

INVITED EDITORIAL

The Anesthesia Patient Safety Foundation: Pioneering success in safety but challenges remain

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SUMMARY

The practice of anesthesiology has emerged as a science as well as an art, which has made heroic surgical interventions possible, for example surgery on a heart with severely compromised myocardium and heart and liver transplantation etc. The constant struggle to remove the risks and adverse outcome during the conduct of anesthesia has led a stream of protocols and guidelines. The Anesthesia Patient Safety Foundation (APSF), created in 1985, is a step forward to create awareness about safety as well as present practical measures to enhance safety all around the globe. This editorial highlights the vital role being played by APSF regarding anesthesia safety.

Key words: Anesthesia safety; Patient safety; Anesthesia Patient Safety Foundation; APSF; Simulation; Automated Information Systems; Evidenced-Based Medicine; ASA

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The Anesthesia Patient Safety Foundation (APSF) was created in 1985 as an independent foundation with the vision that “*no patient shall be harmed by anesthesia*”. APSF’s mission is to improve continually the safety of patients during anesthesia care by encouraging and conducting (1) safety research and education, (2) patient safety programs and, (3) national and international exchanges of information and ideas.¹⁻²

Culture of Safety and Support of Anesthesia Patient Safety Research

APSF has provided the basis and stimulus for the institutionalization and legitimization of patient safety as a topic of professional concern. APSF provides grant support for projects intended to study and improve anesthesia patient safety. When the first grants were made in 1987, funds uniquely directed to patient safety research were nonexistent. Since 1987, APSF has awarded 98 grants for nearly 8 million dollars. The impact of these research grants is more far-reaching than the absolute number of grants and total dollars, as APSF-sponsored research has led to other investigations and the development of a cadre of anesthesia patient safety investigators. APSF

offers a Safety Scientist Career Development Award to anesthesiologists wishing to pursue an academic career with special emphasis on anesthesia safety.

Dissemination of Safety Information

The *APSF Newsletter* currently has a circulation of more than 105,000 making it the most widely distributed anesthesia safety publication in the world. Rapid dissemination of patient safety information and opinions is an important contribution of the newsletter to patient safety. All APSF Newsletters are available on the APSF website (<http://www.apsf.org/resources.php>).

Simulation Programs

APSF provided early funding for the use of realistic patient simulators in anesthesiology. Further publicity and advocacy from APSF has led to anesthesiology becoming the leader in the application and adoption of simulators, with strong patient safety implications through education (residents attempting new skills for the first time on a mannequin), training (teamwork, critical event management), and research (human performance). Use of realistic stimulators has now become common in several

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other specialties.

Automated Information Systems

The APSF Data Dictionary Task Force/International Organization for Terminology in Anesthesia has led the initiative to standardize terminology for anesthesia records and has provided definitions for a proposed anesthesia outcome reporting system. APSF has endorsed the use of automated information systems as a safety initiative to gather data and work towards creating “best practices”.

Patient Safety Programs

The foundation sponsors multidisciplinary consensus conferences on current safety topics with the goal of producing recommendations for “best practices”. In 2005, APSF sponsored a conference and published articles in the APSF Newsletter emphasizing the importance of physiologic alarms being audible during anesthesia and surgery. As a result, the American Society of Anesthesiologists updated their Standards for Basic Intraoperative Monitoring to include the requirement that physiologic alarms (pulse oximetry and capnography) be audible to the anesthesiologist or the anesthesia care team personnel.

Recent consensus conferences have included (1) Safety during Patient-Controlled Analgesia, (2) Medication Safety in the Operating Room, and (3) Perioperative Visual Loss following Spine Surgery. APSF is recommending that continuous electronic monitoring (pulse oximetry) be utilized in all patients receiving postoperative opioids for pain management. The reports of these conferences are published in the APSF Newsletter and posted on the APSF website.

APSF also produces educational DVDs for ongoing patient safety topics. Educational DVDs on “*Fire Safety in the Operating Room*” and “*Medication Safety in the Operating Room*” may be viewed on the APSF website (www.apsf.org) and complimentary copies of the DVDs are available upon request.

On-going safety initiatives sponsored by APSF include development of a “*Pre-anesthetic Patient Safety Checklist (PIPS)*” and a survey to determine anesthesiologist’s opinions regarding the ‘patient safety risk resulting

from neuromuscular blocker-induced skeletal muscle weakness’ in the postoperative period. The Foundation is addressing the question, *Should anesthesia incidents be investigated as they are in other high-risk industries?* The goal is to achieve a better understanding of the pros and cons of such an approach. APSF believes that anesthesiologists should be trained to apply advanced medical technology, e.g. modern anesthesia workstations, intravenous infusion devices, syringe pumps etc., to patient care and is advocating a process to document this competency.

Evidenced-Based Medicine

Formal evidence may be neither appropriate nor necessary for all of the interventions to improve patient safety.³ Improved safety in anesthesia reflects the application of a broad array of changes in process, equipment, drugs, monitoring and education. No single one of these changes (pulse oximetry, capnography, audible physiologic alarms) has ever been proven to have a clear-cut impact on morbidity and mortality. Rather, improved anesthesia patient safety reflects doing a number of ‘little things’ that in aggregate, will result in a big difference. To conclude that convincing evidence of progress and effect is absent because randomized trials of anesthesia safety practices are lacking would be counterproductive. Absence of unequivocal data is not evidence of absence of effect.

Future Challenges

The goal of improving anesthesia patient safety cannot be achieved in a single day. It is a continuous process and needs constant struggle. Equipment and systems still occasionally fail and preventable human errors continue to occur. Increasing ‘production pressures’ in anesthesia practice in the presence of diminishing resources may threaten previously achieved gains in patient safety. Similar to aviation safety, improvements in anesthesia patient safety have been achieved by a host of changes that made sense (were the right thing to do) and were based on an understanding of human factors principles.

APSF persists in its pursuit of zero tolerance for anesthesia-related injury to patients but the goal remains elusive.

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