ALARM FATIGUE: AN ISSUE OF PATIENT SAFETY

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Background: Alarm fatigue has been defined as the desensitization to alarm stimuli resulting from sensory overload, causing the response by a clinician to be missed or delayed. Due to this compromise of patient safety, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) issued the National Patient Safety Goals of 2015, which included implementing improvements to ensure alarms are heard, and responded to by the medical team in a timely manner.

Objective: This Evidenced Based Practice project was developed to answer the PICOT question: Do nurses respond to critical alarms more effectively when unnecessary alarms are reduced, versus the nurse responding to all false-positive alarms, thereby reducing alarm fatigue and improving responses by nurses? This outcome will be measured by recording the frequency of alarms for each patient in a chosen unit, as well as the response time to each alarm by the nurse, over a two-month period.

Methods: A comprehensive search of three databases including Pubmed, CINAHL, and Ebscohost found multiple quality improvement projects, original research studies, and literature reviews by using the keywords alarm fatigue, patient safety, nuisance alarms, and alarm desensitization. These studies were graded according to the Fineout-Overholt scale, which measures the strength of the study based on study design and type, with scores of Level I being the strongest and Level VI being the weakest.

Literature Review Key Findings: Each day, there is an average of 187 alarms in each patient room. The most common alarms are physiologic monitors that measure electrocardiograms, heart rate, respiratory rate, and oxygen saturation. Only 6.4% of total alarms recorded were considered relevant, and nurses effectively responded to 23% of alarms. One in five healthcare responders reported adverse events related to clinical alarm issues. Evaluating the technical relevance of certain alarms could decrease the frequency of irrelevant alarms. Alarms are extremely sensitive, and could be reduced if the monitors automatically detect patient movement or treatment.

Interventions: Decreasing alarm fatigue in nursing practice will occur by individualizing patient parameters on physiologic monitors, implementing a centralized alarm management system, including monitor watchers, implementing a 19 second delay of alarm sounds, and finally, by eliminating self-resetting alarms. Implementing these interventions will lead to an 89% decrease in total alarms. Once the alarm frequency is reduced, nurses should be instructed to respond to all alarms, regardless of their patient assignment.

Expected Outcomes: Nurses and other healthcare providers will respond to alarms more effectively with an overall decrease in alarm frequency, therefore increasing patient safety. Further research is needed to focus on nursing implications of alarm fatigue and the effect on their practice.