COUNTY OF SAN MATEO
EMERGENCY MEDICAL SERVICES

POLICY NO:	PROC-15
DATE ISSUED:	6/6/2005
DATE REVISED:	7/2018
DATE TO BE REVIEWED:	7/2020

PREHOSPITAL 12-LEAD ELECTROCARDIOGRAM

Purpose:

1. To provide prehospital providers with guidance for performing, interpreting, and transmitting EKGs
2. To Identify patients with STEMI for transportation to the closest appropriate STEMI Receiving Center (SRC)
3. To provide SRCs with early notification of patients with EKG changes suggestive of acute myocardial disease in order to facilitate appropriate and rapid hospital response

Indications

1. Adult patients with any of the following:
    a. Non-traumatic pain or discomfort in the torso, abdomen, jaw or chest
    b. Dyspnea without known history of asthma or COPD
    c. Syncope
    d. Symptomatic bradycardia or tachycardia
2. Any patients with the following:
    a. Complaints of palpitations or objective findings of an irregular pulse
    b. Chest pain reported or suspected associated with cocaine or other stimulant use
    c. Post cardiac arrest with ROSC (Return of Spontaneous Circulation)
    d. Diaphoresis of unknown etiology
    e. Symptoms concerning to the paramedic
    f. Termination of resuscitation efforts

Procedure

1. The first responding prehospital provider shall obtain a 12 lead EKG as quickly as possible
2. If *******ACUTE MI SUSPECTED******* (or its equivalent) is noted on the EKG, transmission to the anticipated STEMI Receiving Center (SRC) should occur immediately
    a. If the paramedics are unable to transmit an EKG, they should contact the intended SRC immediately. If first response paramedic is unable to transmit the EKG a copy will be provided to the transporting agency and given to the SRC. If the transporting agency is unable to transmit the EKG a copy will be provided to the SRC.
3. A 12-lead EKG may be transmitted to the closest SRC for physician consultation at the paramedic's discretion when there is concern for acute EKG findings other than *******ACUTE MI SUSPECTED******* mentioned above

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4. After any transmission of the EKG, the paramedic shall contact the intended SRC to confirm reception of the EKG
5. A physician at the SRC will review the transmitted EKG. The SRC will then facilitate the appropriate hospital response
6. Repeat EKGs for changes in symptoms, rhythm, or as deemed necessary by the paramedic
7. Copies of all EKGs shall be left with the PCR

Documentation

1. Document initial 12-lead EKG and the ST findings on the PCR in the section for EKG findings
2. Document any additional findings or changes in the Treatment and Response section
3. Document the patients name and age on the EKG Transmission or any printed copy of the EKG
4. An electronic copy of the 12 lead EKG and/or any abnormal rhythm strip that may document the necessity for medical treatment shall be merged with the PCR
5. Leave a copy of the PCR and 12-lead EKGs

Hospital Report

1. The intended receiving hospital shall be notified of the patient as soon as possible at the initiation of transport
2. The standard radio report will include the following:
    a. Age and gender of the patient
    b. Chief Complaint
    c. Presentation (OPQRST)
    d. Significant medical history
    e. Vital Signs
    f. Confirmation that EKG transmission has been received
    g. Treatments
    h. ETA to facility

Precautions and Comments

1. The patient is to be treated per the appropriate protocol
2. Note that a normal EKG does not rule out significant myocardial disease

12-Lead Placement

- Excess hair should be removed from the lead locations to ensure proper contact of electrodes
- Limb Leads are usually placed on the extremities. The leads may be moved proximal if needed but should not be placed on the trunk
- Placement of the chest leads should be as follows:
  - V-1 The fourth intercostals space at the right sternal border
  - V-2 The fourth intercostals space at the left sternal border
  - V-3 Directly between V-2 and V-4
  - V-4 5th intercostals space left of mid-clavicular line
  - V-5 Level with lead 4 at the left anterior axillary line
  - V-6 Level with lead 5 at the left mid-axillary line