

## 12-LEAD ECG

### INDICATIONS

- A. Suspected cardiac patient
- B. Suspected tricyclic overdose
- C. Electrical injuries
- D. Syncope
- E. Fatigue, nausea or dizziness in the elderly or those with cardiac risk factors
- F. Unexplained shortness of breath
- G. Patients on dialysis

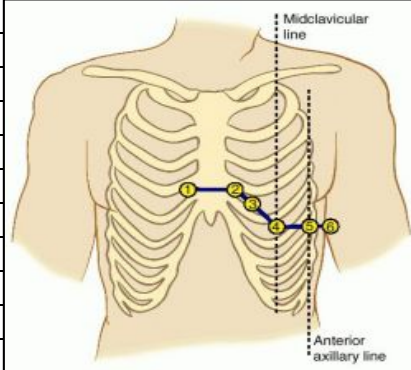
### RESPONSIBILITY

- A. EMTs who have been trained in 12-lead ECG acquisition and transmission
- B. Basic and Advanced EMTs may set up and apply 12-lead ECG in either of the following instances:
  - 1. When assisting a Paramedic, or
  - 2. For purposes of electronic transmission, provided the following conditions are met:
    - a. The EMT does not interpret the ECG;
    - b. The EMT minimizes any delay of patient transport to obtain a 12-lead ECG

### PROCEDURE

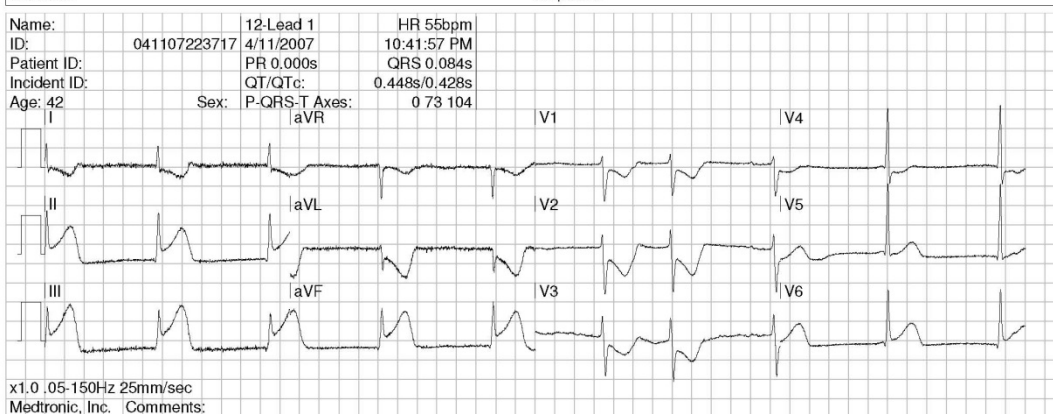
- A. Initiate patient care as indicated by the appropriate protocols – Acute Coronary Syndromes and/or Dysrhythmia Protocols.
- B. If the patient is unstable, definitive treatment is the priority. If the patient is stable or stabilized after treatment, perform 12-lead ECG.
- C. Prepare ECG monitor and connect patient cable with electrodes
- D. Enter the required patient information (patient name, etc.) in the 12-lead device
- E. Expose chest, respecting the patient's modesty. Prep the skin first by drying areas of any sweat / water as needed. Lightly abrade the electrode placement area with an alcohol pad and/or the abrasive pad found on the corner of some electrodes
- F. Apply chest and extremity leads
- G. Instruct patient to remain still
- H. Press the appropriate button to acquire the 12-lead ECG
- I. Transmit data as per guidelines (Basic & Advanced EMTs MUST transmit if a Paramedic is not present) and attach a copy of the 12-lead to the Patient Care Report (PCR)
- J. Document the procedure, time, results on the PCR. If the ECG was not transmitted, document that an Emergency Department physician has acknowledged the ECG.

1. RA	Right arm
2. LA	Left arm
3. RL	Right leg
4. LL	Left leg
5. V1	4th intercostal space at right sternal border
6. V2	4th intercostal space at left sternal border
7. V3	Directly between V2 and V4
8. V4	5th intercostal space at midclavicular line
9. V5	Level with V4 at left anterior axillary line
10. V6	Level with V5 at left midaxillary line
<b>RIGHT SIDED CHEST LEADS</b>	
11. V4R	<b>5th intercostal space at midclavicular line – right side of chest*</b>
12. V5R	<b>Level with V4 at right anterior axillary line – right side of chest*</b>
13. V6R	<b>Level with V5 at right midaxillary line – right side of chest*</b>

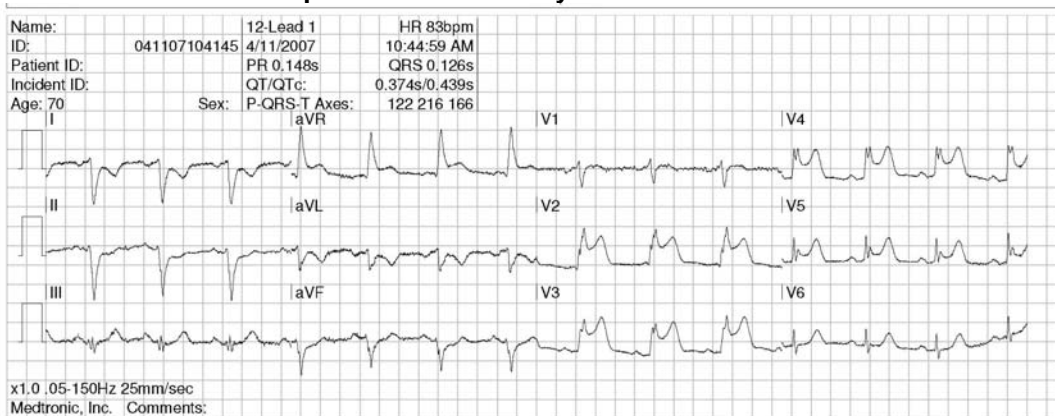


\* The described leads need only to be used for a repeat 12-lead ECG when first ECG reveals suspected inferior wall myocardial infarction. Document on the repeat EKG that leads V4-V6 have been moved to the right side of the chest.

### Inferior Wall Myocardial Infarction



### Septal-Anterior Wall Myocardial Infarction



### 12-Lead Interpretation Reference

LATERAL I		SEPTUM V1	ANTERIOR V4
INFERIOR II	LATERAL AVL	SEPTUM V2	LATERAL V5
INFERIOR III	INFERIOR AVF	ANTERIOR V3	LATERAL V6

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