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Change in Prevalence of Disabilities and Accommodation Practices Among US Medical Schools, 2016 vs 2019

In 2016, a survey found that 2.7% of US allopathic medical students disclosed a disability, which exceeded prior estimates.[1] Data from a follow-up survey, using the same methodology, were used to compare the prevalence of disability and accommodation practices between 2016 and 2019.

Methods | Between September 2018 and March 2019, a web-based survey was administered to disability professionals at eligible schools, defined as having full accreditation through the Liaison Committee on Medical Education and excluding schools on probation. The survey assessed the prevalence of students with disabilities, the category of disabilities (**Table 1**), and types of accommodations (**Table 2**). Survey results were linked to the 2018 Association of American Medical Colleges Organizational Characteristics Database. Descriptive statistics were used to summarize results. Characteristics of nonresponding and responding schools were compared using χ^2 and *t* tests.

Comparison between identical items on the 2016 and 2019 surveys were conducted for schools that responded with data for both years. Differences in the proportions of students with disabilities and by disability type were compared using *z* tests specifying a 2-sided significance level of .05. All statistical analyses were conducted in R version 3.5.1. The study was exempt by the University of Michigan Medical School institutional review board.

Results | In 2019, 140 US allopathic schools were eligible for participation, and 87 (62.1%) completed the survey. Responding schools were similar to nonresponding schools in all characteristics examined (public vs private ownership, community-based status, research intensity, and financial relationship with the parent university), except for geographic region ($P < .001$). Compared with nonrespondents, responding institutions had a lower percentage of schools in the South (22%% vs 58%), a higher percentage of schools in the West (18% vs 4%), and a higher percentage of schools in the Central region (30% vs 15%). Schools in the Northeast were more similarly distributed (30% responding vs 23% nonresponding).

Of the 87 schools participating in 2019, respondents reported 2600 students with disabilities, representing 4.6% (95% CI, 4.4%-4.8%) of the total enrollment of 56 217 students. Psychological disabilities, attention-deficit/hyperactivity disorder, and chronic health disabilities were reported most frequently. Of the 84 schools providing data on accommodations practices, 93.3% of students received accommodations (Table 2).

Table 1. Reported Disabilities, Overall and by Category, 2016 (Benchmark) vs 2019[a]

	No. (%) of Students With Disability[b]			
Category as Identified in Survey	2016	2019	Absolute Difference, % (95% CI)[c]	Relative Difference, %[d]
Overall disabilities	1142 (2.9)	2028 (4.9)	1.9 (1.8 to 2.3)	69
Attention-deficit/hyperactivity disorder	369 (32.3)	617 (30.4)	−1.9 (−5.3 to 1.6)	−5.9
Learning disability	245 (21.4)	371 (18.3)	−3.1 (−6.1 to −0.2)	−14.5
Psychological disability[e]	233 (20.4)	655 (32.3)	11.9 (8.7 to 15.1)	58.3
Chronic health disabilities	152 (13.3)	365 (18.0)	4.7 (2.0 to 7.3)	35.3
Mobility disability	38 (3.3)	74 (3.6)	0.3 (−1.1 to 1.7)	9.1
Visual disabilities	34 (3.0)	46 (2.3)	−0.7 (−2.0 to 0.5)	−23.3
Deaf or hard of hearing	20 (1.8)	25 (1.2)	−0.6 (−1.5 to 0.4)	−33.3
Other functional impairment	51 (4.5)	49 (2.4)	−2.0 (−3.5 to −0.6)	−47

[a] Data are reported for 64 schools that responded in both years and reported complete data for disability type. Total enrollment in these schools was 39 286 students in 2016 and 41 019 in 2018.

[b] Percent values may sum to more than 100% due to several schools reporting more than 1 disability among students.

[c] Calculated as the difference in percent of students with disability in each category; 2019 minus 2016 values. The associated *P* value is less than .05 for the learning disability category, less than .01 for other functional impairment, and less than .001 for psychological disability and chronic health disabilities.

[d] Calculated as the percent change between the 2 years; 2019 values divided by 2016 values minus 1.

[e] Psychological disabilities included adjustment disorder, anxiety disorder, obsessive-compulsive disorder, posttraumatic stress disorder, bipolar disorder, depression, eating disorder, cognitive disorder, schizophrenia or other psychotic disorder, and other psychological disability.

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Of the 64 schools that responded in both years, the total number of students reporting disabilities increased from 1142 (2.9%) in 2016 to 2028 (4.9%) in 2019 (difference, 1.9% [95% CI, 1.8%-2.3%]; relative increase, 69%) (Table 1). Psychological disabilities increased from 20.4% to 32.3% (difference, 11.9% [95% CI, 8.7%-15.1%]) and chronic health conditions increased from 13.3% to 18.0% (difference, 4.7% [95% CI, 2.0%-7.3%]). Learning disabilities decreased from 21.4% to 18.3% (difference, −3.1% [95% CI, −6.1% to −0.2%]).

Discussion | In 2019, 4.6% of medical students reported disabilities, a 69% relative increase from 2016. Despite the stigma surrounding psychological and chronic health disabilities, these categories showed the largest increase.

Though not possible to capture from this survey, the increase in disability prevalence may be a result of more applicants with disabilities being admitted to medical school, more existing students disclosing disability, better reporting of disability data, or increased development of psychological disability while attending medical school.[2,3]

Limitations include potential underestimates resulting from students who did not disclose their disability; inability to examine the distribution of disability by student characteristics, including year in program, due to aggregate reporting of data; and limited generalizability to osteopathic schools. Additionally, schools with a greater percentage of students with disabilities may have been more likely to respond to the survey, leading to potential overestimates. However, medical schools are required under federal law to engage in a robust process for determining disabilities and accommodations and documenting these decisions, increasing the accuracy of the data.

The inclusion of individuals with disabilities is an important contribution to diversity in medicine.[4-6] Although an increase in disability was observed, these data do not provide information about the culture that these students experience or their retention in the training and career pipeline. Therefore, further research is needed, as documenting representation is only a first step toward enhancing the inclusion of persons with disabilities in medicine.

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Correction: This article was corrected on February 18, 2020, to fix incorrect percent values in the text and in Table 1.

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Table 2. Accommodations Provided Within Medical Schools, 2019[a]

	No. (%) of Schools[b]
Didactic accommodation	
Testing[c]	84 (100.0)
Facilitated learning[d]	65 (77.4)
Ergonomic[e]	30 (35.7)
Programmatic accommodation[f]	19 (22.9)
Housing[g]	25 (30.9)
Clinical accommodation	
Testing[h]	63 (75.0)
General clinical[i]	57 (68.7)
Modified clinical procedure[j]	31 (36.9)
Hearing related[k]	8 (9.5)
Other	23 (27.7)

[a] Data are reported for 84 schools (88.7%) from which an institutionally designated disability professional reported complete accommodation data.

[b] Values do not sum to 100% because each school provides several different types of accommodation.

[c] Extra time given to complete examinations, use of low distraction or private environments, and testing breaks.

[d] Flexible attendance, note takers, Live Scribe Pen, recorded lectures, textbooks in alternate formats, and text-to-speech and speech-to-text computer programs.

[e] Ergonomic evaluation and equipment.

[f] Exception from program structure, such as decelerated curriculum.

[g] Living accommodations, such as single-room housing, release from housing, assistance or service animal, and reserved parking.

[h] Extra examination time within clinic or an examination given in a reduced-distraction environment.

[i] Clinical placement, decelerated clinical year, release from clinic to attend appointments, and release from overnight call.

[j] Includes assistive technology, use of a scribe, ability to perform procedural skill or clinical competency in simulation laboratory, and intermediary or assistant to facilitate patient examination.

[k] Use of transcriptionist, Communication Access Real-time Translation (CART), sign language interpreter, specialized phone, and specialized pager.

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COMMENT & RESPONSE

Professionalism and the Review of Systems

To the Editor The Viewpoint by Dr Hendrickson and colleagues on review of systems (ROS) and electronic health record (EHR) systems suggested reimbursement incentives might encourage clinicians to complete, or falsely claim to have completed, a full ROS, even when not clinically useful.[1] The authors noted that EHR systems can facilitate false documentation when "a generic phrase asserting that the ROS was conducted is automatically included in physician note templates" or "a single mouse click in a series of required clicks records its completion," and that "a prepopulated attestation statement endorsing that a 10-point ROS was completed may have the unintended effect of introducing dishonesty...." I share this concern and propose that physicians demand greater control of EHR functionalities and eschew functionalities that set them up to fail.

Accurate clinical records facilitate quality patient care and support payment integrity. When designing, selecting, purchasing, or implementing EHR systems, decision-makers should carefully consider which features promote efficient accurate documentation and which features compromise those goals. EHR systems can be set anywhere along the spectrum, from requiring the physician to enter all findings with originally generated text to checking boxes on a blank template or unchecking boxes from a prefilled template. Some EHR functionalities expedite volumizing medical records in undesirable ways. Clinical records are more useful when salient information is not obscured by copious extraneous information, the "note bloat" some EHR functionalities facilitate. The medical profession cannot allow frustration with EHRs to induce a learned helplessness. Physicians must control EHRs, not be controlled by them. Physicians should select beneficial functionalities and reject harmful functionalities that introduce more vulnerability than utility.

Certain autofill or prepopulating features pose such a high risk for inaccuracy that clinicians should elect EHR systems without those features or disable those features on existing systems. Requiring physicians to uncheck examination elements they did not perform, deselect autofilled normal findings, or delete findings carried forward from the previous clinical encounter raises substantial risk that the medical record will misrepresent what occurred in the examination room. When that inaccurate medical record supports an inaccurate reimbursement claim, physicians risk serious legal consequences, including possible federal criminal liability under the False Claims Act.[2]

The Viewpoint noted that physicians' "professionalism and integrity should preclude misrepresentation in the medical record...." Health care professionals rely on accurate medical records to appropriately care for their patients. The medical profession must ensure that EHR features support, not undermine, this goal.

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2. False Claims Act. 31 USC §3729-3733.

In Reply We agree with Dr Taitsman that precompleted checklist defaults embedded within the EHR can be a setup for unintentional inaccuracy or even fraud. However, we would not want a focus on improving the means of accurately capturing compliance with existing Centers for Medicare & Medicaid Services (CMS) requirements to detract from our central point that current CMS requirements in and of themselves provide conflicting and problematic incentives.[1]

Although our review of the literature uncovered no thorough or compelling studies to support the universal use of the ROS, current CMS documentation guidelines require clinicians to document an ROS for all but the lowest levels of billing.[2] Given this requirement, clinicians who deliver complex care but who reasonably determine that a complete ROS is not necessary for that visit have 3 options. First, they can obtain and document a complete ROS to be able to appropriately bill, decreasing the time available for more pressing matters. Second, they can decline to obtain or document the ROS, thereby limiting the ability to bill for the complex care legitimately being provided. Third, they can obtain the history thought to be clinically appropriate while allowing standardized documentation to imply that a more thorough ROS was conducted than actually provided.

As we noted in our Viewpoint,[1] professionalism considerations should preclude the selection of option 3, which could indeed constitute fraud. Taitsman's suggested approach of limiting the use of prechecks and canned language would decrease the likelihood that clinicians would unwittingly or thoughtlessly do so. However, changes in EHR defaults would do nothing to address the fact that being required to select between option 1 and option 2 forces clinicians either to waste their own and patients' limited time or to fail to meet employers' expectations that billing is commensurate with the effort expended. Neither of these options supports effective, evidence-based care, and there is no justification for perpetuating systems that insist clinicians choose between their ability to optimally care for patients and the financial well-being of their practices.

With its Patients Over Paperwork initiative, CMS is taking steps to decrease the weight of this particular counterproductive and non-evidence-based incentive, although current

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