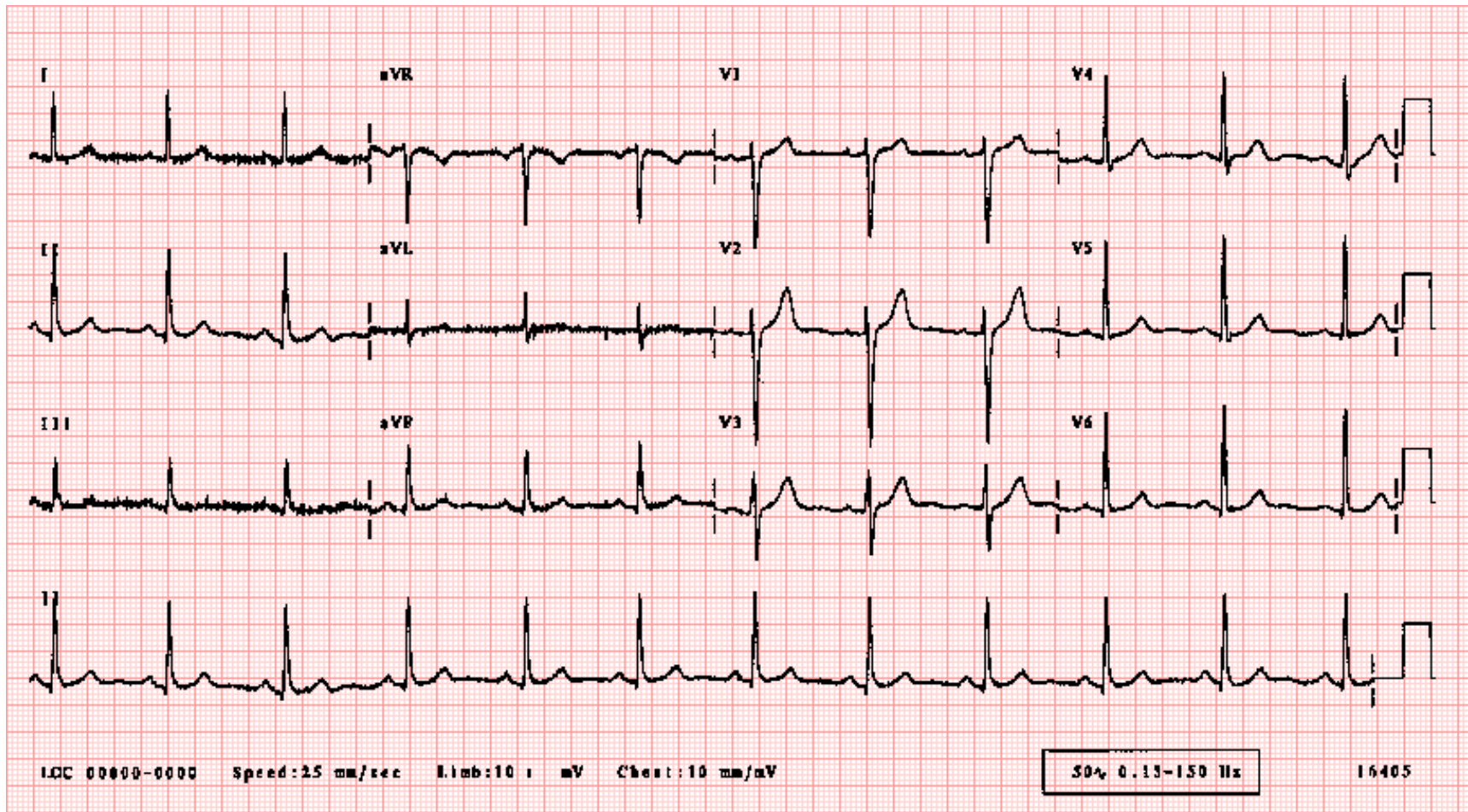
EKG should be read promptly, and risk stratification occur. This is required if the patient is admitted to a non-cardiac floor and develops symptoms.

EKG Serialization

- Order set for EKGs
- EKG at baseline or 'time zero'
- Repeat EKG 3 hours after baseline or 'time zero'

Source: 2014 AHA Guidelines

“Normal” EKG



Treatment Plans

Patient on non-cardiac floor :

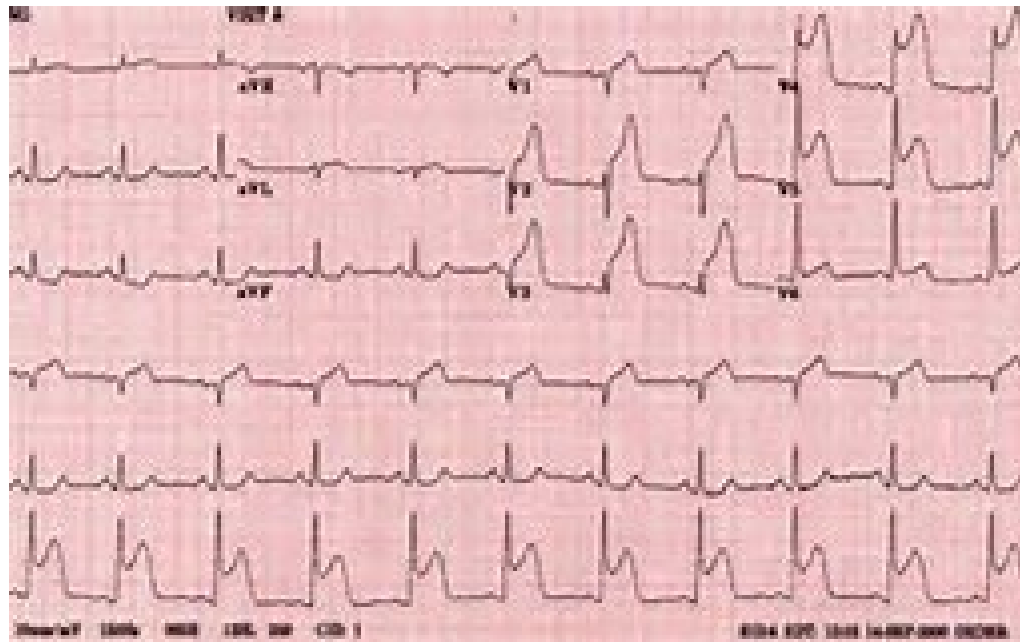
- Risk stratify with TIMI
- Treatment with Nitroglycerin, Aspirin, Beta-blocker, and heparin as appropriate (start chest pain order set).
- Upgrade level of care to SDU or ICU as appropriate.
- Consult Cardiology ASAP, if not already involved in the care of the patient.

Treatment Plans

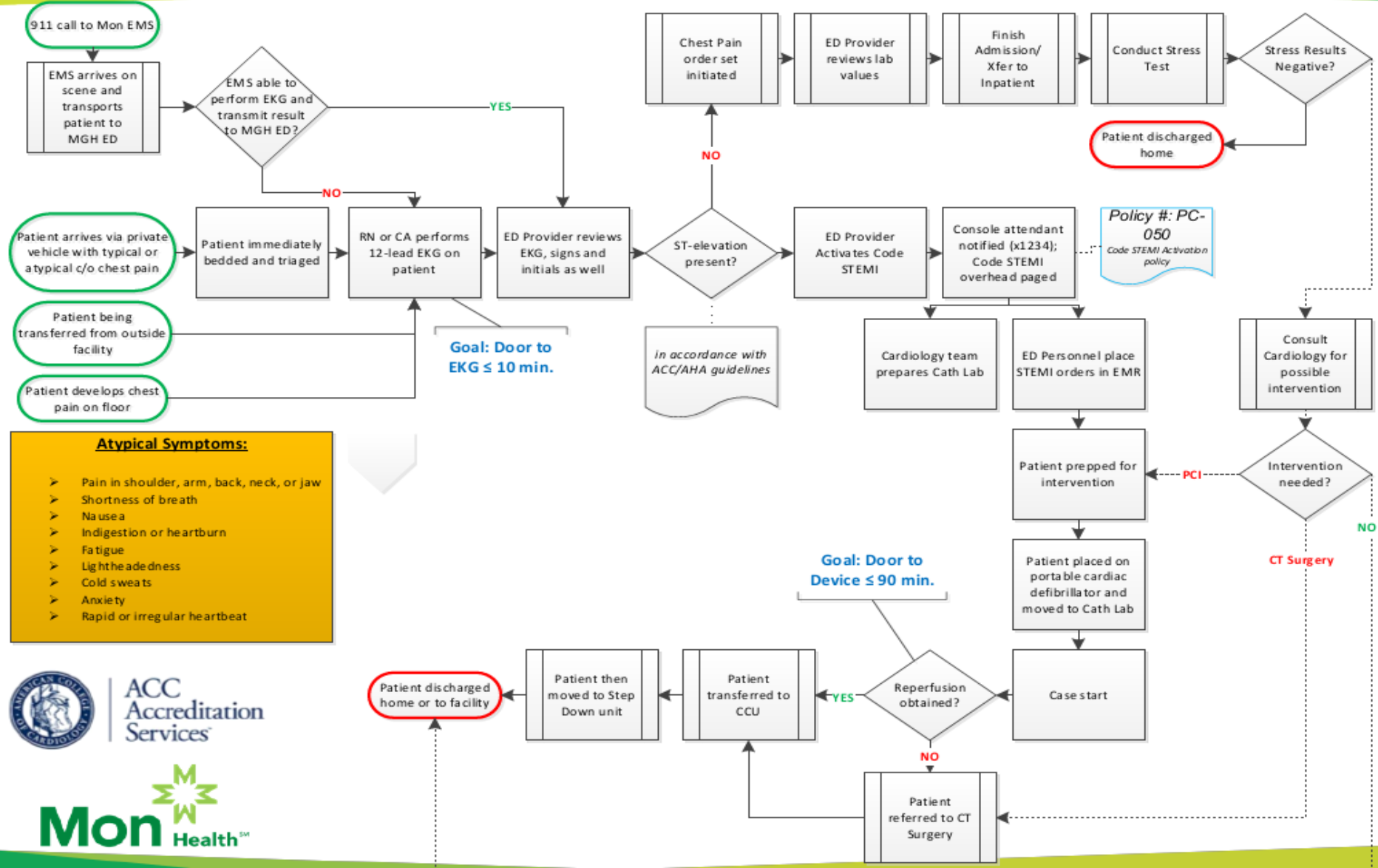
Patient on Cardiac Unit:

- Risk stratify with TIMI
- Treatment with Nitroglycerin, Aspirin, Beta-blocker, and heparin as appropriate (start chest pain order set, if not already activated)
- Upgrade level of care to CCU/ICU as appropriate
- Notify Cardiology ASAP!

STEMI



MON HEALTH CHEST PAIN CENTER COMMITTEE: CODE STEMI PROTOCOL



Treatment Plan

- Regardless of location:
 - CODE STEMI paged
 - Activation of STEMI ED order set
 - ASA, NTG, Beta-blocker and Anti-coagulation per Cardiology
 - Morphine/Fentanyl for pain
 - Have staff prep for Cath
 - Shave/prep groins BILATERALLY and right wrist

Treatment Plan --- Delayed Response!

If for any reason, the procedure may be delayed, consider thrombolytic therapy **AFTER** conversation with Cardiologist.

Dose Information Table

Patient Weight (kg)	TNKase (mg)	Volume TNKase* to be administered (mL)
* From one vial of TNKase reconstituted with 10 mL SWFI.		
<60	30	6
≥60 to <70	35	7
≥70 to <80	40	8
≥80 to <90	45	9
≥90	50	10

Cardiac Biomarkers

- Elevation of biomarkers (enzymes) may not occur during the early stages of a heart attack. Biomarkers are ordered as a serial set.
- Time **'zero'** – The first set of enzymes obtained on the patient. Usually completed in the Emergency Department or upon arrival when directly admitted to the floor.

Cardiac Biomarkers

Standardization of lab draws
3 and 6 hours from time “zero” - not
from time of admission to the floor

Example: ED lab draw at 1100 (time “zero”)

3 hours at 1400

6 hours at 1800

CK and CK-MB no longer utilized

Source: 2014 AHA Guidelines

Stress Testing

Stress testing will be ordered after serialization of biomarkers are negative.

The physician may order an exercise graded stress or a nuclear stress test.

Patient's who show a positive stress testing (cardiac ischemia) are to be referred to Cardiology, if not already consulted. The patient may then be sent for diagnostic angiography to determine the level of blockage.

Discharge Planning

- Aspirin
- Beta Blocker
- ACE/ARB
- Statin Therapy
- P2Y12 Meds
- Cardiac Rehab ordered
- Follow up with PCP/Cardiology
- If meds are not ordered, contraindications **must be documented** (ex: allergies, renal failure).

QUESTIONS?

- If you have any questions, please contact the Chest Pain Center (CPC) Coordinator at 304-285-6647
- Your Current CPC Medical Director is Dr. Brad Warden. FACC, FSCAI
- Your Current CPC Coordinator is Jeffrey Haught, BA, RN, CEN, CCCC