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Development of a Neurally Adjusted Ventilatory Assist (NAVA) Education Bundle for Intensive Care Providers

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Development of a Neurally Adjusted Ventilatory Assist (NAVA) Education Bundle for Intensive Care Providers

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Poster presented at the 2023 Spotlight on Scholarship at the University of Nebraska Medical Center, Omaha, Nebraska.

Abstract

Background: Neurally adjusted ventilatory assist (NAVA) is a mode of ventilation supporting the patient by measuring their neural impulse to breath. This allows the patient to control the size and speed of each breath, individualizing respiratory comfort. Previous research has indicated primary barriers to NAVA implementation include lack of experience, insufficient education, and low confidence implementing the modality. **Objectives:** a) Create an educational bundle teaching intensive care providers about noninvasive and invasive NAVA; b) Analyze objective knowledge acquisition, subjective comfort and confidence with implementing NAVA, and determine barriers to implementation. **Methods:** We conducted a prospective observational study including Neonatologists, Pediatric Intensivists, Advanced Practice Providers, and Fellows at a Level IV Children's Hospital undergoing NAVA implementation. A four-part education bundle was developed including an online module providing the theoretical basis of NAVA, a case-based lecture, a hands-on session with the ventilator, and high-fidelity multidisciplinary NAVA simulations. Participants completed a presurvey including demographic questions, objective knowledge, and subjective comfort prior to the initial module and a similar postsurvey after the simulation. Providers completed the bundle from March to June 2022. Demographic and subjective data was analyzed via descriptive statistics. Paired t-tests were used to compare pre/post objective knowledge assessment. **Results:** 56 providers were included in the study, of which 45 (80%) had no prior NAVA experience. 39 of the 56 (70%) of providers completed both the pre and postimplementation surveys. Self-reported understanding and comfort with NAVA greatly increased after completion of the bundle. Mean objective knowledge scores increased by 3.8 points between the pre and post surveys (95% CI mean 3.18, 4.40, $t=1.62$, $p<0.001$). **Conclusions:** After instituting a NAVA education bundle, provider objective knowledge of NAVA principles and overall perceived comfort and confidence with NAVA increased. Education bundles may be used to improve provider knowledge and comfort when implementing new ventilatory technology.

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