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Stephanie Jones and Teresa A. Mulaikal	

Anesthesiologists receive extensive training in the area of perioperative care and the specialized skills required to maintain life during surgery and complex procedures. Integrated into almost every facet of contemporary medicine, they interact with patients at multiple stages of their health care journeys. While traditionally thought of as the doctors best equipped to save lives, they may also be some of the best doctors to help navigate the chapters at the end of life. Successfully navigating end-of-life care, particularly in the COVID-19 era, is a complicated task. Competing ethical principles of autonomy and nonmaleficence may often be encountered as sophisticated medical technologies offer the promise of extending life longer than ever before seen. From encouraging patients to actively engage in advance care planning, normalizing the conversations around the end of life, employing our skills to relieve pain and suffering associated with dying, and using our empathy and communication skills to also care for the families of dying patients, there are many ways for the anesthesiologist to elevate the care provided at the end of life. The aim of this article is to review the existing literature on the role of the anesthesiologist in end-of-life care, as well as to encourage future development of our specialty in this area.

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## **Outpatient Robotic surgery: Considerations for the Anesthesiologist** **15**

Yasmine Tameze and Ying Hui Low

A shortage of inpatient beds and nurses during the coronavirus disease 2019 pandemic has lent priority to safe same-day discharge after surgery. The minimally invasive nature of robotic surgery has allowed an increasing number of procedures to be done on an outpatient basis. Anesthetic management should be designed to complement the technical advantages of robotic surgery in facilitating early discharge.

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## **An Enhanced Ambulatory Surgery Experience for Patients with Cancer Through End-to-End Patient Engagement** **33**

Todd J. Liu, Hanae K. Tokita, and Brett A. Simon

Ambulatory surgery centers (ASC) serve an important role for hospital systems of increasing operating capacity and offloading patient volume. When seeking to perform more complex cancer surgeries at an ASC, a systematic approach with care pathways can yield success by

facilitating quick recovery for patients and reducing complication rates. End-to-end patient engagement is a key component of patient-centered care at the Josie Robertson Surgery Center and begins the moment the decision to have surgery is made and extends to the postdischarge period to track recovery. Engagement includes comprehensive education, standardization of processes, and setting clear expectations for recovery and discharge.

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## **An Executed Plan to Combat COVID-19 in the United States 45**

William R. Hartman

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) emerged in late 2019. To date, this coronavirus is responsible for greater than 90 million cases in the United States and more than 1 million confirmed deaths. When this virus came to the United States, testing was unorganized, no effective treatments were known, and no vaccines had been discovered. A plan to correct these deficiencies through cooperative science and efficient clinical trials was implemented to combat this novel virus. This plan developed efficient and inexpensive tests, highly effective medicines to treat and prevent disease progression, and vaccines to immunize the population.

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Kaylyn Sachse

Over two-thirds of the world's population do not have access to safe surgical and anesthetic care. Barriers to care include a lack of specialty trained personnel and unavailability of essential operating room resources. Aid efforts with the greatest impact focus on forming partnerships between high- and low-income communities, with the goal of creating self-sustaining programs run by local communities. Together these partnerships can work to build local capacity and expand the trained workforce by educating local providers.

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Kaitlyn A. Brennan, Monica Bhutiani, Meredith A. Kingeter, and Matthew D. McEvoy

Vasoplegic syndrome occurs relatively frequently in cardiac surgery, liver transplant, major noncardiac surgery, in post-return of spontaneous circulation situations, and in patients with sepsis. It is paramount for the anesthesiologist to understand both the pathophysiology of vasoplegia and the different treatment strategies available for rescuing a patient from life-threatening hypotension.

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Juan G. Ripoll, Allan M. Klompas, Bradford B. Smith, and Mark M. Smith

Direct oral anticoagulants (DOACs) have rapidly emerged as popular alternatives to warfarin in the setting of nonvalvular atrial fibrillation, prevention and treatment of venous thromboembolism, and secondary prevention of arterial thrombosis. It is now estimated that more patients in the United States take DOACs than warfarin for approved indications. Studies to date have shown that these drugs are similarly efficacious with perhaps a lower bleeding risk than warfarin. The purpose of this review is to provide insight into the currently available DOACs and discuss the management and reversal strategies for patients in the perioperative period.

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## **What Is the Role of Dexmedetomidine in Modern Anesthesia and Critical Care?**

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Adaora M. Chima, Mohamed A. Mahmoud, and Suryakumar Narayanasamy

Dexmedetomidine's unique sedative properties have led to its widespread use. Dexmedetomidine has a beneficial pharmacologic profile including analgesic sparing effects, anxiolysis, sympatholysis, organ-protective effects against ischemic and hypoxic injury, and sedation which parallels natural sleep. An understanding of predictable side effects,

effects of age-related physiologic changes, and pharmacokinetic and pharmacodynamic effects of dexmedetomidine is crucial to maximize its safe administration in adults and children. This review focuses on the growing body of literature examining advances in applications of dexmedetomidine in children and adults.

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Yang Gu, Heather L. Lander, Ravie Abozaid, Francis M. Chang, Hugo S. Clifford, Mehmet K. Aktas, Brandon F. Lebow, Kunal Panda, and Julie A. Wyrobek

The number of electrophysiology (EP) procedures being performed has dramatically increased in recent years. This escalation necessitates a full understanding by the general anesthesiologist as to the risks, specific considerations, and comorbidities that accompany these now common procedures. Procedures reviewed in this

article include atrial fibrillation and flutter ablation, supraventricular tachycardia ablation, ventricular tachycardia ablation, electrical cardioversion, pacemaker insertion, implantable cardioverter-defibrillator (ICD) insertion, and ICD lead extraction. General anesthetic considerations as well as procedure-specific concerns are discussed. Knowledge of these procedures will add to the anesthesiologist's armamentarium in safely caring for patients in the EP laboratory.

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Valeria Carcamo-Cavazos and Maxime Cannesson

Appropriate perioperative pain control is essential to aid in patients' recovery after surgery; however, acute postsurgical pain remains poorly treated and there continues to be an overreliance on opiates. Perioperative pain control starts in the operating room, and opiate-free anesthesia (OFA), where no opiates are used intraoperatively, has been proposed as a feasible strategy to further minimize opiates in the perioperative period. In this article, we address the potential benefits and shortcomings of OFA, while exploring tools available to accomplish multimodal anesthesia and ideally OFA, and the evidence behind the techniques proposed.

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Aditi Balakrishna, Lucille Bruncker, and Christopher G. Hughes

Mechanical ventilation is ubiquitous in the operating room. This article explores the anesthesia machine as a ventilator, examining its unique features and differences from ventilators designed for long-term use. It will describe standard and nonstandard modes of ventilation. The reader will develop a more nuanced understanding of how to tailor ventilation and oxygenation strategies based on patient and anesthetic scenarios as well as with the assistance of new technologies.

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Mary Yurashevich, Cameron R. Taylor, Jennifer E. Dominguez, and Ashraf S. Habib

Obesity is a worldwide epidemic and is associated with an increased risk of hypertension, diabetes, and obstructive sleep apnea. Pregnant patients with obesity experience a



higher risk of maternal and fetal complications. Anesthesia also poses higher risks for obese parturients and may be more technically challenging due to body habitus. Safe anesthesia practice for these patients must take into consideration the unique challenges associated with the combination of pregnancy and obesity.

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## **Contemporary Anesthetic Evaluation and Management for Electroconvulsive Therapy**

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Francis V. Salinas

Electroconvulsive therapy (ECT) is a medical treatment most often used in patients with severe major depression that has not responded to other treatments. ECT is also indicated for patients with other severe psychiatric conditions, including bipolar disorder, schizophrenia, schizoaffective disorders, catatonia, and neuroleptic malignant syndrome. Contemporary “modified ECT” involves inducing general anesthesia with neuromuscular blockade before inducing the therapeutic seizure. The goal of this review is to combine an evidence-based update with the experience of the author’s institution to provide a practical approach to anesthetic care for the patient undergoing ECT.

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## Advocacy for Anesthesiologists

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Richard P. Dutton, Sherif Zaafran, and Moeed Azam

Advocating for anesthesiology is a professional responsibility. We need to make the public aware of the role we play in assuring their safety and comfort; and we must also ensure that payment models are fair and commensurate with the quality of our work.

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