**Journal Club Research Article Critique Form**

Reviewer name: Andrea Rountree Date: 7/3/2020

Research study (APA reference):

Lewis, Carmencita Lorenzo BSN, RN, CCRN; Oster, Cynthia A. PhD, RN, APRN, MBA, ACNS-BC, ANP, FAAN Research Outcomes of Implementing CEASE, Dimensions of Critical Care Nursing: 5/6 2019 - Volume 38 - Issue 3 - p 160-173 doi: 10.1097/DCC.0000000000000357

Please complete the following:

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| **1. Description of the study** |
| * The purpose of the research is: The purpose of this study was to describe the effect of implementing CEASE, a nurse-driven, evidence-based, patient-customized monitoring bundle on alarm fatigue. CEASE is an acronym for Communication, Electrodes (daily changes), Appropriateness (evaluation), Setup alarm parameters (patient customization), and Education (ongoing). |
| * Explain why this problem is significant to nursing practice: Alarm fatigue is a real phenomenon in the clinical practice environment and can lead to desensitization of the need to respond among nursing staff. |
| **2. Evaluation of literature** |
| * Describe the previous research pertaining to the topic that the authors reference (hint: look for a literature review section in the article): The American Association of Critical-Care Nurses (AACN) published an evidence-based practice alert on recommended nursing practices for alarm management. Key points of the AACN-recommended practices including establishing an inter-professional team to address alarms, appropriate skin preparation before daily changes of electrocardiogram (ECG) electrodes, as-needed pulse oximetry sensor changes for respiratory monitoring, monitoring only patients with appropriate clinical indications, customizing alarm parameters, and initial and continuing education. Some of these recommendations have been reported to decrease the amount of clinical alarms. |
| **3. Study sample** |
| * The study sample was obtained from: (hint: describe the population and where the study is performed): The study sample was obtained from: (hint: describe the population and where the study is performed): The setting is a 36-bed ICU/SDU that provides high-intensity nursing care to a variety of patient populations including, but not limited to, kidney, liver, and pancreas transplants; medical and interventional cardiac; cardiovascular thoracic surgery; radical head and neck surgery; general medical and sepsis; general surgery; and spine surgery. The hospital is a 368-bed, not-for-profit, Magnet-designated acute care facility located in an urban area in the western region of the US. |
| * What is the sample size? 74 Registered Nurses |
| * List the inclusion criteria used in the study: Eligible ICU/SDU registered nurses attended 1 hands-on CEASE champion–led educational session during June 2016. |
| * List the exclusion criteria used in the study: They were excluded if they weren’t from the ICU/SDU and if they did not attend the training. |
| **4. Study methods/design** |
| * Describe or identify the study design (hint: quantitative/qualitative, experimental, meta-analysis, etc): This was an institutional review board approved exploratory, non-randomized, pretest and post-test, 1-group, quasi-experimental study, without-comparators design describing difference in pretest and post-test measures following CEASE Bundle implementation. |
| * Describe the study procedures. (hint: describe the intervention and how the data was collected): The outcomes that were collected before and after intervention were number of auditory monitoring alarms, duration of auditory monitoring alarms, nurse perception of alarms, adherence to the intervention bundle, and number of adverse alarm events. Thirty days of alarm data was downloaded from the monitoring system into an excel spreadsheet. The number of auditory monitoring alarms was counted. The duration of an alarm was measured in seconds and was the time elapsed from the start and stop time. Start time was when the alarm initially began and end time was when the alarm was recorded to have stopped on the download from the monitoring system. The ICU/SDU staff nurse perception of alarm fatigue was measured by the Healthcare Technology Foundation Clinical Alarms Survey via email SurveyMonkey. The survey is divided into 4 main sections. The first section was demographic information, the second section was a number of general statements about clinical alarms and prompts the respondents to rate their level of agreement with the statement using a 5-point Likert-type scale of strongly disagree, disagree, neutral, agree, and strongly agree. The higher the score, the more the respondent agrees with the statement. The third section has 9 issues that inhibit effective clinical alarm management and asks the respondent to rank then a scale of 1 (most important) to 9 (least important). The fourth section provides space for comments. Informed consent was included in the invitation to complete the Clinical Alarms Survey. The number of adverse events related to the hemodynamic and respiratory monitoring alarms were monitored for safety purposes. The intervention was the CEASE bundle. |
| **5. Results** |
| * Describe the results of the study: Total number of auditory monitor alarms decreased 30.45% from 52,880 to 36,780 No adverse alarm events occurred during the study period. The monitoring system software grouped auditory alarms into 3 groups: Level 1, low-priority events such as low battery alerts and artifact; Level 2, moderate-priority events such as high/low blood pressure, irregular heartbeat, paired beats and high/low SpO2; and Level 3, high-priority or life-threatening events such as apnea, asystole, ventricular tachycardia or fibrillation, and rapid oxygen desaturation. The number of Level 1 auditory monitor alarms decreased 7.7% from 14,131 to 13,040. The number of Level 2 auditory monitor alarms decreased 39.35% from 31,251 to 18,955. The number of Level 3 auditory monitor alarms decreased 36.18% from 7498 to 4785. Nurses perceived a significant decrease in nuisance alarm occurrence. |
| **6. Clinical significance** |
| * Explain how you will use this information for your nursing practice at your place of work or community: The CEASE Bundle is an ongoing strategy in the ICU/SDU that has decreased non-actionable alarms and made the alarms that do sound more meaningful without compromising patient safety. This can be used to help reduce alarm fatigue that is a growing issue for many nurses in many different settings, not just ICU/SDU's, improving patient care and satisfaction during hospitalization. |

***Please use the back of this paper for other comments.***