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Learners With Disabilities: An Important Component of Diversity, Equity, and Inclusion in Medical Education

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Abstract

The population of people with physical or sensory disabilities is growing, yet they are underrepresented in the medical and other health professions. At the same time, there is a clear need to enhance didactic curricular content and clinical training experiences that explicitly address the full scope of medical needs that individuals with disabilities have. These gaps represent missed opportunities to advance the health of an important, underserved, and growing population. Based on the authors’ experience, the inclusion of people with physical or sensory disabilities in medical education greatly enhances the education of all learners and the professional development of faculty and staff, providing invaluable perspectives on the significant abilities of individuals with diverse physical or sensory disabilities. There are additional efforts and costs associated with the education of a medical student who is blind, is deaf, uses a wheelchair, or has another disability. But based on the authors’ experience, it is clear that the societal return on investment is enormous, and the costs associated with a failure to embrace full inclusivity are much greater. Medical education institutions should recognize the population of people with disabilities as a vital component of their commitment to diversity, equity, and inclusion and strive to provide inclusive education for learners with disabilities.
Over the past several years, the University of Wisconsin School of Medicine and Public Health has accepted a handful of talented MD program applicants with significant disabilities, including deafness, blindness, and paraplegia. Each of them did well academically and matched into high-quality residency programs. Each needed substantial resources and individualized accommodations to meet the technical standards required by our school’s policies. Navigating surgical rotations in operating rooms proved to be the greatest challenge in most cases, but that challenge was met with an institutional commitment to optimize the learning environment so that each student could be successful. In return, each student contributed substantially to the education of their fellow students and professional development of our faculty and staff, providing invaluable perspectives on the significant abilities of individuals with diverse physical and sensory disabilities. Our experiences with these accomplished and talented people also served to highlight, in a very powerful and personal way, the common challenges and access issues that individuals with disabilities confront every day.

We would like to say that our acceptance of these applicants and their subsequent success during and after medical school reflected a thoughtful, strategic plan aimed at increasing the diversity of our students and future physicians in a way that included individuals with substantial physical or sensory disabilities—but such a statement would be disingenuous. This bolus of highly talented medical students who had embraced their unique physical and sensory abilities to become successful physicians happened spontaneously, aided, perhaps, by our school’s fierce, deep commitments to a holistic admissions approach and to provide individualized services that promote success for all our learners to the greatest feasible extent.
Understandably, much of the current discussion of and program growth around diversity in medical education focus on racial and ethnic populations and, to a growing degree, on the lesbian, gay, bisexual, transgender, queer or questioning, and gender expansive communities. We embrace these efforts and, even more so, the tangible actions resulting from them that are beginning to move the needle toward full inclusivity and equity for individuals within these populations. But there appears to be relatively less emphasis in academic medicine on individuals with diverse physical and sensory abilities, even though the important reasons for demanding greater representation of other underrepresented in medicine groups are equally salient for those with physical and sensory disabilities. In short, academic medicine’s tangible commitment to equity and inclusivity for learners with disabilities is lagging behind other important diversity efforts at most schools.

**Scope of the Challenge**

The U.S. population of individuals with physical or sensory disabilities is growing, yet they are grossly underrepresented in the medical and other health professions. Approximately 28% of adults in the United States have physical disabilities, and about 12% have a communication disability, inclusive of hearing and vision disabilities. The percentages of medical students in these groups do not approach these numbers. Less than 5% of medical students report having a disability of any kind, and of those, less than 10% have a mobility or sensory disability. This lack of representation within medicine and other health professions likely contributes to the health disparities that people with disabilities face. Individuals with physical or sensory disabilities often face daunting limitations in their access to care, are less likely to receive care that is tailored to their individual needs, and have poorer health outcomes.
Like much of our society, physicians and medical educators are vulnerable to misconceptions and unconscious biases regarding people with physical and sensory abilities that are different than their own. One of us remembers a tense, unsuccessful effort at our prior institution to convince the leadership of the admissions committee to accept a remarkably talented person with quadriplegia to the MD/PhD program. The leader of the PhD training component of the program was on board, but the leadership of the MD component could not get past the reality that the individual would not be able to master certain aspects of required competencies, such as independent completion of all aspects of a physical examination. This resulted in a lost opportunity for the program, while the individual fortunately accepted an admission offer elsewhere.

We have learned from our patients with physical and sensory disabilities about their frustrations with health care professionals who have treated them as if they also had cognitive limitations. An academic colleague with obvious visual impairment describes health care professionals speaking to him very slowly and loudly, as if he also had hearing or intellectual limitations. Many erroneous assumptions are made about the functional abilities of people with disabilities, often due to the lack of knowledge or comfort level of the health care provider. For instance, paraplegic patients often observe clear discomfort in their physicians when they ask questions related to sexual function, probably reflecting, in part, their physician’s limited knowledge base in this area or their misinformed assumptions about their patient’s sexual desire and ability.

**Moving Forward: Addressing the Opportunity**

There is a clear need to enhance education and training related to physical and sensory, as well as other types of disabilities, such as intellectual disabilities, throughout medical and health professional curricula. The MD curriculum, as well as other health professional degree curricula,
should include didactic content and clinical training experiences that explicitly address the full scope of medical needs that patients with disabilities have.\textsuperscript{12–14} Health professions education should emphasize the wide range of abilities that individuals with disabilities possess and how their strengths can be used to mitigate the challenges of their specific limitations. Unfortunately, most MD curricular content related to ability and disability is limited to a few modules or “hit or miss” clinical experiences, rather than well-integrated, longitudinal coverage throughout the curriculum. At the same time, the small number of faculty, staff, and fellow students with visible physical and/or sensory disabilities limits medical students’ exposure to the lived experiences of successful professionals and peers with disabilities who could serve as inspiring role models, mentors, and teachers.\textsuperscript{7}

Admissions practices, policies for technical standards, teaching techniques, and clinical training environments strongly favor individuals without disabilities. These need to be reviewed and addressed to promote equity and inclusivity for learners with disabilities.\textsuperscript{15,16} At the same time, extracurricular, cocurricular, and schoolwide events often strongly favor participation by individuals without disabilities. Thus, they unintentionally create additional barriers for growing the cohort of health care learners and providers with disabilities. The lack of obvious medical students, staff, and faculty with physical and sensory disabilities may further perpetuate a noninclusive culture that values “ableism” over diversity in physical and sensory ability. Limitations in the admission of talented students with physical and sensory disabilities deprives all students of valuable exposure to important and unique perspectives. This, in turn, may perpetuate unconscious biases, as well as limitations in the development of expertise in disability care among future physicians, adding to the health disparities faced by people with physical and sensory disabilities.
A recent Association of American Medical Colleges (AAMC) report on disability in medical education provides an excellent overview of the experiences and perceptions of those with disabilities, as well as guidance on policies and processes that can promote the inclusion of and support for learners with disabilities. The authors identified several approaches that medical schools should pursue, individually and collectively, to promote accessibility and inclusion for learners with disabilities, including a national commitment to focus on this issue, inclusion of disability liaisons within AAMC affinity groups and advisory committees, integration of disability into diversity and inclusion initiatives, and the addition of disability to demographic queries for research involving medical students, residents, and faculty. We applaud and support all these suggestions, especially the last one, and would suggest expanding it to include not only research but also all institutional assessments of diversity initiatives—as Peter Drucker is often quoted saying, “If you can’t measure it, you can’t improve it.”

Meaningful progress in expanding the representation of individuals with disabilities in the nation’s medical student population will depend on innovation and commitment at each stage. Selection and recruitment processes for admissions should be inclusive of people with disabilities as an important component of achieving meaningful diversity. Welcoming and onboarding processes—from community building activities to white coat ceremonies—should be carefully examined for unintentional issues that impede the full participation of people with disabilities. Resources and support services with expertise in disability accommodations and an understanding of the clinical learning environment should be in place and should hold a deep commitment to considering unexpected individual ad hoc needs as they arise. At the same time, educational programs should provide longitudinal didactic and experiential learning about disabilities that maps to education program objectives and is woven throughout the curriculum in
an integrated, meaningful way.\textsuperscript{3,12–14} There should also be attention to interprofessional education in this domain, recognizing that optimal high-quality care for individuals with disabilities depends on high-functioning health professions teams.\textsuperscript{17} Finally, graduate medical education must also embrace holistic approaches to admissions, recruitment, education, and professional development that provide equitable learning for primary and specialty care across all fields for graduating medical students with disabilities.\textsuperscript{18,19}

**Conclusion**

There are additional costs and efforts associated with the education of a medical student who is blind, is deaf, uses a wheelchair, or has another disability. But it is clear to us, based on our experience, that the societal return on investment is enormous, and the costs associated with a failure to embrace full inclusivity are much greater. Medical education institutions should recognize the population of people with disabilities as a vital component of their commitment to diversity, equity, and inclusion and strive to provide inclusive education for learners with disabilities.
References


15. McKee M, Case B, Fausone M, Zazove P, Ouellette A, Fetters MD. Medical schools’ willingness to accommodate medical students with sensory and physical disabilities: Ethical


