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The Cardiac Implantable Electronic Device Application. A Novel Modality for Educating Cardiovascular Anesthesia Trainees

Abstract

Cardiac implantable electronic devices (CIED) manage permanent changes in cardiac rhythm initiation, conduction and propagation that encompass pacemakers, cardioverters, defibrillators (ICD) and cardiac resynchronization therapy (CRT) with either pacing (CRT-P) or defibrillating (CRT-D) capability. Currently, more patients with CIEDs are undergoing surgical procedures, and anesthesiologists need to interrogate and program CIEDs perioperatively to maintain patient safety and OR efficiency. Despite an extensive exposure of cardiac anesthesia (CV) trainees to CIEDs during their training and exposure after graduation, there is no formal curriculum on CIEDs. With current didactics that neither match nor conform to the rotatory nature of trainees' exposure to CIEDs, in this application we bridge this gap by 1) creating a high-quality curriculum on CIEDs, and 2) delivering this curriculum on an app-based platform. By so doing, we endorse an educational approach that is comprehensive, updatable, scalable, adjustable to trainees' schedules, and that combines, for the first time, theoretical knowledge with virtual hands-on experience. We are encouraged by departmental level support and the collaborative environment across the University of Alabama campus.