

12-Lead ECG

Paramedic/ALS Required

Indications:

1. A 12-lead ECG is indicated and must be performed on patients exhibiting any of the following signs/symptoms:
 - A. Chest pain or pressure
 - B. Abdominal pain
 - C. Syncope
 - D. Shortness of breath
 - E. Pain/discomfort which are often associated with cardiac ischemia:
 - a. Jaw, neck, shoulder, left arm or other presentations; unless no other symptoms exist and the cause of the specific pain can be identified with a traumatic or musculoskeletal injury.
 - b. If there is any doubt about the origin of the pain/discomfort, or the presentation seems atypical for the mechanism, a 12-lead should be performed.
2. Patients exhibiting any of the following signs/symptoms must have a 12-lead ECG performed if the etiology of the illness is indicative of an Acute Coronary Syndrome or the etiology of the illness is indeterminate:
 - A. Nausea
 - B. Vomiting
 - C. Diaphoresis
 - D. Dizziness
 - E. Patient expression of “feelings of doom”
3. A 12-lead ECG should be performed based on the clinical judgment of the paramedic even in the absence of the above signs/symptoms.

Procedure:

1. Follow **General Pre-hospital Care-Treatment Protocol**.
2. Perform 12-lead ECG per manufacturer guidelines.
3. When a STEMI (ST Elevation Myocardial Infarction) is identified by ECG and confirmed by the paramedic designated as the team leader, notification of the destination hospital will occur as soon as practical so the Cath Lab activation process can begin. At the beginning of the report to the hospital EMS personnel should say, “STEMI Alert.” Once the hospital has acknowledged the crew member the words “STEMI Alert” should be repeated and the remainder of the report given. In addition, the crew will identify the patient’s cardiologist (if they have one) or the primary care physician (if they do not have a cardiologist). Once obtained this information will be shared with the receiving hospital during their radio report. The hospital will activate their Cath Lab process unless there is conflicting evidence to not activate (i.e.

hospital receives and reviews ECG concurrently and the hospital does not agree with paramedic STEMI diagnosis; patient contraindications; or refusals of care).

4. Alternative 12-lead ECG lead placement.
 - A. 12-leads that exhibit contiguous ST segment elevation in leads II, III, or aVF should have a right sided 12-lead ECG performed with a minimum of V4r.
 - B. 12-leads that exhibit ST segment depression in V1-V4 with accompanying ACS symptoms should have a posterior 12 Lead performed with a minimum of 2 leads.
 - i. V4 becomes V7, V5 becomes V8, and V6 becomes V9.
5. The STEMI Report relayed to the receiving facility should include the following:
 - A. Location of MI, "ST elevation, consider _____ injury".
 - B. Time of onset of the chest pain if present.
 - C. Current level of pain.
 - D. Cardiac history (previous MI, CHF, CABG, Angioplasty or Stent).
6. Transport patients per GCMCA transport protocol.
7. Repeat 12 Lead is indicated for prolonged transports or changes in condition.
 - A. Patients that meet criterial for initial 12-lead ECG should have leads left in place during transport
 - B. 12-lead should be repeated every 5-10 minutes for any patient if they met the initial criteria for a 12-lead ECG.
 - C. Devices with active ST segment monitoring do not require repeat ECGs unless there is a noticeable change in the patient's condition.