

## **New Technologies in Pediatric Anesthesia.**

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### **Abstract**

This article reviews potential pediatric applications of 3 new technologies. (1) Pulse oximetry-based hemoglobin determination: Hemoglobin determination using spectrophotometric methods recently has been introduced in adults with varied success. This non-invasive and continuous technology may avoid venipuncture and unnecessary transfusion in children undergoing surgery with major blood loss, premature infants undergoing unexpected and complicated emergency surgery, and children with chronic illness. (2) Continuous cardiac output monitoring: In adults, advanced hemodynamic monitoring such as continuous cardiac output monitoring has been associated with better surgical outcomes. Although it remains unknown whether similar results are applicable to children, current technology enables the monitoring of cardiac output non-invasively and continuously in pediatric patients. It may be important to integrate the data about cardiac output with other information to facilitate therapeutic interventions. (3) Anesthesia information management systems: Although perioperative electronic anesthesia information management systems are gaining popularity in operating rooms, their potential functions may not be fully appreciated. With advances in information technology, anesthesia information management systems may facilitate bedside clinical decisions, administrative needs, and research in the perioperative setting.