Why Diversity, Equity, and Inclusion Matter for Patient Safety

Meghan B. Lane-Fall, MD, MSHP, FCCM

The recent focus on diversity, equity, and inclusion (DEI) has highlighted many of the ways that individuals and organizations in health care are fallible; for example, by making decisions informed by social group membership instead of factors more germane to such decisions. We make patient care safer in part by introducing routinization and standardization and by engineering systems that are resilient in the face of human fallibility. It may seem, then, that the steps we take to ensure safety would obviate DEI concerns. In reality, we encounter DEI issues in much of the safety work that we do as members of the anesthesia and perioperative care team. Confronting and learning from these issues can make us better clinicians and team members.

As a leader in DEI, I find it helpful to ground conversations in this space with operational definitions of terms often used imprecisely. *Diversity* is a characteristic of groups (i.e., a single person cannot be "diverse") that indicates a range of lived experience (*Acad Med* 2015;90:1675-83). I think of characteristics that shape peoples' perspectives on the world, work, problem solving, and relationships to other people. In the U.S., conversations about diversity often center on race, ethnicity, and gender identity, but many additional aspects of experience are relevant to safe patient care, including age, languages spoken, physical mobility, body size, handedness, and visual acuity, to name just a few. *Equity* is about fairness and includes both opportunity and addressing barriers (Organizational Behavior, Theory, and Design in Health Care. 3rd edition, 2021). This might manifest as avoiding dissimilar treatment for similar behaviors, such as women and men being treated differently for speaking directly or raising their voice. I think of *inclusion* as a sense of belonging, which requires an organizational culture that welcomes differing perspectives. Inclusion does not mean that consensus needs to be achieved in all decisions, but an inclusive culture is one with strong psychological safety and the ability to take "interpersonal risks" like speaking one's mind without a fear of ridicule, retribution, or censure (*Annual Review of Organizational Psychology and Organizational Behavior* 2014;1:23-43). Importantly, the organizational benefits of diversity depend critically on inclusion (Organizational Behavior, Theory, and Design in Health Care. 3rd edition, 2021).

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What does this have to do with safety? Let's think about our clinical environment as work systems, as engineers do. In one human factors model, we think about the work system as having five basic components: *the care team*, *tools and technologies*, *the physical environment*, *organizational conditions*, and the *tasks* we perform (*Appl Ergon* 2020;84:103033). I submit that DEI is relevant to all five of these components. Many recent articles have focused on the value of diverse and inclusive care teams. Here I focus on the perhaps less obvious intersections between DEI and the remaining four parts of the work system. A unifying theme across these work system elements is that diversity, equity, and inclusion are necessary to build and maintain systems that are responsive to different team members under a broad range of clinical conditions.

In considering *tools and technologies*, the concepts of usability and bias are relevant to DEI. Human factors engineers are trained to consider the needs of diverse groups in designing products like machines or software to be usable. Buttons, for example, should be operable by people regardless of dexterity, and user interfaces should be visible by people of different heights. Teams with diversity in these and other characteristics are poised to identify and ameliorate potential safety threats that can be encountered during clinical care. Diverse teams may also help identify or focus attention on bias in technologies, such as pulse oximetry and artificial intelligence (*APSF Newsletter* 2021;36; *BMJ* 2020;368:m363).

Similar to tools and technologies, the *physical environment* in health care must be designed to accommodate a diverse workforce. Characteristics such as height, girth, reach, strength, dexterity, mobility, and sensory acuity all influence the way that we interact with our environment and may influence our ability to perform as expected in routine and emergent clinical scenarios (Handbook of Human Factors and Ergonomics in Health Care and Patient Safety. 2nd edition, 2011).

Organizational conditions and *tasks* are where I think equity and inclusion are most relevant. Our safety measures are developed and executed by people working in complex sociotechnical systems. For these systems to operate at peak performance, team members need to be confident that they will be treated equitably and that their perspectives will be considered in the design, evaluation, and optimization of the systems in which they work. In short, they need to perceive psychological safety. In their review of published research in health care and industry, Edmondson and Lei found that psychological safety was positively associated with organizational learning and organizational performance and that it may mitigate factors like conflict that can undermine performance (*Annual Review of Organizational Psychology and Organizational Behavior* 2014;1:23-43). Psychological safety is promoted by inviting input, listening to team members, and celebrating failures (asamonitor.pub/3zSykTj). It is undermined by explicit or implicit actions that exclude or alienate team members. Microaggressions (also called "subtle acts of exclusion") experienced by marginalized groups could therefore compromise psychological safety and team functioning (asamonitor.pub/2YArTH0).

As seen in other aspects of health care, like biomedical research and medical education, attention to DEI can broaden our perspectives and allow us to meet the challenges posed by shifting patient populations, innovations in care, and organizational constraints. In highlighting DEI issues relevant to our work system in anesthesia, I believe that applying this lens to safety can help us design better, more resilient, and safer teams and health care systems. ■

Meghan B. Lane-Fall, MD, MSHP, FCCM
Vice President and Member, Board of Directors, Anesthesia Patient Safety Foundation, and David E. Longnecker Associate Professor and Vice Chair of Inclusion, Diversity, and Equity, Department of Anesthesiology and Critical Care, Perelman School of Medicine, University of Pennsylvania, Philadelphia.

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