Now Is the Time

A Primer on How to Be a Disability Education Champion in Your Medical School

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Abstract: One in four noninstitutionalized adults in the United States lives with a disability. People with disabilities have frequent interactions with the medical community and the healthcare system yet experience disparities in access and outcomes. The Association of American Medical Colleges has included disability in its definition of diversity as one of the aspects of patient care that may affect health equity. However, training in the lived experience of disability is not always included in medical education. Physiatrists make excellent disability champions in medical schools, given their training and experience in the care of individuals with disabilities. Here, we describe strategies for physiatrists to increase disability education in medical schools and an overview of standards and tools (Liaison Committee on Medical Education standards; Commission on Osteopathic College Accreditation standards; International Classification of Functioning, Disability and Health language; and the Core Competencies on Disability for Health Care Education published by the Alliance for Disability in Health Care Education) physiatrists can use to facilitate interactions with medical school educational leadership. Specific examples are provided along with a framework to guide the development of disability champions in medical schools.

Key Words: Disability, Education, Medical, Undergraduate, Curriculum

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One in four noninstitutionalized adults in the United States has a self-reported disability impacting hearing, vision, cognition, mobility, self-care, and/or instrumental activities of daily living.[1] Despite having frequent interactions with the medical system, individuals with disabilities experience disparities in access to health care and in outcomes.[2,3] With much of clinical education occurring in the inpatient and episodic care settings, teaching is more heavily weighted toward a focus on pathology rather than on the long-term needs of patients with disabilities. Ableism may also impact decision making in the healthcare system. Ableism is a form of discrimination against individuals with disabilities, built on assumptions that life without a disability is superior to life with one.[4] The novel coronavirus disease has brought the ongoing needs of people with disabilities to the forefront, as it has especially impacted people with multiple comorbid conditions, lower socioeconomic status, and those who live in crowded settings, factors disproportionately characteristic of people with disability.[5,6] Some proposed guidelines for rationing care during the pandemic had a disquieting ableist bias that raised fears of those with disabilities.[7,8] The coronavirus disease has underscored the current and ongoing need for comprehensive disability instruction in medical education.[9,10]

It has been postulated that health disparities among people with disabilities are related to lack of medical student education around topics related to disability.[11] A 2015 survey of medical school deans found that only 52% of osteopathic and allopathic schools reported having a disability awareness curriculum. For schools that do not have disability awareness curricula, the most common barrier was a lack of a champion for disability-related content.[12] The Association of American Medical Colleges has included disability in their definition of diversity and inclusion as one of the aspects that may affect health equity.[13] They have described the need to expand resources to optimize the educational experience of learners with disabilities and, in turn, the educational experience of all learners.[13,14] These recommendations are the result of the action of multiple advocacy groups.[9,10,15]

Despite multiple calls to action, the development and integration of standardized medical school objectives that include disability topics have been slow to be developed.[11,16,17] Complex issues, including variable resources (e.g., budget, time), and unconscious biases driving potential cultural forces impact decisions about medical school curricular content.[18] Minimizing disruption of existing time and resources while integrating disability education into medical school curricula must be made a priority.

Physiatrists are experts in providing patient-centered care using a biopsychosocial approach. Physiatrists are well versed in function and functional history, adapting history and physical examination to patients with a range of abilities, and developing interprofessional care plans that help people achieve functional goals. Combined with the ability to involve communities of people living with disabilities in teaching sessions, this skillset makes physiatrists eminently qualified to be champions

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for disability education in medical schools. Following is a practical guide to prepare physiatrists to advocate for disability education in medical schools.

BEING A CHAMPION

Physiatrists are well poised to champion disability education within medical schools. Most physiatrists can provide students with both the medical and social context necessary to mitigate the impact of ableism that has long impacted patient care. Physiatrists can offer to teach about ethics and legislation related to civil rights and accessibility and how these have shaped the patient experience over time. Although physiatrists may not have a formal, detailed background in these areas, the specialty recognizes the relevance of these topics to clinical care. Physiatrists can learn specific content and then infuse this into preclinical and clinical teaching.

Physiatrists also understand the need for and embrace a person-centered approach to care. For people with disabilities, this represents an important and valuable shift from the historical medical model of disability (individual with disability is flawed, unable to make their own healthcare decisions), to the social model of disability (individual with disability is valued and holds autonomy; environmental supports enable a person with a disability to flourish). Physiatrists can teach the language of the World Health Organization International Classification of Functioning, Disability and Health[19] to help students view disability as existing in the interaction between a person's impairments/health conditions and the environment. In the International Classification of Functioning, Disability and Health's biopsychosocial model, function is a continuum upon which an individual's needs will vary through the life trajectory, requiring clinicians to provide a more biological focus at sometimes and a more social focus at other times. Physiatrists understand this and can teach this.

Knowledge, Insight, and Community Resources

Physiatrists interact with patients with disabilities from the first moments of their physical medicine and rehabilitation (PM&R) training. This provides the opportunity to learn about local health care and community resources directly from their patients and families, in turn resulting in knowledge that other clinicians cannot easily obtain from the medical literature or may not have the time or training to obtain during their own clinical interactions. Medical schools do not commonly teach about the disability experience within their own hospitals or provide exposure to local disability resources. Physiatrists can add this dimension to medical school curricula.

Interprofessional Perspective

Physiatrists work interprofessionally with a range of rehabilitation healthcare professionals who provide unique perspectives on both the direct medical needs and broader social contextual factors that impact access to health care and health outcomes. Physiatrists can share these perspectives and offer their expertise in interprofessional team leadership by contributing to the design and teaching of interprofessional curricula for medical students. Physiatrists can also give meaningful examples from the hospitals in which medical students train, so that the relevance of social context and advocacy becomes clear to the students.

Physiatrists' expertise is increasingly valuable in the developing healthcare environment. For example, as the US population ages and length of hospital stays decrease, physiatrists can offer insight into the needs of patients across the continuum of care. As telemedicine services expand, physicians across specialties whose practices had been physically inaccessible to people with disabilities may begin to see more individuals with disabilities who are now able to access care remotely. This opens a new opportunity for physiatrists to teach students and colleagues alike about the living settings they may now see—home, long-term care facility, specialized school, or otherwise—and to provide tips for caring for individuals with disabilities. Physiatrists who have developed telehealth expertise[20] around assessing strength and function in a virtual format can also teach these skills for students to meaningfully assess patients. Conversely, as individuals with disabilities are disproportionately undereducated and have lower incomes, some may not be able to access telehealth services.[21] Physiatrists can help medical students understand the barriers to care faced by individuals with disabilities and provide guidance on how to improve healthcare accessibility.[22]

Armed with the experience and expertise necessary to teach medical students, physiatrists need only to understand the process for making meaningful change within the context of the medical school infrastructure.

THE CHAMPION'S SURVEY: UNDERSTANDING THE REGULATORY FRAMEWORK

The first step to becoming a champion for disability in undergraduate medical education is understanding the regulatory framework and the common language used in medical schools.

Each medical school independently chooses and structures its own curriculum, guided by standards outlined by their relevant accrediting bodies—the Liaison Committee on Medical Education for allopathic schools and the Commission on Osteopathic College Accreditation for osteopathic schools. Accreditation assures the public and prospective students that schools meet uniform requirements and engage in self-analysis and quality improvement. Medical schools are reassessed in 5- to 10-yr cycles to maintain accreditation. During site visits, each medical school's policies and procedures are reviewed to ensure adherence to accreditation standards.

The Liaison Committee on Medical Education provides standards for curricular management, content, and design. It specifically includes an element for cultural competence and healthcare disparities[23] in which disability is identified as one of the potential sources for bias and may impact provision of care and, ultimately, outcomes. Education in concepts about disability, including potential structural, financial, and personal/cultural barriers, helps satisfy this requirement. At the current time, the Commission on Osteopathic College Accreditation does not reference disability in its standards.[24] Physiatrists at allopathic and osteopathic schools should review the Liaison Committee on Medical Education and Commission on Osteopathic College Accreditation standards relevant to their schools, as specific language and standards

that impact curriculum and structure can also affect potential advocacy opportunities for educators.

The Association of American Medical Colleges has created a framework for medical educators to track the progression of medical students, in an effort to link knowledge with clinical skills, which are necessary for the first day of residency. This framework involves Core Entrustable Professional Activities for Entering Residency (Core EPAs).[25]

Neither accrediting bodies nor Core EPAs require specific disability content.[26] Thus, responsibility falls to individual medical schools to decide whether and how to include disability content. The Alliance for Disability in Health Care Education, an independent organization composed of educators, advocates, and other stakeholders, published the "Core Competencies on Disability for Health Care Education" (Disability Competencies), which creates a framework for disability education and highlights the International Classification of Functioning, Disability and Health.[27] See Table 1 for examples of curricular integration mapped to both these Disability Competencies and Core EPAs.

The local layer of curricular oversight is each medical school's curriculum committee. These committees are tasked with reviewing, monitoring, and revising the content, coordination, integration, and coherence of topics and experiences to ensure comprehensive education and compliance with regulatory standards. Typically, a curriculum committee includes medical school leadership, faculty members, course directors, and clinical clerkship directors. To make curricular additions or revisions, a proposal with all pertinent information must be presented to the curriculum committee for evaluation and approval. The committee considers available personnel, facilities, funding, and time. Because resources—especially time—are limited, collaboration and integration of disability topics into curricular content that is already part of allocated resources is ideal.

THE CHAMPION'S JOURNEY: OPPORTUNITIES FOR INROADS

A potentially significant barrier that faculty may have with regard to disability curriculum integration within medical schools is an underappreciation of the many areas where these topics can be highlighted. Although there is no single or "right" way for physiatrists to advocate for inclusion of disability education, there are many common opportunities that can be adapted for individual institutions. Physiatrists can either directly or indirectly make inroads into these academic opportunities.

One approach a champion could take is to identify curricular leadership opportunities to voice disability considerations. A physiatrist could serve on a curriculum subcommittee to identify knowledge or educational gaps that relate to care of people with disabilities or disability topics; an offer to help an institution fill these gaps can be very effective. Referencing the Liaison Committee on Medical Education standards and Core EPAs will help physiatrists "speak the language" of the curriculum team. Working on a curriculum subcommittee may also allow participation in informal discussions with leadership regarding curricular changes and open opportunities to advocate for disability topics. If the structure of an institution does not provide opportunities for committee service, physiatrists can connect with key decision makers via a chairperson or departmental undergraduate medical education director and advocate for inclusion of disability education.

Other opportunities to affect curriculum may exist in direct course leadership roles. As small group leaders or mentors/preceptors in early courses, physiatrists may participate in course planning meetings and feedback sessions where decisions regarding course content are made and thus facilitate integration of disability topics. One can advocate for integration of disability education into existing basic science curricula (e.g., anatomy, musculoskeletal, neuroanatomy, health system science, ethics, health equity, and disparities) or into clinical experiences within any specialty.[11] Partnering with clerkship directors across specialties may reveal opportunities for integration within required clinical experiences. Other opportunities to add disability focused sessions may exist within longitudinal professional development groups.

At some institutions, opportunities exist within PM&R departments to work directly with students. Physiatrists could develop single- or multispecialty rotations that focus on care of people with disabilities. If resources are not available for a PM&R-sponsored rotation, physiatrists could collaborate with other departments to incorporate disability experiences into required clerkships.

Despite the differences in the size, location, and structure of medical schools across the country, these approaches examples can serve as a stepping off point for curricular change, networking, and direct student educational opportunities. Local or national funding may be available to support development of disability education, both students and faculty can be engaged in developing new curricular components.

THE CHAMPION'S QUEST: EXAMPLES OF CURRICULAR INTEGRATION

Table 1 lists examples of disability curricular interventions that are currently being implemented by physiatrists in major medical schools across the United States. Typically, settings for disability education include problem-based learning and case-based learning activities (including cases that highlight people with disabilities), preclinical communication skills courses (including people with disabilities as interviewees), standardized patient encounters (including disability as a demographic characteristic for patients who present with routine medical problems), health equity training (including education about social determinants of health in people with disabilities), and clinical rotations (including physician and nonphysicians who mainly see people with disabilities).

To assess retention of disability-related knowledge and skills, physiatrists can help modify end-of-clinical rotation examinations (test for disability specific knowledge), Objective Structured Clinical Examinations (hire standardized patients with disabilities), and formative observation guides (checklists can include encounters with disability-specific skills). Examples of specific skills that could be assessed includes awareness of disability-specific considerations (i.e., atypical presentations of illness, implications of long-standing wheelchair use, autonomic dysreflexia), completion of routine health maintenance questions for all people (i.e., asking about sexual activity in a person with a disability), addressing transfer needs to ensure a complete examination, and use of sensitive language.[4]

TABLE 1. Examples of curricular integration mapped to disability competencies and core EPAs

Core Competency on Disability for Healthcare Education[27]	Physiatry-Led Examples From the Author's Institutions and the Literature	Core EPAs[25]
Contextual and conceptual frameworks on disability	Students should be taught the history of disability rights, treatment of people with disabilities in the healthcare system, types of disability (mobility, sensory, cognitive, behavioral), and disability language, to integrate this context into obtaining a history and physical and delivering oral presentations. 1. During required small group teaching sessions on postacute care for clinical students, include teaching on medical and social models, International Classification of Functioning, Disability and Health model, and history of disability rights. *(any level, small group discussion, panel)*[a,b,c,d] 2. Incorporate disability concepts such as history of disability, appropriate disability language, ableism, and universal design as part of medical student interest group. *(all levels, elective, small group discussion)*[d,e] 3. Create listening sessions where students can hear testimonials from people with disabilities as they have navigated through the healthcare system. The testimonials could be videotaped to allow teachers from all aspects of the learning continuum to use the materials. Education could be enhanced by adding reflective writing assignments at the conclusion of the session. *(preclinical, lecture and essay, required)*[a]	EPA 1: Gather a history and perform a physical examination EPA 6: Provide an oral presentation of a clinical encounter
Professionalism and patient-centered care	Students should be taught to identify and eliminate bias when speaking with a person with a disability in a healthcare setting. Education about supported decision making, interacting with caregivers, respecting intersectional identities, and addressing social determinants of health should also be provided. 1. Showcase local community and disability advocacy organizations during student orientation and introductory medical school courses by inviting representatives of these organizations to present to the entire first-year class. *(preclinical, required, panel discussion)*[d] 2. Create a required preclinical interprofessional course where teams of health professional students meet with someone in the community with a disability to learn about their experience. *(preclinical, experiential, required)*[a, 28] 3. Create a self-directed module on respectful communication. Could also incorporate concepts of supported decision making. *(preclinical, required, self-directed learning module)*[c] 4. Use video to simulate clinical encounters working with people with intellectual and developmental disabilities. Learning can be enhanced by having an amalgam of evaluations from self-reflection, patient educator, and objective evaluator. *(preclinical, elective or required workshop)*[29]	EPA 4: Enter and discuss orders and prescriptions EPA 13: Identify system failures and contribute to a culture of safety and improvement

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TABLE 1. *(Continued)*

Core Competency on Disability for Healthcare Education[27]	Physiatry-Led Examples From the Author's Institutions and the Literature	Core EPAs[25]
Legal obligations and responsibilities for caring for patients with disabilities	Students should be taught how to provide accessible health care. Curriculum should include universal design concepts to provide accommodations for all types of disability (e.g., physical, sensory, intellectual, developmental, emotional, mental health). Education should include legal obligations of clinicians and legal rights for individuals with disability (including the Americans with Disabilities Act, ADA). 1. Teach clinical students in required small group reflection sessions about the principles of creating an accessible office practice, including a primer on the ADA and key aspects of accessible communication and office facilities. Include individuals with disabilities as coteachers to describe their experiences. *(all levels, required, small group discussion or panel discussion)*[a,d] 2. Include student didactic lectures regarding statistics on healthcare disparities for people with disabilities particularly in regards to issues regarding access. *(clinical, lecture or small group discussion)*[d,e,f] 3. Incorporate the application of the Olmstead Act and the concept of institutionalization when making clinical recommendations throughout the continuum of care. *(clinical, informal, bedside teaching or small group discussion)*[e,f] 4. Integrate the concepts of disability into preexisting educational topics such as race, sexual orientation, socioeconomic disparities, etc. Focus on the intersectionality between disability and these topics. *(all levels, elective, panel discussion)*[d,e] 5. Students are asked to read about ADA, IDEA, Rehabilitation Act 504, and other topics that pertain to disability, accessibility, and education. *(clinical, elective, self-learning module or bedside/clinical teaching)*[b]	EPA 1: Gather a history and perform a physical examination EPA 5: Document a clinical encounter in the patient record EPA 12: Perform general procedures of a physician
Teams and systems-based practice	Education should be taught about the role of interprofessional care for people with disabilities, the individual roles served by members of these teams, and the communication skills necessary for working effectively within the team environment. Discuss the impact of all cultural identities (including disability culture) in shared decision making. 1. Highlight the importance of interprofessional care for people with disabilities when preclinical students engage in required clinical simulations. This could be accomplished by student participation in interprofessional education sessions. *(all levels, required or elective, small group discussion or bedside teaching)*[c,d] 2. Participate in a mock team conference with allied health students including summarizing a patient's medical course a nd sharing information with the team. Alternatively, this could be accomplished by having students present their patients during a real team meeting. *(clinical, PM&R elective)*[f] 3. Model behavior that incorporates the inclusion of "team members" beyond the traditional interdisciplinary team such as caregivers, family/guardian, community, lawyers, etc. Emphasize the importance of patient-centered communication. *(clinical, required or elective, small group discussion or bedside teaching)*[b,e]	EPA 9: Collaborate as a member of an interprofessional team

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TABLE 1. *(Continued)*

Core Competency on Disability for Healthcare Education[27]	Physiatry-Led Examples From the Author's Institutions and the Literature	Core EPAs[25]
Clinical assessment	Education should include essential skills in gathering a history and performing a physical examination in people with disabilities. Emphasis should be placed on gathering information from a patient first rather than from a caregiver. Students should be taught to incorporate a patient's current functional status and expected clinical course when developing clinical recommendations. 1. When teaching clinical students about rehabilitation, coteach with individuals with disabilities, who can speak both to rehabilitation and to the lived experience of disability within the healthcare system. *(all levels, elective or required, small group discussion, patient panel or bedside teaching)*[a,d] 2. When creating problem-based learning cases, including people with disabilities with specific details regarding their unique and common health conditions and social factors. Emphasize the importance of the need for routine screenings (e.g., colonoscopy, mammogram, sexual activity) and additional risks associated with the primary disability (i.e., medical and psychosocial environment). *(preclinical, case-based learning, required)*[b] 3. When seeing patients who are currently receiving rehabilitation, students can practice their medical decision-making skills by participating in a formal medical decision-making assignment to guide the clinical care of their patient. *(clinical, required, small group discussion)*[f] 4. Include individuals with disabilities as interviewees when students practice taking medical histories (preclinical, required)[d] 5. Formative communication skills training in small groups using facilitators and trained patients living with disability. *(all years, required or elective, workshops or skill sessions)*[30] 6. Summative OSCE to evaluate ability to position and transfer a patient with spinal cord injury using standardized patients. *(all years, required or elective, workshops or skill sessions)*[30] 7. Formative OSCE to simulate positioning and transferring a person with hemiplegia using standardized patients. *(all years, required or elective, workshops or skill sessions)*[31]	EPA 1: Gather a history and perform a physical examination EPA 2: Prioritize a differential diagnosis after a clinical encounter EPA 3: Recommend and interpret common diagnostic and screening tests EPA 4: Enter and discuss orders and prescriptions EPA 7: Form clinical questions and retrieve evidence to advance patient care EPA 10: Recognize a patient requiring urgent or emergent care and initiate evaluation and management EPA 11: Obtain informed consent for tests and/or procedures

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TABLE 1. *(Continued)*

Core Competency on Disability for Healthcare Education[27]	Physiatry-Led Examples From the Author's Institutions and the Literature	Core EPAs[25]
Clinical care over the lifespan and during transitions	Education should incorporate longitudinal issues that arise with people with disabilities, both for individuals with acquired disabilities and for those with childhood onset impairments. Emphasis should be placed upon providing age-appropriate health screening and interventions, as well as the importance of encouraging patients' self-determination in health care and life choices. 1. Using film, discuss how disability may impact social and personal life milestones. *(clinical, elective, written reflection or small group discussion)*[b] 2. During family medicine orientation, incorporate "patients with disabilities as teachers" session, where patients tell their lived experience and discuss how care plans may have to change to accommodate their disability. *(clinical, patient panel, required)*[a, 32] 3. During the required preclinical genetics course, cofacilitate a large group discussion with genetics experts about care for individuals with genetically based intellectual and developmental disabilities, including discussion of barriers and needs around times of life transitions. *(preclinical, required, large group discussion)*[d] 4. Fourth-year medical students learn about unique medical issues that affect people with disabilities during a 2-wk required PM&R clerkship, including health care and community-based resources needed. *(clinical, required, lecture, and bedside/clinical teaching)*[f] 5. Lecture on exercise prescription involves discussion on how to promote exercise and healthy behaviors across one's lifespan. *(clinical, lecture, required)*[a]	EPA 3: Recommend and interpret common diagnostic and screening tests EPA 8: Give or receive a patient handover to transition care responsibility EPA 10: Recognize a patient requiring urgent or emergent care and initiate evaluation and management EPA 13: Identify system failures and contribute to a culture of safety and improvement

[a]Ankam; [b]Bosques; [c]Sauter; [d]Tolchin; [e]Kasi; [f]Rydberg; [g]Therattil.
OSCE, objective structured clinical examination.

As a teaching strategy, simulating the experience of having a disability has come under increasing scrutiny. The student in the exercise is using their own nondisabled perceptions of the environment without truly understanding the perspective of someone with disability. In addition, this exercise can also increase the risk of creating stigma or pity toward individuals with disabilities.[33]

Exposure to people with disabilities is favored, especially in longitudinal fashion when possible. This contact is not limited to persons with disabilities but also their families and caregivers who can serve as teachers. Physiatrists can draw from their patient panels to provide this kind of exposure for students.[11] Curricular attention to disability can also open opportunities for medical students with disabilities to teach from their experiences, in addition to more generally enhancing the medical school experience for these students.[12]

Engaging educators with a variety of professional backgrounds within disability advocacy (e.g., experts in disability law, employment) is another way physiatrists can develop comprehensive disability education programming.[34,35]

DO NOT REST ON YOUR LAURELS: ASSESSMENT

A systematic review of currently published disability educational interventions suggests that more robust assessment will be valuable to assess the effect of the interventions on students' knowledge, attitudes, and skills.[36] Physiatrists should collaborate with institutions to longitudinally evaluate their programs to evaluate their effectiveness.

1, 2, 3 GO!: CONCLUDING THOUGHTS

Physiatrists have a valuable opportunity to deepen and enrich the training of future physicians. Physiatry faculty should identify themselves within their institutions as champions for disability teaching and seek the support of their academic departments. In schools where PM&R departments do not exist, community-based physiatrists who are passionate about these principles should volunteer to collaborate with their local medical schools to participate in teaching and curriculum development. Local champions are essential for identifying educational gaps and integrating disability content into medical student curricula. Physiatrists are ideally suited to serve in this role and to help medical schools meet important standards. Core Competencies on Disability for Health Care Education and Core EPAs can be met by using International Classification of Functioning, Disability and Health framework and community resource involvement. The examples provided in this article are currently used across the country and can be used directly as a toolkit or more generally

as inspiration for physiatry champions making changes in their home institutions.

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