we have entered the fifth era of vaccinology. This class of vaccines doesn't contain viral proteins; rather, these vaccines use mRNA, DNA, or viral vectors that provide instructions to cells on how to make such proteins. The SARS-CoV-2 pandemic will be an important test of whether these new platforms can fulfill their promise of creating safe, effective, and scalable vaccines more quickly than traditional methods. If they pass this test, the next task will be to accomplish equitable, efficient vaccine distribution — which would represent an even greater achievement.

An audio interview with Dr. Offit is available at NEJM.org

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Addressing Workforce Diversity — A Quality-Improvement Framework

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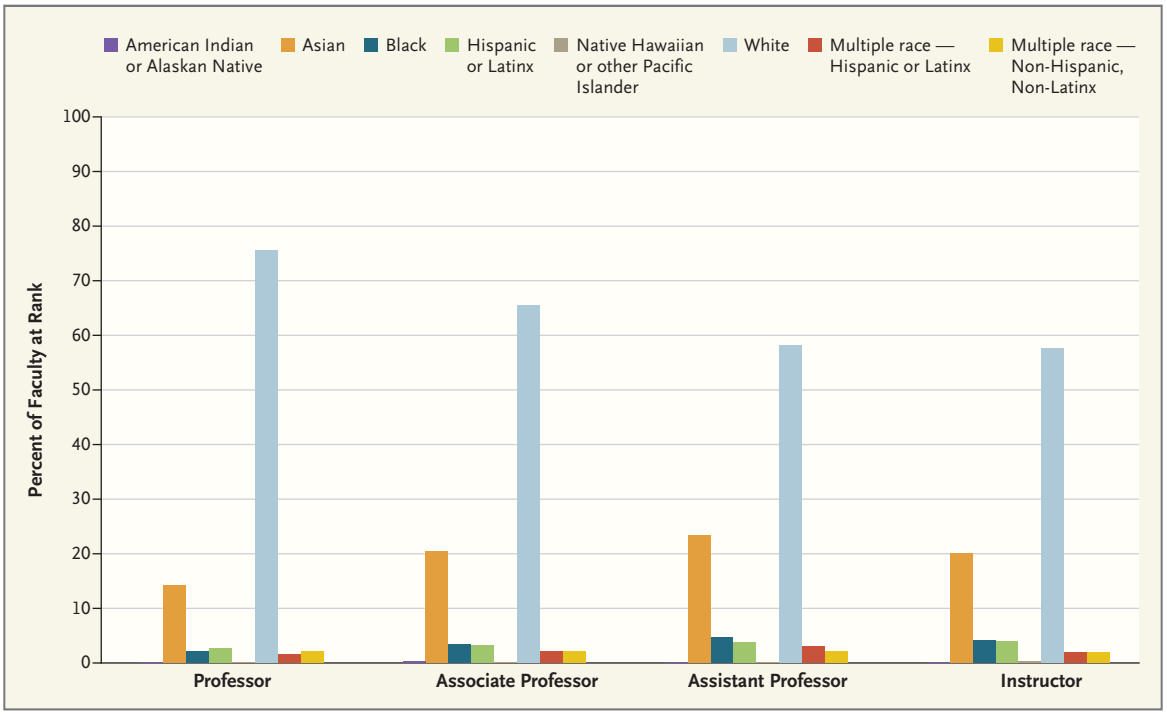
Workforce diversity in medicine, particularly at the highest levels of health care leadership, remains an elusive goal. In the United States, 3.6% of medical school faculty are Black, 3.3% are Hispanic or Latinx, and 0.1% are American Indian or Alaskan Native, according to data from the Association of American Medical Colleges (see graph); those groups comprise 13.4%, 18.5%, and 1.3% of the population, respectively. Female physicians make up more than half of most graduating medical school classes but account for only 5.5% of full professors and 26% of department chairs. Although increased attention is being paid to issues related to workforce diversity, equal representation in health care is hampered by organizational actions and inaction, structural racism, and unequal opportunity throughout the education continuum.

Lack of workforce diversity has detrimental effects on patient outcomes, access to care, and patient trust, as well as on workplace experiences and employee retention. A substantial number of White medical students and residents hold biased views about race-based differences in pain perception that affect their treatment recommendations, for example.[1] Patient race and sex influence the way in which physicians treat chest pain.[2]

The evolution of the modern quality movement represents a useful parallel for achieving a complicated goal like equal representation in health care. The early years of the quality movement were focused on defining the problem. *To Err Is Human*, the 1999 landmark report from the Institute of Medicine (IOM), created a moral imperative for enhancing patient safety by documenting that as many as 98,000 U.S. deaths each year were caused by medical errors in hospitals. That same year, the National Quality Forum (NQF) was founded; the organization later established definitions for "never events" (adverse events that should never occur) and "safe practices." In 2001, the IOM published *Crossing the Quality Chasm*, which outlined a systematic framework for measuring quality (based on structure, process, and outcomes) and specified six goals of quality improvement.[3]

The next stage of the quality movement focused on measurement, with federal agencies guiding the development of quality measures and the NQF establishing a performance-measurement endorsement process and national performance measures. Developing and defining measures facilitated reporting and transparency efforts, such as the Hospital Compare website from the Centers for Medicare and Medicaid Services (CMS) and the NQF's voluntary consensus standards for hospital-based measurement. Implementation of these measurement tools put pressure on institutions to outperform their peers.



U.S. Medical School Faculty, by Rank and Race or Ethnic Group.

Data are from the Association of American Medical Colleges Faculty Roster and are as of December 31, 2020. The "Multiple Race — Hispanic or Latinx" category includes all faculty who are reported as Hispanic or Latinx and at least one other race or ethnic group. The "Multiple Race — Non-Hispanic, Non-Latinx" category includes all faculty who are reported as more than one race or ethnic group but are not reported as Hispanic or Latinx.

Today, in all health care systems, measures of quality and safety — such as Hospital Consumer Assessment of Healthcare Providers and Systems data and rates of hospital-acquired infections — are presented to health care leadership and used to evaluate leaders. Ensuring high quality is not only a moral imperative, it is now also a business imperative. Organizations have responded by implementing systematic quality-measurement and process-improvement efforts.

Key principles emerge from this journey for achieving goals related to workforce diversity. Although the moral imperative for diversity has become clearer, the next stage involves tying rigorous measurement and outcomes to incentives that move relevant actors toward action.

As a first step, we believe that disaggregated data on workforce diversity and the experience of underrepresented and historically marginalized faculty should be regularly collected by organizations and reported to executives and board members. Organizational leaders should then make the pursuit of diversity a shared responsibility that extends down the chain of command. A similar call for defined executive responsibility related to patient safety was included in *Crossing the Quality Chasm*.[3] Today, data on falls, health care–associated infections, and errors are reported, discussed, and acted on at the highest levels of health system leadership, with responsibility for quality of care flowing to nursing, physician, administrative, and other leaders at all levels. Similarly, metrics related to workforce composition and to retention, promotion, and satisfaction of underrepresented and historically marginalized trainees, faculty, technical staff, and administrative leaders should be regularly reviewed by leaders, tracked over time, compared among groups, and discussed at the highest levels.

These data should be used to catalyze action. Workforce-diversity measures, including measures related to structure, process, and outcomes, should be tied to executive evaluation and compensation.

Structural measures could include the existence of an executive-level position devoted to diversity, equity, and inclusion, with funding and staff to support these efforts; the presence of programs to promote career satisfaction and ensure support for underrepresented and historically marginalized faculty; and the

availability of pipeline or recruitment programs for underrepresented health care professionals.

Process measures could include the number and type of groups to which available positions are publicized, the number of minority and female candidates interviewed for each position (particularly leadership positions), dedication of space for workforce-diversity metrics in annual reports, and actions taken to address reports of problems with organizational culture or climate or to rectify inequities identified in reviews of internal data.

Outcome measures might include statistics related to faculty diversity; the gender, racial, and ethnic makeup of committees in charge of funding- and policy-related decisions; student and trainee reports on organizational culture and climate; faculty promotion and retention; pay equity; and job satisfaction. This approach is increasingly being used in the technology industry, such as at Microsoft, where the chief executive's bonuses are partially tied to diversity goals. Whether such incentives improve workforce diversity and culture hasn't been determined.

Second, workforce-diversity data should be publicly reported. The publication of data on hospital-acquired infections catalyzed increased attention to infection metrics, and the decision by *U.S. News and World Report* to give hospitals credit in its ranking system for publicly reporting data on cardiovascular and thoracic surgery outcomes spurred increased visibility of these outcomes. In the same way, public attention to diversity data could be a powerful catalyst for action. The Lown Institute's recent national ranking of hospitals based on civic leadership, value of care, and patient outcomes stirred discussion because of its emphasis on care for the community and its stark contrast with the *U.S. News and World Report* rankings. No such ranking system exists for issues related to workforce diversity, although there are opportunities to establish standalone listings or to integrate this dimension into current ranking methods. Although legal obstacles around reporting of workforce diversity data are unclear — particularly if this reporting attracts attention to institutions with low diversity — similar, if not more detailed, information is already openly available for many public hospital systems whose state laws mandate reporting of all state employee salaries.

Finally, individual contributions to diversity-related work should be compensated and valued in the same way as research or quality-improvement efforts are. Too often, membership on committees devoted to diversity or mentorship of underrepresented trainees or faculty members is voluntary and duties fall on the same people. If enhancing workforce diversity is an institutional priority, it shouldn't depend on the goodwill of individual contributors, just as achievement of quality aims doesn't rely on volunteers. Scholarship, service, and mentorship that facilitate workforce diversity should be compensated in line with other types of work related to institutional priorities, and activities that support diversity should be part of a path to academic advancement. A decade ago, clinicians sought opportunities for advancement related to quality-improvement work[4]; it's now time for a career path that explicitly rewards diversity-related efforts.

The quality movement has faced barriers to scaling up initiatives, which should be considered as this framework is applied to diversity-related efforts. These barriers have included health care organizations' primary focus on costs and revenue at the expense of quality, the predominance of volume-based payment in the United States, and the reluctance of leaders to fully embrace new outcomes-based payment models.[5] These issues provide important lessons about the need for alignment of incentives and for a true leadership commitment — from the national to the local level — to catalyze concrete action toward new goals. In particular, to the extent that efforts to enhance workforce diversity may run counter to other strong financial incentives faced by organizations, as has sometimes occurred with quality-improvement efforts, these trade-offs will need to be anticipated and addressed.

Twenty years ago, the IOM called the U.S. medical community to action to prevent deaths related to low-quality care.[3] Today's challenge centers on ensuring that our health care workforce reflects our society, for the benefit of patients and clinicians alike. The experience of the quality movement suggests that progressing from exhortation to intentional action will require measurement, reporting, and adequate incentives. It will take discipline, courage, and cross-institutional commitment that may initially feel uncomfortable, but it will ultimately improve care delivery and strengthen our workforce.

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The Good Fit — Why Medical Applicants' Personal Statements Are Anything but Personal

Michelle H. Silver, M.D.

Back when I was applying to medical school, there was a moment when I seriously questioned that decision. I was walking to my undergraduate research lab when I received an email from a physician I was shadowing. It contained feedback about my personal statement: "While someone who knows you well can appreciate your openness," it read, "I don't think it is a good idea to share this with an admissions committee. They won't think you're fit to enter into the medical field." I sent the essay to more people, only to receive the same reaction. I felt defeated.

Like many of my pre-med colleagues, I agonized over what to write in my personal statement. Do I discuss feeling inspired by my family of doctors? No, too privileged. How about my passion for helping others? No, too generic. None of my ideas felt sufficiently personal — until I wrote the truth: I wanted to be a healer because of my past suffering from mental illness. The years I had spent coming to understand and recovering from my eating disorder had empowered me to apply those skills to my future patients. This experience, I believed, would make me an empathetic doctor, capable of taking a holistic approach to patients' wellness. My passion grew from a personal place, and my openness would establish how much I had healed. What better vehicle for expressing this truth than my personal statement for medical school admission? But my trusted advisors feared that my honesty would convince evaluators I was "not a fit."

The irony was glaring: mental illness is even more prevalent among medical professionals and trainees than in the general population.[1] But it is so stigmatized that despite its disproportionate prevalence in the field I was about to enter, I had to pretend I'd never faced it. My personal statement was just the first of many experiences that have highlighted this discordance between self-care and patient care. Nonetheless, I took the feedback as any good pre-med would and produced a watered-down essay I knew the committee would enjoy. It worked, and I was accepted to multiple schools.

A few years later, I found myself facing residency applications and another dreaded personal statement. This time, I was advised to aim for the "normal 80%" of applicants — rather than the 10% with exceptional insights or the 10% with red flags, who stand out. The storyteller in me, however, saw an opportunity to aspire to the exceptional 10% by delving into a formidable patient encounter. I wrote about the first critically ill patient I had cared for as a medical student and the disconnect I felt between the logistic task at hand and my visceral discomfort as I watched his family come to terms with his imminent death.

Walking into my mentor's office to review my draft, I was confident in my ability to capture the raw moment. Instead, I heard a familiar line: "While someone who knows you well can appreciate your openness . . . ." He explained that by describing an experience in which I had cried during routine medical practice, I was setting myself up to look unfit for the role — that I appeared "too emotional" to handle the day-to-day work of a resident, and though he knew I was an excellent candidate, he wanted to ensure that I "presented myself the right way." The personal