

Using real-time decision support to improve intra-operative care

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The adoption of Anesthesia Information Management Systems (AIMS) has increased in recent years. However, to date, they remain primarily documentation systems with the primary goal of generating an electronic version of the anesthetic record. The potential of such systems to improve quality of anesthesia care remain untapped. Realizing this shortcoming, we developed a real-time system, Smart Anesthesia Manager™ (SAM) to provide clinical and billing decision support to the anesthesia provider. Working in conjunction with AIMS, SAM interrogates the AIMS database in near real-time, detects issues related to clinical care, billing and compliance, and material waste. Issues are prioritized and brought to the attention of the anesthesia provider in real-time through “pop-up” messages overlaid on top of AIMS screens or text pages. At the University of Washington Medical Center, SAM has been in operation for over 2.5 years. Through SAM high compliance to timely antibiotic initial dose (99%) and subsequent redoses (95%) has been achieved. SAM reminders improved compliance (96%) to continuation of perioperative beta-blockers. Inadvertent gaps (> 15min) in blood pressure monitoring were reduced to nearly 1/6th of the values before SAM intervention. Lost billing revenue related to invasive lines procedures worth \$145,000 and 1,200 non-compliant records per year were recovered with SAM decision support. In addition, SAM was also able to conserve usage of inhalation anesthetic agents worth \$120,000 per year by reminding anesthesia providers to reduce excessive fresh gas flows.

Biography

Bala G. Nair has completed his Ph.D from the Ohio State University with post-doctoral research at the Cleveland Clinic Foundation. He is currently Acting Assistant Professor of Anesthesiology at the University of Washington. He has published more than 25 papers in reputed journals and holds 7 patents in Anesthesia Bioengineering.

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