

## Abstract

**Background & Purpose:** The severity of disease in heart failure patients presenting for implantable cardioverter-defibrillator (ICD) surgery complicates patient stability under anesthesia, yet no clinical practice guidelines (CPGs) exist describing their ideal anesthetic management. The purpose of this evidence-based, quality improvement project was to develop, implement, and evaluate the effects of population-specific guidelines on anesthesia provider knowledge and self-efficacy while anesthetizing patients for ICD implant.

**Methods:** Set in the electrophysiology (EP) lab of an urban, tertiary care facility known for its heart failure clinic, this project utilized a 1-group pretest-posttest design comparing anesthesia provider knowledge and self-efficacy before and after intervention. The intervention was anesthesia provider self-education and application of web-based guidelines at the point of care. Surveys included a novel instrument to assess provider knowledge, and a validated instrument to measure self-efficacy.

**Results:** A total of 34 participants who met inclusion criteria were recruited from the pool of anesthesia providers working at the project hospital EP lab. A total of 26 completed the pre-test, accomplished the intervention, and completed the post-test. A statistically significant improvement in median anesthesia provider self-efficacy was demonstrated (33.5 vs 34,  $P=.038$ ), with no change in median anesthesia provider knowledge (13 vs 13,  $P=.145$ ).

**Conclusions:** This project determined a statistically significant increase in anesthesia provider self-efficacy associated with the provision of CPGs, highlighting the relevance of population-specific point-of-care resources. Project outcomes suggest an intervention other than the provision of web-based CPGs for self-study could best support improvements in anesthesia provider knowledge and should be investigated further.

**Implications:** Findings of this project demonstrate the enhanced capacity of anesthesia providers to enact the highest quality of care using CPGs, and advocate for the establishment of population-specific and disease-specific CPGs in remote and under-supported clinical settings.

*Keywords:* HFrEF, ICD implant, anesthesia, clinical practice guidelines, sedation