

# Alarm Fatigue: A Technology Hazard

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## Introduction and Background

Alarm fatigue is an emerging topic in healthcare, principally in acute care settings. There have been several definitions of alarm fatigue presented by many organizations, including The Joint Commission (TJC). According to TJC (2013), alarm fatigue is defined as “The constant beeping of alarms and an overabundance of information transmitted by medical devices such as ventilators, blood pressure monitors and ECG (electrocardiogram) machines. As a result, clinicians become desensitized or immune to the sounds, and are overwhelmed by information - in short, they suffer from ‘alarm fatigue’(p. 1). Therefore a survey was designed and implemented to discover whether in fact nurses at on two units at the Miriam hospital were experiencing alarm fatigue and whether it impacted their daily workflow.

## Methods

The project methodology included IRB review and approval through Rhode Island College as well as The Miriam Hospital. A literature review on the topic of alarm fatigue was performed utilizing the databases CINAHL, OVID, and Pub Med. The search was conducted on information from 1990 through 2014 and was completed utilizing key words alarm fatigue, monitor alarms, telemetry alarms, physiologic monitoring equipment, and patient safety. In reviewing the literature, there were no surveys available that exclusively targeted the discipline of nursing. Therefore A 12-question survey containing 9- likert and 3 open ended questions, designed by the researcher. It was administered to 48 registered nurses on two telemetry-monitoring units. The survey was created based on common themes found in the literature. The survey was available to respondents for a two week time period. The survey explored whether nurses are experiencing alarm fatigue, and also how their daily workflow was impacted by alarm fatigue. Surveys were anonymous and confidential.

## Results

Unit A employs 30 staff RN’s and unit B employs 33 staff RN’s. On unit A there was a 110% response rate which was attributed to additional responses from float staff not assigned to the unit. On unit B there was a 45% response rate.. Survey responses from unit A demonstrated that 86.2% of respondents either strongly agreed or agreed (SA, or A) to having suffered alarm fatigue in the 6 months preceding the survey. 72.4% of respondents strongly agreed or agreed that false alarms disrupted patient care. 82.7% of respondents reported being interrupted more than 10 times per shift by nuisance/false alarms, which was defined on the survey administered. Two definitions of alarm fatigue were also provided. Of unit B respondents 73.3% of respondents strongly agreed or agreed to having suffered alarm fatigue. 93.3% of unit B respondents strongly agreed or agreed that false/nuisance alarms disrupted patient care. 66.6% of respondents reported they were interrupted more than 10 times per shift by nuisance/ false alarms.

## Discussion

Nurses must become active participants in system initiatives to mitigate alarm fatigue. There is also great opportunity for end users and manufacturers of monitoring devices to collaborate and work towards a solution which would ultimately decrease alarm fatigue and benefit patient care and safety. Recommendations to decrease alarm fatigue included daily lead and battery changes, proper lead placement and skin prep, removal of nuisance alarms that do not have clinical benefit ie: irregular HR alarms and reviewing of institutional alarm policies with specifics to response times for alarms and individualization of parameters. These are all feasible recommendations most of which have been implemented at TMH including removal of irregular HR alarm.

## References

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