Cardiac Emergencies - Triage/Transfer Process

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.

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)

TABLE OF CONTENTS

Chest Pain/Suspected ST-elevation Myocardial Infarction (STEMI) ........................... Page 2
Acute Cancer Care Center/Inpatient ........................................................................ Page 2
Ambulatory/MD Anderson public spaces .............................................................. Page 3
Suspected Acute Coronary Syndrome (ACS) ....................................................... Page 4
Emergency Transfer Administrative Process ...................................................... Page 5
APPENDIX A: TIMI (Thrombolysis in Myocardial Infarction) Score .................. Page 6
APPENDIX B: Texas Medical Center (TMC) Hospital Contact Information .......... Page 7
Suggested Readings ............................................................................................... Page 8
Development Credits .......................................................................................... Page 9
ACCC symptoms may include:
- 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

ACS = acute coronary syndrome
STEMI = ST-elevation myocardial infarction

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
Cardiac Emergencies - Triage/Transfer Process

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

---

<table>
<thead>
<tr>
<th>Ambulatory^1/ MD Anderson public spaces</th>
<th>Call Code Blue team (713-792-7099)</th>
<th>STAT EKG (12-lead)^2</th>
<th>Patient meets criteria for STEMI^3?</th>
</tr>
</thead>
</table>

**Disposition**

- Code Blue team leader/paramedic contacts EMS (911) for transfer to outside facility for higher level of care
- Code Blue team to notify clinical or administrative leaders in the ambulatory area of patient disposition, if applicable
- Ambulatory team to notify available family and primary team as appropriate

---

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

^1 For ambulatory areas not covered by Code Blue services, call 911 and provide supportive care until EMS arrives
^2 If EKG not available, the Code Blue Team will determine disposition based on clinical presentation
^3 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 if no contraindications
  - 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
- Cardiology to assess patient [see Appendix A: TIMI (Thrombolysis in Myocardial Infarction) Score] and provide additional medical management as indicated
- Cardiology to discuss with primary team regarding prognosis, suitability for intervention/transfer and resuscitation status
- Cardiology to determine disposition

**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
  - Cardiology to contact Case Manager/Off Shift Administrator (see Page 5)
Cardiac Emergencies - Triage/Transfer Process

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 professionals in the context of individual clinical circumstances to determine a patient's care.

EMERGENCY TRANSFER ADMINISTRATIVE PROCESS

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. Refer to MD Anderson Institutional Transfer Policy (#CLN0614).

3. Discuss with Attending Physician regarding preference for receiving hospital based on clinical scenario. See Appendix B: Texas Medical Center (TMC) Hospital Contact Information.

4. Documentation:
   - “Face sheet”
   - Medical records to include a current reconciled medication list and transfer orders per primary care team
   - Diagnostic imaging films or CDs as indicated
   - Other documentation as appropriate

OSA = off shift administrator

Patient needing transfer to higher level of care

Acute Cancer Care Center (ACCC) →

Attending Physician will notify ACCC assigned Case Manager or OSA to coordinate acceptance at outside hospital

Attending Physician will notify Case Manager or OSA to coordinate acceptance at outside hospital

- Case Manager
  - Monday through Friday 8 AM – 5 PM: Contact Case Manager assigned to patient location
  - Monday through Friday 5 PM – 10 PM or Holidays/Weekends 8 AM – 10 PM: Contact Case Manager via on call calendar
- OSA
  - Monday through Friday or Weekends/Holidays: 10 PM – 8 AM: Contact OSA via the on call calendar

Case Manager or OSA will:
- Identify and coordinate ambulance transportation
  - For patients in the ACCC, request ambulance to be dispatched to bedside
  - For inpatients, request ambulance to be placed on standby
- Contact Transfer Center at the receiving hospital to obtain approval and bed availability. If transfer approval is not promptly obtained, contact alternate hospital to avoid delay.
- Provide attending physician with contact number for physician at outside hospital

Attending Physician will:
- Notify patient and family of intent to transfer
- Discuss case with physician at outside hospital
- Notify patient and family of accepted transfer
- Sign the Memorandum of Transfer

DISPOSITION

Transfer accepted? Yes

- Case Manager or OSA will:
  - 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
  - Attend Physician will:
    - Inform patient and family of accepted transfer
    - Sign the Memorandum of Transfer

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

Transfer accepted? No

- Attend Physician will notify Case Manager or OSA to coordinate acceptance at outside hospital

- Case Manager or OSA will:
  - Identify and coordinate ambulance transportation
    - For patients in the ACCC, request ambulance to be dispatched to bedside
    - For inpatients, request ambulance to be placed on standby
  - Contact Transfer Center at the receiving hospital to obtain approval and bed availability. If transfer approval is not promptly obtained, contact alternate hospital to avoid delay.
  - Provide attending physician with contact number for physician at outside hospital

- Attending Physician will:
  - Notify patient and family of intent to transfer
  - Discuss case with physician at outside hospital

OSA = off shift administrator

Acute Cancer Care Center (ACCC) →

Attending Physician will notify Case Manager or OSA to coordinate acceptance at outside hospital

Attending Physician will notify Case Manager or OSA to coordinate acceptance at outside hospital

- Case Manager
  - Monday through Friday 8 AM – 5 PM: Contact Case Manager assigned to patient location
  - Monday through Friday 5 PM – 10 PM or Holidays/Weekends 8 AM – 10 PM: Contact Case Manager via on call calendar
- OSA
  - Monday through Friday or Weekends/Holidays: 10 PM – 8 AM: Contact OSA via the on call calendar

Case Manager or OSA will:
- Identify and coordinate ambulance transportation
  - For patients in the ACCC, request ambulance to be dispatched to bedside
  - For inpatients, request ambulance to be placed on standby
- Contact Transfer Center at the receiving hospital to obtain approval and bed availability. If transfer approval is not promptly obtained, contact alternate hospital to avoid delay.
- Provide attending physician with contact number for physician at outside hospital

Attending Physician will:
- Notify patient and family of intent to transfer
- Discuss case with physician at outside hospital
- Notify patient and family of accepted transfer
- Sign the Memorandum of Transfer

DISPOSITION

Transfer accepted? Yes

- Case Manager or OSA will:
  - 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
  - Attend Physician will:
    - Inform patient and family of accepted transfer
    - Sign the Memorandum of Transfer

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

Transfer accepted? No

- Attend Physician will notify Case Manager or OSA to coordinate acceptance at outside hospital

- Case Manager or OSA will:
  - Identify and coordinate ambulance transportation
    - For patients in the ACCC, request ambulance to be dispatched to bedside
    - For inpatients, request ambulance to be placed on standby
  - Contact Transfer Center at the receiving hospital to obtain approval and bed availability. If transfer approval is not promptly obtained, contact alternate hospital to avoid delay.
  - Provide attending physician with contact number for physician at outside hospital

- Attending Physician will:
  - Notify patient and family of intent to transfer
  - Discuss case with physician at outside hospital

OSA = off shift administrator
APPENDIX A: TIMI (Thrombolysis in Myocardial Infarction) Score

TIMI score calculation (1 point for each):
- Age ≥ 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 ≥ 50%)
- At least 3 risk factors for CAD, such as:
  - Hypertension > 140/90 mmHg or on anti-hypertensives
  - Current cigarette smoker
  - Low HDL cholesterol (< 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

<table>
<thead>
<tr>
<th></th>
<th>Memorial Hermann TMC</th>
<th>CHI St. Luke’s TMC</th>
<th>Methodist TMC</th>
</tr>
</thead>
<tbody>
<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>
</tr>
</tbody>
</table>

**Additional contacts:**

<table>
<thead>
<tr>
<th></th>
<th>Memorial Hermann TMC</th>
<th>CHI St. Luke’s TMC</th>
<th>Methodist TMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACS/STEMI</td>
<td>Fax EKG to (713) 704-0665 (for ACCC patients)</td>
<td>On-call STEMI fellow via page operator (832) 355-4146 On-call STEMI attending via transfer center (888) 875-1434 Catheterization Lab (832) 355-6650 Dr. George Younis (Catheterization Lab Med Director) (832) 816-7324</td>
<td>On-call STEMI attending via page operator (713) 790-2201 Catheterization Lab (713) 441-5292</td>
</tr>
</tbody>
</table>
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:

Kumar Alagappan, MD (Emergency Medicine)
Gregory H. Botz, MD (Critical Care Medicine)
Sorayah Bourenane, MSN, BSN, RN (Acute Cancer Care Center)
Ginny Bowman, DNP, APRN, CNS-Onco, NEA-BC (Ambulatory Operations & Access)
Patricia A. Brock, MD (Emergency Medicine)
Brenda Brown, MSN, RN (Ambulatory Infusion)
Karen Chen, MD (Critical Care Medicine)
John W. Crommett, MD (Critical Care Medicine)
Susan Gaeta, MD (Emergency Medicine)
Wendy Garcia, BS*
Marina C. George, MD (General Internal Medicine)
Carmen E. Gonzalez, MD (Emergency Medicine)
Petra S. Grami, DNP, RN (Nursing Administration)
Amanda V. Hamlin, MS, PA-C (Houston Area Locations)

Saamir A. Hassan, MD (Cardiology)\textsuperscript{T}
Angela Hayes-Rodgers, MBA (Off-Shift Administration)
Cezar Iliescu, MD (Cardiology)\textsuperscript{T}
Hagop M. Kantarjian, MD (Leukemia)
Joseph L. Nates, MD (Critical Care Medicine)\textsuperscript{T}
Karen Plexman, MSN, RN (Emergency Readiness)
Jenise Rice, MSN, RN (Perioperative Nursing)
Regina Smith, DBA, MSN, MBA, RN (Houston Area Locations)
Stephen G. Swisher, MD (Surgery)
Delmy A. Vesho, MSN, RN (Nursing Administration)
Marian Von-Maszewski, MD (Emergency Readiness)
Mary Lou Warren, DNP, APRN, CNS-CC\textsuperscript{*}
Suzanne M. Wilson, BSN, DBA, RN (Case Management)

\textsuperscript{T} Core Development Team
\textsuperscript{*} Clinical Effectiveness Development Team

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.

Cardiac Emergencies - Triage/Transfer Process

DEVELOPMENT CREDITS

Approved by the Executive Committee of the Medical Staff on 01/18/2022