

EL DORADO COUNTY EMS AGENCY

FIELD PROCEDURES

Effective: July 1, 2013

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Revised: July, 2017



EMS Agency Medical Director

12 LEAD EKG

PURPOSE:

The 12-lead EKG shall be performed as part of a complete patient assessment when medical history and/or presenting complaints consistent with acute coronary syndrome are present within adult and pediatric patients. The acquiring of a 12-lead EKG should not delay immediate treatment needs or delay transport.

INDICATIONS:

A 12-lead EKG will be considered on adult and pediatric patients with the following presentations:

- Chest, jaw, arm or shoulder pain/discomfort
- Dysrhythmia
- Shortness of breath / dyspnea
- General weakness
- Syncope or near-syncope
- Suspected CVA/stroke
- Epigastric discomfort
- Diaphoresis inconsistent with environment
- Diabetic patients with unusual complaints
- Patients with a history of CHF, coronary artery disease, or cardiac transplant
- Resuscitated cardiac arrest patient
- Other signs or symptoms suggestive of acute coronary syndrome
- Any patient the paramedic feels would benefit from a 12-lead assessment

CONTRAINDICATIONS:

- Patients who have been subjected to trauma prior to initiating transport
- Cardiac arrest (on-going)

PROCEDURE:

1. The patient's age, first initial, and full last name must be programmed into the monitor before the EKG is acquired. This will prevent ID patient errors.
2. Treatment / 12 Lead EKG / transport destination decision should occur concurrently. In order to reduce on scene times, First Responders should attempt to place the EKG electrodes prior to the arrival of the medic unit, whenever practical.
3. EKGs must be transmitted to the respective base hospital for physician interpretation.

Acquiring 12-lead:

1. Place patient in supine position whenever possible.
2. Bare the chest and prepare the patient's skin for electrode placement. Dry the skin if it is excessively moist.
3. For EKGs on female patients please be sensitive when exposing or touching the breast. If possible, the bra should be left on. Always place V3 - V6 under the breast, rather than on the breast. If needed, encourage the female patient to assist you in displacing her left breast. If you must assist the female patient with displacement of her breast, always use the back of your hand and never the palm.

4. Place the electrodes on the limbs. The limb leads can be placed anywhere from the shoulders to the wrists and the thighs to the ankles – not the torso.
5. Place the electrodes on the chest. The six precordial (chest) lead electrodes must be placed in specific locations. Locating the V1 position (fourth intercostals space) is the first step and it is the reference point.
 - o V1: 4th intercostal space, just right of the sternum
 - o V2: 4th intercostal space, just left of the sternum
 - o V3: halfway between V2 and V4
 - o V4: 5th intercostal space, left mid-clavicular line
 - o V5: in-line between V4 and V6, anterior axillary line
 - o V6: 5th intercostal space, left mid-axillary line
6. A copy will be included on the PCR.
7. A copy will be left with the emergency department via electronic transfer or hard copy if transfer was not complete.
8. Document both the paramedic's rhythm interpretation and the monitor's rhythm interpretation on the PCR.

Patient Treatment:

1. If not detrimental to the patient's condition the initial 12 Lead should be performed prior to medication administration.
2. Patient Communication: If the EKG interpretation is "Acute MI Suspected", the patient should be told that "according to the EKG you may be having a heart attack".
3. If the EKG interpretation is anything else, **the patient should NOT be told the EKG is normal or "you are not having a heart attack"**.
4. If the patient asks what the EKG shows, tell him/her that a final reading will be completed by the emergency department MD.
5. Interpretation should be relayed to receiving hospital during patient report. Document "Obtained 12-lead EKG." on PCR and attach a copy.

**For destination decision information refer to the STEMI Destination policy.
12 lead electrode placement diagrams:**

