Reducing Alarm Fatigue through Alarm Management Education

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ABSTRACT

Alarm fatigue in nursing staff results from sensory overload caused by the exposure to excessive and constant sounds of alarms. Many nurses perceive excessive alarms as a nuisance and a disruption to patient care. Establishing alarm system safety to reduce noises contributing to alarm fatigue is one of the Joint Commission's National Patient Safety Goals for 2021. Customizing alarm parameters, removing non-essential alarms, and changing sensors and electrodes are effective interventions to managing alarms. To carry out these recommendations, nurses need to understand the severity of the current problem concerning alarm fatigue and move forward with change through staff education on alarm management. The alarm management module was created to guide the educator in providing education and training for nurses through a content outline and program deliverables. The goal of this education module is to reduce nursing alarm fatigue and desensitization and maintain beneficence and non-maleficence in patient-centered care.

PICO QUESTION

In acute care nurses (P), can education on alarm management (I) versus no education (C) decrease occurrences of alarm fatigue and desensitization (O) within six months (T)?

LITERATURE REVIEW

Nurses care for a diverse patient population on various clinical monitors in the acute care setting. Studies have shown that 72% to 99% of alarms are false positives or alarms that have no clinical importance and do not require action or intervention ([8, 13])Common themes for eliminating non-actionable and false alarms to reduce alarm fatigue found in current research are identified.

- Customizing alarm parameters based on patient condition decreases the number of alarms and increases their value ([4, 5, 14, 18]).
- Removing nonessential alarms and only monitoring patients whose physiologic values and current conditions require it is a practical alarm management intervention ([12, 14, 16]).
- Daily replacement of sensors and electrodes can reduce the number of non-actionable alarms and decrease levels of alarm fatigue amongst nursing staff ([2, 9, 18]).

PROJECT METHODOLOGY

- The development and dissemination of evidence-based alarm management education can reduce alarm fatigue in nurses and maintain patient safety ([2, 5, 12, 16, 18]). Alarm management education provided in clinical practice settings effectively increases clinical alarm awareness ([19]).
- Studies have also shown that education improves nurse and patient satisfaction regarding alarm safety, which is crucial to accreditation by the Joint Commission ([7, 10]).
- Ultimately, an alarm management education can will provide staff with recommendations on interventions to eliminate alarms that are not clinically significant and address the impact of alarm fatigue on patient safety and staff satisfaction.

Plan and Development

The program deliverables developed for the alarm management education include:

- A content outline divided into an introduction and three-alarm management themes will guide the project curriculum delivery.
- A PowerPoint presentation that will act as a visual aid for the audience during podium presentation.
- A tip sheet card for badge reels distribute out to the staff.
- Collaboration with the management team of B50 Medicine & Surgery to implement education during monthly staff meeting.

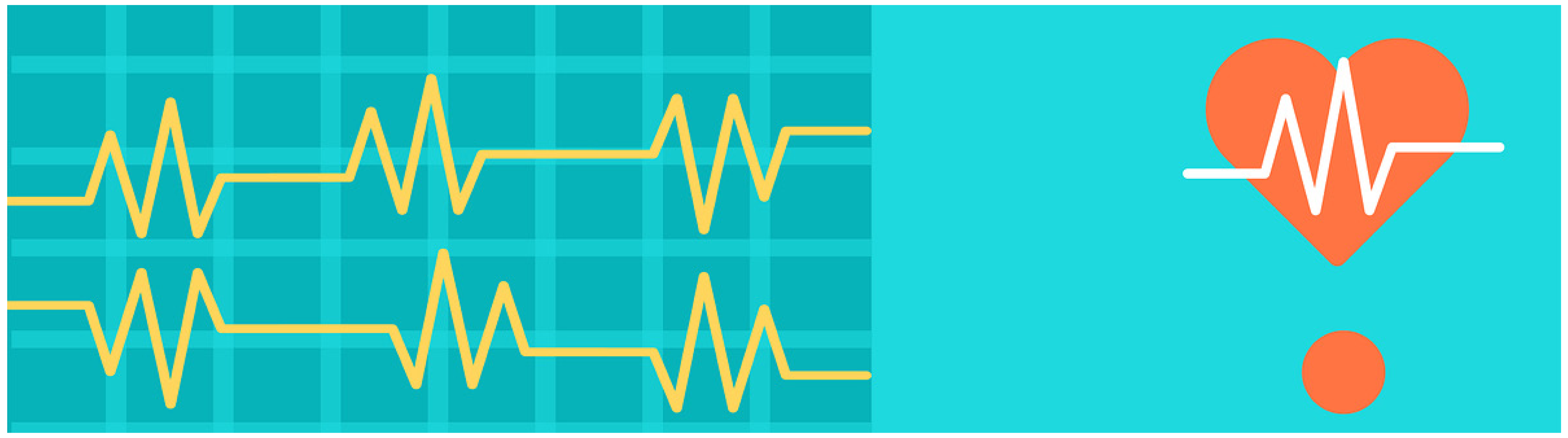
Evaluation

The evaluation of the program will include a pre- and post-quiz to assess objective knowledge and survey subjective feedback. The learning objectives include:

- Learner will indicate the implications of alarm fatigue for nursing staff and patients.
- Learner will identify the Joint Commission's national patient safety goals on alarm-related events.
- Learner will describe best practice to eliminate non-actionable alarms.
- Learner will adapt alarm management recommendations in clinical practice.

THEORETICAL FRAMEWORK

- Lewin's Change Theory is utilized in many health care organizations to understand the concepts of change and patterns of resistance to change in human behavior ([17]).
- The theory consists of stages known as the unfreezing-change-refreeze model and is based on three major concepts: driving forces, restraining forces, and equilibrium ([11]).
- To ensure the quality of care to patients, nurses need to be open to adapting to changes suggested by evidence-based practices through a constant state of renewing and revising protocols ([6]).
- The concepts the theory are clearly stated and can be easily understood by participating staff, and thus, can act as a practical and strategic approach to help nurse leaders to advance organizational change ([15, 20]).



CONCLUSIONS

Non-actionable alarms can lead to alarm fatigue and decreased intervention by staff, which sabotages patient safety by causing a lack of response to urgent patient condition alerts ([3]). Education on combating the adverse effects of alarm fatigue on nursing staff and patients has been emphasized as a need across inpatient units throughout the nation ([1]). Moreover, evidence-based education modules on alarm management can prepare nursing staff with the knowledge to avoid alarm desensitization ([2, 5, 12, 16, 18]). By closing the gap between research and clinical practice, clinical staff educators can help clinicians improve health outcomes by maintaining the quality of care for patient safety.

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