(PARAMEDIC, MICN)

SUBJECT: **NON-TRAUMATIC CARDIAC ARREST PATIENT DESTINATION**

REFERENCE NO. 516

PURPOSE: To ensure that 9-1-1 patients in non-traumatic cardiopulmonary arrest are transported to the most appropriate facility that is staffed, equipped, and prepared to perform resuscitative measures.

This policy does not apply to traumatic arrest or to decompression emergencies. For traumatic arrest, refer to Ref. No. 506, Trauma Triage. For decompression emergencies, refer to Ref. No. 518, Decompression Emergencies/Patient Destination.

AUTHORITY: Health & Safety Code, Division 2.5, Sections, 1798

DEFINITIONS:

Cardiac Etiology: Sudden cardiac death from ischemic heart disease, congenital heart disease, channelopathy, or dysrhythmia. One presumes cardiac etiology when it is a sudden event without evidence of alternate causes (e.g. trauma, terminal illness, overdose, sepsis, drowning, or respiratory arrest).

Extracorporeal Cardiopulmonary Resuscitation (ECPR) Receiving Center: A licensed general acute care facility that is designated by the Los Angeles County EMS Agency as a STEMI Receiving Center (Ref. No. 320), and ECPR Receiving Center (Ref. No. 321).

Return of Spontaneous Circulation (ROSC): The restoration of a spontaneous perfusing rhythm. Signs of ROSC include: palpable pulse, breathing (more than an occasional gasp), a measurable blood pressure and/or a sudden rise in capnography to a normal/high reading.

ST-Elevation Myocardial Infarction (STEMI): An acute myocardial infarction that generates ST-segment elevation on the prehospital 12-lead electrocardiogram (ECG).

STEMI Receiving Center (SRC): An acute care facility licensed for a cardiac catheterization laboratory and cardiovascular surgery by the California Department of Public Health and designated by the Los Angeles County EMS Agency as a SRC.

PRINCIPLES:

1. In all cases, the health and well-being of the patient is the overriding consideration in determining patient destination. Factors to be considered include: clinical presentation, severity and stability of the patient's condition; current status of the SRC; anticipation of transport time; and request by the patient, family, guardian or physician.

2. Optimal post cardiac arrest treatment may include an interventional cardiac procedure in a significant percentage of patients.

APPROVED: Richard Tadeo
Director, EMS Agency

Medical Director, EMS Agency

3. Resuscitation efforts for patients greater than 14 years of age who are in non-traumatic cardiopulmonary arrest should take place in the field until ROSC is achieved or the patient is pronounced. Transport of patients without ROSC is discouraged with the exception of patients who meet ECPR criteria and are transported on a mechanical compression device.

4. For cardiac arrest in patients age 14 and younger, refer to Ref. No. 510, Pediatric Patient Destination.

5. Patients with refractory ventricular fibrillation (3 or more shocks) or EMS witnessed arrests of presumed cardiac etiology may benefit from transport despite prolonged resuscitation.

6. Patients in cardiac arrest with hanging or submersion mechanisms are asphyxial in the large majority of cases and should be considered a medical cardiac arrest for field management and transport destination unless there is strong evidence of cervical spine injury.

POLICY:

I. Establish base hospital contact for medical direction for all cardiac arrest patients who do not meet criteria for determination of death per Ref. No. 814, Determination/Pronouncement of Death in the Field.

II. For patients with STEMI complicated by out-of-hospital cardiac arrest, direct contact with the receiving SRC shall be established for patient notification and/or to discuss cath lab activation criteria.

III. Patients with non-traumatic cardiac arrest who meet ALL of the following criteria should be transported to the closest ECPR Receiving Center if ground transport is 30 minutes or less regardless of service area boundaries:

A. Age ≥15 to ≤75 years old

B. Mechanical compression device (MCD) is available and the patient's body habitus can accommodate the use of the device

C. Initial shockable rhythm with refractory or recurrent ventricular fibrillation/ventricular tachycardia OR presumed massive pulmonary embolus given clinical circumstances of the arrest

D. Scene time can be limited to no more than 15 minutes (no system or patient factors that will significantly delay transport)

E. The patient does NOT: have a do-not-resuscitate order, known terminal illness, or baseline severe neurologic dysfunction.

IV. For transports to the ECPR receiving center, contact should be made directly with the receiving ECPR center as soon as possible **while en route.**

V. Patients in non-traumatic cardiac arrest who do not meet ECPR criteria shall be transported to the most accessible SRC if ground transport is 30 minutes or less including:

A. Patients with sustained ROSC

B. Patients with ROSC who re-arrest en route

C. Patients with persistent cardiac arrest for whom the Base Physician determines transport is required, because futility is not met despite lack of ROSC with on scene resuscitation

D. Patients transported on Base judgment for ECPR when the closest SRC is an ECPR receiving center

E. Patients who have progressed into cardiopulmonary arrest while en route and had a pre-arrest STEMI 12-lead ECG.

VI. For patients who deteriorate into out-of-hospital cardiac arrest while en route to the most assessible receiving facility (MAR), rerouting to the closest SRC should be considered when feasible based on available resources and estimated transport times.

VII. Cardiac arrest patients should be transported to the most accessible SRC (and ECPR receiving center when applicable) regardless of **ED Diversion** status.

VIII. If ground transport time to a SRC is greater than 30 minutes, the patient shall be transported to the MAR.

VI. For ECPR patients: If the closest ECPR receiving center is on ECPR diversion AND there is another ECPR center available within a 30 minute transport, consideration should be made to route to the next open ECPR center <u>if total time from cardiac arrest to that ECPR center is less than 60 minutes</u>. If no open ECPR center is reachable within these time intervals, the patient shall be transported to the closest SRC regardless of ECPR status.

VII. If the closest SRC has requested **STEMI Diversion** (as per Ref. No. 503), cardiac arrest patients <u>with</u> STEMI should be transported to the **next** most accessible **open** SRC if ground transport time is less than 30 minutes, otherwise transport will continue to the closest SRC. Cardiac arrest patients <u>without</u> STEMI should be routed to the closest SRC regardless of ED or STEMI Diversion status.

CROSS REFERENCE:

<u>Prehospital Care Manual:</u>

Ref. No. 320, **ST-Elevation Myocardial Infarction (STEMI) Receiving Center (SRC) Standards**
Ref. No. 321, **ECPR Receiving Center Standards**
Ref. No. 501, **Hospital Directory**
Ref. No. 502, **Patient Destination**
Ref. No. 503, **Guidelines for Hospitals Requesting Diversion of ALS Units**
Ref. No. 506, **Trauma Triage**

Ref. No. 510, **Pediatric Patient Destination**
Ref. No. 517, **Private Provider Agency Transport/Response Guidelines**
Ref. No. 518, **Decompression Emergencies/Patient Destination**
Ref. No. 814, **Determination/Pronouncement of Death in the Field**
Ref. No. 1210, **Cardiac Arrest**
Ref. No. 1303, **Algorithm for Cath Lab Activation**
Ref. No. 1308, **Cardiac Monitoring/12-Lead ECG**