



**PATIENT CARE SERVICES
POLICY & PROCEDURE**

Title: Cardiac Monitoring
Section: Provision of Care, Treatment and Services
Dept. of Origin: Patient Care Services
Effective Date: 8/2000
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I. POLICY STATEMENT

This policy defines:

- Training requirements for associates caring for cardiac monitored patients.
- Monitoring requirements for patients being transported within the hospital.
- Monitor alarm requirements.
- Process for monitoring & responding to arrhythmias for remote telemetry patients.
- Documentation requirements of cardiac rhythms being monitored.

II. PURPOSE

To provide a guide for the monitoring of patients and the transport of monitored patients within CHN facilities.

III. DEFINITIONS

- **Cardiac monitoring** – provides a continual visual record of the electrical activity in the heart (Lippincott, 2009)
- **Telemetry transmitter** – A device, which transmits a signal to a central bank of monitors. There is no physical connection between the patient and the monitor (Lippincott, 2009)
- **Hardwire monitoring** – occurs when the associate monitoring the patient's rhythm is located at the patient's bedside and the patient is directly attached to the monitor (Lippincott, 2009)
- **Central telemetry monitoring** – the patient is attached to a telemetry transmitter and an associate monitoring the patient's rhythm is located in a monitoring station different than where the patient is located (Lippincott, 2009)
- **Electrode** – the patch that is placed on the patient to which the lead wire will be attached (Lippincott, 2009)
- **Lead wires** – the connections between the electrode and the cable that attaches to the monitor/transmitter. These provide a variety of leads that allow the practitioner to view the electrical activity of the heart from various angles (Lippincott, 2009)
- **Derived 12-lead ECG** – A 5-wire system which uses an EASI lead placement method to result in a derived 12-lead ECG that is comparable to the standard 12-lead ECG for detection of arrhythmia and ST segment changes (Weigand, 2011) See Appendix for EASI lead placement.

IV. ROLES AND RESPONSIBILITIES

- A. **Monitor technician** is responsible for:
- maintaining a quality monitor tracing or notifying associates of poor quality signal
 - obtaining monitor tracings for documentation
 - measuring and documenting ECG intervals
 - continually assessing for rhythm changes and notifying the registered nurse
 - disengaging batteries of telemetry packs when not in use
 - assessing telemetry transmitter for proper function and changing batteries as needed
 - setting alarms on the monitor in collaboration with the registered nurse and verifying that they are turned on
- B. **Patient Care Technician** is responsible for:
- changing batteries as needed
 - replacing ECG patches and attaching lead wires as needed
- C. **Registered Nurse (RN)** is responsible for:
- interpreting and documenting rhythms and ectopic beats
 - documenting ECG changes
 - correlating rhythm changes with the patient assessment
 - responding immediately to life-threatening arrhythmias
 - notifying the physician of ECG changes
 - calculating and documenting ECG intervals if a monitor technician is not present, except in the Emergency Center (EC) and procedural setting
 - verifying ECG intervals calculated by the monitor technician
 - notifying the monitor technician when administering medications that may cause rhythm changes
 - setting alarms on the hardwire monitor and verifying that the appropriate alarms are on
 - verifying alarm settings at central monitoring station
- D. **Training**
1. RNs and monitor technicians must have successfully completed a course in ECG arrhythmia interpretation. If proof is required and not obtainable, an ECG challenge exam may be administered.
 2. Any associate with training in lead placement may initiate or discontinue cardiac monitoring under the direction of an RN.

V. SPECIAL CONSIDERATIONS

A. **Electrode Placement**

1. Avoid placement directly over implanted devices.
2. Avoid placement over medication patches. Remove patch, cleanse skin, and apply new patch to a different site per LIP order.
3. Special needle electrodes, sterilely packaged, are available for patients with extensive compromised skin integrity, such as the burn patient. Attempt to first place the usual electrodes on any uninvolved area on the back or any part of the extremity. If not possible, insert the needle electrode just under the skin; may attempt to secure in place with transparent film dressing.

B. Pediatrics

1. Pediatric electrodes are available and should be used on cardiac monitored pediatric patients.

C. Transporting Monitored Patients within the Hospital (as applicable per facility)

1. Patients that are being monitored will be monitored during transportation either remotely by a central monitoring station or by use of a portable cardiac transport monitor. This includes ICU or telemetry patients that are being transported to and from procedures or diagnostic tests.
2. If a portable cardiac transport monitor is required, an associate trained in ECG rhythm interpretation must accompany the patient.
3. Patients on antiarrhythmic/vasoactive medication infusions or experiencing acute medical changes in condition will be monitored and accompanied by an RN during transport.
4. A patient being transferred emergently to a higher level of care will be monitored and accompanied by an RN trained in ECG rhythm interpretation during transport. For example: Medical/Surgical to Telemetry or ICU and Telemetry to ICU.

D. Alarms

1. High and low heart rate alarms shall be set appropriately for the patient and left in the “on” position.
2. Other arrhythmia alarms may be set at the RN’s discretion or by the monitor technician in collaboration with the RN.

E. Central Telemetry Monitoring (as applicable per facility)

1. Central telemetry monitoring requires collaboration between the unit where the patient resides and the monitoring station observing the cardiac rhythm.
2. The monitoring station will notify the unit on a dedicated phone, Vocera or pager of any life-threatening arrhythmia requiring immediate attention.
3. It is expected that the unit associates will answer the dedicated phone, Vocera or pager immediately. The associate receiving the call will respond by checking on the patient and notifying the responsible RN of the reported rhythm changes.
4. The unit associates are to notify the monitoring station when the telemetry monitor is removed, when a patient leaves the unit for diagnostic testing, or when the patient is discharged.
5. The monitor technician is responsible for obtaining patient monitoring strips at the beginning of the shift and with rhythm changes.
6. The telemetry charge nurse and/or Rapid Response RN will act as a resource for assisting RNs with arrhythmia interpretation, cardioversions, and acute status changes on monitored patients.
7. The unit will notify monitor technicians of the names, Vocera name, or pager numbers of RNs caring for monitored patients.

VI. PROCEDURE

Refer to Lippincott’s Nursing Procedures

Click on link: [iConnect Reference Manuals](#)

Click on Lippincott’s Nursing Procedures → Section 7 Cardiovascular Care → Monitoring → Cardiac Monitoring

VII. DOCUMENTATION

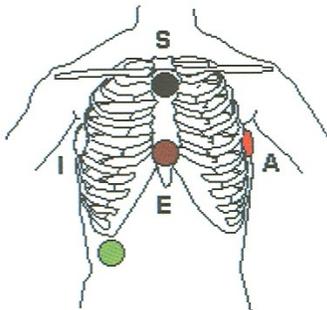
1. RN will place ECG tracings in the chart upon admission to the monitored area, at least every 8 hours, and then with any rhythm change.

2. Except in EC and procedural areas, RN and/or monitor technician will verify and record the patient's name, the lead used, the heart rate, and the P-R, QRS, and Q-T intervals.
3. RN will document an interpretation of the ECG tracing in the patient's chart with each ECG tracing.
4. RN will document patient assessment, intervention, and patient response to intervention with any ECG rhythm changes.

VIII. REFERENCES

1. American Association of Critical Care Nurses. (2008). AACN Practice Alert: Dysrhythmia monitoring. Accessed on 2/2/2012 at http://www.aacn.org/WD/Practice/Docs/PracticeAlerts/Dysrhythmia_Monitoring_04-2008.pdf
2. Dower, G., Machado, H., & Osborne, J. (1980). On deriving the electrocardiogram from vector cardiographic leads. *Clinical Cardiology*. 3:87-9.
3. Lynn-McHale Weigand D. (2011). AACN Procedure Manual for Critical Care (6th ed.). St. Louis, MO: Elsevier Saunders. pp. 493-501
4. Lippincott, Williams, & Wilkins. (2009) Lippincott's Nursing Procedures (5th ed.). Ambler, PA: Lippincott, Williams, & Wilkins.

IX. Appendix: EASI Lead Placement



Electrode	Color	Position
I	White	Right midaxillary line @ level of 5 th intercostal space
A	Red	Left midaxillary line @ level of 5 th intercostal space
S	Black	Upper sternum
E	Brown	Lower sternum @ level of 5 th intercostal space
Ground	Green	Right lower abdomen

Derived 12-lead ECG (Dower 1980)

X. APPROVAL

Committee/Department	Original Approval	1st Review	2nd Review	3rd Review	4th Review	5th Review
Critical Care Network Clinical Practice Committee	08/18/00	11/21/03	4/13/07	3/18/09	5/3/12	
Emergency Department Network Clinical Practice Committee	11/21/03	4/13/07				
CHN Risk Management Department	01/19/04					
PCS Policy and Procedure Committee	02/12/04	3/13/09	3/13/09	5/4/12		
Policy Coordinating Committee	10/08/00	04/22/04	4/18/07			
Nursing Leadership Council	6/25/12					