

There's no biological definition of race—yet race-based assumptions are so baked into medical training that would-be doctors have to learn them to pass their national board exams. Brown med students are working to change that.

BY TIM MURPHY '91

PORTRAITS BY JARED LEEDS

Race

Consider the strange case of the spirometer, the machine used to measure lung capacity. Although versions existed as far back as the Roman age, it was variations invented in the mid-nineteenth century that were used to solidify the notion, dating back at least to slave owner Thomas Jefferson's writings, that black slaves had poorer lung capacity than white citizens and hence were in need of hard physical labor to tone up their pulmonary capacity. A large study done near the

"There's an enormous body of literature discussing how race is politically and legally created," says Jenny Tsai '14, '19 MD, citing the Jim Crow era "one-drop rule."



end of the Civil War came to the same conclusion.

Since then, of course, most notions of inherent physical racial differences have been debunked as well, racist. The landmark 1990s mapping of the entire human genome, completed in 2003, effectively proved that there were no fundamental genetic differences among races—that, beneath our points of origin or skin tones, we are all essentially the same. Moreover, in recent decades, the very meaning of “race” in science and medicine has been exposed as vague and arbitrary, a finite number of boxes one can check that do not reflect the full complexity of someone’s background. Think about bi- or multiracial people, or about someone whose black mother is a sixth-generation American whose ancestors include white people and Native Americans but whose black father was born in Ghana.

Despite all that, the idea of inherent racial differences in lung function persists. Contemporary, computerized spirometers actually ask users to log in race as well as age, height, and other factors, then compare results to a racially “corrected” normal—which is 10 to 15 percent lower for patients that providers identify as black, and 4 and 6 percent for those identified as Asian. Yet of the many studies in recent decades finding whites to have stronger lung capacity than other races, most did not account for environmental factors—such as the fact that black Americans, because of racism, segregation, and poverty, are more likely to live in highly polluted areas. And since many people who identify as black or Asian have other races in their ancestry, exactly how are medical professionals deciding how to program those instruments?

Who would have thought that a banal diagnostic machine would be so charged with historical biases? “I had no idea that studying the whole edifice of spirometry would take me back to Thomas Jefferson,” says Lundy Braun, Brown professor of medical science and Africana studies and author of 2014’s *Breathing Race into the Machine: The Surprising Career of the Spirometer from Plantation to Genetics*. “I’m certainly not the first person to see how racism shapes medicine.”

LIFE-THREATENING ASSUMPTIONS

With Braun’s book as one inspiration, activists at the Warren Alpert Medical School have been working to reframe the national use of racial markers in medical diagnosis and treatment. While Alpert is far from the only med school to identify the problem, says Paul George ’01, ’05 MD, associate dean for medical education, “Brown is definitely the leader on this.” The stu-

dent-led effort now serves as a model for other schools in its interrogation of all the ways that race, and racism, have woven themselves—sometimes with good intentions—into medical education and practice.

In education, this can mean the routine use of race markers in study questions (“A 37-year-old Hispanic man presents with chest pain....”) without a socioeconomic context. Or it can mean teaching long-standing racial differences in health, such as higher rates of asthma among children of color, without really digging down into the how and why—such as the fact that black and Latino children are more likely to grow up not only in high-pollution areas but in older, run-down housing that may have more asthma triggers, like mold.

In the treatment setting, it can often mean jumping to conclusions based on racial patterns. For example, because sarcoidosis, which often involves granulomas (tissue masses) found in the lungs, is more common among black women, providers might be inclined to guess that a particular black woman’s symptoms signal sarcoidosis (as opposed to, perhaps, asthma or raised scars called keloids). And the dangerous impact of this might be to treat patients incorrectly,

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to minimize treatment—or to withhold treatment entirely. One particularly pernicious longstanding racial assumption is that black people have higher pain thresholds than whites, which has meant, ample documentation shows, that historically they have been undertreated for pain.

But it’s no small task to weed such assumptions out of the U.S. medical academy. Racial markers are still routinely used on the exams administered by the all-important United States Medical Licensing Examination (USMLE), which med students take in phases throughout their education prior to applying for a medical license. On the exams, “stems,” or question tee-ups, begin with, for example, “A 42-year-old African American woman presents with shortness of breath and a persistent cough...” but don’t include key information such as the woman’s class, where she lives, history of depression or anxiety, or other factors that could shed light on her condition.

“It’s harmful to perpetuate the idea that race is



Joseph Diaz '96 MD, '09 MPH, chairs Alpert’s Race in Medicine Task Force.

biological,” says Radhika Rajan ’20 MD, the current Diversity Fellow in Warren Alpert Medical School’s Office of Diversity and Multicultural Affairs, “but it’s still everywhere in medical education—in our curriculum, in our algorithms, and in a lot of our lectures. If it’s about sickle-cell disease it’s always a black patient, and if it’s cystic fibrosis, it’s usually a white patient.” Yet sickle-cell also affects some white people from southern Europe and the Middle East, and although cystic fibrosis is far more common in white people, it still affects one in 15,000-20,000 African Americans, according to the Cystic Fibrosis Foundation.

Jenny Tsai ’14, ’19 MD, who has been active in efforts toward a more accurate and nuanced way of looking at race at Alpert, cites two examples from a paper in the journal *Pediatrics*. In one, a young black girl had suffered from a series of lung infections for years. Then a doctor walked by her (racially unmarked) X-ray and said, “Who’s the kid with cystic fibrosis?” Nobody had thought to pursue that because the disease is associated mostly with white people. In the other, a teenage black male came into an E.R. in southern California with a headache. A tox screen came up positive. “He’s probably in a gang,” suggested one doctor dismissively. Then a scan showed a large cyst that was endangering his brain—literally squashing it against his

skull—“and yes, he had smoked a joint before he came to the hospital,” writes the paper’s author, Richard S. Garcia of Burbank, California.

Despite the complexities of real life, medical exams still reward students who think in black and white terms. “A lot of students come to med school” having learned that race is essentially a social construct, defined more by law and culture than biology, Rajan says, “but when you’re taking your medical board exams, you can’t just protest these tropes and not answer the questions.”

CURRICULAR CHANGE AT ALPERT

As far back as 1999, according to Braun, Alpert students began asking why they were being taught that African Americans had higher rates of heart disease without the instructors’ delving into issues such as racism, segregation, and poverty. In recent decades, a large body of research has probed links between these factors and a variety of poorer health outcomes in people of color.

In 2014, a group of med students informally started taking pictures of every lecture slide they encountered that brought up race. One thing they noticed was how arbitrary racial categorizations seemed to be: among slides dealing with higher rates of metabolic syndrome

(heart disease, stroke, diabetes) among blacks, one slide would say “African Americans,” another “black,” another “African,” another “sub-Saharan.”

Says Tsai, who was among the students who started recording the slides, “Medicine is sloppy when it comes to racial categories. Is a Nigerian person really the same as an African American person?”

The students—Tsai, George, Laura Ucić '13, '17 MD, Nell Baldwin '17 MD, and Chris Hasslinger '17 MD—not only assembled their findings into a paper published in 2016 in *Academic Medicine* but presented them to Alpert’s curricular committee. Out of that came a Race in Medicine Task Force to look more closely at the Brown medical curriculum. Currently chaired by Joseph Diaz '96 MD, '09 MPH, Associate Dean of Alpert’s Office for Diversity and Multicultural Affairs (ODMA), the task force is now a subcommittee of the Committee on Diversity and Inclusive Teaching and Learning. The med school, along with the rest of Brown, developed a Diversity and Inclusion Action Plan, then hired its first dedicated ODMA Diversity Fellow—someone to work on these issues full-time and keep driving them forward in the Brown/Rhode Island medical community.

Since then, George says, Alpert has eliminated race from multiple choice questions on internal exams. “Whenever race is used now in lecture slides or small-group discussions, we look to make sure that there is appropriate epidemiology backing that up,

“We can collect data on race, income, and education, but several studies show that there are racial disparities in health even when income levels are the same.”

or that it’s used appropriately, as a proxy for other sociological factors that affect health, such as access to healthy housing, food, places to exercise, and transportation,” he says.

Required first- and second-year courses now include segments on race and medicine that cover race as a social/legal construct as well as the idea of implicit bias (racial judgments we make unconsciously, such as the idea that black people need less pain management). “We have somewhere between 15 and 20 hours on the topic in classes now since 2015,” says George, “and we’re hoping to do more faculty development on the use of race with our residents and attending physicians, because [that racial training] can sometimes go out the window once you’re on the wards.”

Tsai is especially happy about the implicit bias piece. “As providers, we make really deep assumptions about patients [based on their perceived race], about their ability to comply with medication,” she says. “Or their parenting. Or we assume that when they complain about something like pain, they’re faking it for attention.”

Other gains at Brown include the formation of a student group, ARM (Against Racism in Medicine), to put all such work under one umbrella and prevent redundancy. Then there’s the Brown Advocates for Social Change and Equity (BASCE) program, a year-long fellowship for students, residents, and faculty that provides education on race across the Brown medical community, including in the clinical setting of Alpert’s eight local partner hospitals.

DIVERSIFYING THE PIPELINE

“It’s truly noteworthy and commendable that students in our medical school sought to confront this national issue head-on,” says Jack Elias, MD, Alpert’s senior vice president for health affairs and dean of medicine and biological sciences. Elias says the medical school is also pushing to diversify its faculty. Currently, according to figures provided by Diaz, Alpert doesn’t exceed about 6.3 percent when it comes to faculty members from historically underrepresented groups—compared to about a 9.2 percent average at med schools nationwide, based on data from the Association of American Medical Colleges (AAMC).

Alpert is working hard to address the deficit, says Elias, pointing to hires between 2014 and 2019 for the basic science faculty, 65 percent of whom have been people from groups historically underrepresented in medicine.

Elias adds that the medical school is also looking for ways to increase diversity in Brown-affiliated private practices and in the clinical and academic medical faculty, whom Elias says are “primarily hired by the affiliated teaching hospitals and faculty practice foundations,” not Brown. “We created a Brown Council for Diversity in Medicine with membership from the clinical departments/foundations and both affiliated health systems, Lifespan and Care New England,” Elias reports. Brown Physicians, Inc., a group of over 500 Brown-affiliated physicians in private practice, recently created a diversity council, with recruiting a more diverse faculty a top priority. “In medicine, there’s a real and literally life-changing impact in creating a more diverse workforce,” Elias points out. “Research has shown that people from minority groups have better health outcomes



Eloho Akpovi '21 MD asks, “How do we correct for the historical nature of what we see now in society?”

Associate Dean for Medical Education Paul George '01, '05 MD, says Brown's student-led interrogation of race in medical education is serving as a model for other schools.



when their physician is also from a minority group.”

In 2018, Alpert welcomed its most diverse incoming class ever, with 26 percent of students identifying as coming from a historically underrepresented group, making for a total of 23 percent of students from such groups at Alpert. (For context, according to the AAMC, only 6 percent of 2015 med school graduates nationally were black and only 5 percent were Hispanic, compared to whites at 59 percent and Asians at 20 percent. In that same time period, blacks and Hispanics also had lower rates of acceptance to med schools.)

But Tsai remembers how it was “very rare that we had a person of color or a woman of color giving the lectures, which definitely feels related” to the historical failure to more aggressively question racial markers on slides.

Alpert is not alone. Says George, “Just about every medical school in the country is looking at not having enough diversity in its faculty, which needs to be tackled in multiple ways. We need to get kids from all backgrounds interested in medicine from an early age and promote a pipeline [to med school] program, and then we need to be making sure we’re taking care of students once they’re in med schools, with mentor programs, leadership opportunities”—and financial support.

“At Brown,” he continues, “we need to put more competitive packages together to recruit more students who end up doing their residency here and are more apt to stay for life as attending physicians and faculty members.” Some of this already happens, he notes, thanks to Brown’s Program in Liberal Medical Education, which accepts students into the undergrad college and med school simultaneously, and its Early Identification Program, which pre-accepts for Alpert students at Providence College, Rhode Island College, University of Rhode Island, and Tougaloo College (a historically black school in Mississippi), contingent on good college performance and graduation.

SLOW NATIONAL CHANGE

Med schools including Mt. Sinai, Yale, Columbia, and the universities of Toronto, California–San Francisco, Connecticut, and Massachusetts have all been in touch about Alpert’s groundbreaking efforts, says George. But no matter how many med schools are beginning to recontextualize how race is used in classes, “There is no urgent or visible change” from the National Board of Medical Examiners (NBME), says Tsai of the organization that cosponsors the USMLE.

“In fact,” she says, “the new NBME self-assess-

ment, free questions that mirror board exam questions that are posted on the NBME site for test-takers to use as practice, included an explicit direction to utilize ‘ethnicity’—which they do not define, and in fact conflate within the question—in clinical decision making.”

For its part, the NBME and the Federation of State Medical Boards, the co-sponsors of USMLE, referred BAM to its lengthy online-comments reply to a statnews.com piece by Tsai published in July 2018. The reply read, in part: “The USMLE program treats race as a social construct not linked to biology or susceptibility to disease. This is similarly true of someone’s ethnicity or heritage. If these social constructs are to be considered, they should be on the basis of self-report of the individual, not the assumption of a healthcare provider. Alternatively, ancestry, if known, may be biologically important, and thus may be relevant to factors relating to health and disease. This approach affirms our belief that each patient should be treated as an individual.”

The reply also noted: “The USMLE is in the process of reviewing our entire item pool to eliminate questions and cases which promote biases or stereotypes. ... we expect that full review will take some time.”

THE WHOLE PATIENT

Should race be scrubbed out of medical education completely? That’s not what’s being called for—just an end to using race as a shortcut to making medical assumptions and, sometimes, diagnoses.

“We don’t have a good way of being able to tell the whole story” of a patient, says Eloho Akpovi ’21 MD, one of the BASCE fellows who’s currently doing her medical clerkship at several health sites in the Providence area. “We can collect data on race, income, and education, but several studies show that there are racial disparities in health even when income levels are the same.” (Or, as Braun puts it, “Environmental exposures in your youth could have health outcomes that affect you later in life even if you live in a \$6 million mansion.”)

So should doctors start to see themselves as activists? Should they look beyond their prescription-pad silos and become players in addressing larger, systemic factors that influence health outcomes, such as poverty, racism, segregation, and discrimination?

“I strongly believe that,” says Akpovi, adding that health providers should be trained from the get-go to understand how their patients’ health connects to other aspects of their lives—and how to make the appropriate referrals outside of medicine.

“You can learn all this stuff [about racial disparities] in med school, but once you jump into the fast-paced nature of being a physician, everything goes out the window and you can forget to make that referral. But if you learn it in your first year in school, it becomes second nature instead of an afterthought. Just like ordering that extra lab, we should order referrals for housing, transportation, and food insecurity, because we’re able to see the value of social determinants...in treating the whole person, rather than just the illness.”

“I applaud paying attention to these things in education because it will result in better health care for various minority groups,” says Gus White ’57, author

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of *Seeing Patients: A Surgeon’s Story of Race and Medical Bias*. White was the first black med student at Stanford and the first black surgical resident at Yale. He is a Harvard Medical School professor who is one of the nation’s preeminent experts on the biomechanics of the spine—and who has also been deeply concerned with race-based disparities in patient care. But it’s not just race, White points out, mentioning LGBTQ patients and those from other marginalized groups. “The mechanisms vary and they’re different” from group to group, White says, “but we have a responsibility as caregivers to recognize them and try to eliminate them.” The negative impact of bias in medicine, he says, is “profoundly inhumane.”

Tsai suggests that doctors and other caregivers think of race as something that affects patients’ health, not something that defines it. “It’s powerful to use race to document inequity,” she says. “Instead of thinking that Disease X is four times as common in black patients because of a difference in their metabolism, think about how black men who present to the E.R. with a broken bone are half as likely to receive adequate pain control as white patients. Those two ideas have extremely different implications. Because if something is ‘genetic,’ then your only solution is technological or pharmaceutical advancements like gene therapy or surgeries. On the other hand, if you see race as a risk marker, then you have to think about things like racism, policy, poverty, segregation. And suddenly the solutions you can imagine become much more abundant.”