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Racial Inequity in Pediatric Anesthesia

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Abstract

Purpose of Review Minority health disparities have receivedrenewed attention in the USA following several highly publicized racial injustices in 2020. Though the focus has been largely on adults, children are not immune to these inequities. By reviewing racial disparities in pediatric perioperative care, we aim to engage the anesthesia community in the fight against systemic racism.

Recent Findings Minority children have higher rates of anesthetic and surgical morbidity compared to White children, including respiratory events, length of stay, hospital costs, and even death. These inequities occur across surgical specialties and environments.

Summary Racial disparities in the perioperative health and management of children are ubiquitous. Herein, we will summarize recent pediatric health disparity literature, discuss some important contributors to persistent inequities, and propose avenues for anesthesiologists to impact the pursuit of equitable healthcare outcomes.

Keywords Race · Children · Anesthesia · Surgery · Disparities · Inequities · Ethnicity

Introduction

Minority health became a national focus in the 1980s after the Department of Health and Human Services published the Heckler report [1•]. This was the first governmental investigation of the extent and significance of health disparities incurred by minorities in the USA. In this report, the Task Force on Black and Minority Health estimated that 60,000 excess deaths occurred annually in the USA because of health disparities [1•]. In the ensuing 40 years, there was an outpouring of research studying minority health. And the results are clear: minorities have poorer health outcomes by nearly every measurable metric. Despite improved attention to these inequities, all-cause mortality among Black Americans is still higher than among White Americans; there were 74,000 excess deaths annually among Black Americans in 2016 through 2018 [2].

Unfortunately, children are not immune to these disparities. Infant mortality is an important example of persistent childhood inequities. Though the overall US infant mortality rate has declined in past decades, the gap between Black and White children has increased; Black infants have twice the mortality rate as White infants. Furthermore, racial and ethnic minority infants, including Native Hawaiian and Native American infants, have higher mortality rates than White infants [3]. Though disparities in pediatric health are not as well studied as in adult populations, significant inequities in the diagnosis, management, and outcomes of childhood comorbidities and mental health have been documented [3].

In the perioperative setting, and because of our limited relationship with patients, the role of anesthesiologists in eliminating healthcare disparities is poorly defined. Though some inequities in the provision of anesthetic care have been reported [4, 5], most studies of minority health highlight disparities in access to care and surgical outcomes [3, 6]. However, in order to provide optimal patient care, anesthesiologists need to be aware of perioperative inequities and also individual and systemic-level conditions that impact the health of minority children. Anesthesiologists and other perioperative caregivers must recognize that the medical

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field is a microcosm of a larger society, and failure to pay attention to systemic racism and its impact on minority health harms our patients. We must understand the systemic rather than the individualistic nature of the causes *and* solutions to health disparities. In this article, we will review racial disparities in the perioperative health and management of children, discuss some important contributors to persistent inequities, and propose avenues for anesthesiologists to impact the pursuit of equitable healthcare outcomes.

Pre-hospital Racial Disparities and Their Influence on Surgical and Anesthetic Outcomes

Minority children are more likely to be born into and persist in poverty across generations than White children [7, 8]. For this reason, racial disparities in healthcare are often attributed to socioeconomic status (SES) and family wealth. Indeed, SES has a monotonic relationship with health—increasing SES is associated with improved overall health and health outcomes [9, 10]. The converse is also true [11, 12]. This is known as the "wealth advantage." However, we recently showed in a study of approximately 1.4 million children in the Pediatric Health Information System database that despite the protection afforded by parent SES, racial disparity in postoperative mortality was present at every SES level. Indeed, Black children whose parents belonged to the highest SES quartile had comparable postoperative mortality to that of White children whose parents belonged to the lowest SES quartile [13••]. The implications of these findings are profound: poor surgical outcomes in minority children are dependent on more than parent SES.

Pervasive and disparate poverty and low SES in some minority groups are some of the many manifestations of structural racism. Structural racism refers to macro-level societal conditions, such as policies, institutions, and systems, which normalize political and social disadvantages for a group of people [14, 15]. Racism is pernicious and especially effective because it requires little participation from either the advantaged or disadvantaged group to operate. Society is conditioned to believe that "things are just the way they are, and there is not much we can do about it." Some of the constructs of structural racism that influence health outcomes include race-based residential segregation, community disinvestments, intergenerational poverty, immigration policies, and insufficient social safety nets [16]. These disparate structural conditions, in turn, adversely impact a child's social and physical environment. Children raised in these conditions may have limited healthcare access and quality, food and housing insecurity, restricted educational opportunities, exposure to poorer air and water quality, and enduring psychosocial stressors. The end product of structural racism is the accumulation of health-harming contexts. Often, children and their parents subject to structural racism exhibit poor health literacy [17]. Adolescents may engage in risky behaviors such as substance abuse, violence, and sexual encounters [18]. These children are also subject to an increased allostatic load—a chronic-stress mediated multi-system dysregulation—and epigenetic alterations due to cumulative stress burden [19]. In this way, structural racism is the primary driver of health disparities.

Living in disadvantaged neighborhoods has been linked to several pediatric medical conditions, including prematurity [20••], asthma [21], and obesity [22, 23]. Because minority patients disproportionately experience poverty and inhabit these communities [13••], they also are at higher risk for these comorbid diseases and their respective perioperative risks. Prematurity, which is a leading risk for anesthetic and surgical mortality, has a greater incidence in Black infants [24•]. The comorbidities that result from prematurity are also disparately distributed. For example, premature Black infants have a greater risk of post-prematurity respiratory disease, including having persistent symptoms and the need for respiratory medications, hospitalization, home respiratory technology dependence (e.g., ventilator or oxygen therapy), and readmission. Premature Black infants have a significantly higher risk of acute kidney injury (AKI) compared to their premature White peers [25]. They also have an increased risk of persistent pulmonary hypertension (PPHN) in the setting of bronchopulmonary dysplasia (BPD), increased risk of necrotizing enterocolitis (NEC), and NEC-associated mortality, and a greater risk of sepsis [26]. Consistent with the disparate impact of prematurity on infants of different races, Mpody et al. recently used the statistical concept of additive moderation to quantify the combined effect of key preoperative comorbidities and race on surgical mortality. The authors found that among both neonates and older infants with a history of prematurity, Black race portends a higher risk of surgical mortality than it does for premature White infants. Approximately a quarter of surgical mortality in premature Black infants would not occur if the infant were not Black [24•].

Similar to prematurity, asthma is more prevalent among minority children: from 2018 to 2020, asthma prevalence was 12.3% in Black children, 9.3% in American Indian/Alaska Native children, and 6.7% in Hispanic children compared to 5.5% in White children and 3.5% in Asian children [27]. In addition, the asthma disease burden is greater in Black children compared to White children. Black children are more likely to have severe and poorly controlled asthma, require long-term steroid use and have emergency department visits than White children [28]. Disparate asthma disease burden implies that minority children are at increased risk of perioperative complications. Asthma increases the risk of perioperative respiratory adverse

events (PRAE)—approximately 8.5 times increased risk of bronchospasm, 4 times increased risk of laryngospasm, and 3 times increased risk of cough, desaturation, and airway obstruction [29]. Additionally, asthma was recently shown to increase the risk of postoperative pneumonia. Using the National Surgical Quality Improvement Program Pediatric Participant Use Data File (NSQIP-P PUF), Krishna et al. found that the risk of developing postoperative pneumonia within 30 days of inpatient pediatric surgery was almost double in children with asthma compared to those without [30]. Likewise, Tveit et al. showed that children with asthma had nearly 6 times the risk of prolonged hospital stay following surgical management of tibial shaft fractures [31].

Obesity in children and adolescents aged 2–19 is also more common among racial and ethnic minority children. According to the National Health and Nutrition Examination Survey 2017-March 2020, obesity prevalence is highest among Hispanic (26.2%) and Black (24.8%) children, compared to White (16.6%) and Asian (9.0%) children [32]. Obesity is an independent risk factor for many perioperative complications, including emergence delirium, prolonged recovery, unplanned postoperative admissions, PRAE, and respiratory events leading to cardiopulmonary arrests [33–35]. Obesity is also associated with longer anesthesia and operative times, higher odds of difficult intravenous catheter placement in the operating room, and postoperative wound complications [36, 37]. Obstructive sleep apnea (OSA) is common in obese children, with up to 59% of obese children having OSA compared to only 3% of normal-weight children [34]. Black children are 4–6 times more likely than White children to have sleep-disordered breathing (SDB) [38]. Black children are also more likely to have severe OSA, even after controlling for OSA comorbidities such as asthma, prematurity, and obesity [38]. Black and Hispanic children are also less likely to receive a tonsillectomy for SDB [38]. Given that OSA is independently associated with PRAE, minority patients may be at higher risk of adverse events following anesthesia [39].

Disparities in disease burden and related perioperative risks should be considered when approaching the anesthetic care of children. However, it is vital to understand that marked disparities in access to and receipt of surgical care mean that we only care for a fraction of the children who need our services. A study using more than two decades of data from the NHANES demonstrated decreased odds of surgery in the prior 12 months for Black, Asian, and Hispanic children [40•]. The same study also utilized the NSQIP-P PUF to determine the odds of emergent/urgent surgery by race and ethnicity and found that Hispanic children were more likely to require emergent or urgent procedures, a possible indicator of care delays. A recent study of US children aged 0–17 years participating in the 2015–2018 Medical Expenditure Panel Survey demonstrated that the odds of surgery for minority children were significantly reduced compared to White children, despite adjustment for income, insurance, and health status [41]. These access disparities have been demonstrated across a variety of surgical specialties. For example, the National Inpatient Sample was recently used to show inequities in access to surgical palliation for hypoplastic left heart syndrome patients [42]. High-volume congenital cardiac centers, which have superior clinical outcomes, disproportionally care for White patients compared to minority patients. In otolaryngology, minorities undergo surgical intervention for delay-sensitive conditions that affect speech and language development at older ages than White children. Black and Hispanic children are significantly less likely to receive cochlear implants before the age of 2 than White children [43]. Asian children undergo cleft lip repair and cleft palate repair significantly later than children of other races or ethnicities (18 weeks and 19 weeks, respectively) [44]. In neurosurgery, minority patients are more likely to present with severe disease and undergo surgery at a low-volume center for conditions that include central nervous system tumors, craniosynostosis, and epilepsy [45]. They are also less likely to utilize surgical services for medically-refractory epilepsy. Additionally, Black and Hispanic patients are more likely to undergo open craniosynostosis surgery than endoscopic surgery [46]. In transplant surgery, Black and Hispanic children have greater liver transplant waitlist mortality, higher PELD/MELD scores when initially listed and at the time of organ receipt (suggesting delay), and are less likely to have an exception score request submitted by the transplant team [47].

Racial Disparities in Preoperative Care

Anesthesia-specific disparity studies are limited. Nonetheless, it is naïve to assume that racial or ethnic disparities in the anesthesia care process do not exist. In 2019, Baetzel et al. demonstrated evidence of "adultification" of Black children in the preoperative setting [48•]. Adultification is a social principle whereby the notion of childhood is informed by race, with Black children being perceived as more mature and in less need of nurturing and protection than their White peers [48•, 49]. Baetzel et al. found that Black children < 5 years were less likely to be given oral anxiolytics, and Black children < 15 years were less likely to have parental presence for anesthesia induction compared to White children. These findings of adultification of the Black child in the preoperative environment are concerning. The provision of pre-medication and choice of anesthesia induction technique is mainly up to the anesthesia provider and, therefore subject to unconscious and conscious biases. Anesthesia providers, who may view Black children as more mature than their White peers, may not address preoperative

anxiety equitably. Furthermore, the disparity in induction technique may contribute to the increased adverse perioperative events that Black children experience compared to White children. In the APRICOT study, a prospective multicenter study in Europe, a higher risk of severe critical respiratory events was associated with inhalational induction compared to intravenous induction [50]. If adultification of the Black child is a systemic product of unconscious bias, then premedication with midazolam or the method for induction of anesthesia (mask versus intravenous) are two very actionable points for the anesthesiologist to narrow the racial disparity in postoperative outcomes.

In contrast with the Baetzel et al. study of pre-medication and induction technique, Jimenez et al. evaluated preoperative medication administrations at a single institution in Latino and White children aged < 18 years undergoing tonsillectomy and adenoidectomy from 2003 to 2005 [51]. The authors found a trend toward increased odds of premedication for White children compared to Latino children ($p = 0.05$); however, Latino children were more likely to have parental presence at anesthesia induction. There was no significant difference in induction technique (inhalational versus intravenous) between Latino and White children. Additionally, Rosenbloom et al. studied disparities in anesthetic medication administration to children undergoing appendectomy at a single institution between 2010 and 2015 [52]. Black children were more likely to receive midazolam pre-medication compared to White children. Still, after adjustment for patient age and gender, as well as anesthesiologist prescription practice variation, there was no significant difference in premedication by race. These studies fail to account for whether premedication and parental presence were "offered" without regard to race or ethnicity. If these interventions are offered equitably, differential utilization of these preoperative measures may reflect cultural differences in care preferences or the understanding of the intervention.

Intraoperative Racial Disparities

Anesthetic Administration

Very few studies have examined racial disparity in intraoperative care. In a retrospective review of 1680 patients who underwent appendectomy, Rosenbloom et al. found no significant difference between ketorolac, ondansetron, or lidocaine administration. They also found no significant difference between opioid dosing by weight between Black and White children [52]. Similarly, in a single-center retrospective study of 21,000 operations, Jette et al. observed no difference by race or ethnicity in the use and dosing of intraoperative morphine [53]. The racial and ethnic composition of the study population, however, was not representative of the national population (an under-representation of Black children and an over-representation of Asian and Hispanic children) so it is difficult to generalize the study findings to other centers. Nonetheless, the authors reported that children classified as Asian, Hispanic, or Pacific Islander were significantly less likely to receive non-opioid analgesics compared to White children.

Adult studies have shown disparities in the receipt of regional anesthesia by race or ethnicity [54]. However, few pediatric studies have been performed. A single-center retrospective study by King et al., including nearly 34,000 patients, recently demonstrated the absence of a racial or ethnic disparity in the receipt of intraoperative regional anesthesia (either peripheral nerve block or neuraxial block) in children < 19 years of age [55]. This study did not address important microsystem factors related to perioperative pain management that may affect the rate of regional anesthesia by race or ethnicity. Some of these factors include standardized perioperative surgical home protocols involving regional anesthesia and the surgeon advocacy for blocks, anesthesiologist discretion for offering regional anesthesia and potential racial biases, or parental understanding of regional anesthesia. For example, Black patients are more likely to refuse regional anesthesia than their White peers [56]. How race affects the consent/refusal of regional anesthesia for pediatric patients is poorly understood. Lo et al. performed a single-center retrospective study of pediatric patients < 6 years of age who were offered caudal block for urologic surgery. They found that parents of Black and Latinx children were less likely to consent to caudal block than parents of White children [57]. The authors did not find a disparity in consent by parental primary language. Like the study by King et al., this study did not elucidate the microsystem factors (anesthesiologist communication, parental understanding, etc.), so it is impossible to understand the mechanism underlying this disparity. Unfortunately, many single-institution studies are limited in generalization by the patient populations they serve, with many of the hospitals caring for a racial and ethnic composition that is not representative of the national population.

Black children are at increased risk for perioperative respiratory adverse events (PRAE). Nafiu et al. studied the occurrence of PRAE by race in more than 18,000 children undergoing elective non-otolaryngologic procedures at a single institution [58]. The authors found that race was strongly associated with serious PRAE, despite controlling for comorbidities and other patient factors. They also found that respiratory comorbidities such as asthma and SDB were associated with an increased risk of serious PRAE. Interestingly, however, they found that race did not moderate the effect of pulmonary comorbidities on the risk of serious PRAE, meaning that disparities in serious PRAE may be independent of preoperative respiratory comorbidity burden.

Black adolescents also appear to be at increased risk for blood loss and transfusion-related adverse events. Elsamadicy et al. used the Kids' Inpatient Database to investigate differences in intraoperative care and postoperative outcomes for adolescents with idiopathic scoliosis undergoing posterior spinal fusion [59]. The authors found that a greater proportion of Black adolescents required blood transfusion compared to White children. Similarly, Maher et al. investigated blood loss and transfusion by race in pediatric patients undergoing posterior spinal fusion by a single surgeon [60]. Despite the similar prevalence of idiopathic versus neuromuscular scoliosis and similar osteotomies, levels fused, and operative times, Black children had significantly increased blood loss per kg than White children and were subsequently at higher risk of blood transfusion. There was no significant difference in preoperative hematocrit or platelet levels; however, Black children had significantly increased preoperative coagulation studies compared to White children (PTT: 33.7 v. 32.3; PT: 12.5 v. 11.9; INR: 1.1 v. 1.0). The clinical implications of these normal, but increased coagulation values in the context of racial bleeding differences is unclear. It is conceivable that this variability across racial groups in coagulation parameters is due to large sample size rather than any biological differences between racial groups. Future investigations are needed to unravel these questions.

Another study by Nafiu et al. analyzed surgical outcomes by race for nearly 200,000 American Society of Anesthesiologists Physical Status 1 and 2 children undergoing non-cardiac surgery [61••]. The authors found that Black children had an increased incidence of bleeding requiring transfusion compared to their White peers. In contrast, however, a NSQIP-P PUF study of 1982 craniosynostosis repairs found no difference in the proportion of patients receiving a blood transfusion nor the amount of blood transfused by race or ethnicity [62]. After adjustment by surgery type, Hispanic patients had an average of 46 mL more blood transfused than White patients.

Postoperative Pain

Racial disparities in pain management and related outcomes are some of the most robustly studied pediatric anesthesia practice variations. Early studies of pediatric pain disparities demonstrated conflicting results. These studies appeared to indicate that disparities were present, but the small sample sizes precluded broad conclusions from being made about the magnitude of the disparity and which minority groups were most afflicted [51, 63, 64]. In a recent single-center retrospective study, more than 28,000 children undergoing anesthesia for various surgical interventions were evaluated for postoperative pain control practices and outcomes [65]. Asian patients had decreased odds of having a moderate-severe mean pain score in the recovery room and decreased odds of having opioids administered in the recovery room compared to White patients. Black patients had a non-significant decreased odds of moderate-severe mean pain scores in the recovery room compared to Whites and had equal odds of opioid administration. Hispanic patients had the same odds as White patients of having a moderate-severe mean pain score but had a non-significantly increased odds of opioid administration. Finally, Hispanic and Asian patients had lower odds of receiving antipruritic and antiemetic medications following inpatient surgery. The studies that have identified disparities in pain management by race and ethnicity have suggested several mechanisms underlying the inequities. Polymorphisms in genes regulating morphine metabolism have been found with a higher incidence in the White compared to Black population, which may predispose White children to having lower opioid requirements and more opioid-related side effects [66]. Limited English proficiency has also been linked with disparate postoperative pain assessment and management [67]. Finally, individual healthcare providers, including bedside nurses, may exhibit biases that result in differential treatment of subjective pain scores [68].

Postoperative Racial Disparities

Although our relationship with the patient often ends soon after surgery, it is imperative to understand the implications of a patient's race on their surgical course. In a recent study that used a national cohort of 250,000 pediatric general surgery patients in the Kids' Inpatient Database, race was significantly associated with surgical morbidity, with Black patients having the highest complication rate (6.1%), followed by Hispanics (4.4%), and then Whites (4.3%) [69]. The Kids' Inpatient Database (KID) is a sample of pediatric discharges in states participating in the Healthcare Cost and Utilization Project (HCUP). These findings have been echoed across surgical specialties, with minority children incurring poorer outcomes. Minority children have a greater risk of postoperative pulmonary complications [70–73], cardiovascular complications, and cardiac arrest [70, 73], surgical wound complications [61••, 73], unplanned reoperation [61••], and readmission [74]. Even more concerning, however, is disparate postoperative mortality rates. Higher postoperative mortality rates have been documented among both relatively healthy *and* sicker Black children compared to White children [61••, 70]. Mechanisms underlying these disparities in postsurgical mortality remain poorly understood.

Related to disparities in postoperative complications, many studies have demonstrated that minority children have prolonged length of stay following surgery [69, 70]. Minority children may also incur longer preoperative hospital stays. For example, Black and Hispanic infants with

pyloric stenosis have a significantly prolonged preoperative and postoperative length of stay (LOS) compared to White infants [75]. In a large national database study of nearly 250,000 pediatric general surgery patients in the Kids' Inpatient Database, Black patients had a 13% longer stay compared to White patients, and Hispanic and Asian children both had a 7% longer stay [69]. Not surprisingly, hospital costs are also increased for minorities. In the same study of pediatric general surgery patients, Hispanic children had 33% higher hospital charges, Asian children had 20% higher charges, and Black children had 16% higher charges than White children [69]. In addition, Peck et al. studied almost 9000 patients using the Kids' Inpatient Database who underwent orthognathic surgery. They found that hospital LOS was significantly increased for Black and Hispanic patients, and all races incurred significantly higher hospital costs [76]. Even without prolonged LOS, minority children likely incur increased hospital charges. An analysis of the KID for 2012 that included 3400 adolescents with idiopathic scoliosis undergoing posterior spinal fusion revealed that despite similar length of stay between children of different races, Hispanic children had significantly increased hospital costs compared to White children [59]. Most recently, a study by Mpody et al. estimated the economic burden of racial disparities in appendectomy-related complications to be nearly $60,000,000 between 2001 and 2018 [77••].

Future Perspectives

Health disparities are predominantly systemic rather than individualistic problems. Therefore, the solution to pediatric perioperative health disparity requires a system-based mindset. Any system set up with a social hierarchy will inevitably produce inequities in measures of health and wealth. Acknowledging that "no one individual is at fault" is a necessary first step. Nonetheless, this does not mean that perioperative caregivers should simply accept this flawed system. The responsibility to dismantle the perpetual cycle of racism that is at the core of healthcare falls upon us all. As perioperative physicians, anesthesiologists must be more engaged in efforts to mitigate racial disparities in pediatric perioperative care. We must be willing to participate in the uncomfortable conversation about health disparity and evaluate how our individual biases intersect with our profession's influence on (and contribution to) systemic discrimination. Such conversations must not be reduced to mere posturing of sensitivity at the expense of truth. Health disparity is a public health crisis in the USA, and we must all get involved.

One opportunity for decreasing racial gaps in perioperative outcomes is the implementation of Enhanced Recovery After Surgery (ERAS) and Perioperative Surgical Home (PSH) pathways. ERAS and PSH are evidence-based protocols that consist of standardized preoperative preparation, perioperative medication management, and surgical recovery goals [78]. These standardized protocols aim to return patients to their preoperative functional state safely and efficiently. This way, ERAS and PSH can decrease hospital length of stay, morbidity, and associated healthcare costs. Indeed, standardized care regimens have been shown to reduce disparities in some surgical outcomes, including pain and recovery time [78, 79•].

Standardized care regimens are promising tools for mitigating racial disparities because they prevent healthcare providers from giving undue attention to patient factors such as race, ethnicity, or primary language. Implicit biases are "attitudes and stereotypes that impact understanding, actions, and decisions unconsciously" [80]. Unfortunately, healthcare providers are not immune to implicit biases—most healthcare providers have implicit biases that favor White patients over Black patients [81]. Implicit biases are most likely to influence perceptions and treatment decisions under conditions of mental fatigue and stress, which underscores the importance of standardized care regimens as a means of ensuring equitable care. Anesthesiologists must be aware of their implicit biases by using tools such as the Implicit Association Test [82]. Once aware of their biases, several strategies can be learned to redirect responses when these biases manifest, including perspective-taking, emotional regulation, and partnership-building [83, 84•]. When reinforced at the organizational level, these cognitive skills can prevent biases from affecting the quality of care provided to minorities [85].

There is a paucity of anesthesia-specific disparity research, particularly in pediatrics. The majority of perioperative disparities research focuses on surgical and postoperative outcomes. Health equity needs to be a priority for healthcare organizations, anesthesia societies, and anesthesia departments. Healthcare leaders need to invest resources in identifying, measuring, and monitoring inequities in anesthesia delivery and outcomes. Hypotheses as to the underlying mechanisms of the disparities need to be tested, focusing on implicit biases and the social determinants of health. Inequities can then become the target of quality improvement initiatives aiming to ensure high-quality care delivery to patients of all backgrounds.

Conclusion

Recent cataclysmic events, including the stark disparities in COVID-19 incidence and mortality rates and the summer of racial protests in 2020 following the murders of George Floyd, Breonna Taylor, and many others, have refocused attention on the need for racial justice, including in the healthcare system. With a renewed sense of urgency, we now

recognize that health disparity is a crisis, and the lynchpin is systemic racism. As perioperative caregivers, the time to get involved in health disparity research is now. Recognizing that we deal with a systemic rather than an individualistic problem is vital. We must all get involved for the sake of our patients and, ultimately, for the soul of our nation. As perioperative physicians, anesthesiologists must be at the vanguard of solution-oriented efforts through research, quality improvement, or advocacy. We must all be invested in ensuring equitable perioperative care.

Data Availability Not applicable for this review article.

Compliance with Ethical Standards

Conflict of Interest The authors declare no competing interests.

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

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