Reducing Cardiac Telemetry Nuisance Alarms Through Evidence-Based Interventions

Eleftheria T. Karapas, DNP, MS, RN  
*College of Nursing and Health Professions, Lewis University, Romeoville, IL, USA*

Kathleen L. Bobay, PhD, RN, NEA-BC  
*Marcella Neihoff School of Nursing, Loyola University Chicago, Maywood, IL, USA*

A significant number of cardiac telemetry alarms are for clinically non-actionable events. These nuisance alarms compromise patient safety and can decrease staff trust in technology. They create excessive workflow interruptions and decrease efficiencies of personnel. This DNP project will implement evidence-based interventions to reduce the number of nuisance alarms. Telemetry alarms should then yield more useful information for identifying actionable changes in patient status. The setting for this project is a 32-bed inpatient, non-ICU, cardiac telemetry unit of a large, suburban hospital, member of a regional healthcare system. While monitors are located in each nursing station on this unit, all of the telemetry patients are continuously monitored by technicians in a centralized telemetry location. An evidence-based protocol for daily care of the patient on telemetry monitoring will be introduced to the nursing staff (i.e. registered nurses and patient care assistants) in an education module. The protocol includes daily change of electrode pads, proper skin preparation prior to new pad placement, correct anatomic placement of pads, and battery changes as indicated. Prior to attending the module, staff will complete a pre-test that will be compared to results of a post-test administered after delivery of the education module. Daily audits of patient care will then be conducted over a 7-week period to determine protocol adherence and to produce the process measure. The total number of generated nuisance alarms and the overall volume of calls from the central telemetry monitoring technicians for this period will be compared to data collected prior to protocol implementation. These indicators will generate the outcome measures. It is anticipated that implementation of the evidence-based interventions will result in a decreased number of nuisance alarms for this nursing unit and a decreased volume of calls from the centralized telemetry technicians to the nursing unit. Presently, many of the generated nuisance alarms and phone calls to the unit are due to leads off, leads failure, and poor signal. It is also anticipated that this project will result in nursing staff that have a better understanding of current best practices for care of the patient with cardiac monitoring. In turn, this should lead to nursing staff realization of the effect they can have on reducing nuisance alarms, decreasing workflow interruptions, and increasing patient safety. Plans for sustainability for this project include recommendations for adding a section in the electronic medical record for nursing staff documentation of the daily skin care and electrode pad changes. Also for sustainability, the staff education module will be formatted for the organization’s internal online learning system to make content available for new staff as well as current staff. This project provides an opportunity for process and outcome improvements that could be further implemented on other units of the hospital as well as at other sites in this 27-hospital healthcare system.
Title:
Reducing Cardiac Telemetry Nuisance Alarms Through Evidence-Based Interventions

Keywords:
Evidence-based, Nuisance Alarms and Telemetry

References:


**Abstract Summary:**
Cardiac telemetry nuisance alarms are most often due to leads off and poor signal events. Nuisance alarms increase staff workflow interruptions, decrease staff trust in technology, and can compromise patient safety. Implementation of evidence-based interventions for daily care of cardiac telemetry patients should decrease the number of nuisance alarms.

**Content Outline:**

**Purpose:**
To reduce the number of nuisance alarms on a non-ICU cardiac telemetry unit

**Methods:**
- Implementation of an evidence-based protocol for daily care of patients on cardiac telemetry monitoring
- Delivery of a nursing staff education module related to nuisance alarms and the evidence-based protocol interventions
- Daily audits of patient care to determine adherence to the protocol interventions

**Results:**
- Data comparison from staff education module pre-tests and post-tests
- Data from daily audits of staff adherence to protocol interventions
- Number of nuisance alarms on the nursing unit pre-protocol and post-protocol implementation.
- Volume of calls to the nursing unit from central telemetry technicians pre-protocol and post-protocol implementation.

**Potential Implications:**
This project provides an opportunity for process and outcome improvements that could also be implemented on other units of the hospital as well as at other sites in this healthcare system.

**First Primary Presenting Author**

**Primary Presenting Author**
Eletheria T. Karapas, DNP, MS, RN
Lewis University
College of Nursing and Health Professions
Assistant Professor
Romeoville IL
USA
Author Summary: Ms. Karapas is an assistant professor at Lewis University. She has been an educator for the past 15 years. She has over 20 years of medical-surgical clinical experience as staff nurse, clinical nurse specialist, consultant and program director. She has presented regionally and nationally. This is her Loyola University Chicago DNP evidence-based project.

Second Secondary Presenting Author

Corresponding Secondary Presenting Author
Kathleen L. Bobay, PhD, RN, NEA-BC
Loyola University Chicago
Marcella Neihoff School of Nursing
Professor
Maywood IL
USA

Author Summary: Dr. Bobay is a professor at Loyola University Chicago and has extensive experience as a nurse researcher and educator. She has presented regionally, nationally, and internationally and has published numerous articles. She received her PhD from the University of Michigan.