



# History of Equity, Diversity, and Inclusion in Trauma Surgery: for Our Patients, for Our Profession, and for Ourselves

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Accepted: 11 July 2022 / Published online: 5 September 2022  
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## Abstract

**Purpose of Review** Disparities exist in outcome after injury, particularly related to race, ethnicity, socioeconomic status, geography, and age. The mechanisms for this outcome disparity continue to be investigated. As trauma care providers, we are challenged to be mindful of and mitigate the impact of these disparities so that all patients realize the same opportunities for recovery. As surgeons, we also have varied professional experiences and opportunities for achievement and advancement depending upon our gender, ethnicity, race, religion, and sexual orientation. Even within a profession associated with relative affluence, socioeconomic status conveys different professional opportunities for surgeons.

**Recent Findings** Fortunately, the profession of trauma surgery has undergone significant progress in raising awareness of patient and professional inequity among trauma patients and surgeons and has implemented systematic changes to diminish these inequities. Herein we will discuss the history of equity and inclusion in trauma surgery as it has affected our patients, our profession, and our individual selves.

**Summary** Our goal is to provide a historical context, a status report, and a list of key initiatives or objectives on which all of us must focus. In doing so, the best possible clinical outcomes can be achieved for patients and the best professional and personal “outcomes” can be achieved for practicing and future trauma surgeons.

**Keywords** Gender · Racism · Disparity · Equity · Diversity · Health outcomes · Acute care surgery · Trauma

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This article is part of the Topical Collection on *Racism, Equity, and Disparities in Trauma*.

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## For Our Patients

### From Where Did We Come?

Injury has been a major cause of death and disability since the earliest recordings of medical records and remains the leading cause of death among young Americans [1]. However, traumatic injury became an increasingly dominant cause of morbidity and mortality in developed nations due to industrialization, increasing availability and speeds of motor vehicle transportation, and declines in infectious disease burden due to medical and public health advancements. Disability, disfigurement, and death in the workplace increased dramatically during the Industrial Revolution and was one of the first examples of disparity in injury prevalence and outcome [2]. Workplace safety was not a priority in factories, railroads, mines and other industries until the turn of the twentieth century, when the first workplace safety regulations and worker's compensation for injury were legislated. Until that time, work and workers were considered "cheap" and replaceable [2]. In other words, low wage manual laborers were plentiful, and hiring a new worker was far less expensive than safety measures to prevent losing an employee to injury. Still, after much progress in workplace safety, inequity in workplace injury remains a major source of healthcare disparity with a disproportionately large impact on more vulnerable demographics. Racial and ethnic disparities place minorities and those with poorer educational level and socioeconomic status at greater risk on roadways, in factories, and other blue-collar occupations.

Unequal access, unequal care, and unequal outcomes have always challenged trauma and emergency care in the USA [3]. The trauma surgery community has long been aware of this fact and pioneered systematic changes intended to increase equality [4–6]. The American College of Surgeons Committee on Fractures, which later became the Committee on Trauma, was established to advance care standards and improve quality for trauma victims regardless of their socioeconomic status or ability to pay. The development and worldwide promulgation of the Advanced Trauma Life Support (ATLS) program is a prime example of an initiative for equitable care [7]. ATLS was established in 1976 to seek one common effective and evidence-based approach to care for the injured so that anyone anywhere can receive optimal trauma care. Though the context of ATLS's development was rural trauma, it is taught and applied in urban and rural communities, has become the standard worldwide, and consistently improves trauma patient outcome and trauma provider confidence.

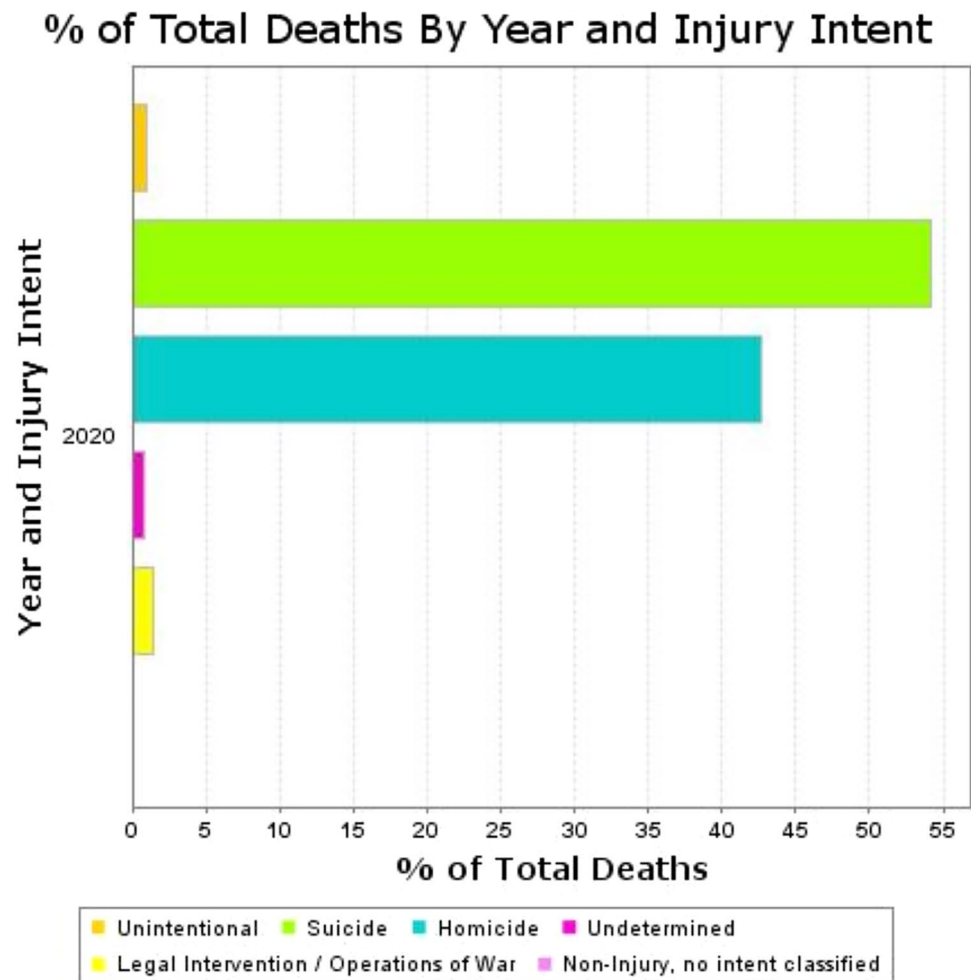
Arguably, the starkest example of inequity in trauma victims began in the 1970s and 1980s. In 1971, President Nixon declared a "war on drugs" with a focus on police

enforcement and aggressive judicial prosecution and incarceration [8]. By heavily criminalizing marijuana and heroin and simultaneously enhancing enforcement, incarceration skyrocketed and disproportionately targeted Black, Hispanic, and other minority communities. The commoditization of marijuana, heroin, and other drugs and illegal drug trade that ensued also triggered a dramatic rise in firearm violence [9]. The year 1991 saw an all-time high in US murder rates, primarily driven by urban gun violence. In his 1993 address to the Eastern Association for the Surgery of Trauma, Dr. William "Bill" Schwab called violence an "epidemic," one that found the handgun to be its principal vector in which the victims were disproportionately young Black men [10]. Dr. Schwab and other trauma providers began a decades-long public advocacy for reducing firearm violence and the social, demographic, and mental health factors which contribute to it [11, 12]. That advocacy continues today and remains a particular focus of the trauma surgery community and national organizations.

The incidence of suicide has also increased and disproportionately affects some populations [13]. Although much of the discussion around gun violence focuses on homicides and interpersonal violence, suicide remains the top cause of firearms-related deaths in the USA (Fig. 1). Suicides are more likely to occur among men, Whites and American Indian and Alaskan Natives, those who live in rural areas and in communities with higher rates of poverty, and in some professions. Though inequity exists in suicide rates, demographics are changing, with adolescents and the elderly being the two groups with the fastest rising suicide rates. There are also significant gender disparities when analyzing all suicide attempts, with women attempting suicide at much higher rates compared to men, but with a higher rate of successful suicide among males. As a profession, trauma providers have been on the forefront of recognizing the suicide epidemic and two of its prime drivers in the USA—widespread availability of firearms and lack of access to mental health care.

Intimate partner and sexual violence (IPSV) also unequally affect some populations including immigrants, American Indian and Alaskan Natives, Blacks, and those with mental illness and poorer socioeconomic status. The mechanisms by which racial, ethnic, and economic diversity translate into IPSV continue to be studied. In one study, discrimination was found to negatively impact mental health among Latino men which in turn increased their risk of perpetrating intimate partner violence [14]. As trauma surgeons, we must be aware of these facts and work to mitigate them. Some of the most effective programs in this area have come from trauma and emergency medicine professionals who implemented uniform brief screening and intervention programs to identify, counsel, and intervene in these cases.

**Fig. 1** Breakdown of firearm deaths in 2020 shows suicide remains the most common cause at 54.1%. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999–2020 on CDC WONDER Online Database, released in 2021. Accessed at <http://wonder.cdc.gov/ucd-icd10.html> on Feb 6, 2022 11:08:36 PM



Recent decades have seen a great deal of trauma surgeon advocacy for our patients, a growing realization that injury affects patients unequally and the development of systematic injury prevention initiatives with this inequity in mind [5, 15–18]. But we as trauma surgeons have also come to realize that as a group, the demographic, class, ethnic, and racial diversity among trauma surgeons is far less than the populations we serve [19–21]. Since diverse teams tend to perform better in healthcare and other industries, we are likely to be better positioned to mitigate the outcome differences of our diverse patient populations if we enhance diversity in trauma care and among trauma surgeons [23–0.24] In addition to diverse teams performing better, patients from diverse backgrounds may benefit from care provided by people and teams that better reflect them and their lived experience. Recent efforts in this area have been instituted by multiple trauma organizations, with the earliest being the establishment of an equity, diversity, and inclusion task force by the Eastern Association for the Surgery of Trauma (EAST). This has been followed by similar initiatives from the American Association for the Surgery of Trauma (AAST) and the American College of Surgeons Committee on Trauma.

### Where Are We Now?

Despite advances in medical science, healthcare delivery, technology, and even enhanced access through proliferation of trauma centers, Black and Hispanic communities and those without insurance continue to experience higher injury mortality [3]. This disparity appears to be related to many factors including patient-specific health status, geography and EMS care, more frequent under-triage, trauma center capacity, and other center-specific factors as well as access to post-injury care and rehabilitation [18, 22]. Unconscious racial and class bias exists among medical students, nurses, and acute care surgery providers but this bias appears to have little impact upon clinical decision-making. Therefore, other mechanisms must exist for trauma outcome disparities arising from race, ethnicity, and class [15–17]. Surgeons have long recommended further study of these biases so that outcome differences can be mitigated.

Cultural competence education for healthcare providers is becoming more widely available and may help advance equity. Evidence suggests that this sort of training enhances the involvement of culturally and linguistically diverse

populations in their healthcare. Whether this training and improved patient engagement improves clinical outcomes has yet to be proven [23].

In addition to disparities in trauma outcomes, trauma care processes and access to care may vary with race, ethnicity, or other factors. Some evidence suggests opioid analgesia dosing is lower and pain control is worse among Black children in the emergency department but additional research has challenged this notion [24, 25]. Uninsured patients with pelvic fractures undergo fewer diagnostic tests than insured patients [5]. Black and Hispanic children are less likely to undergo diagnostic imaging in the emergency department, independent of insurance status [26]. Race correlates with prevalence of a range of elective and emergency surgical procedures, independent of insurance status or hospital type [27]. Race, ethnicity, and socioeconomic status also affect access to palliative and hospice care [28]. Black and poorer patients have longer lengths of hospital stay and less post-discharge resources for rehabilitation and recovery [29]. The evaluation of abuse, particularly intimate partner violence, also varies among trauma centers, possibly related to trauma center resources but also provider mistrust and unconscious bias [6].

Patients at the extremes of age are also uniquely vulnerable after injury. Children have always represented a population requiring special attention with respect to training, equipment, triage, care standards, and unique considerations in terms of rehabilitation [7]. As our population ages, injuries among older patients are growing more rapidly than any other group. Geriatric trauma triage, care guidelines and patient-centered approaches to care including early goal setting, limits on futile and unwanted care interventions, and involvement of palliative and hospice care have emerged as important strategies to assure that the needs of this large, special population are met [30]. The identification of patients who are injured from elder abuse has also been suboptimal among our nation's trauma centers, with awareness and protocolization for this falling significantly behind what has been implemented for intimate partner violence.

### Where Are and Where Should We Be Going?

As trauma surgeons, we are uniquely positioned to positively impact the inequity in trauma outcomes and care processes that exist today. We are present in the hospital at all hours and have direct contact with patients at very vulnerable moments. We manage patients through the entire stay and see them in follow-up as outpatients, setting the stage for long-term recovery. We serve as team leaders, establishing care standards and pathways and developing organizational cultures that are mindful of how patients can be treated differently, even unconsciously, simply based upon race, ethnicity, religion, socioeconomic status, sexual orientation, age, and other factors. We see first-hand the realities that our

patients face and advocate for them through our organizations, professional societies, and legislatures.

Practice management guidelines (PMG) and algorithms for trauma like those promulgated by EAST, the Western Trauma Association, and the American Association for the Surgery of Trauma are intended to increase standardization, reduce care variation, and enhance quality [31]. The American College of Surgeons (ACS) Trauma Quality Improvement Program also produces care guidelines that target areas where inequity is known to exist like intimate partner violence, pain management, and mental health after injury [32]. EAST first developed practice guidelines in the early 1990s [33]. Since that time, PMG have become fundamental to trauma care, and the trauma community is well-known to be protocol-driven and evidence-based, with its PMG used worldwide. These works now include evidence-based reviews that review and synthesize the literature around controversial topics such as firearm violence, known to disproportionately affect select populations [34].

One of the farthest-reaching initiatives in optimizing trauma care delivery to date is the recent roadmap for a national civilian-military trauma care system proposed by the National Academies of Science, Engineering, and Medicine (NASEM) [34]. In a 2016 publication entitled “A National Trauma Care System: Integrating Military and Civilian Trauma Systems to Achieve Zero Preventable Deaths After Injury,” the authors representing military and civilian trauma and healthcare leadership in the USA outlined 11 initiatives under the over-arching goal of reducing preventable deaths and disability. Those initiatives included patient-level data collection and accessibility, optimizing quality across the trauma care continuum including mental health, and the dissemination of common care practices, all of which should help reduce disparities in access to care, timeliness, and quality of care, and promote equity in outcomes. This report also strongly recommends and advises on the routine capture of comprehensive data regarding all phases of trauma care, which will be the required foundation for identifying and intervening for any persistent inequities or disparities in access or outcomes.

Trauma surgeons have advocated for broader access to trauma care by studying the impact of expanded coverage through the Affordable Care Act. In addition to income and rurality, insurance status is a major determinant of access to trauma care [35]. Under the Affordable Care Act, access to post-discharge care has been dramatically expanded, and out-of-pocket expenses have been reduced [36]. A number of studies over the past several decades have shown the undeniable impact that socioeconomics and insurance status had and continue to have on post-injury outcomes. Trauma surgeons and other trauma professionals have been on the forefront of working for equal access to care for all injured patients, including post-discharge follow-up and rehabilitation care.

This has included strong support for a single-payer or universal coverage national healthcare insurance program.

Nearly three decades after Bill Schwab called violence an epidemic, injury prevention efforts continue to focus on firearms and the role of access and regulation on firearm injury in various populations. The ACS, EAST, WTA, and AAST have all developed statements on firearm injury and continue to advocate for research, research funding, responsible use, and pragmatic public policy to curb the incidence of firearm injury [37]. A human rights approach to prevention of unintentional injuries has been proposed [38]. Such an approach acknowledges that injury is a public health problem that lacks systemic visibility and support and that injury might be intervened upon the same way broad public health issues are—by first acknowledging the social, economic, and cultural factors that cause it.

Trauma surgeons also continue to advocate for a more holistic approach to trauma recovery, with attention to outcomes beyond simply survival and measures of physical healing. We now understand that long-term mental health outcomes are determined by the combination of baseline health, prior trauma, prior adversity, and the neighborhoods where our patients live. These disparities change over time and require trauma surgeons to maintain a “cultural dexterity” and social consciousness to effectively advocate for patients. For example, many crime victims and their families suffer significant financial hardships at baseline. These hardships often compound feelings of social isolation related to race, ethnicity, or other factors. The Victims of Crime Act of 1984 established the Crime Victims Fund which provides financial support to victims [39]. Resources available under this federal program can facilitate transportation, shelter, counseling, and advocacy. They could also include burial services for the deceased. However, to be eligible, victims must report the crime within 3 days and file a claim within 2 years. Many patients and families are unaware that this program exists. For victims to know that these services exist and to begin to access these services requires us as trauma surgeons to inform, advocate, and support our patients. Similarly, trauma-informed care (TIC) has emerged as an important over-arching approach to trauma care delivery. The concept of TIC is the systematic consideration of past physical and emotional trauma experienced by patients and how that context affects their experience of the current care event [40]. Since many trauma victims present with numerous lifetime adverse events, the importance of TIC to overall trauma outcome will continue to garner interest and warrants further investigation.

We trauma surgeons have enormous potential to positively impact patients and families by continuing to advocate for change among trauma teams, trauma centers, and trauma systems. Our patients present with vulnerabilities that many of us as trauma surgeons never experienced or even imagined. By educating ourselves and our teams, implementing care pathways and standards, driving public policy, and

continuing to study the effect of equity and diversity in trauma populations, we will further the goal of zero preventable deaths and optimal recovery after injury for everyone everywhere. We will continue to tirelessly advocate for our patients, and work toward the future ideal of equity for our patients, our professions, and ourselves.

## For Our Professional Societies

Surgical societies provide tremendous opportunities for developing professional connections, career advancement, participating in scholarly activities, and dissemination of knowledge on excellence in patient care. It must therefore be a priority for academic surgeons to join societies whose mission statements, objectives, and efforts coincide with their own.

Recent events in society, especially the increases in awareness and visibility of structural racism, discrimination, and violence, have led to an unprecedented era for the surgical field as a whole, and in particular for professional surgical societies. It has been clear for some time now that addressing these systemic issues has not been prioritized, and that the growth of under-represented in medicine (URM) groups in trauma surgical societies has stagnated compared to other initiatives.

Twenty years ago, the idea of surgical societies identifying and empathizing with long-marginalized groups was unheard of. Following the disastrous events of September 11, 2001, Muslims in the USA saw a progressive rise in Islamophobic rhetoric, yet little was ever done to address the plights of those surgeons identifying with this community [41]. In sharp contrast, many surgical societies stood up in defense of the Asian American Pacific Island community when recent anti-AAPI sentiment flared during the coronavirus epidemic [42, 43].

On April 21, 2021, Dr. Richard Bosshardt, a plastic surgeon, made the decision to rescind his Fellowship of the American College of Surgeons (ACS) after nearly three decades holding the title of FACS [44]. He made public his disagreement with the ACS’s commitment to anti-racism and instead advocated for a dated concept of meritorious selection of “excellent” surgeons, failing to recognize his own implicit biases. It came as a shock to the entire medical community, which for many decades has worked hard to address structural sources of bias and discrimination within their communities. His announcement had an important implication: that even though the last few years have seen many surgical societies showcase efforts to spearhead the cause of DEI in the field of surgery, some individuals subscribe heavily to the notion of meritocracy or fail to acknowledge the existence of bias.

## A Historical Perspective

Great leaders demonstrate the values of an organization with their actions and their words and understand that stagnation

within a profession will ultimately render that society irrelevant. To gain an understanding of the past, present, and future of our professional societies in terms of DEI, we reviewed the published presidential addresses of the three most prominent trauma societies—the American Association for the Surgery of Trauma, the Western Trauma Association, and Eastern Association for the Surgery of Trauma.

The American Association for the Surgery of Trauma was founded by 14 “patriarchs” in 1938 [45–47]. The first PubMed indexed presidential address is from Dr. Basil Pruitt in 1983, when he notably used no gendered pronouns when outlining a future for trauma surgeons [46]. The following year, Dr. Sheldon stood out as one of the first in our profession to highlight diversity in the surgical field, positing that the practice of surgery would be altered by more women and fewer foreign medical graduates in the profession, and noted that it was “very positive” that “women and minorities now comprise approximately 35–40% of all medical students” and would soon “hold prominent leadership roles in medicine” [48]. Unfortunately, just 1 year later, Dr. Mulder closed his presidential address with a lesson he had learned about “the important role of a wife in any surgeon’s life and particularly in the life of a trauma surgeon,” thus limiting the profession once again to a male and heteronormative view [49].

Over a decade later in 1998, the first woman president of the AAST, Dr. Ledgerwood, after recounting how her service as the AAST women’s liaison to the American Medical Association led to her being implicated in the distribution of “female sexist material,” said she would “have no further commentary regarding women and membership in the AAST” [50]. The following year, however, Dr. Richardson did briefly acknowledge increasing gender diversity in the profession [51]. Dr. Jurkovich’s 2009 presidential address marked the first time that gender diversity was mentioned explicitly, even if only as a passing observational remark [52]. He spoke of how “identity” could “limit you from becoming who you were meant to be,” just as how explicit and implicit biases against one’s innate traits can lead to professional inequities [52]. His words aligned well with contemporary discourse.

The association’s first Black president, Dr. Britt, an inspiration for many who feel underrepresented in our profession, did not touch upon diversity, equity, or inclusion, and similar themes also followed during the address of Dr. Mackerise [53, 54]. A shift in perspective was finally noted in the 2015 presidential address by Dr. Scalea, when he cited the book *The Greatest Generation* by Tom Brokaw about the men who fought in World War II. Dr. Scalea made an analogy between the current generation of trauma surgeons to his generation, in that though great, they allowed “racism to exist way too long, and did not embrace women in the workplace” [55]. Later, as only the second woman president of the organization, Dr. Rozcyki spoke of generational diversity in the association’s membership for the first time

[56]. In his 2017 presidential address, Dr. Coimbra spoke of how he as an immigrant came to live the “American Dream” through the support of his mentors [57]. He went on to share his gratitude to 29 of his peers, all leading trauma surgeons among whom were two Black men and three women, and 18 of his mentees, younger trauma surgeons among whom were four women and three Asian men. Though his story clearly paid homage to an increasingly diverse profession, it also showed that while women and Asians are on the rise, Blacks continue to fall behind in medicine.

The Western Trauma Association (WTA) was founded in 1970 by four White male surgeons who envisioned meetings at ski resorts [58]. The association’s early programming was marked by male and heteronormative content, including the male members’ wives being part of a “Ladies” Ski Movie and Style Show [59]. In the following years, the association transitioned to become more academic, but DEI were not considered priorities during this period. During his presidential address, Dr. Ernest “Gene” Moore lauded the “diverse group of medical specialists” comprising the organization without once mentioning women, under-represented minorities, or other excluded groups [58]. His reference to diversity meant private versus academic practice and surgical specialty. Two years later when WTA president Dr. Pierce gave his presidential address on “every surgeon’s specialty,” every surgeon with few known exceptions was a White, heterosexual male [60]. In his 1996 presidential address, Dr. Cogbill proposed an “inclusive” definition of trauma careers but by this, he meant inclusive of various biomedical lenses for the care of injured patients [61]. Finally, the following year, Dr. Benjamin clearly stated that sexism should be rooted out for the sake of education [62]. However in 1999, Dr. Hebert’s presidential address analogized the WTA membership to the nurturing of grapes into fine wine varietals, but he mentioned no unique demographic characteristics or lived experiences of trauma surgeons who were nurtured into WTA members [63]. Although Dr. Rozcyki broke many glass ceilings in the profession of trauma surgery, her 2009 address on the bidirectional joys of mentoring relationships did not make reference to the leaky pipeline issue in many science, technology, engineering, and medicine professions attributed to race and gender discordance in such relationships [64–66].

The Eastern Association for the Surgery of Trauma (EAST) was founded by Drs. Howard Champion, Kimball Maull, Burton Harris, and Lenworth Jacobs out of a need to diversify and combat the ageism that was present in the AAST at the time, envisioning a forum for “young surgeons to be creative and generate and discuss ideas” [67]. Given historical trends of Black representation in surgery, the creation of such an organization opened the door for Black surgeons like Dr. Jacobs to lead a major surgical society. Subsequently, addresses by Drs. Harris and Champion addressed the issue of retaining and recruiting EAST members, but

diversity of membership and inclusivity beyond overcoming ageism was not yet part of the organization's ethos. [68, 69] The organization's second Black president, Dr. Cunningham referred to his Jamaican heritage and Colin Powell along with a number of Black athletes such as Tiger Woods, Michael Jordan, Muhammad Ali, and Marion Jones in his discussion of heroism. He noted that "EAST should come to be known as an organization that "leverages diversity" by cultivating opportunities through different kinds of people" [70]. In her presidential address, more than 20 years after the inception of the society, Dr. Nagy, the first woman president of EAST, discussed the growth of the organization both in scope and in membership. In citing multiple statistics on the make-up of the organization, she did not mention race, ethnicity, gender, or religious affiliation instead focusing on age, geography, and training level distribution of membership. [71] It was not until 2019, however, that a leader of EAST explicitly took on the cause of equity, diversity, and inclusion. Dr. Bernard expressed his call to action for an organization whose founding members had developed "an association based upon congeniality and concern—for our patients, for each other, for the future of trauma surgery" [72]. He defined diversity and inclusion and noted that effective leaders ensure that everyone on their team has a sense of belonging and meaning. He provided empirical evidence about the gender gap in compensation, advancement, education, and responsibilities at home. He spoke of an institutional culture where "subtle but very powerful cultural norms, accepted behaviors, and nonverbal messages" exist [72].

To a large extent, these historic trends in the leading trauma organizations paralleled those of American society at large. It was not until recently that these professional societies took sincere steps forward in terms of DEI.

## Recent Efforts

### American College of Surgeons Committee on Trauma (ACS COT)

The ACS COT has recognized that diversity in society is not mirrored in the surgical workforce and leadership, and in 2019, the ACS COT released a position statement on equity, diversity, and inclusion to that effect, and most recently reaffirmed this commitment by releasing a statement of solidarity with the American Asian and Pacific Islander (AAPI) community after the recent nationwide rise in Anti-AAPI sentiment.

To achieve their goals, the ACS COT developed the equity, diversity, and inclusion workgroup in December 2019, which has several short- and long-term goals, including: (1) identifying and developing strategies to bridge gaps within and barriers to COT membership and leadership with regards to equity, diversity, and inclusion; (2) developing

and tracking metrics related to equity, diversity, and inclusion within the COT; and (3) developing and disseminating resources to address those gaps and barriers.

In the winter of 2020, the ACS COT DEI workgroup began conducting a self-assessment survey within the society on the topic of equity, diversity, and inclusion, and expects to release their results soon.

### American Association for the Surgery of Trauma (AAST)

The AAST Diversity, Equity, and Inclusion (DEI) committee was established in 2019 by president David Spain. The objectives of the committee included providing career development opportunities for surgeon scholars and leaders from diverse backgrounds, ensuring transparency and promoting diversity and equity in all decisions related to scholarships, membership, meeting participation, and leadership and editorial board positions, and educational efforts aimed at increasing cultural awareness within the profession of trauma and acute care surgery.

One of the committee's first activities was to sponsor a very successful essay contest for medical students, residents, and fellows, with the focus being on identifying and providing the solutions for bridging the gaps in equity, diversity, and inclusion in today's world of trauma surgery [73–77]. The AAST DEI Committee also plans on addressing racial inequity in trauma surgical leadership by creating a visiting professor program for members of the Society of Black Academic Surgeons (SBAS) to promote the careers of early to mid-career AAST-SBAS members and recognize academic excellence in the Black academic surgery community.

### Eastern Association for the Surgery of Trauma (EAST)

EAST strongly spearheaded the DEI initiative before any other trauma surgical society and pioneered the path toward a more equitable trauma and acute care surgery environment. In 2018, the newly elected EAST president, Dr. Andrew Bernard, chose to make this the priority of his term and determined that this fell within the core guiding principles and purposes of the EAST organization. Soon afterwards, the EAST Equity, Quality, and Inclusion ad hoc task force was created [19]. It consisted of four workgroups: assessment and research; education; development of guidelines and processes; and mentorship, dialogue, and collaboration.

The task force resulted in an unprecedented burst of productivity with regards to DEI in trauma and acute care surgery. Their first 2019 plenary session was "#EAST4All: An Introduction to the EAST Equity, Quality, & Inclusion in Trauma Surgery Practice Ad Hoc Task Force." Session topics included gender, racial, ethnic, religious, sexual orientation, and gender identity bias while marrying the evidence with deeply personal and painful anecdotes of well-respected

trauma surgeons known to all. This was, in fact, the last invited public appearance of Dr. Lynn Weaver before his death. The task force created the #EAST4ALL survey discovering that implicit and explicit biases predominate in the workplace and put out a call to action that prompted a roundtable discussion at the 2020 EAST Annual Scientific Assembly. The task force was also instrumental in the drafting and publication of the Eastern Association for the Surgery of Trauma Statement on Structural Racism, and the Deaths of George Floyd, Ahmaud Arbery, and Breonna Taylor.

This was followed by the publication of multiple landmark papers that evaluated the current climate within trauma surgical societies and surgical leadership with regards to equity, diversity, and inclusion and identified the barriers to progress [20, 21, 78, 79]. The task force also developed a comprehensive toolkit for addressing inequity in the trauma and acute care surgery profession. This toolkit consisted of important practical information on how to address harassment and discrimination, gender pay gaps, implicit bias and microaggressions, and call-out culture. The task force also sought to pursue improved equity in the peer-review and publication process and was instrumental in pushing for adoption of the Lancet's diversity pledge among trauma journal editors. This effort, led by Dr. Ariel Santos, directly led to the double-blinding of manuscripts submitted to the *Journal of Trauma and Acute Care Surgery* in 2022. Additional key accomplishments of this group included the development and dissemination of practice management guidelines and monthly literature reviews that regularly address these systemic structural factors still standing in the way of achieving these ideals [80]. EAST has also attempted to identify and rectify religious discrimination [21].

### Other Trauma Surgical Societies

The WTA released a statement on July 10, 2020, addressing equity, diversity, and inclusion [81]. It was an emphatic call to action, but the WTA has not identified or achieved any actionable goals toward this objective since then. Similarly, the Pediatric Trauma Society has not released any statement addressing the barriers to achieving equity, diversity, and inclusion for both the trauma surgical leadership and its patient population.

### The Road Ahead

Although nearly every trauma surgical society has demonstrated at least some commitment to the ideals of equity, diversity, and inclusion, it is no longer enough to release placating statements and calls to action. Efforts to address DEI and associated issues should be incorporated into all aspects

of our profession and organizations and should extend from the medical trainee level to the most senior physicians and leaders. The time is now to actively achieve these goals. Increasing focus should:

- i. Identify and provide specific language to address issues of discrimination, bias, micro- and macroaggressions, disparities, and inequity.
- ii. Promote transparency in leadership ascension.
- iii. Support research and educational activities aimed at disseminating information pertaining to the current state of inequity and disparities in trauma surgical leadership, the reasons behind these conditions, and ways to improve the situation.
- iv. Create benchmarks and tools to track the impact of changes brought about as a result of these efforts.
- v. Recruit and promote minorities and women in the trauma surgical society membership and leadership.
- vi. Mentor young trauma surgical leaders hailing from diverse backgrounds, so that future leadership is adequately prepared to tackle the challenges of inequity and discrimination.
- vii. Identify, develop, and disseminate validated toolkits to address specific issues faced by minorities and women in this profession.
- viii. Advocate for our professional medical and surgical organizations to prioritize equity, diversity, and inclusion throughout all facets of their operations, academic and educational products, and at their annual scientific meetings.

Increasing the visibility of trauma surgeon leaders from diverse backgrounds can empower, uplift, and support future trauma surgeons and provide an atmosphere where they feel comfortable expressing who they are without fear of repercussions. Increasing diverse and inclusive representation in trauma surgical society leadership will empower more trainees from diverse and underrepresented backgrounds to actively participate in the scientific process to address health issues that may have been previously understudied or overlooked. This should be our priority going forward.

### For Ourselves

The history of Diversity, Equity, and Inclusion (DEI) in trauma surgery closely tracks with the history of equity and inclusion in medicine in the USA (Table 1). While the first US medical school opened in 1765, women were systemically excluded from admittance for decades, with Dr. Elizabeth Blackwell being the first female medical graduate in 1849. Once she broke this glass ceiling, however, many others soon followed—within 15 years, more than 200 women



**Table 1** Selected milestones for diversity, equity, and inclusion in the USA

1870	Fifteenth Amendment	Barred federal and state governments from excluding citizens from voting based on race, color, or previous enslaved status. De jure guaranteed Black men the right to vote, but in reality, poll taxes, literacy tests, and “grandfather” clauses served to exclude them from being able to exercise this right
1920	Nineteenth Amendment	Barred federal and state governments from excluding citizens from voting on the basis of sex, but women of color were de facto blocked from exercising their right to vote in many places [92]
1924	Indian Citizenship Act	Granted citizenship to all Indigenous Americans born in the USA. However, some states barred Indigenous Americans from voting until 1957 [93]
1943	Magnuson Act	Overtaken Chinese Exclusion Act of 1882 which barred Chinese people from immigrating to the USA or becoming naturalized citizens but allowed laws that prohibited them from owning property. Was not overturned until Immigration and Nationality Act of 1965 [94]
1963	Equal Pay Act	Prohibits sex-based wage discrimination between men and women in the same establishment who perform jobs that require substantially equal skill, effort, and responsibility under similar working conditions [95]
1964	Civil Rights Act	Prohibits discrimination on the basis of race, color, religion, sex, or national origin, as well as discrimination on the basis of sex and race in hiring, promoting, and firing, among other remedies to inequality
1967	<i>Loving v Virginia</i>	Established that bans on interracial marriage were unconstitutional [96]
2015	<i>Obergefell v Hodges</i>	Established that bans on same-sex marriage were unconstitutional [97]

from around the world had obtained degrees from US medical schools.

People of color were also systemically excluded from formal medical education as well. Although in 1837 Dr. James McCume Smith was the first Black American to receive a medical degree, he matriculated from the University of Glasgow in Glasgow, Scotland. It was not until 10 years later in 1847 that Dr. David J. Peck became the first Black American to receive a medical degree from a US school, which was Rush Medical School in Chicago.

Recognition for medical professionals who had undergone formal training in surgery occurred in 1937 with the founding of the American Board of Surgery (ABS). The first people to hold board certification in surgery from the ABS were White men, but White women were not far behind, with Dr. Barbara Stimson receiving hers in 1940 [82]. Surgeons of color did not achieve board certification until 1954 when Dr. Frank Oliver Richards became the first Black man to do so [83]. The first female surgeons of color to be board certified in surgery were Dr. Margie D. McRae and Dr. Kate Nkoyeni Aseme Winborne in 1981, both Black women [84, 85]. Certification in surgical critical care became available in 1986, and five Black men and 20 women achieved certification in this subspecialty in 1987. Dr. Norma Michelle Smalls was the first female person of color to receive a surgical critical care certificate in 1989. These remarkable individuals pioneered new routes toward DEI in American medicine and surgery, and many others followed in their footsteps.

While it may be tempting to view these milestones as excellent progress toward DEI, they are in fact achievements against a background of tremendous professional and social injustices. For example, while the Nineteenth Amendment was introduced in 1878, it was not ratified until 1920, thus guaranteeing women the right to vote [86]. With policies that tolerated racial segregation and the exclusion of Black

physicians from state medical societies, the American Medical Association effectively barred most Black physicians from membership for decades after the Civil War [87]. Starting in the 1920s, US medical schools implemented quotas to limit Jewish enrollment [88]. It was only by the constant concerted efforts of key forward-thinking individuals and organizations that these barriers and injustices were opposed and reduced or eliminated.

Within the last several years, there has been increased dialogue about DEI issues in medicine and surgery. Many of these conversations regarding gender, race, and other social justice issues have been triggered by events rooted in a greater national or social context. The #MeToo movement, sparked by the exposure of sexual abuse charges against Hollywood mogul Harvey Weinstein, opened the door to discussion about sexual harassment in medical education and the medical profession. Around the same time, the cover of the April 3, 2017 issue of the *New Yorker* magazine became a rallying cry for #ILookLikeASurgeon, in which women and other underrepresented groups in surgery shared photos of themselves and stories of their experiences in a traditionally White- and male-dominated field [89]. These spontaneous and informal discussions are happening in the classroom, the workplace, academic conferences, and online in social media.

Attention is now being paid to these same topics in surgery in academic and professional settings. In 2017, Dr. Caprice Greenberg gave the Association for Academic Surgery presidential address titled “Sticky Floors and Glass Ceilings,” examining gender disparities among surgeons [90]. Over the last decade, Dr. Adil Haider has examined implicit racial and class bias among medical students and acute care surgeons [15, 16]. As discussed above, the first explicit discussion of equity among trauma surgeons occurred in 2019 when EAST established an ad hoc task

force looking at DEI in trauma surgery and Dr. Andrew Bernard gave the Eastern Association for the Surgery of Trauma (EAST) presidential address entitled “EAST—a legacy of inclusion” [72]. EAST became the first trauma organization to specifically pursue equity as an organizational priority and in early 2021 formally established the Equity, Diversity, and Inclusion in Trauma Surgery Practice Committee.

There is much work that remains to be done on issues of DEI in trauma surgery. Racial bias remains structurally integrated into trauma surgery—for instance, derogatory language against patients of color has been part of the official teaching materials for the Advanced Surgical Skills for Exposure in Trauma course. Prejudice against women is also present. This was illustrated in a recent article by Weaver et al., in which the authors analyzed more than 200 panels from the annual scientific meetings of AAST, EAST, and WTA over the last decade and found that almost a third were all-male “manels” with no statistically significant change in the rate of “manels” over time. It is clear that racism and gender bias are problematic in the field [91].

What is harder to describe are the challenges that remain in other areas of DEI. For example, there is virtually no research into the inequities among trauma surgeons with identities that intersect along lines of race and ethnicity, gender, class, religion, immigration status, age, or sexual orientation, just to name a few. It is also important to recognize that with the growing interest in facing the challenges of DEI in our field, there has also been understandable resistance that mirrors discussions occurring at large in society. Ongoing commitment to promoting DEI by trauma surgery leadership will be critical to tackling these remaining challenges.

## Conclusion

DEI in trauma surgery applies to patients, many of whom suffer unequal treatment and injustices in everyday life, seeking equitable health care urgently at the most vulnerable time of their lives. DEI in trauma surgery also applies to practicing surgeons, many of whom have faced unequal treatment injustices through their entire lives, seeking equitable professional treatment and advancement opportunities alongside their daily commitment to serve the injured. As trauma surgeons on the front lines, we are well positioned to witness, shed light upon and actively mitigate inequity, and assure that every patient and surgeon receives equal treatment and has the same opportunity to not only survive but thrive. With the help of our professional societies, we have made great progress but there is much more to do. Resistance to advancing DEI remains. By compelling surgeons and societies to continue to engage in action, we will continue the history of improving DEI in trauma surgery.

## Declarations

**Competing Interests** The authors declare no competing interests.

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