Telemetry Monitoring
in Pennsylvania
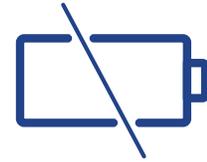
Tips and Strategies to Combat Alarm Fatigue
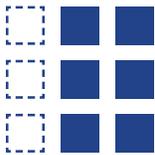
Improve Data Analysis

Ensure Consistent Monitoring

Eliminate Dead Batteries

Reduce Unnecessary Utilization

Improve Communication Between/Among Care Teams

Ensure Alarms Are True and Clinically Relevant

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1. Conduct a thorough data analysis
- Categorize all types of alarms. Consider which ones could be rendered unnecessary through process improvement, *e.g., preventing dead batteries will eliminate end-of-life batteries from triggering.*
- Monitor trends.
- Review current set points to determine whether any can be adjusted to reduce the number of triggered alarms without compromising safety, *e.g., reducing the lower limit for oxygen saturation.*
- Engage vendors, when necessary.

2. Reduce unnecessary telemetry utilization
- Review the *Practice Standards for Electrocardiographic Monitoring in Hospital Settings* by the American Heart Association (AHA).
- Incorporate the practice standards into order sets for clinical decision support.
- Develop a nurse-driven discontinuation protocol.

3. Ensure monitoring consistency throughout a patient stay
- Identify potential lapses in monitoring throughout a patient's hospital stay, *e.g., transfer from the Emergency Department to an inpatient room, transport of a patient to imaging or other testing area.*
- Develop a protocol with two-nurse verification whenever a potential lapse could occur that includes the:
  - Patient Name
  - Telemetry order and indication
- Include telemetry monitoring verification as a standard part of the handoff process.
- Create a process to identify patients who have orders for telemetry but are not being monitored.

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4. Improve communication about telemetry monitoring
- Incorporate telemetry monitoring into daily huddles, including goals and risks surrounding alarm fatigue.
- Establish and support a safe monitor watcher-to-patient ratio that covers call outs.
- Identify and mitigate communication breaks, *e.g., up-to-date contact information for each shift.*
- Develop a robust downtime protocol in the case of a power outage or compromised electronic health record (EHR).
- Provide staff with necessary equipment.
- Create communication plan between monitor watcher and clinical staff.
  - Ensure closed-loop communication team members, *e.g., teach back.*
  - Establish an escalation policy, *e.g., watcher, nursing assistant, nurse, charge nurse, manager, director.*

5. Eliminate dead batteries and end-of-life battery alarms
- Inventory all telemetry batteries.
- Determine the battery life for each type.
  - Assess the maximum average runtime: *Attach samples of each type to a simulator and measure the time it takes for each one to deplete its energy store.*
  - If rechargeable: Determine the estimated number of charge cycles. Contact the manufacturer, if necessary.
- Develop a consistent schedule around battery changes, *e.g., if the average maximum runtime is 72 hours, change each battery every 48 hours, regardless of whether the battery has died.*
- Considerations:
  - Who will change the batteries?
  - When and how often will the battery change occur?
  - Where will the schedule be posted?
  - How will we ensure that batteries are changed?

6. Make alarms true and clinically relevant
- Reduce false alarms:
  - Provide skin prep upon application of electrodes
    - Wash area with soap and water
    - Roughen the skin with a washcloth
  - Change electrodes per defined schedule (consider every 24 hours)
  - Store electrodes per manufacturer recommendations
  - Open package immediately before use to prevent drying of gel
- Reduce clinically irrelevant alarms:
  - Individualize alarms to each patient, *e.g., an athlete may have a resting heart rate in the 40s*
  - Suspend alarms during patient care to proactively prevent alarms from sounding due to artifact
- Review alarm limits with an interprofessional group, and determine which may be individualized.