APSF.ORG
NEWSLETTER
THE OFFICIAL JOURNAL OF THE ANESTHESIA PATIENT SAFETY FOUNDATION

CITATION: Eichhorn, J. 40 years of the Anesthesia Patient Safety Foundation: past progress and continued promise *APSF Newsletter.* 2025;3:82–83.

40 Years of the Anesthesia Patient Safety Foundation: Past Progress and Continued Promise

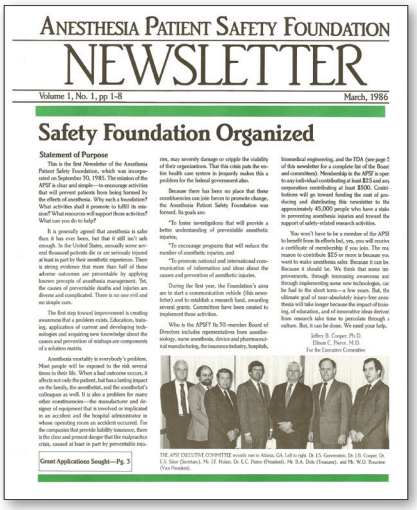
by John H. Eichhorn, MD

When the Anesthesia Patient Safety Foundation was created in the Fall of 1985, with the admirable mission "that no patient shall be harmed by anesthesia care," an agenda of communication, education, advocacy, debate, and research support was begun that continues enthusiastically in force to this day.

The first issue of the *APSF Newsletter*, in March 1986, immediately embraced the current issues of that era: essential intraoperative monitoring, risks of hypercarbia vs hypoxemia, verification of correct endotracheal tube placement, lessons from closed claims, and grant support for much-needed high-quality patient safety research. Some of the early questions and concepts have been resolved or significantly transformed over time—others, not so much. Review of every issue of the *Newsletter*, in order since its creation, reveals that many concerns recur over the decades.

Previously published histories have detailed the antecedents, driving forces, and organizational efforts to launch the APSF, as well as its role in establishing, naming, and defining the discipline of patient safety, and as the first formal patient safety organization.[1-3] Note that the APSF was prominently cited as the prototypical example of a formal organization helping to improve patient safety in the landmark (and controversial) comprehensive 1999 "To Err Is Human," report from the Institute of Medicine,[4,5] which resulted in an APSF response from then APSF President Robert K. Stoelting, MD, (successor to inspirational founding APSF President, the late Ellison C. ["Jeep"] Pierce, Jr., MD) highlighting the significant recognition of APSF, but objecting to the report's emphasis on identifying and eliminating "unsafe providers," as opposed to preferred objectively proven system-based protocols and efforts.[6]

Within the initial year of the APSF, the American Society of Anesthesiologists (ASA) adopted the first ever formal mandatory standards for intraoperative monitoring,[7] with the strongest possible backing of the APSF, especially through the involvement and efforts of Dr. Pierce (past ASA president, who initiated its standards committee) and John H. Eichhorn, MD, (then *APSF Newsletter* editor, secretary of that new ASA standards committee, and chair of group that created the original Harvard monitoring standards).[8] Over its first few years, the APSF supported, endorsed, and publicized both the updating of the ASA standards and the creation and adoption of intraoperative monitoring standards by numerous anesthesia societies and governments from all around the world.



ANESTHESIA PATIENT SAFETY FOUNDATION
NEWSLETTER
Volume 1, No. 1, pp 1-8 March, 1986

Safety Foundation Organized

Statement of Purpose

This is the first Newsletter of the Anesthesia Patient Safety Foundation, which was incorporated on September 30, 1985. The mission of the APSF is clear and simple—to encourage activities that will prevent patients from being harmed by the effects of anesthesia. Why such a foundation? What activities shall it promote to fulfill its mission? What resources will support those activities? What can you do to help?

It is generally agreed that anesthesia is safer than it has ever been, but that it still isn't safe enough. In the United States, annually some several thousand patients die or are seriously injured at least in part by their anesthetic experience. There is strong evidence that more than half of these adverse outcomes are preventable by applying known precepts of anesthesia management. Yet, the causes are predictable deaths and injuries are diverse and complicated. There is no one evil and no simple cure.

The first step toward improvement is creating awareness that a problem exists. Education, training, application of current and developing technologies and acquiring new knowledge about the causes and prevention of mishaps are components of a total attack.

Anesthesia mortality is everybody's problem. Most people will be exposed to the risk several times in their life. When a bad outcome occurs, it affects not only the patient, but has a lasting impact on the family, the anesthetist, and the anesthetist's colleagues as well. It is also a problem for many other constituencies—the manufacturer and designer of equipment that is involved or implicated in an accident and the hospital administrator in whose operating room an accident occurred. For the companies that provide liability insurance, there is the clear and present danger that the malpractice crisis, caused at least in part by preventable injuries, may severely damage or cripple the stability of their organizations. That this crisis puts the entire health care system in jeopardy makes this a problem for the federal government also.

Because there has been no place that these constituencies can join forces to promote change, the Anesthesia Patient Safety Foundation was formed. Its goals are:

"To foster investigations that will provide a better understanding of preventable anesthetic injuries.

"To encourage programs that will reduce the number of anesthetic injuries; and

"To promote national and international communication of information and ideas about the causes and prevention of anesthetic injuries.

During the first year, the Foundation's aims are to start a communication vehicle (this newsletter) and to establish a research fund, awarding several grants. Committees have been created to implement these activities.

Who is the APSF? Its 70-member Board of Directors includes representatives from anesthesiology, nurse anesthesia, device and pharmaceutical manufacturing, the insurance industry, hospitals, biomedical engineering, and the FDA (see page 7 of this newsletter for a complete list of the Board and committees). Membership in the APSF is open to any individual contributing at least $25 and any corporation contributing at least $500. Contributions will go toward funding the cost of producing and distributing this newsletter to the approximately 45,000 people who have a stake in preventing anesthesia injuries and toward the support of safety-related research activities.

You won't have to be a member of the APSF to benefit from its efforts but, yes, you will receive a certificate of membership if you join. The real reason to contribute $25 or more is because you want to make anesthesia safer. Because it can be. Because it should be. We think that some improvements, though increasing awareness and through implementing some new technologies, can be had in the short term—a few years. But, the ultimate goal of near-absolutely injury-free anesthesia will take longer because the impact of training, of education, and of innovative ideas derived from research take time to percolate through a culture. But, it can be done. We need your help.

Jeffrey B. Cooper, Ph.D.
Ellison C. Pierce, M.D.
For the Executive Committee

Grant Applications Sought—Pg. 3

THE APSF EXECUTIVE COMMITTEE recently met in Atlanta, GA. Left to right: Dr. J.S. Gravenstein, Dr. J.B. Cooper, Dr. L.S. Stier (Secretary), Mr. J.F. Holzer, Dr. E.C. Pierce (President), Mr. R.A. Dain (Treasurer), and Mr. W.G. Rountree (Vice President).

Front page of the first issue of the APSF Newsletter, *Vol. 1, No. 1, March 1986, with a photo of the first APSF Executive Committee members.*

Multiple areas of patient safety interest have received intense APSF efforts over the decades. Good examples include safety issues related to non-OR anesthetizing locations (MRI, cath lab, etc.) and office-based anesthesia. Anesthesia automated electronic information systems and their electronic anesthesia records (with debate and mixed opinions about safety implications) have been often considered. Patient-injury fires during monitored anesthesia care with open supplemental oxygen being administered to the sedated patient generated major safety recommendations and is the subject of one of the APSF Executive Summary videos (intended for both professionals and patients) available on the APSF main webpage. Patient vision loss after prolonged prone spine surgery was a critical issue that APSF fixated on more than 15 years ago and publicized widely, encouraging preventive protocols. A related concern is hypotension and adverse events in patients anesthetized in the beach chair position, often for shoulder surgery. This issue surfaced in 2007,[9] was the subject of a 2009 APSF Workshop,[10] provoked the creation of an APSF registry of injury cases in 2010, and led to several preventive practice recommendations. Safety implications of distractions in the OR, yielded a series of recommendations for practice and provided another example of the recurring nature of safety issues in anesthesia.[11] The topics of distraction (especially "reading" in the OR, which produced for years a torrent of Letters to the Editor in the *Newsletter*), practitioner fatigue, and, later, OR production pressure (usually with institutional financial motives) have intermittently permeated throughout APSF efforts for decades. Monitoring neuromuscular blockade by muscle relaxants during, at the end of, and even after general endotracheal anesthesia has been (and continues to be) an intense and heavily debated issue for the APSF. These discussions have highlighted quantitative neuromuscular monitoring technology[12] and contributed to the eventual adoption by the ASA of specific practice guidelines to enhance patient safety.[13] Surgical infections were another topic that received significant attention.[14,15] The implications and challenges of the COVID-19 pandemic were addressed by the APSF, especially the use of anesthesia machine ventilators in make-shift emergency ICUs set up in operating rooms.

Closely related to human factors in anesthesia patient safety are the topics of crisis management, emergency manuals, cognitive aids for use in clinical practice (both emergency and routine), checklists, and hand-off communications. The APSF has awarded research grants on technical and nontechnical decision support tools for perioperative pediatric crises, sponsored Pierce Memorial lectures on the importance of cognitive aids, and organized conferences on the implementation of cognitive aids and checklist in the perioperative setting.[16-18] Checklists as a tool to enhance anesthesia safety (and the classic analogy comparing administering anesthesia to piloting a commercial jumbo jet) appeared very early in APSF discussions;[19] anesthesia machines and equipment were the first checklist targets.[20] The APSF administered a profession-wide survey to help formulate a template for a preanesthetic checklist.[21] More recently, proposals for implementation of checklists have focused on handoffs between caregivers. Formed in

See "Past and Future," Next Page

Fundamental Questions in Anesthesia Patient Safety Remain

From "Past and Future," Preceding Page

2015, the Perioperative Multi-Center Handoff Collaborative is supported by the Anesthesia Patient Safety Foundation.[22] The inaugural APSF Stoelting Conference yielded recommendations for handoff procedures to enhance patient safety.[23]

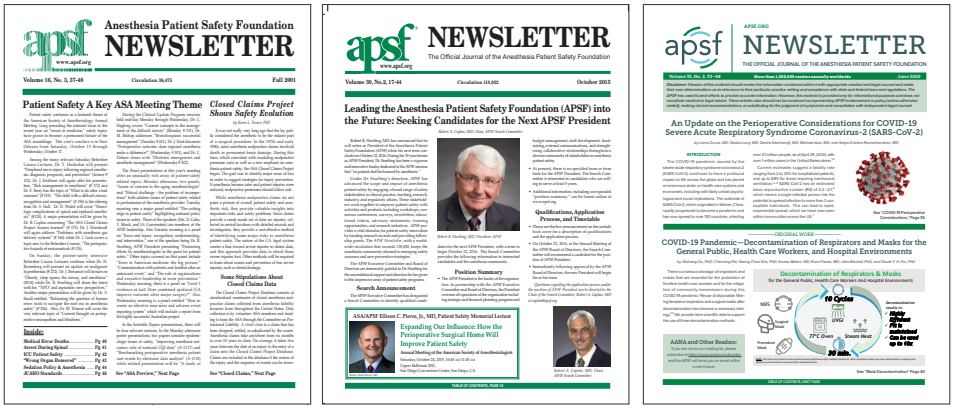
The APSF has periodically conducted surveys of anesthesia practitioners to help determine the relative priorities in order of importance from a list of more than 50 specific patient safety ideas: in 1999[24] (difficult airway management was number 1); in 2018[25] (perioperative clinical deterioration and responses topped the list); and in 2021[26] ("culture of safety, inclusion, and diversity" was the first priority). The ordering of the priorities ranked in the surveys has changed some and progressed over the years, but, as noted, reviewing those lists, most of the fundamental questions persist, thus providing stimulus,

John H. Eichhorn, MD

inspiration, and direction for APSF engagement in both the present and the future.

John Eichhorn, MD, was the founding editor and publisher of the APSF Newsletter. *He lives in San Jose, CA, as a retired professor of Anesthesiology, and continues to serve on the APSF Editorial Board.*

The author has no conflicts of interest.



The APSF Newsletter *through the years, starting with the original design under John Eichhorn; changes to the logo and format under Bob Morell; and our latest edition with the new branding under Steven Greenberg.*

REFERENCES

1. Eichhorn JH. The Anesthesia Patient Safety Foundation at 25: a pioneering success in safety; 25th anniversary provokes reflection, anticipation. *Anesth Analg.* 2012;114:791–800. PMID: 22253277.
2. Eichhorn JH. The APSF at 25: pioneering success in safety, but challenges remain. *APSF Newsletter.* 2010;25: 21,23–24,35–40. https://www.apsf.org/wp-content/uploads/newsletters/2010/summer/pdf/APSF201010.pdf Accessed August 10, 2025.
3. Eichhorn JH. The history of anesthesia patient safety. In: Ball C, Bacon D, and Featherstone P (eds.). Broad horizons —the history of anesthesia beyond the operating room. *Int Anesthesiol Clin.* 2018;56:56–93. PMID: 29521790.
4. Institute of Medicine (US) Committee on Quality of Health Care in America. To err is human: building a safer health system. Washington (DC): National Academies Press (US); 2000. PMID: 25077248.
5. Gaba D, Cooper J. Landmark report published on patient safety. *APSF Newsletter.* 1999;14(4). https://www.apsf.org/article/landmark-report-published-on-patient-safety/ Accessed August 10, 2025.
6. Stoelting RK. APSF responds to IOM medical error report. *APSF Newsletter.* 2000;15(2). https://www.apsf.org/article/apsf-responds-to-iom-medical-error-report/ Accessed August 10, 2025.
7. Eichhorn JH. ASA adopts basic monitoring standards. *APSF Newsletter.* 1987;2(1). https://www.apsf.org/article/asa-adopts-basic-monitoring-standards/ Accessed August 10, 2025.
8. Eichhorn JH, Cooper JB, Cullen DJ, et al. Standards for patient monitoring during anesthesia at Harvard Medical School. *JAMA*. 1986;256:1017–1020. PMID: 3735628.
9. Cullen D, Kirby R. Beach chair position may decrease cerebral perfusion. *APSF Newsletter.* 2007;22:25,27. https://www.apsf.org/article/beach-chair-position-may-decrease-cerebral-perfusion/ Accessed August 10, 2025.
10. Lee L, Caplan R. APSF Workshop: Cerebral perfusion experts share views on management of head-up cases. *APSF Newsletter.* 2009;24:45,47–48. http://apsf.org/article/apsf-workshop-cerebral-perfusion-experts-share-views-on-management-of-head-up-cases/ Accessed August 10, 2025.
11. van Pelt M, Weinger M. Distractions in the anesthesia work environment: impact on patient safety? Report of a meeting sponsored by the Anesthesia Patient Safety Foundation. *APSF Newsletter.* 2017;32:40–42,55. https://www.apsf.org/article/distractions-in-the-anesthesia-work-environment-impact-on-patient-safety-report-of-a-meeting-sponsored-by-the-anesthesia-patient-safety-foundation/ Accessed August 10, 2025.
12. Renew JR. Advancements in quantitative neuromuscular monitoring. *APSF Newsletter.* 2021;36:117–119. https://www.apsf.org/article/advancements-in-quantitative-neuromuscular-monitoring/ Accessed August 10, 2025.
13. Chung C, Szokol JW, Weigel WA, Thilen SR. New practice guidelines for neuromuscular blockade. *APSF Newsletter.* 2023;38:34,39–41. https://www.apsf.org/article/new-practice-guidelines-for-neuromuscular-blockade/ Accessed August 10, 2025.
14. Anesthesia Patient Safety Foundation. New guidance outlines recommendations for infection control in anesthesiology. https://www.apsf.org/news-updates/new-guidance-outlines-recommendations-for-infection-control-in-anesthesiology/ Accessed August 10, 2025.
15. Kuvadia M, Wall R, Andjela P, et al. Designing a program for infection prevention in the anesthesia work environment. September 3, 2020. https://www.apsf.org/article/designing-a-program-for-infection-prevention-in-the-anesthesia-work-environment/ Accessed August 9, 2025.
16. Howard S. Four APSF grants awarded for 2014. *APSF Newsletter.* 2014;28:57–59. https://www.apsf.org/article/four-apsf-grants-awarded-for-2014/ Accessed August 10, 2025.
17. Morell RC. APSF workshop and EC Pierce lecture address importance of cognitive aids. *APSF Newsletter.* 2015;29:41,45–47. https://www.apsf.org/article/apsf-workshop-and-ec-pierce-lecture-address-importance-of-cognitive-aids/ Accessed August 10, 2025.
18. Morell RC, Cooper JB. APSF sponsors workshop on implementing emergency manuals. *APSF Newsletter.* 2016;30:68–71. https://www.apsf.org/article/apsf-sponsors-workshop-on-implementing-emergency-manuals/ Accessed August 10, 2025.
19. Chopra V. et al. Checklists: aviation shows the way to safer anesthesia. *APSF Newsletter.* 1991;6(3). https://www.apsf.org/article/checklists-aviation-shows-the-way-to-safer-anesthesia/ Accessed August 10, 2025.
20. Good M. Comments sought on new FDA preanesthesia checklist. *APSF Newsletter.* 1992;7(4). https://www.apsf.org/article/comments-sought-on-new-fda-preanesthesia-checklist/ Accessed August 10, 2025.
21. Stoelting R. APSF survey helps to establish pre-induction checklist. *APSF Newsletter.* 2013;28:1,11–14. https://www.apsf.org/article/apsf-survey-helps-to-establish-pre-induction-checklist/ Accessed August 10, 2025.
22. Greilich P, Keebler J. Multicenter handoff collaborative. *APSF Newsletter*. 2017;32:47–48. https://www.apsf.org/article/multicenter-handoff-collaborative/ Accessed August 10, 2025.
23. Cooper JB, Lane-Fall M, Agarwala A. First Stoelting conference reaches consensus on many perioperative handover recommendations. *APSF Newsletter.* 2018;32:85. https://www.apsf.org/article/first-stoelting-conference-reaches-consensus-on-many-perioperative-handover-recommendations/ Accessed August 10, 2025.
24. Stoelting R. APSF survey results identify safety issues priorities. *APSF Newsletter*. 1999;14(1). https://www.apsf.org/article/apsf-survey-results-identify-safety-issues-priorities/ Accessed August 10, 2025.
25. Lane-Fall M. APSF highlights 12 perioperative patient safety priorities for 2018. *APSF Newsletter.* 2018;33:33. https://www.apsf.org/news-updates/the-patient-safety-movement-foundation-and-anesthesia-patient-safety-foundation-award-the-patient-safety-curriculum-award/ Accessed August 10, 2025.
26. Greenberg S. The APSF revisits its top 10 patient safety priorities. *APSF Newsletter.* 2021;36:48.53. https://www.apsf.org/article/the-apsf-revisits-its-top-10-patient-safety-priorities/ Accessed August 10, 2025.