LOS ANGELES COUNTY DEPARTMENT OF HEALTH SERVICES
HARBOR-UCLA MEDICAL CENTER

SUBJECT: ST - ELEVATION MYOCARDIAL INFARCTION (STEMI) RECEIVING CENTER **POLICY NO.** 321C

CATEGORY: Provision of Care	**EFFECTIVE DATE:** 5/19
POLICY CONTACT: Dawna Willsey, RN	**UPDATE/REVISION DATE:** 12/21
REVIEWED BY COMMITTEE(S): STEMI Receiving Center Program Committee	

PURPOSE:

1. To establish Emergency Department (ED) Policies and Procedures as required by Los Angeles County Emergency Medical Service Agency standards.

2. To establish protocol to ensure appropriate and timely Percutaneous Coronary Intervention (PCI) consistent with the American Heart Association (AHA)/American College of Cardiology (ACC) guidelines and the Los Angeles County Emergency Medical Service Agency ST Elevation Myocardial Infarction Receiving Center (SRC) standards for those patients with acute ST elevation myocardial infarctions (STEMI).

3. To reduce delays in transferring STEMI patients from outside non-SRC facilities to Harbor-UCLA Medical Center.

POLICY:

Harbor-UCLA Medical Center Cardiac Catheterization Laboratory (Cath Lab) personnel, including the Interventional Cardiologist attending physician, are available for STEMI patients requiring emergent cardiac intervention as identified by in-house physicians or the Emergency Department (ED) physician, 24 hours a day, 7 days a week to achieve a medical contact to device (balloon, thrombectomy, device, etc.) time consistent with the AHA/ACC Guidelines and the Los Angeles County Emergency Medical Service Agency ST Elevation Myocardial Infarction Receiving Center (SRC) standards.

PROCEDURE:

I. IDENTIFICATION OF THE STEMI PATIENT

A. Pre-hospital Patients

STEMI patients may be identified in the pre-hospital/9-1-1 setting by a 12-lead ECG tracing with greater than 1mm ST-segment elevation in two or more contiguous leads as identified by

paramedic interpretation and/or if computer analysis indicates "ST Elevation Acute MI" (or manufacturer's equivalent). If a STEMI is identified in the field by software or paramedic interpretations, the ECG tracing shall be transmitted to Harbor-UCLA by prehospital personnel, concurrent with base contact. It is the responsibility of the Mobile Intensive Care Nurse (MICN) or Base Hospital Physician (BHP) answering the radio call, download the transmitted ECG and present to the ED attending. It is the ED attending's discretion and responsibility to determine the STEMI diagnosis and activate "**Code STEMI**", when appropriate, utilizing the EMS (Emergency Medical Service) Algorithm for Cath Lab Activation (Reference No. 1303). If upon review of the ECG and presentation of the patient as described by prehospital personnel, the ED attending agrees with STEMI impression and patient meets Cath Lab activation criteria, the "Code STEMI" shall be activated by the ED attending prior to patient arrival. If patient as presented by prehospital personnel does not meet all criteria for Cath Lab activation as described in Ref 1303, patient shall be transported to Harbor-UCLA, if nearest SRC, and shall be assessed by the ED physician with repeat ECG performed immediately upon arrival.

B. Patients Transferred from Outside Hospitals

Outside hospitals that do not have 24/7 Cardiac Catheterization capabilities may urgently transfer STEMI patients requiring emergent catheterization to the ED at Harbor-UCLA Medical Center. The referring hospital shall transmit the relevant ECG and shall call the ED on the Radio Room recorded phone line to discuss the case with the ED attending. The ED attending shall review the ECG and confirm STEMI diagnosis and shall ensure that the patient is not already admitted on the inpatient service at the facility (inpatients with STEMI should NOT be transferred to the ED via this process). The Attending ED physician should briefly discuss the case with the referring physician, with every effort made to facilitate the transfer. When there is disagreement about the need to transfer a patient with STEMI on ECG (as defined by Ref 1303 and 1308), the REFERRING PHYSICIAN'S JUDGEMENT SHOULD TAKE PRECEDENCE.

For patients with Acute Coronary Syndrome that is not a STEMI on ECG, the referring facility may arrange transfer to the ED at Harbor-UCLA via the Medical Alert Center (MAC) transfer route for urgent cardiac catheterizations.

C. Patients in the ED at Harbor-UCLA

All adult patients who self-present to the ED Triage Area with a chief complaint suggestive of myocardial ischemia, or who develop complaints suggestive of myocardial ischemia while undergoing evaluation for unrelated complaints, will have an ECG performed rapidly and will be presented to the ED attending for review, per Harbor-UCLA DEM Policy 21.4 "Core of the Potential Myocardial Ischemia Patient in Triage". It is the ED attending's discretion and responsibility to determine the STEMI diagnosis and activate "**Code STEMI**", if appropriate.

II. CATH LAB ACTIVATION

A. STEMI

The following process will be used to notify the "Code STEMI" team when the ED is awaiting the arrival of a pre-hospital patient, identifies a STEMI patient in the ED, or when an admitted patient in the ED is identified as a STEMI. The "Code STEMI" team will consist of the on-call Interventional Cardiology attending physician, the on-call Cardiology fellow, Cardiac Cath Lab nurses and other Cath Lab staff as appropriate.

1. If a STEMI patient is identified in the pre-hospital setting or ED as described in Section I. Identification of the STEMI patient (above), it is the ED attending's responsibility to immediately request the ED clerk or MICN to activate a **"Code STEMI"** and to transmit the ED ECG to the Code STEMI team.

2. The Code STEMI team will be contacted by a designated simultaneous group page to all members.

3. The Cardiology fellow or Interventional Cardiology attending physician of the Code STEMI team will respond by contacting ED attending physician within 10 minutes of receiving the page, acknowledging the **CODE STEMI** page and, if the on-call cardiologist agrees with the STEMI diagnosis by ECG review, that they are en-route to the ED/Cath Lab with an expected estimated time of arrival of 30 minutes.

4. If there is a delay in response from the Code STEMI team that is greater than 10 minutes, the ED staff will contact the on-call Interventional attending directly by contacting the alternative phone number provided to the ED by the Cardiology Department on the monthly Cath Lab call schedule to assure the **CODE STEMI** attending physician received the page.

5. If the Interventional Cardiology attending does not find the prehospital or ED ECG to be consistent with STEMI, s/he will contact the ED attending by phone to cancel the **Code STEMI**, and to discuss further evaluation/disposition of the patient, including indications for **"Code STEMI"** reactivation.

6. Primary PCI is the standard of care for a STEMI patient. However, if there is a delay of >90 minutes for performance of a Primary PCI procedure, fibrinolytic therapy should be considered.

7. Additional patient evaluations and procedural consent are the responsibility of the CODE STEMI team (attending physician and fellow). The patient will not be transported to the Cath Lab until the two CODE STEMI Cath Lab nurses have arrived and are present for the procedure.

B. SRC DIVERSION

The hospital may be placed on SRC diversion status for any one of the following reasons:

1. The Cath Lab is encumbered due to Cath Lab personnel already fully committed to caring for a STEMI patient currently in the Cath Lab.

2. The Cath Lab is not functioning due to major equipment failures.

3. The hospital is on status of Internal disaster.

If any of the above criteria are met, the Cath Lab attending physician or Cath Lab staff will notify the MICN in the ED and the Hospital Flow Facilitator who will communicate the closure of the Cath Lab to the ED attending, Charge Nurse, MICN, and Administration. EMS agency will be notified of internal disaster or major Cath Lab equipment failure. The rationale for the temporary SRC

diversion shall be communicated to all concerned parties. The Hospital Flow Facilitator will relay the change in status to the MICN at the radio base station, who will then communicate the change (via the ReddiNet application).

Any pre-hospital STEMI patients identified during SRC diversion should be diverted via base station personnel to the next most accessible open SRC, regardless of ED diversion status (Ref 513).

If STEMI is identified in a patient already in the ED at Harbor-UCLA, the ED attending should contact the most accessible open SRC, via the base station consoles, to arrange IFT to the most accessible open SRC. The MICN and ED Charge Nurse will attempt to contact an ALS or CCT County Transport unit, as appropriate to patient's clinical condition, to transfer the patient. If no appropriate County Transport unit is available for arrival within 10 minutes, the MICN will call 9-1-1 to request transfer of patient to the accepting SRC.

III. DATA COLLECTION

Data involving STEMI and patients administered Therapeutic Hypothermia data are collected and entered into the SRC database per the EMS Agency SRC standards. Data fields are determined and agreed upon per the SRC/ROSC (Return of Spontaneous Circulation) Advisory Committee and are subject to change as deemed necessary.

IV. QUALITY IMPROVEMENT

The SRC Program Medical Director will be responsible for the ongoing STEMI and Therapeutic Hypothermia Quality Improvement Program and oversight of the following:

A. All Code STEMI, Inter-facility transfers and Therapeutic Hypothermia cases will be reviewed quarterly by the Division of Cardiovascular Medicine Quality Improvement Meetings.

B. All referring hospitals sending STEMI referrals will receive a timely QI report with all patients transferred to Harbor-UCLA Medical Center.

C. Pre-hospital patients transported to Harbor-UCLA as a STEMI Receiving Center will be tracked, trended, and evaluated for compliance with guidelines, with outcomes, and trends reported to the Committee. This includes patients for whom Code STEMI was activated, and those patients who upon evaluation by the ED staff, were not found to have a STEMI.

D. The Division of Cardiology SRC Committee will meet quarterly and include, at a minimum, the following representatives:
   1. SRC Program Medical Director
   2. Interventional Cardiologists
   3. ED physician
   4. Cath Lab nurses
   5. Pre-hospital Care Coordinator
   6. Representatives of pre-hospital public provider agencies

E. Review of the following categories will occur in the SRC Committee and/or Cardiology Cath Lab Quality Improvement meetings:

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1. All pre-hospital patients transported to Harbor-UCLA as the SRC
2. All STEMI adverse outcomes
3. All fall-outs with medical contact to intervention/needle goal times > 90 minutes
4. All fall-outs among transferred patients of first medical contact to intervention goal times > 120 minutes
5. All fall-outs that do not meet the 10-minute door to 12 lead ECG benchmark (excludes cardiac arrest patients)

F. 100% attendance of the EMS Agency's QI Meetings is required. If the SRC Program Medical Director is not available, fifty percent (50%) of the meeting may be attended by one of the following per Department of Health Services County of Los Angeles EMS Agency Reference No. 320D.
   1. Attending Interventional Cardiologist from the same SRC.
   2. By conference/by phone call when available.

REFERENCES:

Los Angeles County Emergency Medical Service Agency Prehospital Care Manual @ http://dhs.lacounty.gov/wps/portal/dhs/ems/prehospitalcaremanual
LA County Department of Health Services, EMS Agency Ref. No 320
LA County Department of Health Services, EMS Agency Ref. No. 513
LA County Department of Health Services, EMS Agency Ref. No. 513.1
LA County Department of Health Services, EMS Agency Ref. No. 1303
LA County Department of Health Services, EMS Agency Ref. No. 1308

Reviewed and approved by:
Medical Executive Committee on date 12/2021

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