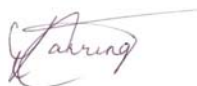


## CARDIOLOGY PROCEDURE

**CATEGORY:** System-Level Clinical  
**ISSUE DATE:** October 16, 2001  
**SUBJECT:** **TELEMETRY MONITORING**

**REVISION DATE:** March 2019

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<b>Update Schedule:</b> Every three years, or sooner if required.	
<b>Stakeholder Consultation and Review:</b> Nurse Clinician Forum Medicine Program Council	<b>Date:</b> March 4, 2019 March 28, 2019
<b>Approval:</b> Lorraine Carrington, Executive Sponsor Clinical Policy & Procedure Committee 	<b>Date:</b> May 1, 2019

### PURPOSE

To ensure the safe use of telemetry monitoring to assess the electrocardiographic status of patients at risk for cardiac dysrhythmias not requiring critical care admission.

### PROCEDURE

#### Equipment

- Electrodes
- Rechargeable lithium battery
- Telemetry Transmitter Pack (TTP) provided by Cardiac Medical Unit (CMU)
- Telemetry Transmitter Pouch

#### Special Instructions

- The use of cardiac telemetry must be received, or approved, as a medical order from the patient's most responsible physician (MRP).
- Telemetry packs will be booked through Bed Allocation.
- **Do not hold packs on the unit for future patients.**
- Telemetry packs are **NOT** to be applied to patients admitted to overflow areas including tub/shower rooms.
- Telemetry packs **CAN** be applied to lounge areas on 4 North, 5 South and 6 South.
- In the event that the telemetry pack supply is depleted, CMU will initiate telemetry contingency.
- Interpretation of electrocardiography will be performed by specially-trained CMU Registered Nurses.
- Care of the telemetry-monitored patient is the responsibility of the assigned home unit nurse and should reflect the established standard of care.
- In the event of telemetry monitor failure, the contingency plan for telemetry monitor failure will be initiated.
- CMU will initiate an Automatic Stop Order (ASO) after 72 hours of telemetry monitoring in the absence of dangerous or progressing arrhythmias.
- When available, slave monitoring will be established on the telemetry home unit.

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- If the slave monitor ceases to function, the home unit will call CMU to verify if central monitoring is functioning.
  - If the problem is exclusive to the slave monitor, contact Biomedical Engineering.
  - If the problem is global, initiate the Contingency Plan for Telemetry Monitor Failure.

**See Appendix A** for Initiating Telemetry

**See Appendix B** for Telemetry Monitoring

**See Appendix C** for Contingency Plan for Telemetry Monitor Failure

**See Appendix D** for Telemetry Contingency

**See Appendix E** for Telemetry Safety Checklist & Patient Record

## **EDUCATION AND TRAINING**

### **Education/Training Related Information**

Specially-trained CMU RNs must complete:

- Didactic ECG training through Critical Care Orientation
- ECG certification every two years

### **References and Related Documents**

Drew BJ, Califf RM, Funk M, et al. Practice standards for electrocardiographic monitoring in hospital settings. *Circulation*. 2004;110:2721-2746.

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## APPENDIX A

### Initiating Telemetry

#### Unit Receiving Order for Telemetry

1. Upon the physician order for application or discontinuation of telemetry, place the order in Meditech:  
Category: **TEL**  
Procedure: **ACT** for activate, **HOLD** for hold, or **DIS** for discontinue
2. Call Bed Allocation to request a TTP.

#### Bed Allocation

1. Call CMU to allot the telemetry pack. Provide the patient name, SH number and current or forthcoming room.
2. In the event a TTP is ordered on a patient in a monitored unit, the pack will be ordered to the forthcoming unit so the pack is immediately available upon patient arrival.

#### Cardiac Medical Unit

1. Complete their portion of the *CMU Telemetry Safety Checklist & Patient Record*.
2. Admit the patient to the central monitor.
  - A. Click on **Manage Patient**. A bed pick list will be displayed.
  - B. Select the correct bed. A new equipment list will be displayed.
  - C. Select the assigned telemetry pack that the patient will be monitored on. Either double-click on the pack to be assigned, or use the arrows next to the equipment list to move the telemetry to the "Assigned" box.
  - D. Select **OK**. The bed number will appear in the top left corner of the telemetry window and the patient demographic window will open.
  - E. Admit the patient.
  - F. Enter the patient's name (first and last) into the assigned room.
  - G. Enter the patient's SH and pack number into the medical number slot.
  - H. Once all information is entered, select **Apply**.
3. Insert a fully charged battery into the assigned pack. The pack will turn on. Ensure the correct patient name is in the grey bar at the top of the screen.
4. Place the TTP in **Standby**.
5. Send the TTP with a charged lithium battery in the pack, along with the completed *CMU Telemetry Safety Checklist & Patient Record* via pneumatic tube to the patient's home unit.
6. In the event no telemetry packs are available, the CMU charge nurse will assess the need for telemetry on an individual basis (using the Telemetry Contingency) and call to request discontinuation as appropriate.

#### Patient Home Unit

1. Complete the Home Unit portion of the *Telemetry Safety Checklist & Patient Record* at the bedside, ensuring all information is accurate. If there is incorrect information documented in the CMU portion, STOP, notify the telemetry RN and return the paperwork to CMU for correction. If there are no errors in the documentation, continue with application of the telemetry pack.
2. Prepare the patient's chest for electrode placement:
  - A. Clip excessive hair. **Do not shave**.
  - B. Cleanse the chest with soap and water. If diaphoretic, cleanse with alcohol and allow to dry.
3. Completely remove the plastic backing from the electrode.
4. Apply the electrodes to the patient, pressing first on the center and then the outer rim. Apply electrodes in standard lead placement:

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Electrode	Colour	Placement
V1	Brown	4 <sup>th</sup> intercostal space, right sternal border
RA	White	Directly below the right clavicle, near the shoulder
LA	Black	Directly below the left clavicle, near the shoulder
LL	Red	Below the rib cage on the left upper quadrant of the abdomen
RL	Green	Below the rib cage on the right upper quadrant of the abdomen

5. Unlock the TTP and verify it is in Telemetry Mode.
6. Look at the screen on the TTP to ensure an acceptable tracing is displayed.
7. Verify rhythm and interpretation with the CMU telemetry RN and document (i.e. flow sheet, interdisciplinary patient progress notes, etc.).
8. Complete the remainder of the *Telemetry Safety Checklist & Patient Record* within 1.5 hours and return to CMU. If the patient has had an ICD/pacemaker implanted from HSN, obtain the *Basic Pacemaker Check* from the patient's electronic medical record and attach it to the *Telemetry Safety Checklist & Patient Record*.

#### **Cardiac Medical Unit**

1. Review the *Telemetry Safety Checklist & Patient Record* upon receipt, ensuring all identifiers are completed identically.
2. Place the *Telemetry Safety Checklist & Patient Record* in the telemetry binder.
3. Using the IECG module, review the patient's most recent 12 lead ECG.

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## APPENDIX B

### Telemetry Monitoring

#### Cardiac Medical Unit

1. Assess telemetry alarms every shift and PRN for appropriateness.
  - A. Call the home unit STAT for **red** alarms. Expect follow up from the home unit detailing patient condition as soon as possible.
  - B. Call the home unit in a time-appropriate manner for **yellow** alarms. Make a follow up call to the clinical leader if there is no response within 10 minutes.
2. Print and interpret rhythm strips every four hours at 0400, 0800, 1200, 1600, 2000, 0000 and PRN on the *Telemetry Record*. Rhythm analysis and interpretation includes:
  - A. Rhythm regularity
  - B. Ventricular rate
  - C. PR interval
  - D. QRS interval
  - E. Extrasystoles
3. Document the rhythm interpretation on the *Telemetry Safety Checklist & Patient Record*.
4. Review alarm events under “alarm review” every four hours with rhythm strip interpretation.
5. Record any relevant conditions and interpretations on the *Telemetry Patient Record*.
6. Immediately notify the patient’s home unit of rhythm changes and recommendations. Document changes on the *Telemetry Safety Checklist & Patient Record*.
7. Upon identification of unstable rhythms:
  - A. Print and analyze the rhythm.
  - B. Identify the rhythm to the home unit RN/delegate with instructions. Recommend assessments and/or actions.
  - C. Record pertinent information relayed from the home unit RN on the *Telemetry Safety Checklist & Patient Record*.
8. Update the *Telemetry Safety Checklist & Patient Record* as clinical data or information is provided by the home unit nurse.
9. Send the shift’s telemetry strips and interpretations to the home unit by 0600 and 1800. Report on telemetry patients to the covering/replacement CMU RN.

#### Patient Home Unit

1. As alarm conditions occur, verify patient status through immediate patient assessment.
2. Correct low priority alarms:

Low Priority Alarm	Corrective Action
<b>Lead Off</b>	<ul style="list-style-type: none"> <li>• Replace missing electrodes</li> <li>• Reconnect leads to appropriate electrodes</li> <li>• Ensure cables correctly inserted to TTP</li> </ul>
<b>NOTE:</b> If the Lead Off alarm persists despite the preceding corrective actions, the entire lead set or telemetry pack may need to be changed.	
<b>Weak Battery</b>	<ul style="list-style-type: none"> <li>• Replace batteries using rechargeable batteries on the home unit. If no batteries are available on the unit, call CMU for a battery.</li> </ul>

3. Notify the physician of rhythm changes (including relevant clinical information) as identified by the CMU nurse.
4. Report any changes in modalities or goals of therapy.

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5. Change electrodes daily during morning care with appropriate cleansing of previous electrode sites. Electrodes should always be changed when contact integrity is lost.
6. The telemetry pack is water resistant. The patient may shower with the TTP in place, however, a physician order **must** be obtained to allow the patient to shower.
7. Place the telemetry monitor on Standby when the patient is off unit for diagnostics and/or procedures. Telemetry will be resumed upon return.
8. Notify the CMU telemetry nurse when:
  - A. Telemetry is discontinued
  - B. Medication orders are changed
  - C. Patient is transferred to another location within the unit or hospital
9. If the patient is transferred to a different bed/unit, an additional *Telemetry Safety Checklist & Patient Record* **must** be completed. **TTPs are not to be sent with patients off-site.**
10. Obtain rhythm interpretation strips sent from CMU at 0600 and 1800 and file appropriately.
11. Reassess the need for telemetry with the MRP every 24 hours.
12. Upon discontinuation of telemetry:
  - A. Place the unit in Standby.
  - B. Disconnect the TTP from the patient and remove the electrodes.
  - C. Remove the lithium battery and leads from the TTP.
  - D. Clean the TTP, lead set and battery with appropriate hospital-approved disinfecting solution.
    - If Clorox is required, the device must be subsequently cleaned with water
    - Inspect the leads and cables and notify CMU of any deterioration/damage
    - Use a single-use soft bristle brush to clean the ECG clips
    - Use adhesive remover to remove adhesive residue from the device and leads
    - Place the cleaned battery on the charger on the home unit
13. Wrap the cleaned TTP and a fully charged battery in packing and return it to CMU.

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## APPENDIX C

### Contingency Plan for Telemetry Monitor Failure

In the event of a telemetry monitor failure, CMU will immediately inform Biomedical Engineering and verify the need to follow the contingency plan:

1. Notify switchboard to announce "TELEMETRY OFF" three times and to be announced every hour between 0800 and 2200 until the system is operational.
2. Notify all patient home units of the disruption in service.
3. CMU staff and charge nurse will review all telemetry patients and identify patients with unstable arrhythmias using *Telemetry Contingency*.
4. The home unit charge nurse will review telemetry assignments with the CMU charge nurse for possible discontinuation.
5. The home unit charge nurse will obtain a telemetry discontinuation order from the MRP.
6. If a telemetry patient requires monitoring, CMU telemetry will be a resource for portable monitor setup and rhythm interpretation as required. **Portable monitor locations include CMU, Cardiodiagnostics, Intensive Care Unit and Perfusion.**
7. Notify switchboard to announce "TELEMETRY ON" three times once the system is operational.
8. CMU telemetry nurse/delegate will obtain a rhythm analysis strip once the system is operational.

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**APPENDIX D**

## Telemetry Contingency (No packs available)

Date: \_\_\_\_\_ Time: \_\_\_\_\_

CMU Charge Nurse: \_\_\_\_\_

Patient Name, SH # Location	Date Ordered	Rhythm over last 48 hrs/issues orders to resolve	Current Rhythm	Plan	CN Contacted? Name and time
Name: SH#: Location:					
Name: SH#: Location:					
Name: SH#: Location:					
Name: SH#: Location:					
Name: SH#: Location:					
Name: SH#: Location:					
Name: SH#: Location:					



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**APPENDIX E**

Telemetry Safety Checklist & Patient Record

**CMU TO COMPLETE:**

**HOME UNIT TO VERIFY AT BEDSIDE:**

<b>Date:</b>	<b>Date:</b>
<b>Patient Name:</b>	<b>Patient Name:</b>
<b>SH #:</b>	<b>SH #:</b>
<b>Room:</b>	<b>Room:</b>
<b>Pack #:</b>	<b>Pack #:</b>
<b>Time Sent:</b>	<b>Time Applied to Patient:</b>
<b>Nurse Signature:</b>	<b>Nurse Signature:</b>

**Note:** If there are any errors in the above information, STOP, notify CMU Telemetry RN of the error and return this document to CMU for correction.

If no errors, proceed to complete required clinical information below and send to CMU within 1.5 hours

<b>Physician:</b>	<b>Age:</b>	<b>Diagnosis:</b>
<b>Reason for Telemetry:</b>		
<b>Pacemaker/ICD:</b> <input type="checkbox"/> No <input type="checkbox"/> Yes		
<b>Set Rate:</b>		
<b>Relevant Clinical Information:</b>		
<b>Medications Ordered on Admission:</b> Medication List Attached: <input type="checkbox"/> No <input type="checkbox"/> Yes (Include dose and frequency)		
<b>Unit Nurse Signature:</b>		