# Cardiac Emergencies - Triage/Transfer Process

**Note:** For emergencies occurring on MD Anderson campus locations not supported by the Code Blue Team, contact 911 (Code Blue Team vs. 911 Response Map)

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Disclaimer: This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular to MD Anderson’s specific patient population, services and structure, and clinical information. This is not intended to replace the independent medical or professional judgment of physicians or other health care providers in the context of individual clinical circumstances to determine a patient’s care.
**PRESENTATION AND ASSESSMENT**

**Note:** Patient should be transferred < 30 minutes of initial presentation [door in-door out (DIDO)] since the “door to device time” for STEMI is < 120 minutes

ACS symptoms:
- Chest pain or discomfort
- Shortness of breath
- Pain or discomfort in one or both arms, jaw, neck, back, or stomach
- Dizziness or lightheadedness
- Nausea
- Diaphoresis

**EC**

Complete the following within 10 minutes:
- STAT EKG (12-lead)
- EKG technician to deliver to EC physician for reading

Patient has STEMI per EC physician?
- Yes → EC physician<sup>2</sup> to contact Case Manager for transfer to outside hospital
- Case Manager to arrange ambulance transport
- Case Manager to contact outside hospital for acceptance of STEMI patient

- No → EC physician to contact Cardiology to determine disposition to a higher level of care
- See Page 4 for Suspected ACS

**Inpatient**

Complete the following within 10 minutes:
- STAT EKG (12-lead)
- EKG technician to notify Cardiology of STEMI reading

Patient has STEMI per Cardiology?
- Yes → Cardiology to contact Case Manager for transfer to outside hospital
- Case Manager to arrange ambulance transport
- Case Manager to contact outside hospital for acceptance of STEMI patient
- Cardiology to contact primary team within 10 minutes regarding prognosis, suitability for intervention/transfer and resuscitation status (should not delay transfer)

- No → Cardiology to determine disposition to a higher level of care
- See Page 4 for Suspected ACS

**Outpatient/MD Anderson public spaces**

See Page 3

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ACS = acute coronary syndrome

STEMI = ST-elevation myocardial infarction

<sup>1</sup>ACS symptoms:
- Chest pain or discomfort
- Shortness of breath
- Pain or discomfort in one or both arms, jaw, neck, back, or stomach
- Dizziness or lightheadedness
- Nausea
- Diaphoresis

<sup>2</sup>EC physician to perform the following only if able to complete within 10 minutes; DO NOT DELAY TRANSFER

- Initiate medical management:
  - Aspirin 162-325 mg PO once
  - P2Y12 inhibitor loading dose: Clopidogrel 600 mg PO once or Ticagrelor 180 mg PO once
  - Anticoagulation-unfractionated heparin (UFH) with additional boluses if needed to maintain therapeutic activated clotting time (ACT)
- Contact Cardiology for confirmation of STEMI
- Contact primary team regarding prognosis, suitability for intervention/transfer and resuscitation status

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**DISPOSITION**

Transfer patient to outside hospital (see Page 5)

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Department of Clinical Effectiveness V2

Approved by the Executive Committee of the Medical Staff on 01/21/2020
PRESENTATION AND ASSESSMENT

Note: Patient should be transferred < 30 minutes of initial presentation [door in-door out (DIDO)] since the “door to device time” for STEMI is < 120 minutes

DISPOSITION

- Code Blue team leader/paramedic contacts EMS (911) for transfer
- Code Blue team to notify outpatient area of patient disposition
- Outpatient team to notify available family and primary team as appropriate

• Code Blue team to determine disposition to a higher level of care

EMS = Emergency Medical Services
STEMI = ST-elevation myocardial infarction

1 For outpatient areas not covered by Code Blue services, call 911 and provide supportive care until EMS arrives

2 Criteria for STEMI
- New ST elevation at the J point in two contiguous leads of ≥ 0.1 mV in all leads other than leads V2-V3
- For leads V2-V3 the following cut points apply:
  - Men ≥ 40 years old: ≥ 0.2 mV
  - Men < 40 years old: ≥ 0.25 mV
  - Women regardless of age: ≥ 0.15 mV
- New or presumed new left bundle branch block (LBBB)
PRESENTATION AND ASSESSMENT

Suspected Acute Coronary Syndrome (ACS)

- EKG
- STAT medical management
  - Aspirin 162-325 mg PO once
  - P2Y12 inhibitor loading dose: Clopidogrel 600 mg PO once or Ticagrelor 180 mg PO once
  - Anticoagulation with unfractionated heparin (UFH) or low molecular weight heparin (LMWH)
- STAT consult to Cardiology
- STAT cardiac panel (CK, CKMB, troponin T) and pro NT-BNP
- Continuous cardiac monitoring

DISPOSITION

- Cardiology to assess patient and start medical management
- Cardiology to discuss with primary team regarding prognosis, suitability for intervention/transfer and resuscitation status
- Cardiology to determine disposition

Early invasive strategy

- Diagnostic catheterization at MD Anderson within 48 hours of presentation
- Final disposition per Cardiology

Ischemia-guided therapy

- Medical management per Cardiology

Transfer to outside hospital for higher level of care (see Appendix A)

- Cardiology to contact Case Manager
- Case Manager to arrange ambulance transport
- Case Manager to contact outside hospital for acceptance

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EMERGENCY TRANSFER ADMINISTRATIVE PROCESS

- Case Management or OSA will:
  - Contact Transfer Center at the receiving hospital to obtain approval and bed availability
  - Provide attending physician with contact number for physician at outside hospital
- Attending Physician will discuss case with physician at outside hospital
- Attending Physician to notify patient and family of intent to transfer

Transfer accepted?

Yes

- Case Management or OSA will:
  - Identify and coordinate appropriate transportation service to be used
  - Complete the Memorandum of Transfer
  - Ensure proper documentation accompanies patient
  - Notify appropriate nursing unit when the approval to transfer has been obtained along with information such as address and phone numbers for calling clinical report
  - Inform patient and family of accepted transfer

No

- Inform patient and family that care will continue at MD Anderson
- Manage patient as clinically indicated

1 If patient is not stabilized prior to transferring to another facility, continue to pursue a transfer if the individual requests the transfer or the expected benefits outweigh the increased risks of the transfer (see MD Anderson Institutional Policy #CLN3280 - Emergency Medical Screening Examination Stabilization, and Appropriate Transfers Policy)
2 Contact Case Management or OSA via operator
3 Refer to MD Anderson Institutional Transfer Policy (#CLN0614)
4 Discuss with Attending Physician regarding preference for receiving hospital based on clinical scenario. See Appendix B: Texas Medical Center (TMC) Hospital Contact Information. If transfer approval is not promptly obtained, Case Management to contact alternate hospitals to avoid delay.
5 Documentation:
   - “Face sheet”
   - Medical records to include a current reconciled medication list and transfer orders per primary care team
   - Others as appropriate
APPENDIX A: TIMI (Thrombolysis in Myocardial Infarction) Score

TIMI score calculation (1 point for each):
- Age greater than or equal to 65 years old
- Aspirin use in the last 7 days (patient experiences chest pain despite aspirin use in past 7 days)
- At least 2 angina episodes within the last 24 hours
- ST changes of at least 0.5 mm in contiguous leads
- Elevated serum cardiac biomarkers
- Known coronary artery disease (CAD) (coronary stenosis greater than or equal to 50%)
- At least 3 risk factors for CAD, such as:
  - Hypertension greater than 140/90 mmHg or on anti-hypertensives
  - Current cigarette smoker
  - Low HDL cholesterol (less than 40 mg/dL)
  - Diabetes mellitus
  - Family history of premature CAD:
    - Male first-degree relative or father younger than 55 years old
    - Female first-degree relative or mother younger than 65 years old
APPENDIX B: Texas Medical Center (TMC) Hospital Contact Information

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<tr>
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<th>Memorial Hermann TMC</th>
<th>CHI St. Luke’s TMC</th>
<th>Methodist TMC</th>
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<tr>
<td><strong>For Transfers:</strong></td>
<td>Transfer Center (713) 704-2500</td>
<td>Transfer Center (832) 355-2233</td>
<td>Transfer Center (713) 441-6804</td>
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<td><strong>Additional contacts:</strong></td>
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<td><strong>Memorial Hermann TMC</strong></td>
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<tr>
<td>ACS/STEMI</td>
<td>Fax EKG to (713) 704-0665 (for EC patients)</td>
<td>On-call STEMI fellow via page operator (832) 355-4146</td>
<td>On-call STEMI attending via page operator (713) 790-2201</td>
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<td>On-call STEMI attending via transfer center (888) 875-1434</td>
<td>Catheterization Lab (713) 441-5292</td>
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<td>Catheterization Lab (832) 355-6650</td>
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<td>Dr. George Younis (832) 816-7324</td>
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SUGGESTED READINGS


MD Anderson Institutional Policy #CLN0614 – Transfer of Patients to, from and Within MD Anderson Cancer Center Policy

MD Anderson Institutional Policy #CLN3280 – Emergency Medical Screening Examination Stabilization, and Appropriate Transfers Policy
This practice consensus statement is based on majority opinion of the Emergent Triage/Transfer Process workgroup experts at the University of Texas MD Anderson Cancer Center for the patient population. These experts included:

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- Gregory H. Botz, BS, MD (Critical Care & Respiratory Care)
- Sorayah Bourenane, BSN, RN (Emergency Center)
- Ginny Bowman, MSN, RN (Nursing Administration)
- Patricia Brock, MD (Emergency Medicine)
- Brenda Brown, MSN, RN (Ambulatory Infusion)
- Karen Chen, MD (Critical Care & Respiratory Care)
- John Crommett, MD (Critical Care & Respiratory Care)
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- Marina George, MD (General Internal Medicine)
- Carmen Gonzalez, MD (Emergency Medicine)
- Petra Grami, DNP, RN (Nursing Administration)
- Amanda Hamlin, MS, PA-C (Houston Area Locations)
- Saamir Hassan, MD (Cardiology)
- Angela Hayes-Rodgers, MBA (Off-Shift Administration)
- Patrick Hwu, MD (Cancer Medicine Administration)
- Cezar Iliescu, MD (Cardiology)
- Colleen, Jernigan, PhD, RN (Nursing Administration)
- Hagop Kantarjian, MD (Leukemia)
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- Jenise Rice, MSN, RN (Perioperative Nursing)
- Regina Smith, MSN, MBA, RN (Houston Area Locations)
- Stephen Swisher, MD (Surgery)
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- Suzanne M. Wilson, BSN, DBA, RN (Case Management)

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