UPPER CHESAPEAKE HEALTH
DIVISION OF NURSING

TITLE: CARDIAC MONITORING AND DISCONTINUATION

APPROVED BY:
Vice President, Patient Services/CNO: _____

Original Date: 4/94
Reviewed Date: 12/90, 12/00, 12/01
Revised Date: 8/84, 8/87, 7/89, 1/91, 2/95, 12/96, 4/05, 4/06, 7/08, 11/10, 12/12

PURPOSE: To provide for safe and consistent monitoring of the patient requiring cardiac monitoring.

POLICY: "Cardiac monitoring", for the purpose of this policy, refers to telemetry monitoring, as well as hard wired cardiac monitoring, in all areas of the hospital.

I. Alarm Settings
1. Default alarm settings can only be adjusted by a Registered Nurse who has completed the Basic Arrhythmia Course and/or ACLS (see Monitor Defaults Worksheet in Forms on Line in Meditech).
   a. Changes to the default alarm settings should be made with consideration of the patient's condition, prescribed medications and diagnosis.
   b. Changes to alarm settings will be documented in the Meditech system.
   c. The registered nurse will review the alarm settings when cardiac monitoring is initiated to ensure that the alarm settings are appropriate given the patient's condition/diagnosis.
   d. The system will automatically return the alarm settings to the default settings when the patient is discharged from the system.

II. Care of Patient on Cardiac Monitoring
1. IV access will be maintained during cardiac monitoring.
2. The registered nurse will notify the attending physician/Cardiology consultant of changes in the patient's rhythm. If the attending physician/cardiology consultant is not available, the Intensivist will be notified by the registered nurse.
3. A patient admitted for cardiac/telemetry monitoring will be monitored continuously.
4. Telemetry can be discontinued by physician's order (entirely or intermittently) and by meeting the criteria of the Cardiac Monitoring Discontinuation Criteria (included in this policy).
5. Cardiac monitoring will be provided, as indicated, during patient transfer/transport. Refer to policy: "Transporting Patients within the Hospital".
6. Emergin phones (receive cardiac alarms) will be assigned to nurses each shift or a central alarm system (ED, PACU, and PEDS) will be utilized to alert nurses of patient dysrhythmias.

7. Lethal arrhythmias will be immediately treated by calling a CODE BLUE (A or C), per policy.

III. Documentation

1. The registered nurse will document and affix a rhythm strip to the progress note.
2. Rhythm strip interpretation and documentation will occur:
   a. Upon admission, by the admitting RN
   b. Upon transfer to another unit, by receiving RN, if telemetry is continued.
   c. Beginning of every 12 hour shift.
3. Rhythm strip interpretation and documentation will include:
   a. Measurement of PR and QRS intervals.
   b. Rhythm.
   c. Heart rate.
   d. ST changes, if present.
   e. Ectopy, if present.
4. Rhythm strip documentation will be maintained in the progress note section of the medical record. The registered nurse will also include this information in Meditech documentation (Document intervention, EKG Strip).

IV. Cardiac Monitoring System Management

1. Team members will contact BioMed, and the Clinical Nurse Manager/Administrative Coordinator, immediately when equipment failure is noted or suspected.
2. Clinical engineering will change the time in the cardiac monitoring system twice per year (Day Light Savings Time) and when time discrepancies are identified.
3. Telemetry boxes and cables will be maintained on the nursing units. Cleaning of the equipment (boxes and cables) is performed by the unit upon removal from patient.
4. Lead wires should be stored hanging freely or loosely coiled.
5. Telemetry transmitter boxes and leads cannot be placed into the PEVCO system.

V. Discontinuation of Cardiac Monitoring

1. Eligibility to discontinue telemetry is determined on an on-going basis, and by the unit's charge nurse (this does not apply to ICU and IMC patients). The decision to discontinue cardiac monitoring will be based on:
   a. an order from a physician to discontinue cardiac monitoring, and,
   b. the fact that the discontinuation criteria have been met, as defined in the **Telemetry Discontinuation Criteria**, detailed within this policy.
2. The registered nurse discontinuing the telemetry will review the patient's telemetry history in the monitoring system to identify rhythm changes, rate changes, and/or dysrhythmias and compare his/her findings with the discontinuation criteria to assess eligibility.
3. The registered nurse will contact the attending physician if he/she has any questions regarding the appropriateness of discontinuing telemetry and/or consult with the ICU Intensivist on duty.

VI. Telemetry Discontinuation Criteria:

Telemetry may be discontinued with a physician's order and when the following criteria are met:

1. The patient has been admitted with a non-cardiac diagnosis and has been on telemetry for greater than 24 hours, OR the patient was admitted with a primary cardiac diagnosis and has been on telemetry for greater than 48 hours, AND THERE HAS BEEN:
   a. No change in cardiac rhythm within last 24 hours.
   b. No sustained SVT.

c. No sustained ventricular tachycardia (i.e. >4 beats of V Tach) or evidence of frequent PVC's (>6/min).
d. No evidence of 2nd or 3rd degree heart block.
e. No symptomatic arrhythmias during the admission.
f. No diagnosis of acute MI, Unstable Angina, or STEMI (or patients who have met STEMI criteria).
g. No complaint of active chest pain.
h. No use of IV chronotropic and/or vasoactive medications during admission.

2. If the need for telemetry monitoring of patients exceeds the number of telemetry units available, the nurse can assess the eligibility for telemetry discontinuation using the criteria listed above at 12 hours of telemetry monitoring for the non-cardiac diagnosis, and 24 hours of monitoring for the cardiac diagnosis. A physician's order is required for discontinuation of monitoring.

PROCEDURE:

I. Application of Cardiac Monitoring
1. The registered nurse will:
a. Admit the patient to the monitoring system per manufacturer's recommendation. Refer to the Operator's manual located on the unit for the cardiac monitoring system being used.
b. Gather the following supplies:
1) Transmitter (telemetry only) or lead wires
2) Electrodes
3) Alcohol
4) Scissors, if needed
c. Explain the procedure and purpose to the patient.
d. Prep skin for electrode placement by clipping long chest hair at electrode sites (if necessary) and cleansing the sites with alcohol and allow the sites to dry before application of the electrode.
e. Attach lead wires to the electrodes which have been placed onto the patient's chest in a 3, 5, 6 pattern, depending on the type of cardiac monitor used. See Operator's Manual for lead placement.
f. Evaluate the quality of the transmitted rhythm strip and reposition electrodes or re-prep sites as necessary.
g. Upon admission and at the beginning of every shift, ensure that the alarm settings for the patient, in the monitoring system, are appropriate given the patient's diagnosis, condition and medications.

II. Discontinuation of cardiac monitoring utilizing the telemetry discontinuation criteria.
1. When discontinuing telemetry utilizing the telemetry discontinuation criteria, the registered nurse will:
a. Ensure that there is a physician's order to discontinue
b. Evaluate the patient's telemetry history in the monitoring system.
c. Review the criteria in the Telemetry Discontinuation Criteria (see criteria included in this policy) to ensure that the patient meets the criteria prior to discontinuation.

d. After ensuring that the criteria have been met, print a rhythm strip, document the interpretation and the fact that the telemetry history was reviewed.
e. Discontinue continue cardiac monitoring.
f. Carefully remove the electrodes from the patient.
g. Clean and store the transmitter box, and/or lead wires, per policy.

UPPER CHESAPEAKE HEALTH HOSPITALS

HOSPITAL/ADMINISTRATIVE POLICY MANUAL

Title: CLINICAL ALARM EFFECTIVENESS

APPROVED BY:

President/CEO: _____

Original Date: 4/03
Reviewed Date: 10/05, 10/07, 10/09
Revised Date: 10/03, 7/12
Next review date: 7/14

PURPOSE:

To ensure patient safety by appropriate and timely response to critical clinical alarms.

DEFINITIONS:

Critical Clinical Equipment encompasses equipment directly applied to the patient that is used for physiologic monitoring and/or measures variations in equipment setting parameters. An inventory of Critical Clinical Equipment is attached, see Table A.

Alarms on critical clinical equipment will alert staff to urgent patient needs by recognizing variations in the measured parameters. Alarms typically indicate that an acceptable limit has been exceeded, a procedure is complete or a device has failed.

Alarm Parameters are limits that are preset (default) or manually set to measure physiologic elements or equipment thresholds which when exceeded can trigger the alarm.

Alarm Settings include volume, tone, or other modes of communicating an alarm such as to a phone or pager.

Functionality and Effectiveness of the Alarm will be based on:
1. Activation – Alarms are activated and functional specific to patient needs
2. Audibility – Alarms are sufficiently audible given location and ambient or competing noise
3. Appropriately Set – Parameters and settings are specific to patient needs

POLICY:

Alarm effectiveness will be assessed at the time the equipment is connected to the patient and when environmental conditions change.

Based on the physical needs of the patient, alarm function, and assessment of ambient or competing noise the alarm will be 1) Activated 2) Audible and 3) Appropriately set.

I. <u>Consideration of Functionality and Alarm Effectiveness may include the following</u>:

- Check for a current Clinical Engineering preventive maintenance sticker.
- Check that Default Settings for clinical settings/parameters and alarm limits are correct.
- Note that changes to default settings can only be made by authorized and qualified personnel as defined in unit specific or division standards/policy. Refer to equipment or department specific protocol for setting changes.
- Ensure that caregivers will hear audible alarms at all times, under predictable ambient noise levels.
- If a remote alarm is used, check function, including pager, nurse call, mobile phone or other mechanism that might be used in remote application.

If the caregiver determines that the alarm function is inadequate, appropriate action will be taken to prevent an alarm going unnoticed. Interventions can include:

- Adjusting the alarm tone or volume level
- Moving a patient to a location with closer observation
- Increasing frequency of physical assessments
- Alerting team to situations indicating possible alarm fatigue and assess/review alarm setting for appropriateness
- Correcting the competing noise
- Connecting the IV pump or ventilator to remote alarm outlets, that will alarm through the nurse call system, mobile phone or pager
- Establishing one-to-one care
- Contacting the Clinical Engineering Department to explore equipment-specific options

II. Department or Equipment- Specific Policies relative to Clinical Alarm Effectiveness

When developing department-specific or equipment-specific protocol for critical clinical equipment, the policy or procedure should consider the following, as applicable:

- **Define Alarm Settings** and methods of communication (volume, tone, pager notification, etc.).
- **Define Alarm Parameters** (limits which trigger the alarm).
- **Identify who can respond** to alarms.
- **Identify who can change** Alarm Settings and/or Parameters (competent caregiver).
- **Establish documentation protocols** where necessary. Determine if, and where, a change in either Alarm Settings or Parameters is captured.
- **Establish Alarm Assessment protocols**. Determine if, when, how and by whom Alarm Setting and Parameter Functionality and Assessment occurs (e.g., how to check nurse paging systems each shift).
- **Establish appropriate education** and competency requirements for new team members and ongoing education.
- **Create contingency plans** for power outages or areas that pose problems hearing alarms.