



Rancho Los Amigos National Rehabilitation Center

INTENSIVE CARE UNIT

POLICY AND PROCEDURE

SUBJECT: TWELVE LEAD
ELECTROCARDIOGRAM (ECG)

Policy No.: ICU 06
Supersedes: All
Reviewed Date: 11/2023
Effective Date: 12/1989
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Purpose of Procedure: To diagnose acute coronary syndromes, identification of dysrhythmias, and determination of the effect of medications, electrolytes and treatments.

Physician's Order Required: Yes

Performed By: Provider, RN, Respiratory Care Practitioner, ECG Technician.

Procedural Steps:

1. Verify order in the medical record.
 2. Perform hand hygiene.
 3. Turn the ECG machine on and input the information required, following manufacturer's guidelines.
 4. Ensure that the patient is in the supine position, not touching the bedrails or footboard.
KEY POINT: Body position changes can cause alterations in the ECG tracing. Touching the bedrails or footboard may increase the chance of distortion of the trace.
 5. Maintain patient privacy by exposing only the necessary parts of the patient's legs, arms, and chest.
 6. Identify lead sites.
 - a. Limb leads.
 - Right arm (RA) – Inside right forearm
 - Left arm (LA) – Inside left forearm
 - Right leg (RL) – right ankle or inner aspect of the calf
 - Left leg (LL) – left ankle or inner aspect of the calf**KEY POINTS:** Limb leads should be placed in fleshy areas, and bony prominences should be avoided. The limb leads need to be placed equidistant from the heart and should be positioned in approximately the same place on each limb.
 - b. Precordial leads.
 - V1 – at the fourth ICS (intercostal space) right sternal border.
 - V2 – at the fourth ICS left sternal border.
 - V3 – equidistant between V2 and V4.
 - V4 – at the fifth ICS midclavicular line.
 - V5 – horizontal level to V4 at the anterior axillary line.
 - V6 – horizontal level to V4 at the mid-axillary line.
7. Apply the electrodes securely.
8. Identify the multiple-channel machine recording setting.
KEY POINT: Multiple-channel machines run several leads simultaneously and can be set to run leads in different configurations.
9. Examine the 12-lead ECG tracing to see if it is clear and print. Repeat the ECG if it is not clear.
10. Disconnect the equipment, and clean the gel off the patient (if necessary). Clean the equipment with hospital approved disinfectant for future use.
11. Discard used equipment, and perform hand hygiene.

DOCUMENTATION

1. Document the completion of the 12-lead ECG in the medical record.
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Reviewed by: Ramon Enage RN, CCRN

References:

Wiegand, Debra. Lynn, et al. (2017) *AACN Procedure Manual for High Acuity, Progressive, and Critical Care 7th Edition*. St. Louis MO: Saunders.

12-lead electrocardiogram (ECG). Lippincott® Solutions. (2023, August 21).

<https://procedures.lww.com/lnp/view.do?pld=6608895&hits=ecgs%2Cecg%2Cleads%2Celectrocardiogram%2Cleading%2C12%2Clead&a=true&ad=false&q=12+Lead+ECG>

12/89 - Revised
08/90 - Revised
03/97 - Revised
06/00 - Revised
03/03 – Reviewed – formerly Nursing Clinical C116.10
02/06 – Reviewed
07/09 – Reviewed
6/13 - Reviewed – Formerly Policy ICU12
09/14 – Revised
01/17 – Revised
06/20 – Revised
11/23 - Reviewed