



## Reducing Telemetry Alarm Fatigue

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### Introduction:

Cardiac Telemetry plays an important role in acute care, appropriate utilization can provide useful and critical information such as fatal arrhythmias and ischemia. Alarms are essential in telemetry, they alert the medical staff with critical patient's needs, and if not managed appropriately it can compromise the patient's safety. There are nearly 200,000 alarms generated during one month period, data suggest that about 99% of these alarms are clinically irrelevant or nonactionable. This results in considerable frustration for the telemetry nurses/techs, naturally developing alarm fatigue, becoming annoyed, desensitized and stop paying attention. Desensitization is concerning because clinically important alarms such as VT or AV block will go unnoticed or will have a delayed response from the medical staff. Decreasing the number of non-actionable alarms should help minimize alarm fatigue. The Joint Commission National Patient Safety Goal developed Alarm Management Committee to reduce the harm associated with clinical alarm systems focusing on essential elements such as identifying the most important alarms signals to manage, establishing policies for the management of these alarms and educating staff. This led to the design of this Quality Improvement project at the VA Healthcare to reduce alarm fatigue among caregivers.

### Methods:

A 30 day sample of data in 2018 showed 30,705 "arrhythmia" alarms from 5D telemetry monitors. The alarms generated for patients on 5D, 5A and 3A (Phillips telemetry monitoring system) are maintained in the system database for 50 days. The alarms over a 30 day period were exported into huge data then filtered and then identified as to arrhythmia type and then quantified. The most common non-actionable alarms identified were tachycardia, bradycardia, PVCs and Atrial Fibrillation detection. Telemetry order sets defaults were changed in CPRS from February 2019- April 2019 to include Tachycardia alarm to sound if HR >130, Bradycardia alarm if HR <40, 10 PVC per minute alarm was deleted, and alarm was turned off in known chronic atrial fibrillation. Ordering providers were given the option to change default settings depending on individual patient characteristics and telemetry techs/nurses were educated about these changes.

### Results:

Data extracted before and after the 30 days of intervention in 2018 and 2019 showed a decreased of 52% in total alarms. Individual alarms had a dramatic decrease as well; ~68% decrease in Tachycardia alarms, ~20% decrease in PVCs alarms, ~82% decrease in Bradycardia and ~57% decrease in Atrial Fibrillation. There were no adverse events documented during this time but data is still pending.

### Conclusion:

This quality improvement project proved that small changes generated in telemetry order sets for non-actionable alarms can make a huge impact and can help reduce alarm fatigue safely. Some of the challenges faced were extracting data safely and efficiently from the monitors, apprehension from some monitors and providers to modify parameters that may be alarming unnecessarily and the data for a specific period of time can vary depending on individual patient arrhythmia burden. These challenges show that there is still a lot of room for improvement in the telemetry area suggesting that monitors and ordering providers should work together to individualize alarm parameters for individual patients.