

OPTIONAL SUPPLEMENTAL PROGRAM  
EMT ACQUISITION OF 12-LEAD  
ELECTROCARDIOGRAPHY

## G. EMT ACQUISITION OF 12-LEAD ELECTROCARDIOGRAPHY

### 1. PURPOSE

Coronary heart disease is the single largest cause of death in U.S. men and women. Early identification and treatment of patients with acute myocardial infarction (AMI) has proven to reduce myocardial damage and decrease morbidity and mortality. The goal of this program is to allow an EMT to acquire and transmit a 12-lead (15-lead if trained to perform) electrocardiogram (EKG) to the receiving facility and possibly reduce the door to reperfusion time for the AMI patient.

### 2. PRESENTATION

Chest discomfort that may radiate to the arm, shoulders, jaw, or back. Generally described as a crushing pain or toothache. May be accompanied by shortness of breath, sweating, nausea, or vomiting.

OR

- a) Chest discomfort. Some heart attacks involve discomfort in the center of the chest that lasts for more than a few minutes or that goes away and comes back. This discomfort can feel like uncomfortable pressure, squeezing, or fullness.
- b) Discomfort in other areas of the upper body. Symptoms can include discomfort in one or both arms or in the back, neck, jaw, or stomach.
- c) Shortness of breath. This symptom often accompanies chest discomfort. However, it can also occur prior to the chest discomfort.
- d) Other signs. These may include breaking out in a cold sweat, nausea, light-headedness, or a sense of impending doom.
- e) Post-cardiac arrest with ROSC.
- f) Medical history and contributing factors.
  - (1) A previous heart attack or procedure to open up coronary arteries
  - (2) Family history of heart disease
  - (3) Diabetes mellitus
  - (4) High blood pressure
  - (5) High blood cholesterol
  - (6) Overweight
  - (7) Physical inactivity
  - (8) Cigarette smoking

**OPTIONAL SUPPLEMENTAL PROGRAM  
EMT ACQUISITION OF 12-LEAD  
ELECTROCARDIOGRAPHY**

### **3. INDICATIONS**

Any patient complaining of chest discomfort or exhibiting signs, symptoms, or medical history as outlined in Section 2 (Presentation).

### **4. CONTRAINDICATIONS**

Acquisition of a 12-lead EKG should not take precedence over required life-saving measures (e.g., CPR, assisting respirations, clearing or maintaining a patient's airway, checking blood glucose, extrication, or removing a patient from a dangerous scene).

### **5. PROCEDURE**

- a) Initiate General Patient Care.
  - b) Initiate Cardiac Emergencies: Chest Pain Protocol.
  - c) Position patient (1) (2).
  - d) Place chest and limb leads (3) (4).
  - e) Turn on monitor.
  - f) Set patient age and a patient identifier.
  - g) Acquire 12-lead (5).
  - h) Consult with receiving facility.
  - i) Transmit 12-lead (6).
  - j) Continue patient care.
- (1) Unrestricted access to the skin in the chest area, arms, and lower legs is required to allow for correct placement of electrodes. Do your best to protect the patient's privacy. Once the electrodes are positioned and connecting leads are appropriately attached, the patient should be covered with a sheet to preserve their dignity during the procedure.
  - (2) If unable to place patient in the recumbent position, include this information in your hospital consult and note it in the written narrative of your patient care report.

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EMT ACQUISITION OF 12-LEAD  
ELECTROCARDIOGRAPHY**

- (3) Remove electrodes from a sealed package immediately before use. Using previously unpacked electrodes or electrodes with expired date codes may impair EKG signal quality.
- (4) When placing electrodes on female patients, always place the leads V3-V6 under the breast rather than on the breast.
- (5) Acquisition of a 12-lead EKG should take no more than 5 minutes.
- (6) Transmission of the 12-lead EKG to the receiving facility should be done en route to the receiving facility. There is no need to delay transport to transmit a 12-lead EKG.

**6. INDIVIDUAL EMT APPROVAL FOR PARTICIPATION**

- a) The EMT 12-Lead EKG Program is open to all Maryland EMTs that have been providing direct patient care for a minimum of one year.
- b) Clinicians must be members of an ALS company that currently owns a local system compatible 12-lead device.

**7. ONGOING DEMONSTRATION OF PROFICIENCY**

After the initial training program is completed, the EMT will participate in an annual refresher training program.

**8. REVIEW OF EACH CALL**

- a) The clinician will submit copies of each 12-lead EKG and patient care report to their jurisdictional Quality Review Committee.