



CEASE the Alarms: A Nurse-Led Bundled Approach to Alarm Management

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Practice Problem

- Responding to alarms signifying potential life-threatening events is crucial to patient care in the Pediatric Intensive Care Unit
- Research suggests that 80 to 99% of alarms are non-actionable
- Increased exposure to alarms leads to a delayed response and decreased trust in alarm systems
- Resulting alarm fatigue leads to behaviors such as ignoring and mismanaging alarms
- These behaviors have severe consequences for patients and healthcare providers
- There is a need to address alarm management

PICO Question

In a pediatric intensive care unit, will implementing a nurse-led alarm management bundle, compared to current practice, affect perceived alarm fatigue and overall alarm burden?

Literature Review

- A literature search was completed utilizing Ovid and databases CINAHL and Medline
- Research study identified using CEASE: An Innovative, Nurse-Driven, Evidence-Based, Patient-Customized Monitoring Bundle to Decrease Alarm Fatigue in the ICU (Lewis & Oster, 2019)
- Other publications identified translating the CEASE bundle as an evidence-based practice
- Multiple systematic reviews support individual interventions included in the CEASE bundle

Practice Changes

Current practice:

- Alarm parameters will be set to "notify provider" orders that default to narrow vital sign ranges based on patient's age
- Scattered alarm management practices, no standardized or consistent approach

New Practice:

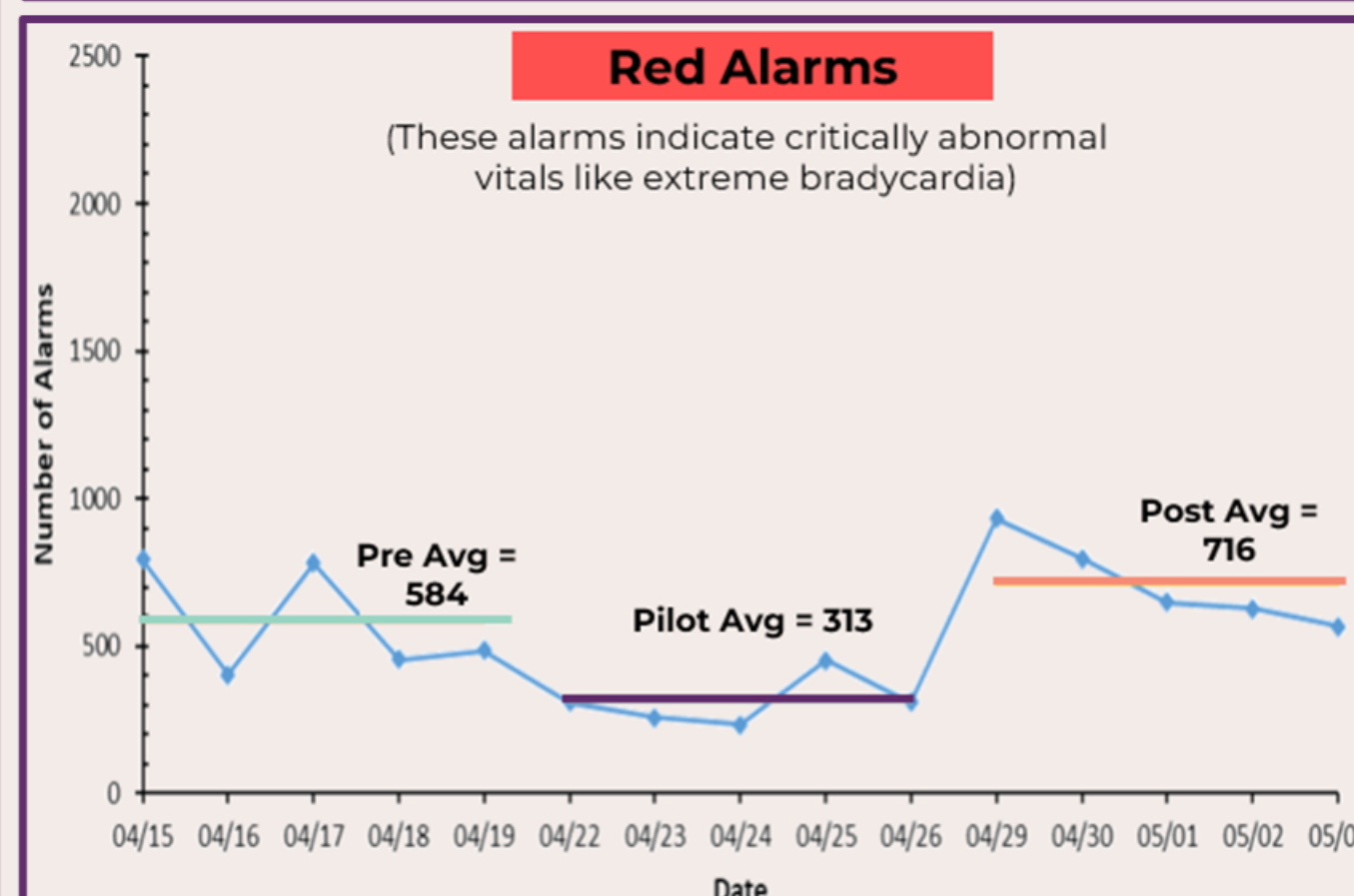
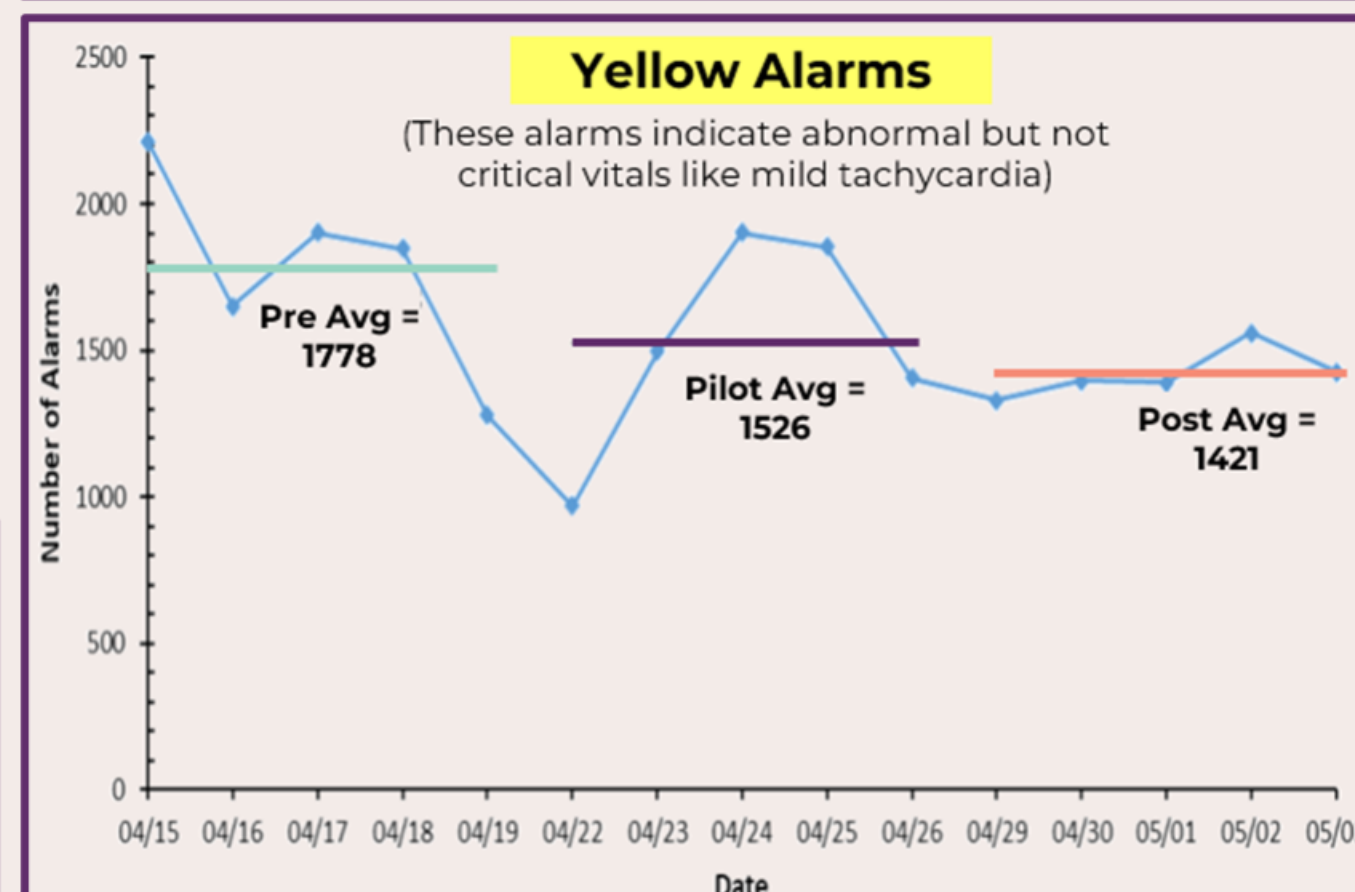
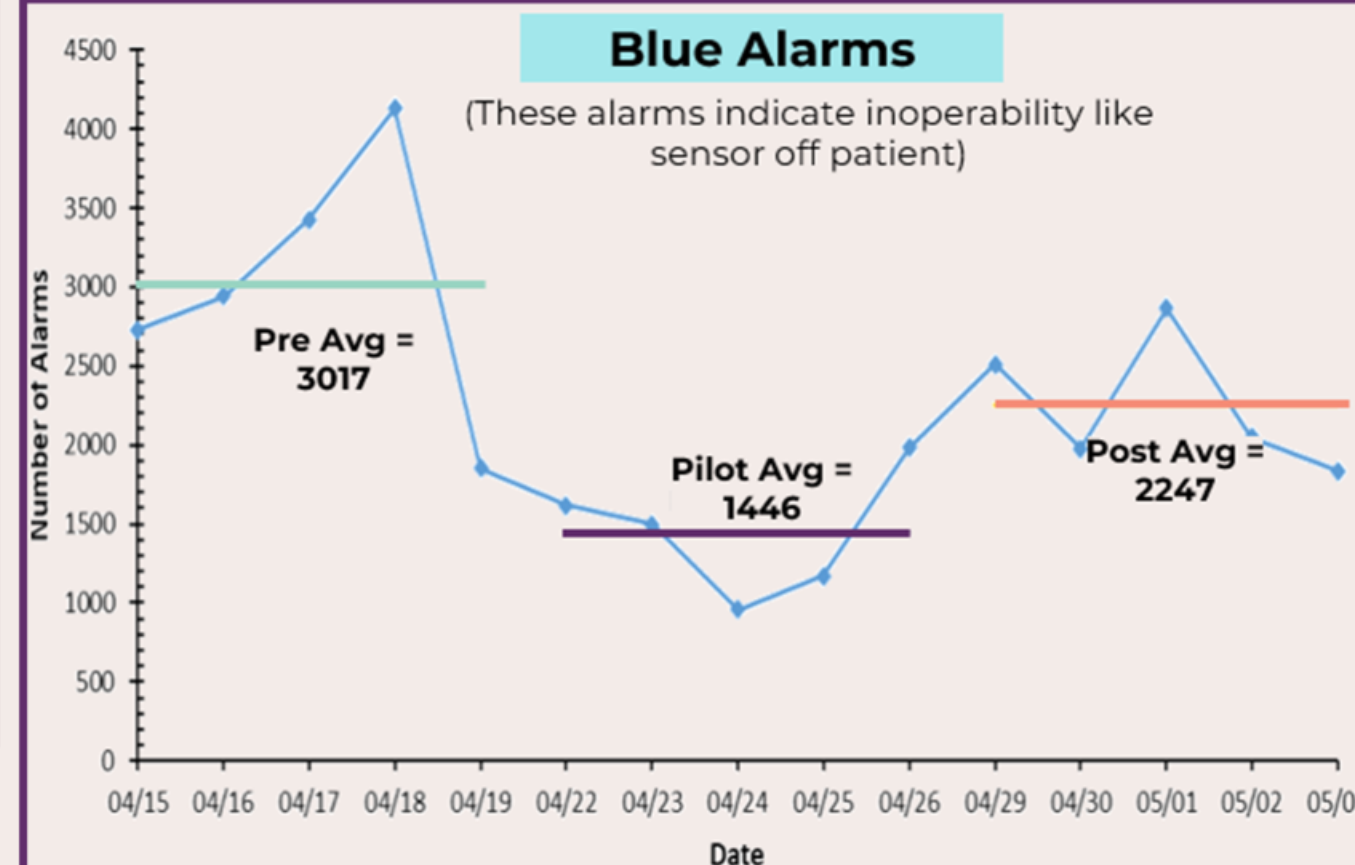
- CEASE Bundle Approach

C: Communication
E: Electrodes
A: Appropriate
S: Set Up
E: Education



Pilot Testing

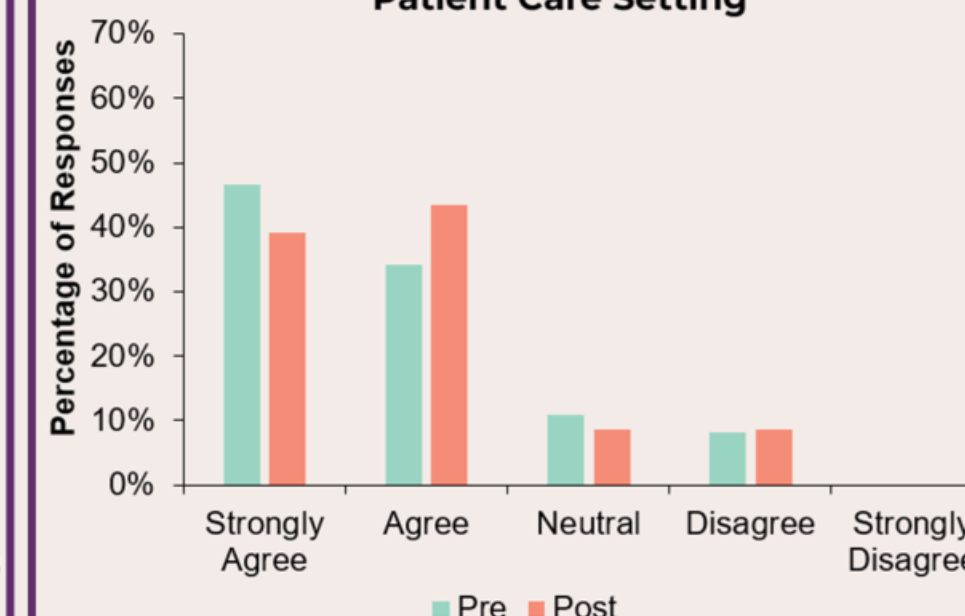
- Pre-Pilot Survey measured perceived alarm fatigue and management behaviors
 - completed by 73 PICU nurses
- Alarm management/ Cease Bundle education sessions provided at PICU Staff Meetings
- 5-day pilot implementing the CEASE Bundle
 - 40 nurses participated in pilot
- Implementation team of two nurse experts frequently rounded during the pilot to provide education, answer questions, remove barriers, and
 - collected 60 daily audits
- Post-pilot survey provided to participating nurses.
 - Completed by 23 PICU nurses



Results

- During the 5-day pilot period, there was a **44% reduction** in overall alarms from the physiological monitors on the unit compared to the 5-day pre-pilot and a **32% reduction** compared to the 5-day post-pilot period
- No significant change in perceptions of alarm fatigue
- Decreased perceived frequency of non-actionable alarms occurring
- Perceived fewer complaints from patients and families about alarms during the pilot period

Experiencing Alarm Fatigue in the Patient Care Setting



Impact and Next Steps

- A bundled, focused approach to nurse-led alarm management significantly reduced alarms
- Effective management of alarms requires a high level of collaboration between nursing, respiratory therapists, physicians, and other healthcare providers
- Future longer-duration pilots are planned at Children's Health to evaluate CEASE Bundle's impact on alarms and alarm fatigue

