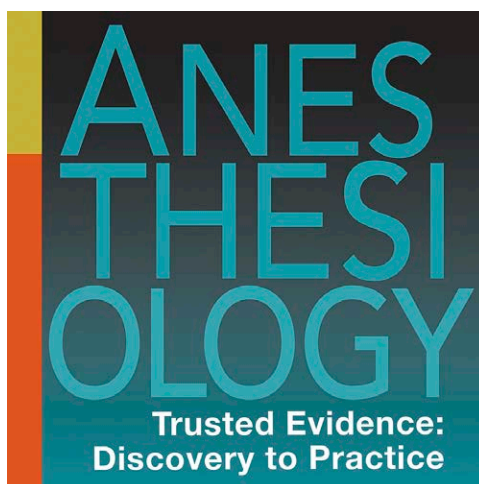


# ANESTHESIOLOGY: Reflecting and Leading

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It has become my custom as Editor-in-Chief to publish in July, at the start of the new academic year, an essay of past reflection and journal plans for the upcoming year. Astute readers will note this is not July. Last year's message reflected on the COVID-19 pandemic of 2019 to ???, with no knowledge of when it would end.<sup>1</sup> For this July, with implementation of the swiftly developed and extremely efficacious vaccines and innovative patient management and therapeutic strategies, there was optimistic hope to close out the story as the pandemic of 2019 to 2021. However, with some early signals of resurgence due to the highly contagious delta variant, publication of this editorial was paused, hoping that the signal was just transitory and victory could be announced and celebrated, along with some return to normalcy among critical care practitioners, operating room denizens, and investigators. Unfortunately, those signals were real, and we are in for more, with vaccination resistance, increasing disease transmission, and once-falling caseloads now reversed and climbing. No longer somewhat normalized, systems are again changing rapidly, including just-updated Centers for Disease Control guidance that even fully vaccinated people return to wearing masks when indoors, new mask mandates, expanded testing, and required vaccinations by schools, healthcare institutions, and employers.

Last year, ANESTHESIOLOGY mobilized an extraordinary response to unprecedented circumstances, leading the specialty. In February 2020, we published a special online suite of COVID-19-related articles, in partnership with clinicians in China, including firsthand information, scholarly reviews, clinical protocols, and recommendations on the ongoing pandemic.<sup>2</sup> This collection has grown beyond the original seven articles published and two accompanying podcasts. It now includes numerous additional articles,



**“ANESTHESIOLOGY continues to publish the highest-quality clinical and basic scientific research in the field, to create trusted evidence, spanning from discovery to practice.”**

The coronavirus pandemic continues to have an extraordinary influence on scholarly publishing. As of April 28, 2020, PubMed listed more than 7,300 COVID-19 articles. Little more than one year later, July 27, 2021, there were more than 160,600 articles!

ANESTHESIOLOGY continues to publish the highest-quality clinical and basic scientific research in the field, to create trusted evidence, spanning from discovery to practice. It leads and influences the field through publication of original research, reviews, and editorials. Special articles have addressed the role of anesthesiology in health policy, burnout in anesthesiologists, levels of evidence and clinical practice guidelines, and provision of anesthesia care in space. ANESTHESIOLOGY continues to attract and publish high-quality original investigations as evidenced by the 14% increase in original investigation submissions from 2019 to 2021. Tables 1 and 2 list the 20 most viewed articles in 2020 that were published in 2019 and 2020.

including a review on COVID-19 and personal protective equipment, an original investigation on aerosol retention characteristics of barrier devices, and a photo essay that demonstrates the humanity of response to COVID-19 around the world. A third podcast, “COVID-19: Challenges of Hemostasis and Coagulopathy,” featuring Drs. Jerrold H. Levy and Jean M. Connors, was recently added to the collection. All are available on the Journal website, and we will continue to add to our COVID-19 offerings as needed. In addition, the 30th annual ANESTHESIOLOGY Journal Symposium, at the 2021 American Society of Anesthesiologists (ASA) Annual Meeting, to be led by Journal Editors Dr. Levy and Dr. Martin London, is themed “SARS-CoV-2 and COVID-19: New Paradigms and Challenges for Anesthesiologists.”

Image: ANESTHESIOLOGY icon.

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**Table 1.** 2019 Anesthesiology Articles Most Viewed in 2020

Article Title	Volume:Pages
Perioperative fluid therapy for major surgery	130:825–32
Operating room fires	130:492–501
Quantitative research methods in medical education	131:23–35
Quadratus lumborum block: Anatomical concepts, mechanisms, and techniques	130:322–35
Driving pressure and transpulmonary pressure: How do we guide safe mechanical ventilation?	131:155–63
Respiratory physiology for the anesthesiologist	130:1064–77
Intraoperative methadone in surgical patients: A review of clinical investigations	131:678–92
Postoperative delirium and postoperative cognitive dysfunction: Overlap and divergence	131:477–91
Practicalities of total intravenous anesthesia and target-controlled infusion in children	131:164–85
Assessment of common criteria for awake extubation in infants and young children	131:801–8
Practice advisory for perioperative visual loss associated with spine surgery 2019: An updated report by the American Society of Anesthesiologists Task Force on Perioperative Visual Loss, the North American Neuro-ophthalmology Society, and the Society for Neuroscience in Anesthesiology and Critical Care	130:12–30
Acute fatty liver of pregnancy: Pathophysiology, anesthetic implications, and obstetrical management	130:446–61
Artificial intelligence and machine learning in anesthesiology	131:1346–59
Adverse events and factors associated with potentially avoidable use of general anesthesia in cesarean deliveries	130:912–22
Total intravenous anesthesia <i>versus</i> inhalation anesthesia for breast cancer surgery: A retrospective cohort study	130:31–40
A neurologic examination for anesthesiologists: Assessing arousal level during induction, maintenance, and emergence	130:462–71
Qualitative research methods in medical education	131:14–22
Superior trunk block provides noninferior analgesia compared with interscalene brachial plexus block in arthroscopic shoulder surgery	131:1316–26
Analgesic effects of hydromorphone <i>versus</i> buprenorphine in buprenorphine-maintained individuals	130:131–41
Superior trunk block: A phrenic-sparing alternative to the interscalene block: A randomized controlled trial	131:521–33

**Table 2.** 2020 Anesthesiology Articles Most Viewed in 2020

Article Title	Volume:Pages
Intubation and ventilation amid the COVID-19 outbreak: Wuhan's experience	132:1317–32
Practice guidelines for central venous access 2020: An updated report by the American Society of Anesthesiologists Task Force on Central Venous Access	132:8–43
Perioperative management of patients infected with the novel coronavirus: Recommendation from the joint task force of the Chinese Society of Anesthesiology and the Chinese Association of Anesthesiologists	132:1307–16
COVID-19 infection: Implications for perioperative and critical care physicians	132:1346–61
Practice advisory for the perioperative management of patients with cardiac implantable electronic devices: Pacemakers and implantable cardioverter–defibrillators 2020: An updated report by the American Society of Anesthesiologists Task Force on Perioperative Management of Patients with Cardiac Implantable Electronic Devices	132:225–52
Saline <i>versus</i> lactated Ringer's solution: The saline or lactated Ringer's (SOLAR) trial	132:614–24
Perioperative use of gabapentinoids for the management of postoperative acute pain: A systematic review and meta-analysis	133:265–79
Perioperative acute kidney injury	132:180–204
Preventing infection of patients and healthcare workers should be the new normal in the era of novel coronavirus epidemics	132:1292–5
Response of Chinese anesthesiologists to the COVID-19 outbreak	132:1333–8
Novel coronavirus 2019 and anesthesiology	132:1289–91
Anesthetic management using multiple closed-loop systems and delayed neurocognitive recovery: A randomized controlled trial	132:253–66
Preoperative risk and the association between hypotension and postoperative acute kidney injury	132:461–75
Multimodal analgesic regimen for spine surgery: A randomized placebo-controlled trial	132:992–1002
Postoperative hypotension after noncardiac surgery and the association with myocardial injury	133:510–22
Body habitus and dynamic surgical conditions independently impair pulmonary mechanics during robotic-assisted laparoscopic surgery	133:750–63
Subomohyoid anterior suprascapular block <i>versus</i> interscalene block for arthroscopic shoulder surgery	132:839–53
Mepivacaine <i>versus</i> bupivacaine spinal anesthesia for early postoperative ambulation: A randomized controlled trial	133:801–11
Vital signs monitoring with wearable sensors in high-risk surgical patients: A clinical validation study	132:424–39
Associations of intraoperative radial arterial systolic, diastolic, mean, and pulse pressures with myocardial and acute kidney injury after noncardiac surgery: A retrospective cohort analysis	132:291–306
Body habitus and dynamic surgical conditions independently impair pulmonary mechanics during robotic-assisted laparoscopic surgery: A cross-sectional study	133:750–63

In addition to striving to continuously increase the quality and content of published articles, ANESTHESIOLOGY endeavors to disseminate journal content as broadly as possible, through multiple channels of communication, to

maximize our reach. This includes traditional scholarly publishing, as well as alternative methods and partnerships. For example, the Pain Research Forum, an online publication of the International Association for the Study of Pain, features

one ANESTHESIOLOGY article each month as its Editors' Pick. So too do the ASA's Monday Morning Outreach and the ASA Monitor. The Journal social media program has grown to include 12 social media ambassadors to engage and drive discussions on social media and recommendations for new initiatives. In 2020, the Journal's Twitter account saw a 32% increase in followers, a 45% increase in mentions, a 70% increase in retweets, an 88% increase in engagements, and a 93% increase in likes. In October 2020, we launched a Journal-branded Instagram account that now has more than 1,100 followers. Follow ANESTHESIOLOGY on Twitter (@Anesthesiology), Facebook (<https://www.facebook.com/ASAanesthesiology>), and Instagram (@anesthesiology\_journal). For content distribution, ANESTHESIOLOGY launched a refreshed website in September 2020, with improved access to journal articles and other content, enhanced search functionality, new trending topic alerts, and new viewer options for split-view page layout, enabling easier navigation between text and figures/tables. To provide better service to our authors, the new website features an Author Resource Center, which includes comprehensive submission instructions, information regarding peer review, social media dissemination, journal metrics, and scientific integrity. Website usage continues to increase after the new launch. Overall page views increased 4% in the first quarter of 2021 compared to the fourth quarter 2020, as did Journal visits. International visitors comprised 54% of all traffic; thus, ANESTHESIOLOGY reach extends far beyond the United States, as we continue being an international journal.

ANESTHESIOLOGY strives to bring value to ASA members; all anesthesiologists, critical care physicians, pain physicians, certified registered nurse anesthetists, and certified anesthesiologist assistants worldwide; and investigators in anesthesiology and biomedical science most broadly. We want to know how we are doing. How are our metrics? What we have learned from them is gratifying and speaks to the quality of Journal content and the contributions of our authors, editors, reviewers, and staff. Thank you.

The ASA conducts a periodic survey of its members. We were thrilled to see how the Journal ranked in both importance to members and their satisfaction with the content we publish. Of all the ASA offerings and activities, ANESTHESIOLOGY (and the ASA website) was by far the most utilized, and 87% of respondents were satisfied or extremely satisfied with the Journal. Of all the factors contributing to ASA member satisfaction, ANESTHESIOLOGY and the ASA practice guidelines it publishes were ranked highest. Staying informed on the latest clinical information (e.g., ANESTHESIOLOGY, practice guidelines) was the top-most reason for maintaining ASA membership. That increased more with years in the profession and was similar between members in academic or private practice. With regard to ASA investing on behalf of the field of anesthesiology, offering access to high-quality education and access to novel clinical research in anesthesiology were listed as two of the

three most important reasons. This information shows that Journal scientific content is highly valued by ASA members and demonstrates Journal value to the organization from a membership point of view, beyond usage and satisfaction.

Another metric is the 2-yr Journal Impact Factor, which is controversial<sup>3</sup> and about which I have written and cautioned previously.<sup>4</sup> This well known but less well understood number is the ratio of all citations to journal content (research, reviews, editorials, letters, etc.) to citable articles (typically research and reviews) in the previous 2 yr. The just-released 2020 ANESTHESIOLOGY Impact Factor is 7.892, representing 33,319 citations to Journal content and 436 unique contributing authors. Perhaps more importantly, and as a measure of our enduring importance and foundational value, are the 5-yr Impact Factor of 8.139 and the citation half-life of 11.4 yr. These metrics are yet again the highest in Journal history.

Nonetheless, as is recognized, the Impact Factor can be "gamed," and certain journals do so voraciously. One approach is excessive self-citation, in which journal content cites other articles in that same journal, such as through author coercion (requiring authors to cite articles in that journal as a condition of manuscript acceptance) and profligate letters to the editor that cite the journal. Another approach is to publish research as correspondence, which accrues citations (raising the numerator) but does not count as "citable items" (reducing the denominator), thereby increasing the Impact Factor ratio. In recognition of that, Clarivate, the company that publishes the Impact Factor, also publishes an Impact Factor that excludes self-citation. They also suppress certain journals (do not give them an Impact Factor) or issue an expression of concern for excessive self-citation or for "citation stacking" (sometimes referred to as participating in "citation rings"), which artificially inflates the Impact Factor.<sup>5,6</sup>

This year, Clarivate introduced a new metric, the Journal Citation Indicator.<sup>7</sup> This new metric counts 3 yr of citations, only counts citations to citable items (e.g., research and reviews) but not noncitable items (e.g., letters, news, editorials), and normalizes journals within their field of research (thus not biasing against journals in smaller fields, and making the metric easily interpreted and more uniform across disciplines). The Journal Citation Indicator may mitigate some of the Impact Factor gaming. The ANESTHESIOLOGY Journal Citation Indicator is 2.56 and is ranked no. 1 in the field.

We want ANESTHESIOLOGY to be leading in scholarly content but also on issues of policy and scholarly integrity. Quality peer review remains a hallmark of ANESTHESIOLOGY, in service to readers, patients, and the public trust, and we highlighted its importance and questioned the recent trend toward valuing publication speed over quality.<sup>8</sup> As a reminder to readers, the peer review process does not necessarily stop at publication. Readers may seek additional information; raise issues about the conduct, reporting, or interpretation of research; and

offer alternative interpretations and conclusions based on available evidence by writing a letter to the editor. Article authors may reply to such letters, and the paired dialogue can be useful to readers by serving to clarify and/or amplify the message in an original article. We addressed the importance of recognizing collaborators in research and Journal mechanisms for doing so, as well as the ethics of authorship and criteria for authorship in *ANESTHESIOLOGY*, salami publication *versus* appropriate use of segmented publication, and other elements of scientific integrity.<sup>9</sup> As research protocols become more common and authors may describe them in more than one publication, we clarified what constitutes legitimate limited text recycling so that authors can use their best description of what they had done.<sup>8</sup> In addition, this helps to draw a brighter line against plagiarism. Last, we reiterate the need, grounded in ethics, research validity, and sponsor requirements, for the study of both sexes in animal and human research.<sup>10</sup>

While we continue to face uncertainties, nonetheless we will go where the science takes us.

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### Competing Interests

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