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Quality improvement methods to reduce adverse events in anesthesia

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Although serious complications during anesthesia are less common today than in the past, serious airway events, especially in pediatric anesthesia, continue to occur and lead to patient morbidity, escalation of care and unplanned hospital admission. Quality improvement methodology evaluates existing processes, identifies parts of the process which are faulty and proposes changes which are believed to result in improvement. Proposed changes are then evaluated using small tests of change and Plan-Do-Study-Act (PDSA) cycles to be sure that they actually result in improvement and do not have unintended negative effects. Quality improvement measures and analyzes data so that quality and safety failures are traced back to their underlying causes. Based on data, clinical processes can then be changed to prevent future failures and adverse outcomes. While outcome data is widely considered to be the ultimate measure of quality, the processes and the environment in which health care is delivered are also fundamental to high quality, safe care. We identified system factors related to the clinical practice of anesthesia in our pediatric hospital which contributed to serious airway events and cardiac arrests in the operating room. In conjunction with anesthesia providers, we designed and tested interventions to reduce these adverse events. Simple process changes were put in place which led to a greater standardization of our clinical practice. Over the 2 ½ year period of the improvement project, the incidence of serious airway events and airway related cardiac arrests were reduced by 44% and 59% respectively, compared to the previous two years. Quality improvement enables any organization to continuously assess its performance and use the information to drive change and improvement, however challenging.

Biography

Eric Wittkugel, MD, FAAP is an Associate Professor at the University, Cincinnati College of Medicine and an Attending Anesthesiologist at Cincinnati Children's Hospital. He completed training in Pediatrics, Anesthesiology, Pediatric Anesthesiology at the University of Pennsylvania and the Children's Hospital of Philadelphia. He is a Co-Editor of *Clinical Pediatric Anesthesia: A Case Based Handbook*, has authored numerous chapters, scientific papers and review articles and also lectures nationally about pediatric anesthesiology and quality improvement.

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