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# **Telemetry Monitoring Toolkit**

**Best Practices for  
Acute Care Hospitals**

FHA Telemetry Work Group

# 2025 Telemetry Monitoring Toolkit

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The Florida Hospital Association would like to extend our heartfelt gratitude to the Telemetry Work Group for their invaluable contributions to this telemetry monitoring guide. Their collaborative expertise and insights provided the necessary guidance for hospitals to implement best practices for telemetry monitoring and for the safety of patients. For the list of work group members, please see page 41.

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# Introduction

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Telemetry monitoring is a vital tool in managing patients with cardiovascular conditions, but issues such as overutilization, alarm fatigue, and missed alarms can lead to significant safety events. In 2024, the Florida Agency for Healthcare Administration (AHCA) reported that telemetry and patient monitoring are among the top citations for Florida hospitals, increasing most significantly between 2020 and 2023. Additionally, telemetry and patient monitoring were among the top five reasons for immediate jeopardy citations for hospitals.

The Joint Commission and the American Heart Association (AHA) emphasize aligning telemetry use with AHA evidence-based guidelines to improve patient outcomes, optimize resource utilization, and reduce unnecessary monitoring. The Joint Commission has also addressed the critical issue of alarm safety in health care settings through Sentinel Event Alerts and the National Patient Safety Goal for clinical alarms. The Joint Commission advises health care organizations to establish alarm safety as a priority and implement policies and procedures for managing utilization and monitoring of telemetry.

Identifying that this is a patient safety focus and priority, several FHA member hospitals have shared their experiences and challenges in addressing opportunities to implement “best practices” for telemetry monitoring.

Some of the concerns that emerged included:

1. Understanding and lack of clear guidance and standards.
2. Short-term and long-term impact to workforce and staffing.
3. Equipment infrastructure to support dedicated monitoring in emergency departments and critical care settings.

In response to the concerns expressed by FHA member hospitals, the issue was presented to the FHA Quality and Patient Safety Committee. The committee recommended establishing a work group to explore the issues and develop guidance and recommendations for “best practices” and implementation strategies to improve patient safety. The committee stressed the importance of ensuring telemetry protocols are aligned with evidence-based practice, effectively managed, and continuously evaluated.

To support efforts to improve quality and patient safety, the Florida Hospital Association is pleased to provide this Telemetry Monitoring Toolkit for acute care hospitals. This guide provides health care professionals with access to guidelines, key considerations, and actionable solutions for safe and effective telemetry monitoring. The guide is designed to be user-friendly and to assist with accelerating patient safety efforts with a collection of best practices into one convenient resource.

The Florida Hospital Association encourages hospitals to use this toolkit to develop tailored solutions that meet the needs of their patient populations and care teams. By developing comprehensive policies and procedures based on best practices to optimize telemetry monitoring, health care facilities can reduce alarm fatigue and enhance patient safety.

# How to use this toolkit

The foundation of the Telemetry Monitoring Toolkit is built upon The American Heart Association's established practice standards for electrocardiographic monitoring in hospital settings. These standards are available through the AHA's links provided below, offering valuable detailed resources to support the implementation of best practices in telemetry monitoring.



[Update to Practice Standards for Electrocardiographic Monitoring in Hospital Settings: A Scientific Statement From the American Heart Association](#)



[American Heart Association Telemetry Guidelines Improve Telemetry Utilization in the Inpatient Setting](#)



## PRACTICAL APPLICATIONS

This toolkit is designed as a practical guide for hospitals and health care professionals offering key considerations and practical applications to optimize evidence-based telemetry monitoring practices. Key considerations offer points to consider while developing your program, and practical applications are sample processes from participating hospitals.

### Follow these steps to maximize its effectiveness:

#### 1. Engage Leadership and Key Stakeholders:

Share the toolkit with clinical leaders, physicians, nursing staff, IT & clinical informatics, and administrators to gain buy-in for implementing standardized telemetry best practices.

#### 2. Customize the Toolkit:

Assess your current program and adapt the recommendations in this toolkit to fit your hospital's unique patient demographics, resources, and workflow.

#### 3. Monitor Progress:

Track telemetry utilization rates, alarm response times, and patient outcomes using performance metrics.

#### 4. Evaluate and Refine:

Continually assess and evaluate telemetry practices and improve and refine practices over time.

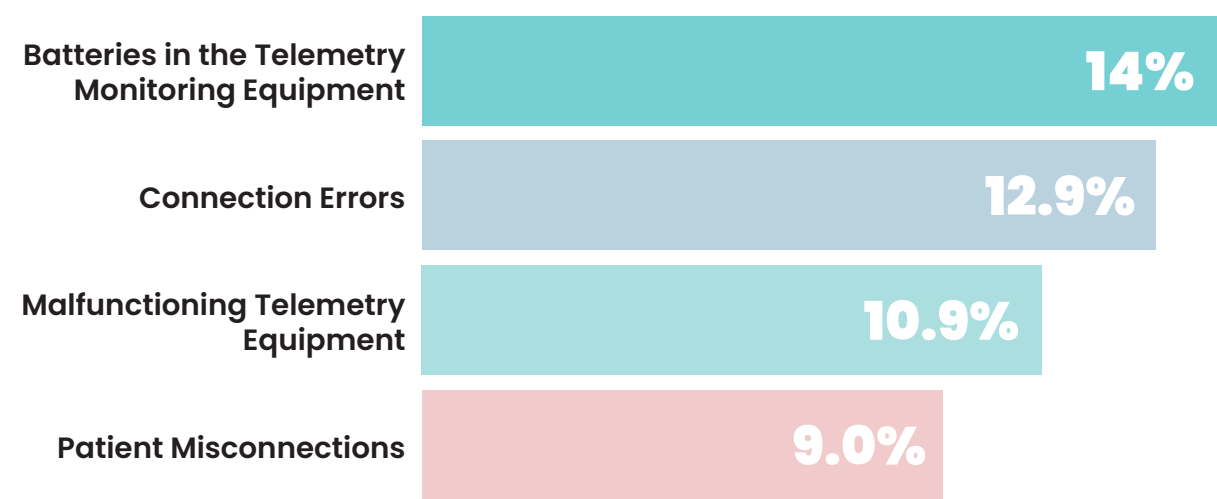
#### 5. Sustain Improvements:

Create a monitoring stewardship team to regularly review telemetry usage and ensure adherence to protocols. An interdisciplinary team approach is essential for reassessing and optimizing telemetry use, **ensuring adherence to guidelines, and achieving meaningful and sustainable improvements in telemetry monitoring.**

# Common Issues and Failure Points

Effective telemetry monitoring is essential for patient safety, but several common issues and failure points can compromise its effectiveness. An analysis of reports submitted to the *Pennsylvania Patient Safety Reporting System* over a four-year period focused on interruptions or failures related to telemetry monitoring. The analysis found that user errors accounted for 47.1% of the events.

## THE MOST FREQUENT SUBTYPES ERRORS



Source: *Pennsylvania Patient Safety Reporting System*

These findings reinforce the critical importance of strong communication between the patient unit and the central monitoring unit (CMU) to ensure patient safety (Kukielka et al, 2019).

*Florida’s Agency for Health Care Administration* stated that the most frequent contributions to identified deficiencies in surveyed hospitals include the following:

- Orders for telemetry monitoring were not initiated in a timely manner.
- Patients were not connected/reconnected to telemetry monitoring equipment as ordered.
- Patients were not being monitored during transport.
- Timely communication and response of the health care team.
- Alarm settings.
- Monitoring by qualified and competent staff in accordance with policies.

## Key Considerations

### Equipment Malfunctions

Telemetry units should have redundancies, including additional telemetry packs and contingency plans in case of a CMU failure. Quick recognition of equipment failures and the implementation of contingency plans are critical to ensure appropriate patient monitoring and safety.

### Communication Breakdown

Establish an escalation protocol for the CMU when they are unable to see the patient's rhythm or when there is a change in rhythm requiring notification. Monitor response times to ensure the escalation process works as designed.

### Battery Issues

Always use manufacturer-recommended batteries in battery-powered telemetry packs. Using non-recommended batteries can result in short battery life, increasing the workload for changing batteries and the risk of depleted batteries leading to loss of rhythm communication.

### Alarm Issues

Hospital policy should address alarms and include safety precautions such as timers and settings where alarms can be silenced but will automatically resume if the situation is not resolved within a short timeframe. Other safety precautions include ensuring alarms cannot be silenced permanently or turned down to an inaudible volume for more than a short timeframe. Policies should guide who can adjust alarm parameters and whether a physician order is required.

### Transferring Patients

Transferring patients between units and for testing can lead to delays in telemetry monitoring or periods where patients are not monitored as ordered. Encourage staff to report zones where monitoring may not function well so that additional measures can be taken to ensure communication between the telemetry pack and the central monitor.

### Delays in Connection and Lack of Monitoring

Hospitals may use various methods to notify staff of new orders, such as phone, fax, worklists, or other notifications. Monitor the order-to-initiation time to ensure the notification process is adequate, regardless of shift, time, or day of the week. Review policies to ensure proper handoff when a portable monitor is removed after transfer (e.g., ED admission) and clearly define procedures for patients leaving a unit for testing to ensure continuous monitoring.

# Initiation & Utilization

## Evidence-Based Criteria for Appropriate Monitoring

The implementation of telemetry order sets is crucial for ensuring the appropriate use of telemetry monitoring in health care settings. These order sets should include clear guidelines for when telemetry is indicated, as well as a process for periodically evaluating the need for continued monitoring. This helps prevent unnecessary use of telemetry. Utilizing a physician champion is essential in this process, as they can advocate for the adoption of these guidelines and help secure approval and full buy-in from the medical staff. Engaging the entire medical team ensures that the guidelines are consistently followed, leading to improved patient outcomes and more efficient use of telemetry resources.

Adherence to evidence-based guidelines for hospital inpatient telemetry with appropriate reminder mechanisms for physicians and other health care team members has been shown to improve the quality of health care and reduce costs (Pendharker et al, 2020). Unnecessary monitoring can prolong hospital admission, reduce hospital capacity, inconvenience the patient, and contribute to alarm fatigue.

According to the Society of Hospital Medicine, in concordance with the Choosing Wisely initiative, continuous telemetry monitoring outside of the intensive care environment should be directed by protocols (Clapp, 2022). To enhance compliance with evidence-based practice for telemetry utilization, consider the use of nurse-driven protocols or clinical decision support tools. Nurse-driven protocols will not only curb over-use but can engage nurses autonomously in best practice (Clapp, 2022). Clinical Decision Support built into order sets can be an effective means to reduce excess telemetry use. Development with appropriate stakeholders is key for optimal integration into clinical practice with a process for monitoring for adherence (Hatley et al, 2023).

Cerner  
Cardiac  
Monitoring  
Telemetry

| Cardiac Monitoring Telemetry (Initiated Pending)                                                                                                                                                          |                              |                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------|
| Patient Care                                                                                                                                                                                              |                              |                                                                                               |
| Cardiac Monitoring - 48 hours                                                                                                                                                                             |                              |                                                                                               |
| Cardiac Monitoring ordered for the following indications will be evaluated approximately 48 hours and will discontinue unless changes are made in the patient's clinical condition supports continuation. |                              |                                                                                               |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Acute Coronary Syndrome, As per telemetry algorithm, T+2, 48 Hour Telemetry                   |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Arrhythmia - AFib, Brady/Tachycardia, As per telemetry algorithm, T+2, 48 Hour Telemetry      |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Chest Pain/ Rule out MI, As per telemetry algorithm, T+2, 48 Hour Telemetry                   |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | CHF, As per telemetry algorithm, T+2, 48 Hour Telemetry                                       |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Complex Congenital Heart Disease, As per telemetry algorithm, T+2, 48 Hour Telemetry          |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Electrolyte Imbalance, As per telemetry algorithm, T+2, 48 Hour Telemetry                     |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Heart Block, As per telemetry algorithm, T+2, 48 Hour Telemetry                               |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Major Surgery (TAVR/Clip/LAAO/CABG/Valve), As per telemetry algorithm, T+2, 48 Hour Telemetry |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Percutaneous Coronary Intervention (PCI), As per telemetry algorithm, T+2, 48 Hour Telemetry  |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Permanent Pacemaker/AICD Lead Implant, As per telemetry algorithm, T+2, 48 Hour Telemetry     |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Pregnant Woman with Cardiac Condition, As per telemetry algorithm, T+2, 48 Hour Telemetry     |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Stroke Patient, As per telemetry algorithm, T+2, 48 Hour Telemetry                            |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Syncope, As per telemetry algorithm, T+2, 48 Hour Telemetry                                   |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Uncomplicated Ablation of Arrhythmia, As per telemetry algorithm, T+2, 48 Hour Telemetry      |
| Cardiac Monitoring - 24 hours                                                                                                                                                                             |                              |                                                                                               |
| Cardiac Monitoring ordered for the following indications will be evaluated approximately 24 hours and will discontinue unless changes are made in the patient's clinical condition supports continuation. |                              |                                                                                               |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Acute Coronary Syndrome, As per telemetry algorithm, T+1, 24 Hour Telemetry                   |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Arrhythmia - AFib, Brady/Tachycardia, As per telemetry algorithm, T+1, 24 Hour Telemetry      |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Chest Pain/ Rule out MI, As per telemetry algorithm, T+1, 24 Hour Telemetry                   |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | CHF, As per telemetry algorithm, T+1, 24 Hour Telemetry                                       |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Complex Congenital Heart Disease, As per telemetry algorithm, T+1, 24 Hour Telemetry          |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Electrolyte Imbalance, As per telemetry algorithm, T+1, 24 Hour Telemetry                     |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Heart Block, As per telemetry algorithm, T+1, 24 Hour Telemetry                               |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Major Surgery (TAVR/Clip/LAAO/CABG/Valve), As per telemetry algorithm, T+1, 24 Hour Telemetry |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Percutaneous Coronary Intervention (PCI), As per telemetry algorithm, T+1, 24 Hour Telemetry  |
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| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Pregnant Woman with Cardiac Condition, As per telemetry algorithm, T+1, 24 Hour Telemetry     |
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| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Syncope, As per telemetry algorithm, T+1, 24 Hour Telemetry                                   |
| <input type="checkbox"/>                                                                                                                                                                                  | Cardiac Monitoring Telemetry | Uncomplicated Ablation of Arrhythmia, As per telemetry algorithm, T+1, 24 Hour Telemetry      |

 PRACTICAL APPLICATIONS SAMPLE ORDER SET

### Epic Telemetry Order: Aligned with AHA Guidelines

- Each condition has a specified duration:
- 24 hours
  - 48 hours
  - Continuous

Telemetry Monitoring

✓ Accept

To move the patient to an ICU level of care, use the full transfer navigator workflow.

Telemetry Monitoring - Patient on telemetry-capable unit

Select the Telemetry Monitoring order below that is appropriate for your patient based on the indication chart below. If your patient does not have one of these indications (or is not being evaluated for that issue), please reconsider whether telemetry is necessary or select the Telemetry Monitoring 48 hrs with "Other" as the indication.

| Indications for Telemetry:             |                                 |                                                         |
|----------------------------------------|---------------------------------|---------------------------------------------------------|
| 24 hr                                  | 48 hr                           | Continuous                                              |
| Chest pain                             | Acute Stroke                    | AV block                                                |
| Syncope NOS                            | Heart Failure acute or subacute | Temporary pacemaker or transcutaneous pacing pads       |
| TIA                                    | Acute MI                        | Cardiac surgery during this admission                   |
| Uncomplicated arrhythmia               | Complex major surgery           | Use of a wearable personal automatic defibrillator      |
| Major surgery                          | Syncope suspect arrhythmia      | Arrhythmia complicating WPIW syndrome                   |
| Non-Urgent PCI                         | Thoracic Surgery                | Long-QT syndrome and associated ventricular arrhythmias |
| AICD or pacer placement                | Pericarditis                    | Required for medication administration                  |
| Overdose                               | Pulmonary Embolism              | Patients with indications for ICU                       |
| Uncomplicated ablation of arrhythmia   | Sepsis                          |                                                         |
| Procedure requires sedation/anesthesia | Arrhythmia management           |                                                         |
| Severe Electrolyte imbalance           | Other (specify)                 |                                                         |

☐ Telemetry Monitoring 24 hours  
Routine for 24 hours

☐ Telemetry Monitoring 48 hours  
Routine for 48 hours

☐ Telemetry Monitoring continuous  
Routine Until Specified

☐ Telemetry Monitoring - Patient on non telemetry-capable unit

Next Required

✓ Accept

### Epic Telemetry Order: Aligned with AHA Guidelines Continued

- Provider identifies:
- Indication
  - If patient can be off telemetry

Telemetry Monitoring

✓ Accept

✗ Cancel

Telemetry Monitoring 24 hours Chest pain

✓ Accept

✗ Cancel

Priority: Routine

Frequency: Until discontinued

Starting: 12/6/2023 1430

For: 24 Hours

Starting: Today 1430

Indication for 24 hour telemetry: AICD or Pacer placement Chest pain Major surgery Non-urgent PCI Overdose Procedure requiring sedation and/or anesthesia Severe electrolyte imbalance Syncope NOS TIA Uncomplicated ablation of arrhythmia Uncomplicated arrhythmia

Can the patient be off telemetry for activities (including therapy, ambulation, off-unit procedures, showers, bathroom)? Yes No

Baseline Rhythm: Normal Sinus Rhythm Atrial Fibrillation Sinus Bradycardia Sinus Tachycardia Paced Rhythm Other (Specify)

Comments: Notify Provider for change in rhythm

✓ Accept

✗ Cancel

Once cardiac monitoring is ordered by a physician or Advanced Practice Provider (APP), the initiation process begins to ensure continuous and accurate monitoring of the patient’s cardiac status. Many hospitals and health care systems utilize CMUs to oversee cardiac monitoring, providing a centralized approach to patient care. Effective communication and coordination between the CMU and nursing staff are crucial to ensure accurate monitoring and timely response to any cardiac events.

6

INITIATION & UTILIZATION





## PRACTICAL APPLICATION: SAMPLE CARDIAC MONITORING INITIATION WORKFLOW

### Step 1

The physician or APP orders cardiac monitoring for the patient in accordance with evidence-based practice as described in the [AHA Telemetry Guidelines Improve Telemetry Utilization in the Inpatient Setting](#).

### Step 2

Nurse educates the patient and family on cardiac monitoring, including its purpose, device placement, usage and care, and when to notify the nurse for specified cardiac symptoms (e.g., chest pain, palpitations, or dizziness).

### Step 3

Assign and provide the transmitter according to the organization's process.

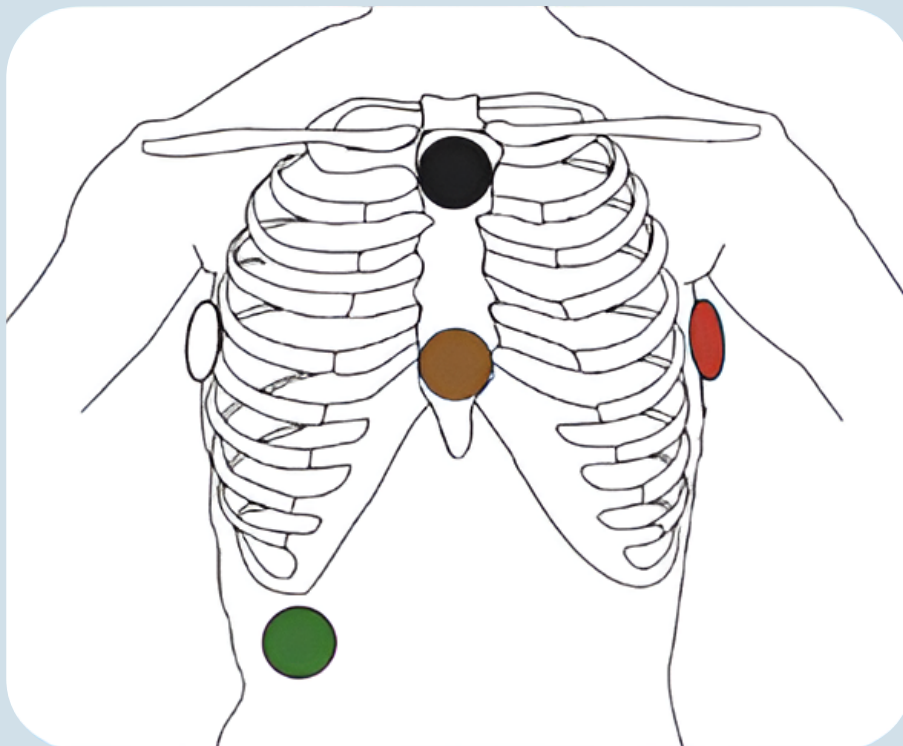
### Step 4

Nursing staff notify CMU a patient is being monitored by using a standardized handoff communication template. Consider including the following information in the template (see sample below):

- |                                                      |                                               |
|------------------------------------------------------|-----------------------------------------------|
| ◇ Patient identifiers as defined by the organization | ◇ Cardiac history                             |
| ◇ Telemetry box number                               | ◇ Alarm parameters                            |
| ◇ Code status                                        | ◇ If patient has a defibrillator or pacemaker |
| ◇ Oxygen requirement                                 |                                               |
- Nursing staff attach the assigned transmitter and/or leads to the patient.
  - CMU staff admit the patient to the Telemetry Monitoring system, ensuring demographics, transmitter number, and clinical parameters are recorded.
  - After connecting the patient, nursing staff call the CMU from the patient's room to confirm the transmitter number, patient's name, room number, and visualization of the patient's rhythm.
  - Nursing staff ensure the patient call device is within reach.
  - Document and analyze the initial cardiac monitoring strip according to facility protocol.
  - CMU staff confirm a clear electrocardiogram (ECG) signal with nursing staff upon initiation of monitoring.
  - CMU staff verify the patient's name, room number, transmitter number, visualization, and rhythm upon initiation.
  - CMU staff set and adjust default alarm limits according to the organization's standards or provider's order.

**SAMPLE TELEMETRY MONITOR APPLICATION & MAINTENANCE**

Application of the cardiac monitor will follow the manufacturer's guidelines (e.g., EASI format for telemetry packs, 5-lead setup for hardwire monitoring).

**Telemetry Pack Batteries**

CNAs or designated staff must change the telemetry pack batteries (battery pack or double AA) at the beginning of each shift (0800 & 2000). Battery changes may also be requested as needed by the Monitor Bank. All changes should be documented in the EHR.

**Pulse Oximeter and Electrodes**

Replace the pulse oximeter and prep/replace electrodes after the daily bath. Document these actions in the Electronic Health Record (EHR).



# Monitoring

Effective telemetry monitoring involves the continuous observation of patients' cardiac rhythms to detect any abnormalities that may require immediate medical intervention. This process is supported by a robust framework that includes routine rhythm interpretation, clinical and technical alarm triage, and proper documentation.

This chapter will cover cardiac rhythm strip review, clinical & technical alarm triage, communication guidelines and CMU documentation, Monitor Tech (MT) assignment and coverage, and handoff.

## Key Considerations



### CARDIAC RHYTHM STRIP REVIEW

#### Timing for Sending Rhythm Strips to EHR

Determine when MTs should send rhythm strips to the EHR, considering alarm events and routine timing. Routine strips may be sent at different frequencies based on patient acuity:

- **Med-Surg:**  
At least once every 12 hours.
- **Progressive Care and ICU:**  
At least every 4 hours

#### Documentation by MTs:

Create a process for MTs to document their interpretations in the EHR, including elements such as PR and QRS measurements and rhythm interpretation.

#### Nurse Review:

Establish a process for nurses to review rhythm strips and document their interpretations in the EHR.



### CLINICAL & TECHNICAL ALARM TRIAGE, NOTIFICATION, ESCALATION

#### Escalation Process:

Establish a clear escalation process using common language for alarms/alerts from MTs to clinical staff, ensuring all staff understand the urgency of responses.



## PRACTICAL APPLICATION: SAMPLE ESCALATION PROCESS

- **MTs** notify staff immediately when a patient's rhythm is no longer visible on the screen, there is a change in heart rhythm or rate, a lethal arrhythmia occurs, or there are issues like leads off, dead battery, or other patient-related concerns.
- **CNAs** can accept notifications related to leads off, dead battery, or loss of signal.
- **RNs** accept notifications related to changes in heart rate/rhythm or issues like leads off, dead battery, or loss of signal.
- If a rhythm cannot be detected, the **MT** will notify the nursing unit immediately and continue follow-up until the patient is back on the monitor and a rhythm is detected.
- If the problem is not corrected, the **MT** will escalate the issue up the chain of command, notifying the **Charge Nurse** and then the **rapid response team**.

### Anticipated Response Times:

#### Red Alarms

##### High Risk

Immediate  
Response

#### Yellow Alarms

##### Moderate Risk

1-3 Minutes

#### InOps Alarms

##### Low Risk

3-5 Minutes

### Communication Guidelines

Establish guidelines for communication among clinical staff, MTs, and providers. Consider the following:

- **Clinical staff** should notify the **CMU** when a patient needs to be off the monitor. Consider if a provider order is required for patients to be removed from cardiac monitoring for showering or off-unit testing.
- **Clinical staff** should notify **CMU** when a patient will be leaving the unit.
- Provider should be notified if the patient refuses cardiac monitor.

### CMU Documentation

**MTs** should maintain documentation logs. The documentation may be a paper log or completed electronically. Consider documenting the following:



Date/Time of  
Calls to the Unit



The Person  
Notified



Time the Issue  
was Resolved



## PRACTICAL APPLICATION: SAMPLE SHIFT REPORT PROCESS

1. A new *Monitor Tech Shift Log* (See Appendix 1) will be started at the end of each shift and used to provide a shift report to the oncoming shift.
2. MT will sign his/her name in correct time slot at the top of the *Monitor Tech Shift Log* indicating MT is on duty.
3. This Log will be maintained by both A.M. and P.M. MTs.
4. If a rhythm change occurs this will be noted on the *Communication Log* along with the time of notification and the name of RN who was notified. A strip with the rhythm change will be saved and added to the *Monitor Strip Summary form*.
5. If a telemetry box needs to be checked by staff due to leads off, no signal, battery or any other reason, the MT is to document on the Communication Log and include the nursing unit that was called, the time and the person notified. If calling for more than one patient at a time a notation must be made on the Communication Log regarding each patient and not grouped as a whole.
6. *Monitor Bank Shift Logs* are not a part of the medical record and are kept for 7 days and then discarded.
7. The Communication Log is sent to the appropriate Nursing Unit at 4 AM and 4 PM to the attention of the ANM/Charge Nurse. The ANM/Charge Nurse will review the logs and provide real time coaching/education addressing items on the logs and turn in the logs to the Nurse Managers for further review/tracking and filing. The Monitor Bank will keep the Communication Log for 7 days and then discard it.
8. The Nurse Manager reviews the logs daily to ensure that all issues identified have been addressed as well as to determine if additional drill down of the issue is required or if team members need additional education. Documentation should also be placed in team member files.
9. Nurse Managers conducting drill downs should include the Monitor Bank leadership when concerns are related to the Monitor Bank processes, differing opinions on interpretation of cardiac strips, competencies or team members.

### Monitor Tech Assignment and Coverage

**Ratio Determination:**

Determine the appropriate ratio for MTs. There is no guideline or recommended ratio.

**Break Process:**

Establish a process for breaks.

**Clinical Supervisor:**

Consider placing a registered nurse as the clinical supervisor in the CMU.

**Handoff**

Establish a handoff process for MTs. Consider a reconciliation at shift change to ensure all patients with orders are being monitored, all patients are correctly admitted in the monitoring system, and all patients are assigned to a monitoring tech.

**PRACTICAL APPLICATION:  
SAMPLE SHIFT REPORT PROCESS**

1. Each shift the off-going MT will give a report to the oncoming MT using the *Monitor Tech Report Sheet*.
2. Charge Nurse or designee on the unit will verify all patients are visible on the monitors and communicate with the Monitor Bank if there are any patients missing.
3. Nursing unit will send a copy of the Vocera assignment sheet, which were updated at the start of each shift.
4. Oncoming MT will check the accuracy of patient's names against census sheet.
5. Oncoming MT will check alarm settings and verify they are on and audible.
6. Oncoming MT to review events of previous shift.
7. Off-going MT will report on each patient's rhythm, rate, and any other information needed for the safe handoff of patient monitoring.
8. Both shifts in the Monitor Bank will be responsible for contacting their immediate supervisor when supplies are needed. Please leave ample time for supplies to be obtained.
9. Off-going MT will remain logged on to Vocera, a hands-free communication device, until handoff report is complete, then oncoming MT will obtain Vocera and log on immediately after handoff.
10. MT to remain in Monitor Bank unless relieved by a trained staff member for breaks or lunch.



## PRACTICAL APPLICATION: TELEMETRY TRANSPORT PROCESS

1. Physician order should be obtained to transport cardiac monitored patients off the unit without a cardiac monitor.
2. Patients undergoing an MRI, unstable cardiac monitored patients, patients on vasoactive drips or patients with blood products being infused should be transported with a cardiac monitor and accompanied by an RN.
3. New Patients admitted to "telemetry" should be transported to inpatient unit with a cardiac monitor.
4. Transporters should notify the Central Monitor Bank when leaving patient's room or a testing area including transporter's name, patient's name, patient's room number and anticipated destination. The MT will document this information on the Communication Log.
5. During transportation of the patient, if the MT identifies an issue with the rhythm, the MT will contact the Transporter via Vocera to verify physical location of the patient, to check lead placement and next steps.
6. For patients that are not returning back to their original room, the nursing staff will be responsible for obtaining the telemetry equipment back from procedural area. A transport request can be placed for equipment to be delivered back to the home unit once removed from the patient (See Transport to and from the OR).
7. Transporter or staff delivering patient back to the room is to remain with patient until patient is received by nursing unit staff.
8. Nursing staff to place patient back on cardiac monitor upon return to the room, phone call/ Vocera to MT confirming patient name, room number, telepack and confirmation the rhythm is viewable.

**Transport of patients is a high-risk failure point.**



**Consider the following points:**

- Closed loop communication between transporting team members and CMU to know when the patient is leaving a unit, and when they return.
- If there is a need for a provider order to transport without cardiac monitoring.
- Closed loop communication between clinical team members of patient's departure, arrival, and return.
- Wi-Fi coverage in the building.
- Guidelines for the skill level/competency of clinical team members permitted to transport patients on cardiac monitoring.

# Evaluation of Ongoing Need & Discontinuation

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Evaluating the ongoing need for telemetry monitoring is crucial to ensure patient safety, optimize resource utilization, and enhance overall health care efficiency. Continuous telemetry monitoring can lead to alarm fatigue among health care staff, which may result in missed critical alarms and delayed responses. By regularly assessing the necessity of telemetry, health care providers can reduce unnecessary monitoring, thereby minimizing false alarms and improving patient flow.

This chapter will cover automated discontinuation and discontinuation communication.

## Key Considerations

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### Automated Discontinuation

An automated discontinuation process is strongly encouraged. The EHR can be leveraged to assist in this process. There are a few approaches to be considered:

Automatic discontinuation of the order. This is typically based on an indication for monitoring selected by the provider when initiating monitoring. The order expires according to the AHA recommendation at either 24 or to 48 hours. An action by the provider is required to extend monitoring. The clinical team removes monitoring when the order expires.

Assessment and removal by nurses. After a period of time determined by the organization (typically 24 or 48 hours) nurses use established assessment criteria and discontinue monitoring if the patient meets criteria.



## PRACTICAL APPLICATION: TELEMETRY DISCONTINUATION ASSESSMENT

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### TELEMETRY DISCONTINUATION ASSESSMENT IN EPIC

1. Telemetry order will expire within two hours- the following BPA will appear when the chart is opened:

2. Telemetry order for this patient will expire within 2 hours or has expired.

Follow the instructions below:

1. Complete Telemetry Discontinuation Assessment.
2. Update the Telemetry order based on the result of the assessment.
  - **DISCONTINUE:** Click the hyperlink below to jump to orders and discontinue the order.
  - **RENEW:** Contact the provider for new orders.

Document Do Not Document ☒ Telemetry assessment for discontinuation Collapse

Time taken: 2/2/2024 9:55

Telemetry Discontinuation Assessment

Has the patient undergone a cardiology procedure within the last 24 hours? (Cardiac Cath, Ablation, Pacemaker, ICD)

Yes - Patient does not meet criteria to discontinue telemetry, renew telemetry or No

Discontinue telemetry order

The following actions have been applied:

Added NCH IP TELEMETRY DISCONTINUATION ASSESSMENT TASK

2. At the same time, a task will be added to the Brain:

3. The RN can complete the assessment from either the BPA or the task. Completing the assessment will suppress the BPA for 2 hours, giving the RN time to either Renew or Discontinue the Telemetry order.

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### 4. Discontinue or Renew the Telemetry order as determined by the assessment.

Remember: if you need to renew the order for telemetry, you must contact the provider!

Orders

Active Signed & Held Items Made Manage Lists Order History

Telemetry monitoring for CMI

Unit discontinued: Starting on Tue 1/30/24 at 1452, Unit Tue 1/30/24, No 2 hours extension for telemetry CMI. Can the patient be off telemetry for activities including therapy, ambulation, off-unit procedures, showers, bathroom?

Yes Telemetry Administrator Code: Telemetry-Private Expires on 1 hour 10 minutes

5. If the RN chooses to complete the assessment through the task and not the BPA, the flowsheet should be completed like the following example:

6. If the order is not Renewed or Discontinued within the 2 hour timeframe, the BPA will fire indicating the RN should click the link to address the order.

### Discontinuation Communication

Establish a process that the CMU is notified when a patient's monitoring is discontinued.



## PRACTICAL APPLICATIONS SAMPLE ORDER SET

1. When a confirmed discharge order is placed, the RN or designee is to notify the Monitor Bank at the time discharge instructions are provided to the patient.
2. Nursing Unit staff will clean and return monitoring equipment and return to the designated location within 15 minutes of discharge or place in designated area for the HUC to clean and place in designated location.
3. Telepacks are not to be left on the counter or sent through the tube system.
4. MT will note the time of patient discharge on Monitor Tech Shift Log.
5. Nursing unit staff will place printed Monitor Strip Summary forms in HIM bin for scanning if the Waveform integration has not been implemented.
6. The Monitor Bank will discard any remaining patient labels in secured recycle bin.
7. MT will remove patient name from sector and save and discharge the patient out of the system.
8. If the Monitor Bank is not notified of patient discharge by the nursing team, the MT will call the RN caring for the patient to confirm patient is discharged and make notation of this on the Communication Log.

# Technology

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Telemetry monitoring often intersects with several different technologies. Conducting a full technology assessment is recommended and is crucial to help ensure the effective integration and utilization of these technologies.

## Key Considerations

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### ELECTRONIC HEALTH RECORDS (EHR)

#### Bed Charges and Accommodation Codes

Telemetry monitoring is typically tied to a bed charge/accommodation code for billing purposes. The accommodation code and provider order should ideally be linked to avoid conflicts.

#### Patient-Equipment Association

Establish a process for verifying that the correct patient is associated with the correct piece of equipment, especially when using an interface to the EHR.

#### Central Monitoring Flex Models

In some central monitoring flex models, an action is required by a team member to assign a patient to a sector. A process for admitting patients and ensuring the data is visible to the central station should be established. Otherwise, there is a risk that patient information is only visible on the telemetry box or the in-room monitor.





## ALARMS, PARAMETERS, AND SETTINGS

### Vendor Engagement

Ensure the vendor is engaged in staff education and the development of resources to address all alarms, including technical alarms/alerts. Request a quick reference guide with recommended response times from the vendor.

### Alarm Prioritization Knowledge

Ensure there is a working knowledge of the vendor's alarm prioritization, including sounds, alerts, banners, etc. Limited space on the central monitoring station does not allow for the display of multiple alarms.

### WiFi Coverage Assessment

Perform an assessment of WiFi coverage in all patient areas to ensure there is knowledge of the areas where patient information can be transmitted to the central station versus where monitoring will be local only.



## ADVANCED TECHNOLOGY

### Console Management Software

This software is used by central monitoring technicians to help prioritize alarms/alerts, track notifications, track response times, and incorporate some automated escalations. It provides a centralized interface for managing systems, devices, and applications, allowing for efficient monitoring and management from a single point of control.

### Middleware Technology

Middleware acts as a bridge between different applications, enabling them to communicate and share data seamlessly. In the context of telemetry, middleware can directly send alarms/alerts to bedside team members, ensuring timely and accurate communication. It provides a uniform user experience by integrating various technologies, tools, and databases into a single system.

# Education & Competencies

## Telemetry Monitoring Education and Curriculum Guidelines

A robust telemetry monitoring education curriculum, including ongoing competency assessments, is essential for ensuring that health care teams can accurately interpret and respond to telemetry data. Proper education ensures that staff are equipped with the necessary skills and knowledge to manage telemetry effectively, reducing the risk of missed or inappropriate responses to alarms.

According to the AHA guidelines, initial and ongoing education for the correct interpretation of electrocardiographic waveforms and data, congruent with the type of patients being cared for, is recommended (Class I; Level A Evidence) (Sandau et al, 2017). This education must include both didactic content and hands-on practice, covering general and specific monitoring skills. The AHA emphasizes that baseline and ongoing education are crucial components, ensuring that health care providers are well-equipped to interpret and respond to electrocardiographic data accurately (Class I Recommendation, Level A) (Sandau et al, 2017).



### PRACTICAL APPLICATION: SAMPLE CURRICULUM

#### Understanding ECG Abnormalities

**Goal:**

Educate staff on identifying and responding to arrhythmias, ischemia, and prolonged QTc intervals.

**Content:**

- Review of electrophysiological concepts essential for accurate ECG interpretation.
- Detailed instruction on recognizing specific ECG abnormalities and the clinical implications of each.

The 2017 Update to AHA Practice Standards for Electrocardiographic Monitoring in Hospital Settings provides the following ECG Interpretation & Appropriate Response education content guidance:



[AHA Recommendations for Education Related to General Electrophysiological Concepts](#)



## AHA RECOMMENDATIONS FOR EDUCATION RELATED TO GENERAL ELECTROPHYSIOLOGICAL CONCEPTS

### Automaticity

- Physiological pacemakers
- Overdrive suppression

### Excitation

- Refractory periods

### Conduction

- Conduction velocity
- Concealed conduction
- Anterograde and retrograde conduction

### Sinus node physiology

- Normal ranges of sinus rate with age
- Effects of autonomic tone
- Vasovagal reactions
- Resting/sleep
- Activity/exercise
- Effects of drugs

### Atrioventricular node physiology

- Effects of atrial rate
- Effects of autonomic tone
- Resting/sleep
- Activity/exercise
- Effects of drugs

### Wide vs narrow QRS complexes

- QT/U intervals
- Relation to rate
- Sex differences
- Drug effects
- Pause dependency

### Observations with arrhythmias

- Sustained vs non-sustained
- Monomorphic vs polymorphic
- Hemodynamically stable vs unstable
- Symptomatic vs asymptomatic
- Association with heart disease vs no heart disease

### Hemodynamic effects of arrhythmias

- Influence of rate
- Influence of heart disease
- Influence of atrioventricular synchrony
- Influence of left ventricular synchrony

### Implantable devices

- Function of electronic pacemakers, including biventricular pacemakers
- Function of automatic defibrillators

### Acute myocardial ischemia

- ST-segment elevation (anterior, septal, inferior, lateral, right ventricular; ST recovery indicative of successful reperfusion; reperfusion arrhythmias; intermittent reperfusion; leads on the ECG related to occlusion of 3 main coronary arteries)
- NSTEMI
- Transient myocardial ischemia (including coronary spasm and effects of body position changes mimicking ischemia)

### Syncope

- Effects of common antiarrhythmic drugs, rate control vs rhythm control





## AHA Recommendations for Education Related To Specific Abnormalities on ECG



### AHA RECOMMENDATIONS FOR EDUCATION RELATED TO SPECIFIC ABNORMALITIES ON ECG\*

#### Normal rhythms

- Sinus rhythm
- Sinus bradycardia
- Sinus arrhythmia
- Sinus tachycardia

#### Intraventricular conduction defects

- Right and left BBB
- Aberrant ventricular conduction

#### Bradyarrhythmias

- Inappropriate sinus bradycardia
- Sinus node pause or arrest
- Nonconducted atrial premature beats
- Junctional rhythm
- Atrioventricular blocks
- First degree
- Second degree
- Mobitz I (Wenckebach)
- Mobitz II
- Advanced ( $\geq 2:1$ )
- Third degree (complete heart block)
- Asystole, pulseless electric activity
- Sino-ventricular rhythm (e.g., in severe hyperkalemia)

#### Tachyarrhythmias

- Supraventricular
- Atrioventricular nodal reentrant tachycardia, atrioventricular reentrant tachycardia
- AF
- Atrial flutter
- Multifocal atrial tachycardia
- Atrial tachycardia
- Accelerated junctional rhythm
- Ventricular
- Accelerated ventricular rhythm
- Nonsustained/sustained monomorphic VT
- Nonsustained/sustained polymorphic VT
- Prolonged QT interval—associated ventricular ectopy, TdP
- VF

#### Premature complexes

- Supraventricular (atrial, junctional)
- Ventricular

#### Pacemaker electrocardiography

- Failure to capture
- Failure to pace (no pacemaker output)
- Failure to sense

- Failure to capture both ventricles in biventricular pacing

#### Electrocardiographic abnormalities of acute myocardial ischemia

- ST-segment elevation/depression
- T-wave inversion

#### Muscle or other artifacts simulating arrhythmia

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### Electrode Placement & Skin Preparation

#### Goal

Ensure staff understand the importance of proper electrode placement and preparation to prevent false readings.

#### Content

- Demonstrations and hands-on practice in electrode placement and skin preparation.
- Best practices for maintaining clean skin contact to ensure accurate telemetry readings.

### Monitoring Skills: ECG Interpretation & Appropriate Response

#### Goal

Teach staff how to interpret ECG waveform data and when to escalate based on abnormal readings.

#### Content

- Interpretation of ECG waveform data
- Monitoring goals (e.g., arrhythmia, ischemia, QTc)
- Didactic and hands-on practical sessions focused on reading ECG data, detecting abnormalities, and determining when to call a Code Blue.
- Simulations to practice real-world scenarios where staff must act quickly to ECG changes.
- 2017 Update to AHA Practice Standards for Electrocardiographic Monitoring in Hospital Settings provides the following ECG Interpretation & Appropriate Response education content guidance: AHA Recommendations for Education Related to Recommended Monitoring Skills.



[AHA Recommendations for Education Related to Recommended Monitoring Skills](#)



## AHA RECOMMENDATIONS FOR EDUCATION RELATED TO RECOMMENDED MONITORING SKILLS

- Operation of monitoring system used in hospital unit (arrhythmia, ST-segment, and QTc monitoring)
- Recognition of limitations of computer algorithms
- Proper skin preparation before applying electrodes
- Sinus tachycardia
- Landmarks for and importance of accurate electrode placement
- Setting heart rate, ST-segment alarm parameters appropriately
- Importance and procedure for customizing alarm parameters to unit and patient needs
- Measurement of heart rate
- Measurement of intervals (use of manual and electronic electrocardiographic calipers)
- Diagnosis of specific rhythms, recognition of atrial activity, evaluation of pauses
- Recording of standard 12-lead ECG from monitor, including moving limb lead wires from electrodes on torso to electrodes on limbs
- Recording of atrial electrograms from postoperative epicardial wires (including electrical safety)
- Ability to intervene (unit protocols for responding to, reporting, and documenting) for:
  - Defibrillation/cardioversion
  - Patient with bradycardia
  - Patient with tachycardia
  - Patient with syncope
  - Patient with cardiac arrest
  - Patient with implanted device (new or chronic)
  - Patient with temporary transvenous pacemaker
  - Patient with transcutaneous pacemaker

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### Tailored to Unit Needs

#### Goal

Customize initial and ongoing content based on the specific patient population of each unit. AHA Class 1 Recommendation (Level A).

#### Content

- Unit-specific training on monitoring goals (arrhythmia, ischemia, QTc) and responding to patients' needs.
- Clinical leadership guides content development to ensure relevance to each unit.
- For instance, a unit that cares for patients undergoing ICD placement should ensure that staff receive initial education and continuous updates as technology evolves. This will help maintain the necessary knowledge to properly assess both the patient and the device, including recognizing issues such as antitachycardia pacing, overpacing, or underpacing.

## Role-Specific Education Pathways

### Monitor Technicians (MTs)

#### Goal

Equip MTs with the skills needed for precise ECG monitoring and effective alarm management.

#### Content

- A robust orientation covering ECG interpretation basics, clinical workflow, and escalation processes.
- MTs should be familiar with the specific telemetry systems used, with focused training on alarm management, device functionality, and troubleshooting. Education should include manufacturer-provided content, such as instructional videos, to enhance understanding of critical features like alarm settings and silencing protocols.
- Familiarity with the AHA recommendations and highlighting the potential harms that inappropriate monitoring can lead to.
- Policy and SOP review.
- Awareness of the importance of proper electrode placement and telemetry device maintenance.
- Using closed loop communication for telemetry escalation and calls.
- Hands-on practice with common telemetry scenarios, focusing on triaging multiple alarms and closed-loop communication.
- Rhythm recognition tests and telemetry simulations to assess competency.
- Telemetry/CMU preceptorship period after initial orientation to telemetry.
- For centralized telemetry off unit, consider nursing unit shadow time to understand telemetry workflow and build relationships.

## Nurses

### Goal

Prepare nurses to independently manage telemetry monitoring, focusing on ECG interpretation and escalation.

### Content

- ECG competency testing, with a minimum passing requirement.
- Nurses should receive training on telemetry equipment, ensuring proficiency in managing alarms and device settings. Manufacturer-provided resources, including instructional videos, can enhance understanding of critical features like alarm settings and equipment functionality.
- Familiarity with the AHA recommendations and highlighting the potential harms that inappropriate monitoring can lead to.
- Preceptor-led training on proper telemetry usage, including SOP reviews.
- Simulation-based learning covering lethal rhythm identification, alarm management, and team communication. Using closed loop communication for telemetry escalation and calls.
- Rhythm recognition tests and simulations to assess competency.
- Policy and SOP review.
- Ongoing education embedded in ongoing (ex. annual or biannual) competency tests.
- For centralized telemetry off unit, consider CMU shadow time to understand telemetry workflow and build relationships.

## Patient Care Technicians (PCTs)

### Goal

Ensure PCTs understand their role in telemetry monitoring and their responsibilities for patient safety.

### Content

- Training on the importance and purpose of telemetry monitoring, with a focus on electrode replacement and battery management.
- Annual competency validation through hands-on skill checks.
- Role-specific education on closed-loop communication and escalation procedures when patients are being taken off or being placed back on telemetry (ex. during bathing or battery changes).



### Transporters

#### Goal:

Provide transporters with the knowledge to safely transport telemetry-monitored patients.

#### Content:

- Training on the site-specific escalation processes for telemetry, ensuring closed-loop communication during handoffs.
- Annual refresher training on telemetry policy points related to their role, including audible alarm management during transport.

### Providers

#### Goal:

Ensure providers understand the appropriate use of telemetry based on clinical guidelines.

#### Content:

- Familiarity with the AHA recommendations and highlighting the potential harms that inappropriate monitoring can lead to.
- AHA-guided education on when to order telemetry monitoring and the purpose of monitoring for specific clinical scenarios.
- Training in ordering processes within the EHR.

## Sustained Validation & Competency

### Quarterly Competency Testing

#### Goal

Ensure all health care providers involved in telemetry monitoring maintain a high level of competency.

#### Content:

- Quarterly rhythm recognition tests, focusing on the detection of arrhythmias and correct escalation procedures.
- Telemetry SOP reviews and updates integrated into quarterly training sessions.
- Continuous validation of electrode placement and skin preparation skills.

### Simulation-Based Learning

#### Goal:

Reinforce critical telemetry monitoring skills through realistic, hands-on practice.

#### Content:

- Regular simulation exercises focusing on triaging alarms, detecting lethal rhythms, and practicing team communication during critical events.
- Quarterly hands-on training that emphasizes telemetry equipment maintenance and correct responses to abnormal ECG readings.

### Provider Integration

#### Goal:

Ensure providers understand the implications of telemetry monitoring and their role in appropriate usage.

#### Content:

- Educational sessions tailored for providers on AHA guidelines for ECG monitoring and best practices for ordering telemetry.
- Cross-disciplinary training to improve communication between providers, nurses, and MTs, ensuring optimal patient monitoring outcomes.

### Cross-Team Collaboration

#### Goal

Foster collaboration among MTs, nurses, PCTs, and providers to ensure cohesive telemetry management.

#### Content

- Team-based learning modules to enhance communication and role clarity when managing telemetry alarms and interpreting ECG data.
- Monthly interdisciplinary reviews of telemetry practices and outcomes to ensure continuous improvement in monitoring processes.
- Completed in partnership by MT department leadership and learning specialist/corporate learning team. Focusing on rhythm identification, follow up actions, policy follow through, and escalation algorithm.

## Examples of Structured Content

### Roles

- New hire to MT role (no MT experience)
  - ◊ Corporate ECG courses with passing score on final test
- New hire to MT role (with MT experience)
  - ◊ Stated ECG Experience test in lieu of corporate ECG course; passing score on stated experience test, or will need to take full corporate course
  - ◊ If pass stated experience test, will still take corporate tele course that focuses on process and policy

### Onboarding

- Monthly/Quarterly/Annual Education/Competencies
  - ◊ Monthly – department specific needs
  - ◊ Quarterly – developed by corporate ED; rhythm strips, process questions, and policy reiterations
  - ◊ Annual – proctored test with rhythm strips, process questions, and policy reiterations

*\*If unable to pass exams, unable to remain in the role.*

# Infection Prevention and Control

Ensuring proper infection prevention and control practices is critical in health care settings, particularly when it comes to shared patient care equipment like telemetry boxes.

## Key Considerations

### PROPER CLEANING/DISINFECTING OF THE TELEMETERY BOX AFTER PATIENT USE

#### Infection Control Policy

Add telemetry boxes and portable monitoring equipment to the list of items covered by the infection control policy on cleaning and disinfection of shared non-critical patient care equipment.

#### Cleaning and Disinfection

The telemetry box/monitor must be cleaned and disinfected immediately after use and whenever visibly soiled or contaminated, following the manufacturer’s directions. Refer to the manufacturer’s instructions for use (IFU) for complete information.

#### Identification Process

Establish a clear process to identify clean versus dirty (or not yet cleaned and disinfected) telemetry devices. Include proper storage instructions to maintain cleanliness when not in use, using the manufacturer’s IFU as a reference.



### MANUFACTURER’S APPROVED PRODUCT LIST AND CLEANING METHODS

#### Review IFU

Review the manufacturer’s IFU and use only approved products and methods for cleaning and disinfection.

#### Cleaning Tips/Methods

Follow the cleaning tips and methods approved by the manufacturer.



### ROLES AND RESPONSIBILITIES FOR CLEANING AND DISINFECTION

#### Policy Inclusion

Add telemetry boxes and portable monitoring equipment to the items listed in the infection control policy on cleaning and disinfection of shared non-critical patient equipment.

# Continuous Quality Monitoring

Create a monitoring stewardship team to regularly review telemetry usage and ensure adherence to protocols. An interdisciplinary team approach is essential for reassessing and optimizing telemetry use, ensuring adherence to guidelines, and achieving meaningful and sustainable improvements in telemetry monitoring.

## Key Considerations



### COMMITTEE MEMBERSHIP

Creation of a multidisciplinary team, who shall oversee the telemetry management program and the improvement efforts.



### POTENTIAL TEAM MEMBERS

- Representative from the Medical Staff
- Representative from Nursing (Leadership/Staff Nurse/Nursing Assistant/Unit Champion)
- Telemetry Technicians
- Quality Management
- Risk Management
- Patient Safety
- Infection Control
- Clinical Informatics
- Clinical Educator
- Biomedical Engineering
- Information Technology (IT) System
- Representative from Vendor
- Representative from Patient Care Experience team



## PRACTICAL APPLICATION: SAMPLE CLINICAL QUALITY MEASURES & PROCESS IMPROVEMENT

CMU documentation logs should be routinely reviewed for compliance with notifications, escalations, and clinical staff response times.

### Patient near miss/harm events related to tele

- Event reports
- Serious Safety Events

### Kudos

- Sharing at safety huddle when process goes well and patient care/outcomes are positive

### Tele order/placement discrepancies

- Reconciliation mismatches (have order not on tele; don't have order and are on tele)

### Number of canceled code blue calls as a result of poor tele communication and follow through

#### Observation

- The alarm on central monitor (nursing station) was on and audible
- Staff responding to alarms in a timely manner as per policy
- Equipment - cleaning/disinfecting following manufacturer's IFU

*(See Appendix 2 for a Quality Metrics Dashboard Example)*

### EHR-based measures

- Number of patients with tele orders
  - ◊ Quantity by reason type
  - ◊ Time on Telemetry
    - 0-12 hours
    - 12-24 hours
    - 24-48 hours
    - 48-72 hours
    - >72 hours
- Trending Telemetry Best Practice Alert (BPA) responses
- Time from order to implementation
- RN/NA task compliance (lead change, documentation of tele box number, battery change at the start of shift etc.)
- Reason for call (avoidable calls)
  - ◊ Calls due to "battery Low"
  - ◊ Calls due to "Leads Off" (patient being discharged, off the floor for testing and off monitor for personal care)
- Documentation requirement as per policy
  - ◊ A copy of telemetry strip on file (for any change in rhythm/arrhythmia)
  - ◊ Name of telemetry tech reporting, nurse notified, date and time of notification
  - ◊ Alarm was on and audible as per policy
- Timeliness of call
  - ◊ Telemetry tech to nurse as per policy
  - ◊ Nurse to provider as per policy

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# Appendix

## Appendix 1

### Practical Application: Sample CMU Documentation Process

- Monitor Tech Shift Log

| Telemetry Call Log |      |     |        |                |          |                 |         |                        |                   |      |    |     |          |
|--------------------|------|-----|--------|----------------|----------|-----------------|---------|------------------------|-------------------|------|----|-----|----------|
| TIME               | CALL |     | ROOM # | PATIENT'S NAME | SPOKE TO | REASON/RESPONSE |         |                        |                   |      |    |     |          |
|                    | IN   | OUT |        |                |          | PT              | BATTERY | LEADS OFF:<br>ALL SOME | RHYTHM<br>CHANGED | TEST | BR | D/C | COMMENTS |
|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
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|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
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|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
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|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |
|                    | [ ]  | [ ] |        |                |          |                 |         | [ ]                    | [ ]               |      |    |     |          |

DATE

MONITOR TECH'S NAME

UNIT

[ ] 7 am [ ] 7 pm

NOT PART OF MEDICAL RECORD

FORM 2288-124287 Rev. 11/24

| Date:    |            |                                |                                        |                                |                                                 |                                                                                                | 7A                              | 7P              | Q4H MONITOR RHYTHM / SPO2 EVALUATION LOG |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|----------|------------|--------------------------------|----------------------------------------|--------------------------------|-------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------|-----------------|------------------------------------------|-----------------|----------------------------|-----------------|---------------------------------|-----------------|----------------------------|-----------------|----------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------|--|--|--|
| Room/Bed | Tele Box # | Patient Name: Last, First, MRN | Does pt have an active tele order? Y/N | Off Tele for Activities Order? | MD order for custom alarm limits? Y/N           |                                                                                                | 08:00AM                         | SPO2            | 12:00PM                                  | SPO2            | 16:00PM                    | SPO2            | 20:00PM                         | SPO2            | 12:00AM                    | SPO2            | 04:00AM                    | SPO2            | Comments/Interventions/Code etc.                                                                                    |  |  |  |
| 2401     | Box 102    | Test, Patient One #123456789   | Yes                                    | Yes                            | No                                              | Rate<br>Rhythm                                                                                 | 102 HR / Sinus Tachycardia      | NO SPO2 MONITOR | 10 HR / Sinus Tachycardia                | NO SPO2 MONITOR | 105 HR / Sinus Tachycardia | NO SPO2 MONITOR | 90 HR / Sinus Rhythm            | NO SPO2 MONITOR | 102 HR / Sinus Tachycardia | NO SPO2 MONITOR | 102 HR / Sinus Tachycardia | NO SPO2 MONITOR | See Escalation Monitor. Tachycardia with Ambulation.                                                                |  |  |  |
| 2403     | Box 106    | Test, Patient Two #123456789   | Yes                                    | Yes                            | No                                              | Rate<br>Rhythm                                                                                 | 59 HR / Sinus Bradycardia       | 94%             | 57 HR / Sinus Bradycardia                | 92%             | 59 HR / Sinus Bradycardia  | 94%             | 62 HR / Sinus Rhythm            | 94%             | 59 HR / Sinus Bradycardia  | 95%             | 57 HR / Sinus Bradycardia  | 93%             | No comments to report. Patient Baseline.                                                                            |  |  |  |
| 2404     | Box 108    | Test, Patient Three #123456789 | Yes                                    | No                             | Yes - Notify Nurse if Heart Rate drops below 70 | Rate<br>Rhythm                                                                                 | 120 HR / AFIB Rate uncontrolled | NO SPO2 MONITOR | 121 HR / AFIB Rate uncontrolled          | NO SPO2 MONITOR | 100 HR / AFIB              | NO SPO2 MONITOR | 100 HR / AFIB Rate uncontrolled | NO SPO2 MONITOR | 90 HR / AFIB               | NO SPO2 MONITOR | 89 HR AFIB                 | NO SPO2 MONITOR | See Escalation Monitor. Patient is on Cardizem - Cardiology is adjusting dosing. Patient Stable per Primary RN Sue. |  |  |  |
|          |            |                                |                                        |                                |                                                 | Rate<br>Rhythm<br>Rate<br>Rhythm<br>Rate<br>Rhythm<br>Rate<br>Rhythm<br>Rate<br>Rhythm<br>Rate |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |
|          |            |                                |                                        |                                |                                                 |                                                                                                |                                 |                 |                                          |                 | </                         |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |  |  |

|          |            | Date:                          |                                        |                                |                                                 |        |                                 | 7A              | 7P                             |         |
|----------|------------|--------------------------------|----------------------------------------|--------------------------------|-------------------------------------------------|--------|---------------------------------|-----------------|--------------------------------|---------|
| Room/Bed | Tele Box # | Patient Name: Last, First, MRN | Does pt have an active tele order? Y/N | Off Tele for Activities Order? | MD order for custom alarm limits? Y/N           |        |                                 | 08:00AM         | SPO2                           | 12:00PM |
| 2401     | Box 102    | Test, Patient One #123456789   | Yes                                    | Yes                            | No                                              | Rate   | 102 HR / Sinus Tachycardia      | NO SPO2 MONITOR | 110 HR / Sinus Tachycardia     |         |
|          |            |                                |                                        |                                |                                                 | Rhythm |                                 |                 |                                |         |
| 2403     | Box 106    | Test, Patient Two #123456789   | Yes                                    | Yes                            | No                                              | Rate   | 59 HR / Sinus Bradycardia       | 94%             | 57 HR / Sinus Bradycardia      |         |
|          |            |                                |                                        |                                |                                                 | Rhythm |                                 |                 |                                |         |
| 2404     | Box 108    | Test, Patient Three #123456789 | Yes                                    | No                             | Yes - Notify Nurse if Heart Rate drops below 70 | Rate   | 120 HR / AFIB Rate Uncontrolled | NO SPO2 MONITOR | 121HR / AFIB Rate Uncontrolled |         |
|          |            |                                |                                        |                                |                                                 | Rhythm |                                 |                 |                                |         |

| Q4H MONITOR RHYTHM / SPO2 EVALUATION LOG |                            |                 |                                 |                 |                            |                 |                            |                 |                                                                                                                     |  |
|------------------------------------------|----------------------------|-----------------|---------------------------------|-----------------|----------------------------|-----------------|----------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------|--|
| SPO2                                     | 16:00PM                    | SPO2            | 20:00PM                         | SPO2            | 12:00AM                    | SPO2            | 04:00AM                    | SPO2            | Comments/Interventions/Code etc.                                                                                    |  |
| NO SPO2 MONITOR                          | 105 HR / Sinus Tachycardia | NO SPO2 MONITOR | 90 HR / Sinus Rhythm            | NO SPO2 MONITOR | 102 HR / Sinus Tachycardia | NO SPO2 MONITOR | 102 HR / Sinus Tachycardia | NO SPO2 MONITOR | See Escalation Monitor. Tachycardia with Ambulation.                                                                |  |
| 92%                                      | 58 HR / Sinus Bradycardia  | 94%             | 63 HR / Sinus Rhythm            | 94%             | 59 HR / Sinus Bradycardia  | 95%             | 57 HR / Sinus Bradycardia  | 93%             | No comments to report. Patient Baseline.                                                                            |  |
| NO SPO2 MONITOR                          | 100 HR / AFIB              | NO SPO2 MONITOR | 120 HR / AFIB Rate uncontrolled | NO SPO2 MONITOR | 90 HR / AFIB               | NO SPO2 MONITOR | 88 HR / AFIB               | NO SPO2 MONITOR | See Escalation Monitor. Patient is on Cardizem - Cardiology is adjusting dosing. Patient Stable per Primary RN Sue. |  |

| Initiation of Telemetry Monitoring (new admission, transfer, or new order)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CMU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Nursing Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <ol style="list-style-type: none"> <li>1. Receive patient information from Nursing Unit via Communication Tool (<a href="#">Central Monitoring Unit Telemetry Initiation Form</a>) including: <ol style="list-style-type: none"> <li>a. Patient data (Name, MRN)</li> <li>b. Room, bed #</li> <li>c. Telemetry box #</li> <li>d. Pacemaker history (if applicable)</li> <li>e. Monitoring required (telemetry, SpO<sub>2</sub>, etc.)</li> <li>f. Bedside nurse contact information</li> <li>g. Telemetry order information: 24 hours, 48 hours, continuous, off telemetry for activities</li> </ol> </li> <li>2. Initiate telemetry monitoring.</li> <li>3. <u>Bedside</u> nurse and CMU will communicate to confirm correct patient associated with correct monitor and transmission of waveforms.</li> <li>4. Telemetry ECG tracings will be monitored continuously.</li> </ol> | <ol style="list-style-type: none"> <li>1. Continuous telemetry and/or telemetry oxygen saturation (SpO<sub>2</sub>) monitoring is initiated with a Provider's order.</li> <li>2. Obtain the telemetry box.</li> <li>3. Nursing to provide the CMU with the following information: <ol style="list-style-type: none"> <li>a. Patient data (name, MRN, admit/transfer date &amp; time)</li> <li>b. Room, bed #</li> <li>c. Telemetry box #</li> <li>d. Code status / pertinent patient history</li> <li>e. Pacemaker history (if applicable)</li> <li>f. Monitoring required (telemetry, SpO<sub>2</sub>, etc.)</li> <li>g. Primary nurse contact information</li> <li>h. Telemetry order information: 24 hours, 48 hours, continuous, off telemetry for activities, SPO2</li> <li>i. Send to CMU using the <b>Communication Tool:</b> <a href="#">Central Monitoring Unit Telemetry Initiation Form</a>.</li> </ol> </li> <li>4. Attach patient to telemetry box (<a href="#">skill reference</a>)</li> <li>5. Nurse and CMU will communicate to confirm the correct patient associated with correct monitor and transmission of waveforms.</li> </ol> |

| Job Aid (Required)                                                                                                                                                                                                               |                               |                     |                         |                                              |                                              |                                             |                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------|-------------------------|----------------------------------------------|----------------------------------------------|---------------------------------------------|-----------------------------------|
| Document Type/Title                                                                                                                                                                                                              |                               |                     |                         |                                              |                                              | Nursing Review Date                         |                                   |
| Central Monitoring Unit Telemetry Initiation Form                                                                                                                                                                                |                               |                     |                         |                                              |                                              | 03/05/2025                                  |                                   |
| <b>Related Documents</b><br>AHO.100.490- <a href="#">Telemetry Monitoring</a>                                                                                                                                                    |                               |                     |                         |                                              |                                              |                                             |                                   |
| <b>Purpose:</b> Send to CMU for Admissions, Transfers, & New Telemetry Orders                                                                                                                                                    |                               |                     |                         |                                              |                                              |                                             |                                   |
| Unit Name:                                                                                                                                                                                                                       |                               |                     |                         |                                              |                                              |                                             |                                   |
| Patient Name & MRN<br>(Patient Label Preferred)                                                                                                                                                                                  | Admit/Transfer<br>Date & Time | Room/<br>Bed Number | Telemetry Box<br>Number | Code Status/<br>Pertinent<br>Patient History | Cardiac<br>Pacemaker<br>(Y/N; type if known) | Monitoring Required<br>(ECG, SPO2, or Both) | Bedside Nurse &<br>Contact Number |
| Order<br>(check all that apply)                                                                                                                                                                                                  |                               |                     |                         |                                              |                                              |                                             |                                   |
| <input type="checkbox"/> 24 hours<br><input type="checkbox"/> 48 hours<br><input type="checkbox"/> Continuous<br><input type="checkbox"/> Order to take off telemetry for activities<br><input type="checkbox"/> Continuous SPO2 |                               |                     |                         |                                              |                                              |                                             |                                   |
| <input type="checkbox"/> 24 hours<br><input type="checkbox"/> 48 hours<br><input type="checkbox"/> Continuous<br><input type="checkbox"/> Order to take off telemetry for activities<br><input type="checkbox"/> Continuous SPO2 |                               |                     |                         |                                              |                                              |                                             |                                   |
| <input type="checkbox"/> 24 hours<br><input type="checkbox"/> 48 hours<br><input type="checkbox"/> Continuous<br><input type="checkbox"/> Order to take off telemetry for activities<br><input type="checkbox"/> Continuous SPO2 |                               |                     |                         |                                              |                                              |                                             |                                   |
| <input type="checkbox"/> 24 hours<br><input type="checkbox"/> 48 hours<br><input type="checkbox"/> Continuous<br><input type="checkbox"/> Order to take off telemetry for activities<br><input type="checkbox"/> Continuous SPO2 |                               |                     |                         |                                              |                                              |                                             |                                   |
| <input type="checkbox"/> 24 hours<br><input type="checkbox"/> 48 hours<br><input type="checkbox"/> Continuous<br><input type="checkbox"/> Order to take off telemetry for activities<br><input type="checkbox"/> Continuous SPO2 |                               |                     |                         |                                              |                                              |                                             |                                   |
| <input type="checkbox"/> 24 hours<br><input type="checkbox"/> 48 hours<br><input type="checkbox"/> Continuous<br><input type="checkbox"/> Order to take off telemetry for activities<br><input type="checkbox"/> Continuous SPO2 |                               |                     |                         |                                              |                                              |                                             |                                   |

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**CENTRAL MONITORING UNIT COMMUNICATION and ESCALATION LOG (Effective Date 3/13/2025)**

Date: \_\_\_\_\_ Unit(s): \_\_\_\_\_ Nurse Leader Reviewed: \_\_\_\_\_

♥ Required: Rhythm strip printed and/or uploaded

Monitor Tech (AM): \_\_\_\_\_

Monitor Tech (PM): \_\_\_\_\_

**Escalation Process for ANY Rhythm Waveform Change, Telemetry Refusal, or Off Monitor**

1. Immediately call assigned Nurse
2. Call unit Charge Nurse if no report back received within 2 minutes
3. Call Rapid Response Team (RRT) if no report back received within 2 minutes
4. CMU Supervisor to cefrief Unit Manager/Unit Director/CNO of escalations beyond unit escalation

**Escalation process for Potentially Lethal Rhythm Change (VTACH/VFIB/Asystole)**

1. Immediately call assigned Nurse
2. If unable to reach Nurse call CODE BLUE

**Escalate!** Do not stop escalating until the patient is back on telemetry and/or communication received

| Room | Tele Box #        | Patient Full Name + MRN or DOB | MONITOR | LEADS | TECH | Call Time | Escalation RN Name | Call Time | Escalation CHG/ANN Name | Call Time | Escalation RRT Name | Call Time | Escalation Code Blue | Time Resolved | Comments |
|------|-------------------|--------------------------------|---------|-------|------|-----------|--------------------|-----------|-------------------------|-----------|---------------------|-----------|----------------------|---------------|----------|
| 2401 | Schwartz, B Mcty  |                                |         | S     |      | 14:00     | SUE                |           |                         |           |                     |           |                      |               |          |
| 2435 | RUXODOS, ToXin    |                                |         |       | PA   | 14:05     | BOB                |           |                         |           |                     |           |                      |               |          |
| 2415 | BROOKIN, AXKer    |                                |         | DB    |      | 14:08     | TAMMY - No Answer  | 14:10     | CHG DIA                 |           |                     |           |                      |               |          |
| 2401 | Schwartz, B Mcty  |                                |         |       | PVC  | 14:11     | SUE                |           |                         |           |                     |           |                      |               |          |
| 2422 | KRAMMER, JaXmKie  |                                |         |       | B    | 14:12     | SUE                |           |                         |           |                     |           |                      |               |          |
| 2401 | Schwartz, B Mcty  |                                |         |       |      | 15:00     | SUE                |           |                         |           |                     |           |                      |               |          |
| 2407 | LYNNCH, K KellXty |                                |         |       | LOS  | 15:10     | SUE - No Answer    | 15:11     | CHG DIA                 |           |                     |           |                      |               |          |
| 2413 | LOPEZ, LauXr/Kia  |                                |         |       | B    | 16:00     | TAMMY              |           |                         |           |                     |           |                      |               |          |
| 2412 | MAKIN, M KellXael |                                |         |       | CT   | 16:05     | BOB                |           |                         |           |                     |           |                      |               |          |
| 2412 | MAKIN, M KellXael |                                |         |       | BN   | 16:35     | BOB - No Answer    | 16:37     | EV/A - No Answer        | 16:37     | Carla               | 16:39     |                      |               |          |

## Documentation

### Telemetry technician documents in the Electronic Health Record (E H R)

|                           | 09:00 - 09:59 EST                                    | 08:00 - 08:59 EST | 07:00 - 07:59 EST | 06:00 - 06:59 EST |
|---------------------------|------------------------------------------------------|-------------------|-------------------|-------------------|
| Remote Telemetry Repo...  |                                                      |                   |                   |                   |
| Problem Detected Telem... | Problem Detected Telemetry                           |                   |                   |                   |
| Cardiac Rhythm            | <input type="checkbox"/> Battery low                 |                   |                   |                   |
| RN Notified               | <input type="checkbox"/> Change in cardiac rhythm    |                   |                   |                   |
| RN Notified Date/Time     | <input type="checkbox"/> Leads off patient           |                   |                   |                   |
| Charge RN Notified        | <input type="checkbox"/> Life threatening arrhythmia |                   |                   |                   |
| Charge RN Notified Dat... | <input type="checkbox"/> Signal lost                 |                   |                   |                   |
| CMU Notified by RN        | <input type="checkbox"/> Other                       |                   |                   |                   |
| CMU Notified by RN Da...  |                                                      |                   |                   |                   |
| Rapid Response Team N...  |                                                      |                   |                   |                   |
| Rapid Response Team N...  |                                                      |                   |                   |                   |
| RN Response               |                                                      |                   |                   |                   |
| Telemetry Problem Dete... |                                                      |                   |                   |                   |

## Appendix 2

**Practical Application: Sample Clinical Quality Measures and Process Improvement**

- CMU documentation logs should be routinely reviewed for compliance to notifications, escalations, and clinical staff response times.

ABC Medical Center Main page  
(IFU kept in a folder, easily accessible to staff)

★ Monitors/Telemetry Instructions For Use (IFU)

- IFU for Model DEF (telemetry box)
- IFU for Model GHI (spot check monitors)
- IFU for Model JKL (transport monitors)

Performance Improvement (The Joint Commission NPSG.06.01.01  
Reduce Patient Harm Associated with Clinical Alarms)

|                                                                                                | Yes              | No | N/A | Total | Compliance: |
|------------------------------------------------------------------------------------------------|------------------|----|-----|-------|-------------|
| Q #1: What clinical alarm are you auditing?                                                    | <u>Telemetry</u> |    |     |       |             |
| Q #2: Did Nrsng. /Clinical staff document clinical alarms are "on" & audible once every shift? | xx               | xx | --  | xx    | xx/xx= xxx% |
| Q #3: Are clinical alarms on and audible at the nurse station?                                 | xx               | xx | --  | xx    | xx/xx=xxx%  |
| Q #4: Are clinical alarms on and audible at bedside?                                           | --               | -- | xx  | xx    | blank       |
| Q #5: Is staff responding to alarms in a timely manner as per policy?                          | xx               | xx | --  | xx    | xx/xx=xxx%  |

Date: Jan.2025

Facility: ABC Medical Center

Unit: WW 4

Dept: Tele/Med-Surg

## Performance Improvement (Timeliness of notification – from CMU to RN)

| ABC Medical Center<br>(sample from all units covered by the<br>Central Monitoring Unit)                                                                                                               | Jan.           | Feb.           | Mar.           | Apr.          | Compliance       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|----------------|---------------|------------------|
| Total # of cases w/c shows timely notification<br>from the time the telemetry technician<br>identified a change in cardiac rhythm to the<br>time the nurse was notified/ Total # of cases<br>reviewed | xx/xx=<br>xxx% | xx/xx=<br>xxx% | xx/xx=<br>xxx% | xx/xx=<br>xx% | xxx/xxx=<br>xxx% |

## Performance Improvement (Time on Telemetry)

| # of pts | 0-12 hrs. | 12-24 hrs. | 24-48 hrs. | 48-72 hrs. | > 72 hrs. |
|----------|-----------|------------|------------|------------|-----------|
| xxx      | xx        | xx         | xx         | xx         | xx        |

## Performance Improvement (Patient Satisfaction Survey Comments)

Search keywords: “alarms”, “noise”, “noisy”, “loud”, “beep”, “beeping” and “machine”

| Discharge<br>Date: | Hospital           | Unit        | Comments:                                                                          |
|--------------------|--------------------|-------------|------------------------------------------------------------------------------------|
| 1/15/2025          | ABC Medical Center | West Wing 4 | “My stay was very good but I noticed alarms beeping. My nurse came to check often” |

### Performance Improvement (The Joint Commission NPSG.06.01.01 Reduce Patient Harm Associated with Clinical Alarms)

|                                                                                               | Yes                           | No | N/A | Total | Compliance: |
|-----------------------------------------------------------------------------------------------|-------------------------------|----|-----|-------|-------------|
| Q #1: What clinical alarm are you auditing?                                                   | <b><u>Mechanical Vent</u></b> |    |     |       |             |
| Q #2: Did Nrsq. /Clinical staff document clinical alarms are "on" & audible once every shift? | xx                            | xx | --  | xx    | xx/xx=xxx%  |
| Q #3: Are clinical alarms on and audible at the nurse station?                                | xx                            | xx | --  | xx    | xx/xx=xxx%  |
| Q #4: Are clinical alarms on and audible at bedside?                                          | xx                            | xx | --  | xx    | xx/xx=xxx%  |
| Q #5: Is staff responding to alarms in a timely manner as per policy?                         | xx                            | xx | --  | xx    | xx/xx=xxx%  |

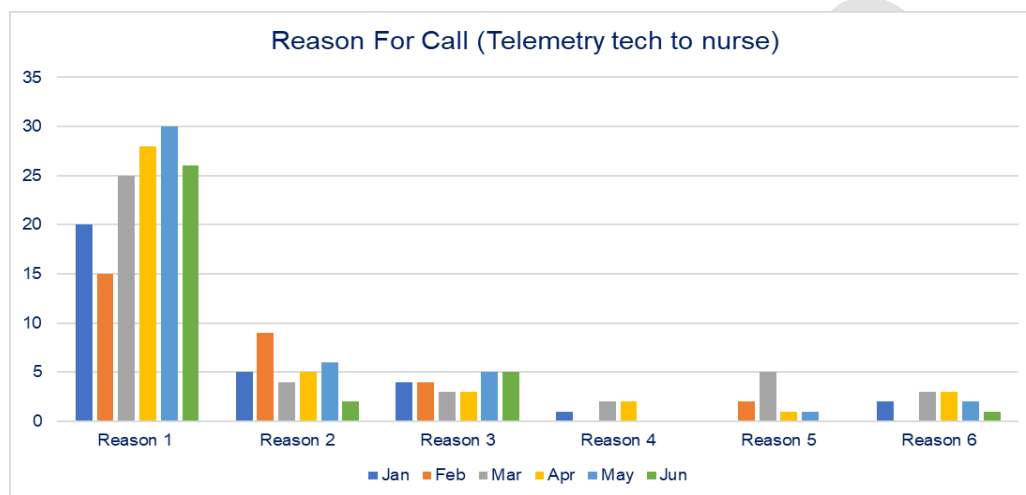
Date: Jan. 2025

Facility: ABC Medical Center

Unit: SICU

Dept: ICU

### Performance Improvement (Reason for call- Telemetry tech to nurse)





# Acknowledgements

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## Telemetry Monitoring Toolkit

