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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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Chest Pain/Suspected ST-elevation Myocardial Infarction (STEMI)

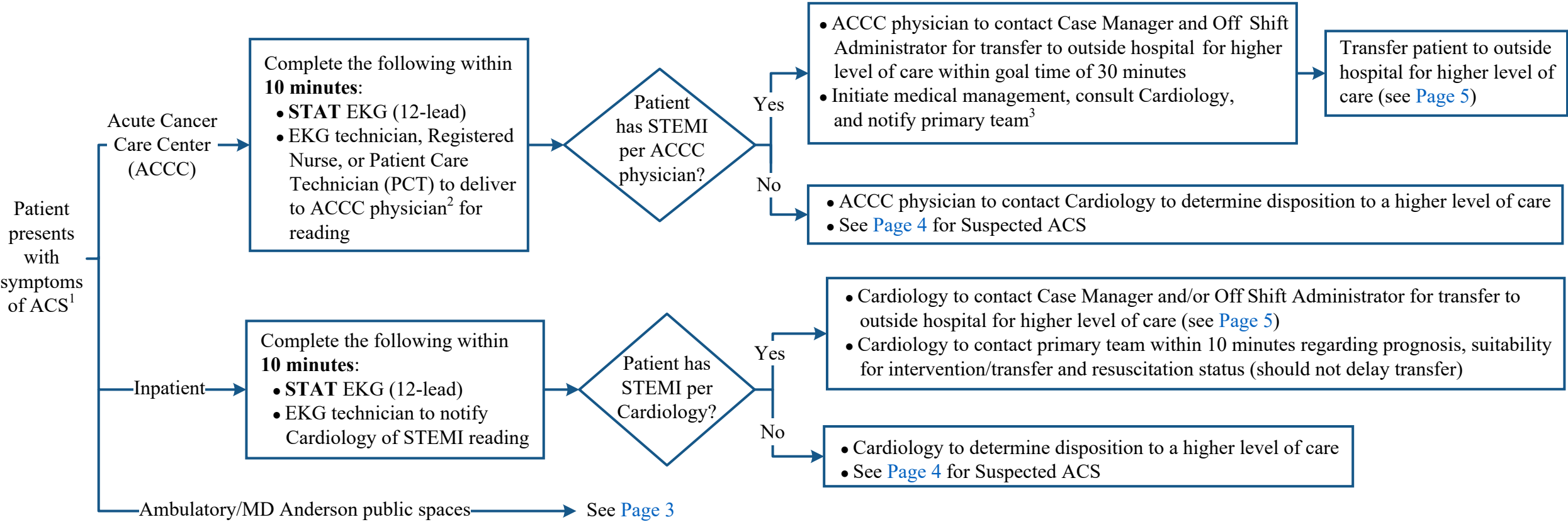
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PRESENTATION AND ASSESSMENT

DISPOSITION

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 = acute coronary syndrome
STEMI = ST-elevation myocardial infarction

¹ ACS 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

² ACCC physician = Medical Screening Examiner (MSE)/triage physician, if available and EKG completed on triage, physician assigned to the patient, or if neither is available, the Clinical Coordinator

³ ACCC physician to perform the following only if able to complete within 10 minutes; DO NOT DELAY TRANSFER

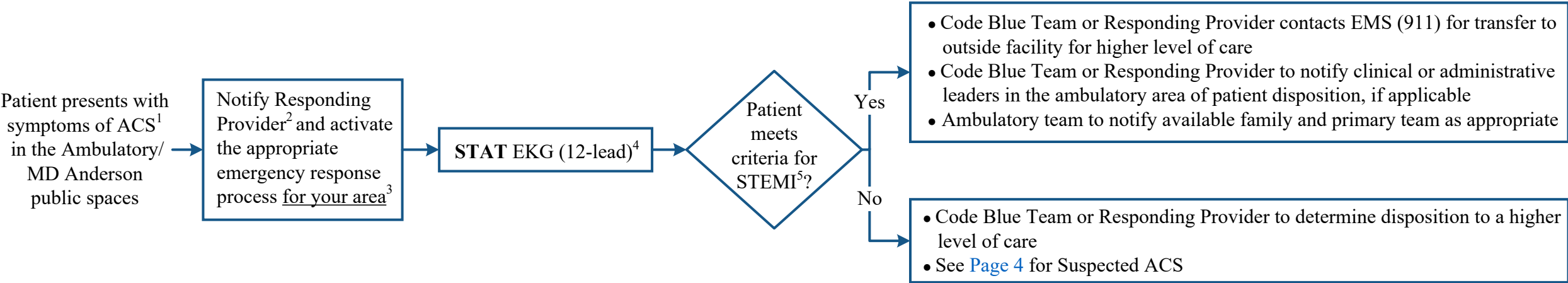
- If no contraindications, initiate medical management:
 - Aspirin 162-325 mg PO once
 - P2Y12 inhibitor loading dose: Clopidogrel 600 mg PO once **or** Ticagrelor 180 mg PO once
 - Anticoagulation-unfractionated heparin (UFH) with additional boluses if needed to maintain therapeutic activated clotting time (ACT)
- Contact Cardiology for confirmation of STEMI
- Contact primary team regarding prognosis, suitability for intervention/transfer and resuscitation status

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PRESENTATION AND ASSESSMENT

DISPOSITION

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**



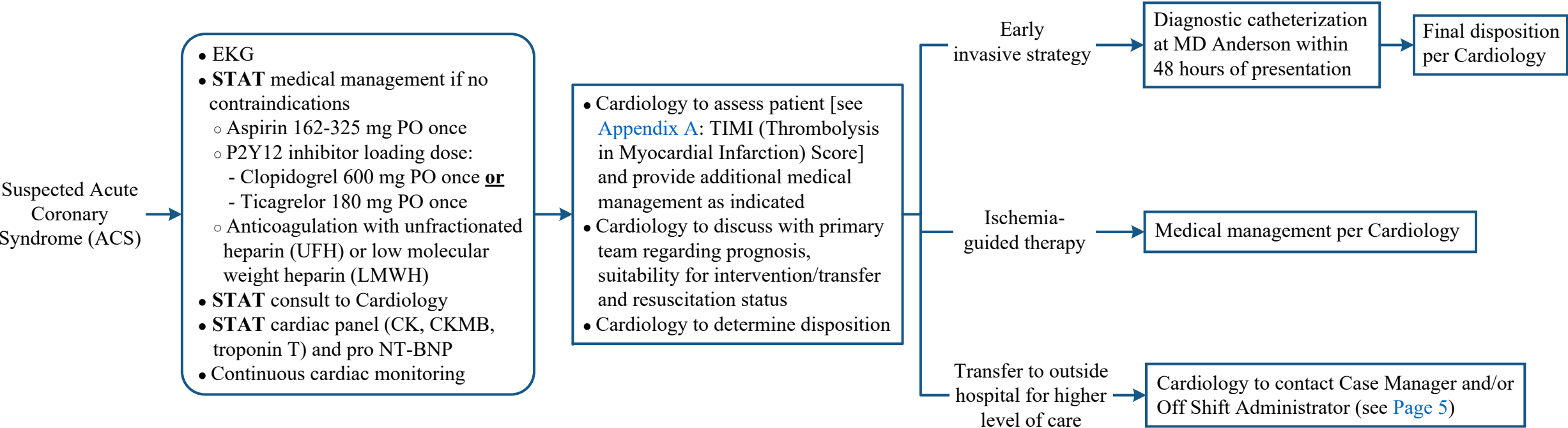
EMS = Emergency Medical Services
STEMI = ST-elevation myocardial infarction

¹ ACS symptoms may include: • Chest pain or discomfort • Shortness of breath • Pain or discomfort in one or both arms, jaw, neck, back, or stomach
² Appropriate provider may include: On-call Provider, Attending Physician, Anesthesiologist, Radiation Oncology Team, or Diagnostic Imaging Team/Radiologist
³ For ambulatory and public spaces, Code Blue Team (713-792-7099) and/or EMS (911) to evaluate and determine disposition as clinically indicated
⁴ If EKG not available, the Code Blue Team or Responding Provider will determine disposition based on clinical presentation
⁵ 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)

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PRESENTATION AND ASSESSMENT

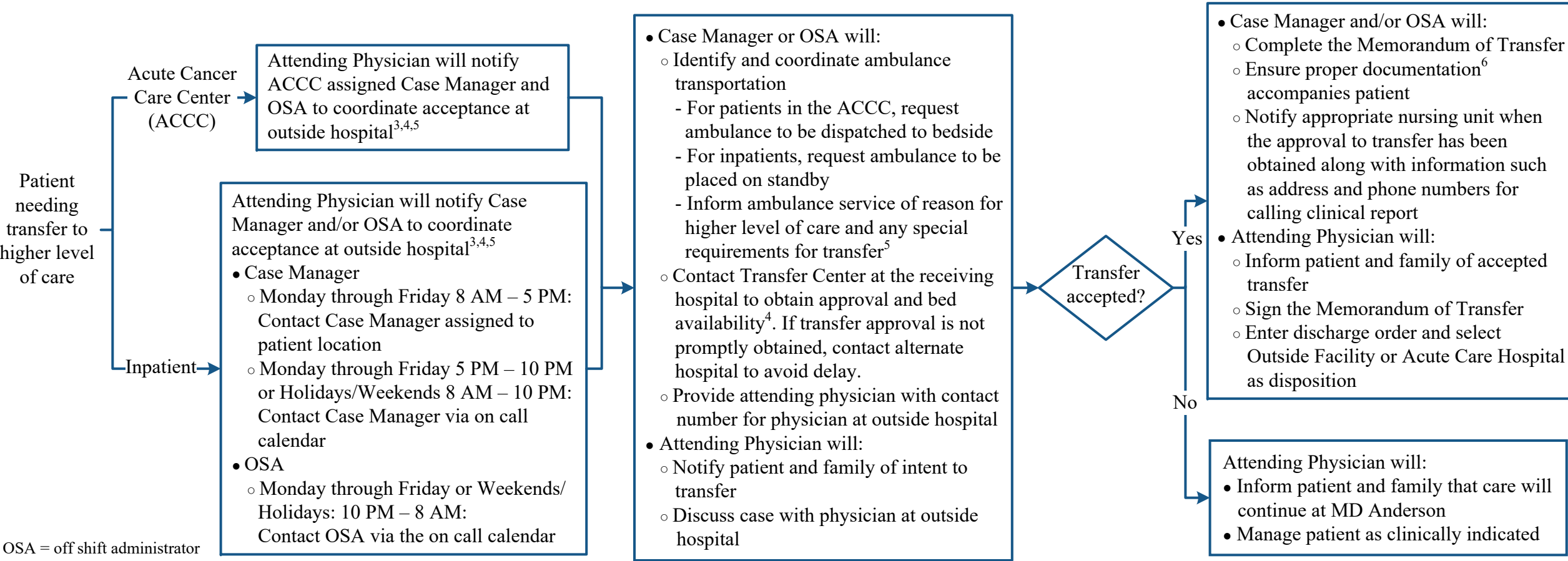
DISPOSITION



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EMERGENCY TRANSFER ADMINISTRATIVE PROCESS^{1,2}

DISPOSITION



OSA = off shift administrator

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 Emergency Medical Screening Examination Stabilization, and Appropriate Transfers Policy (#CLN3280)]

² Emergency Medical Treatment and Labor Act (EMTALA) generally does not apply for admitted patients [see Emergency Medical Screening Examination, Stabilization, and Appropriate Transfers Policy (#CLN3280)]

³ See Transfer of Patients To, From, and Within MD Anderson Cancer Center 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](#).

⁵ Discuss with Attending Physician regarding required level of ambulance team (e.g., basic life support, advanced life support, critical care), equipment and special medications (e.g., infusion pumps, oxygen, ventilator), and special patient-specific factors (e.g., large body habitus, isolation status)

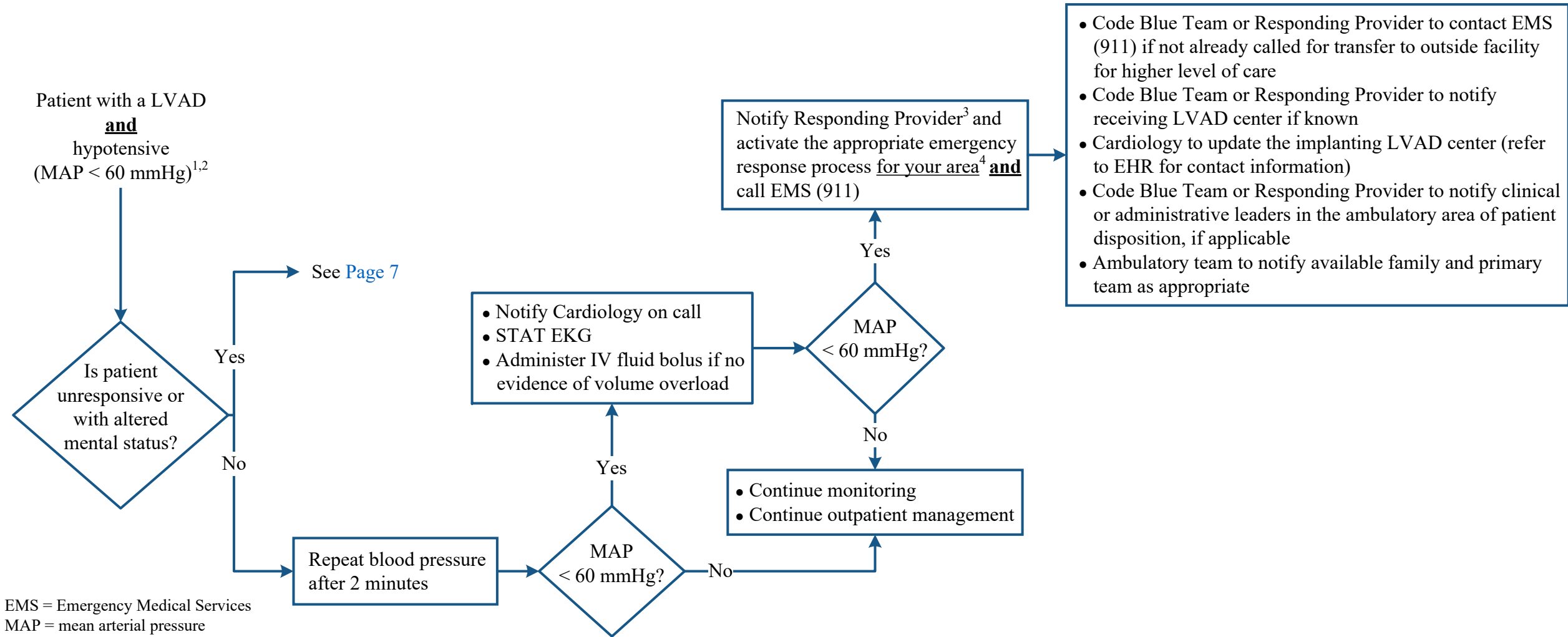
⁶ Documentation: • “Face sheet” • Diagnostic imaging films or CDs as indicated • Other documentation as appropriate
• Medical records to include a current reconciled medication list and transfer orders per primary care team

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PRESENTATION AND ASSESSMENT – Left Ventricular Assist Device (LVAD)

Note: Care for patients with a LVAD is restricted to ambulatory settings in clinics, treatment areas, and/or lab and diagnostic imaging areas on the Main Campus only.

DISPOSITION



¹ Goal MAP 60-85 mmHg

² See [Appendix C](#) for monitoring blood pressures in patients with LVAD

³ Appropriate provider may include: On-call Provider or Attending Physician

⁴ For ambulatory and public spaces, Code Blue Team (713-792-7099) and/or EMS (911) to evaluate and determine disposition as clinically indicated

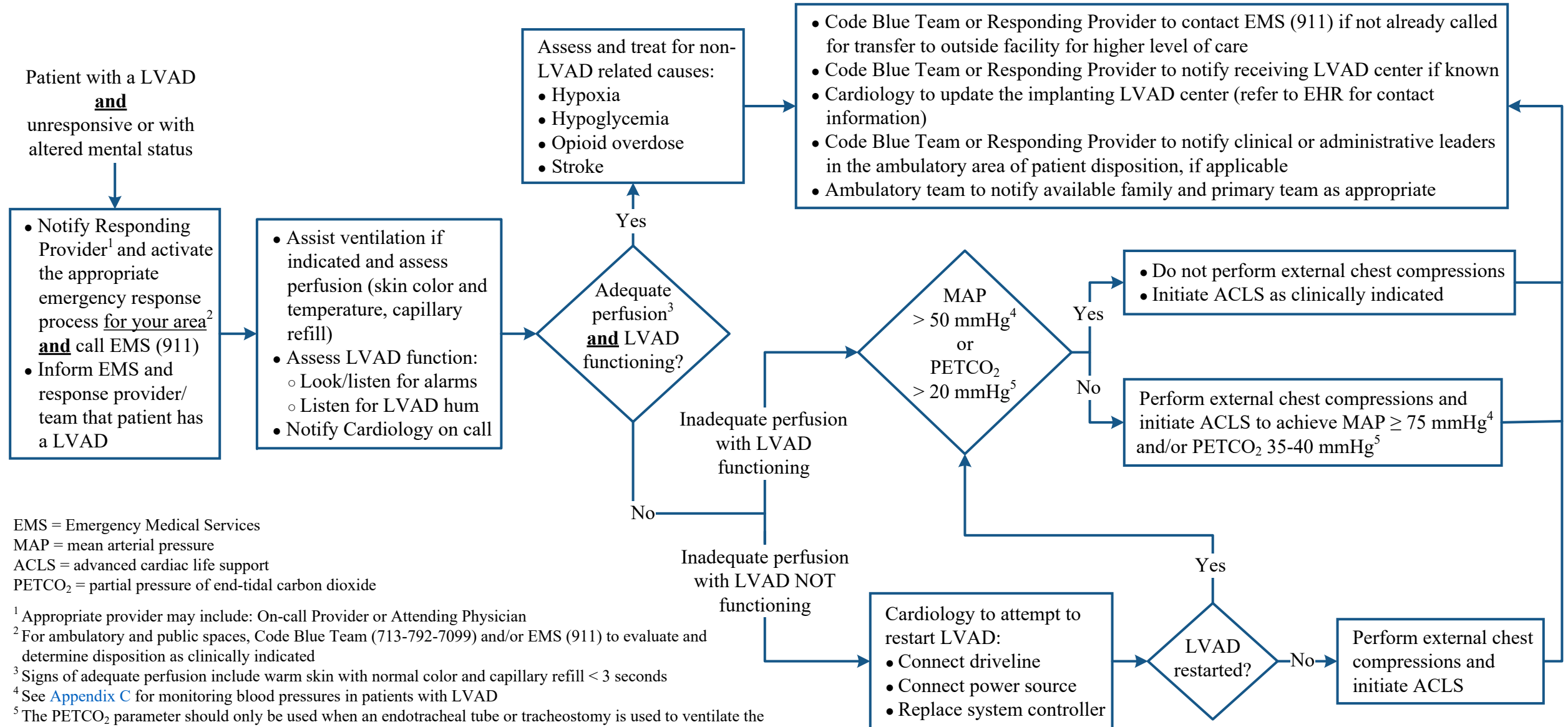
Cardiac Emergencies - Triage/Transfer Process

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PRESENTATION AND ASSESSMENT – Left Ventricular Assist Device (LVAD)

TREATMENT/DISPOSITION

Note: Care for patients with a LVAD is restricted to ambulatory settings in clinics, treatment areas, and/or lab and diagnostic imaging areas on the Main Campus only.



EMS = Emergency Medical Services
MAP = mean arterial pressure
ACLS = advanced cardiac life support
PETCO₂ = partial pressure of end-tidal carbon dioxide

¹ Appropriate provider may include: On-call Provider or Attending Physician

² For ambulatory and public spaces, Code Blue Team (713-792-7099) and/or EMS (911) to evaluate and determine disposition as clinically indicated

³ Signs of adequate perfusion include warm skin with normal color and capillary refill < 3 seconds

⁴ See [Appendix C](#) for monitoring blood pressures in patients with LVAD

⁵ The PETCO₂ parameter should only be used when an endotracheal tube or tracheostomy is used to ventilate the patient. Use of a supraglottic airways results in falsely elevated values.

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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 $\geq 50\%$)
- 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

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APPENDIX B: Texas Medical Center (TMC) Hospital Contact Information

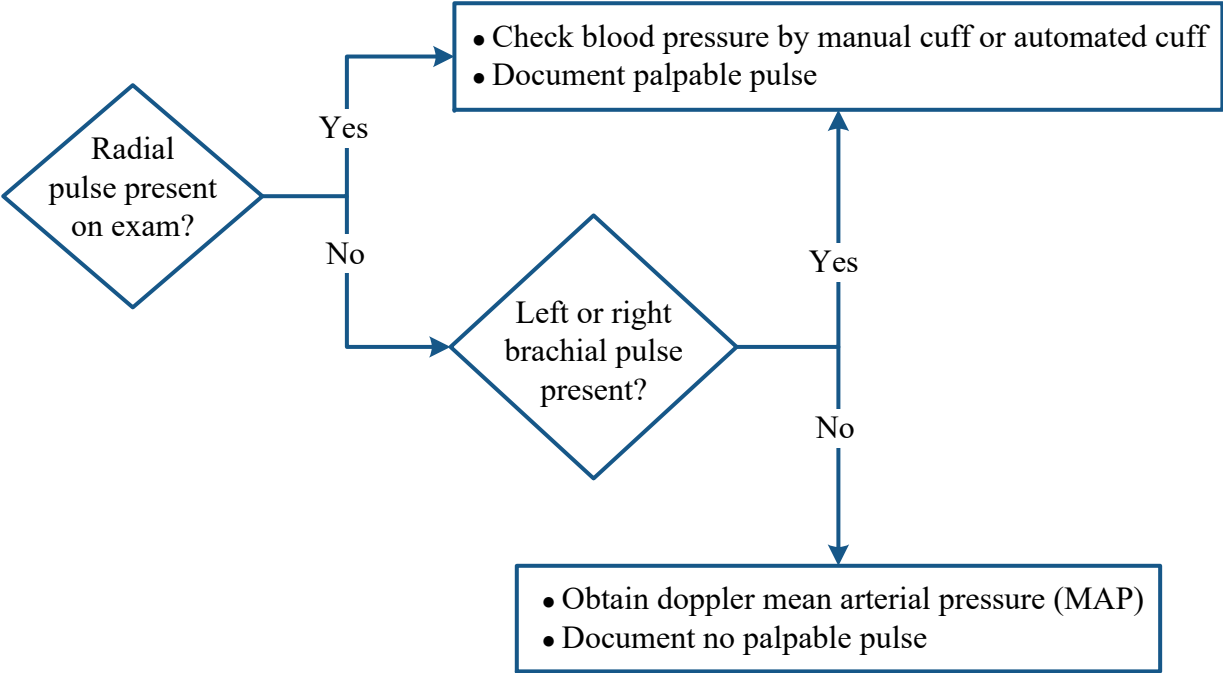
	Memorial Hermann TMC	CHI St. Luke’s TMC	Methodist TMC
For Transfers:	Transfer Center (713) 704-2500	Transfer Center (832) 355-2233	Transfer Center (713) 441-6804

Additional contacts:

	Memorial Hermann TMC	CHI St. Luke’s TMC	Methodist TMC
ACS/STEMI	Fax EKG to (713) 704-0665 (for ACCC patients)	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	On-call STEMI attending via page operator (713) 790-2201 Catheterization Lab (713) 441-5292

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APPENDIX C: Monitoring Blood Pressures in Patients with LVAD



LVAD = left ventricular assist device

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SUGGESTED READINGS

Jneid, H., Addison, D., Bhatt, D. L., Fonarow, G. C., Gokak, S., Grady, K. L., . . . Pancholy, S. (2017). 2017 AHA/ACC clinical performance and quality measures for adults with ST-elevation and non-ST-elevation myocardial infarction: A report of the American College of Cardiology/American Heart Association Task Force on performance measures. *Circulation: Cardiovascular Quality and Outcomes*, 10(10), e000032. <https://doi.org/10.1161/HCQ.0000000000000032>

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

Peberdy, M. A., Gluck, J. A., Ornato, J. P., Bermudez, C. A., Griffin, R. E., Kasirajan, V., . . . O'Neil, B. (2017). Cardiopulmonary resuscitation in adults and children with mechanical circulatory support: A scientific statement from the American Heart Association. *Circulation*, 135(24), e1115–e1134. <https://doi.org/10.1161/CIR.00000000000000504>

Saeed, D., Feldman, D., Banayosy, A. E., Birks, E., Blume, E., Cowger, J., . . . D'Alessandro, D. (2023). The 2023 International Society for Heart and Lung Transplantation guidelines for mechanical circulatory support: A 10-year update. *The Journal of Heart and Lung Transplantation*, 42(7), e1–e222. <https://doi.org/10.1016/j.healun.2022.12.004>

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DEVELOPMENT CREDITS

This practice consensus statement is based on majority opinion of the Emergent Triage/Transfer Process experts at the University of Texas MD Anderson Cancer Center for the patient population. These experts included:

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