

CODE CLEAR?

Now that women constitute a majority of first-year students, can U.S. medical schools stop treating the profession's historical gender imbalance like a mass-casualty incident?

(Spoiler alert: The answer is a resounding *no*. Here's why.)

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The notion — expressed in the form of riddle — was so preposterous that it sustained an entire half-hour episode of the trailblazing 1970s sitcom *All in the Family*.

A father and son are in a horrible car crash. The father dies instantly. The son, badly injured, is rushed to the hospital. There, the surgeon walks into the operating room, takes one look at the patient, and says: "I can't operate on this boy. He's my son." How is that possible?

The answer eluded all of the show's characters — including know-it-all protagonist Archie Bunker — until the episode's closing moments, when Archie's long-suffering wife, Edith, sheepishly solved the puzzle: *The surgeon was the boy's mother*.

Forty-six years have passed since that oft-discussed episode — "Gloria and the Riddle" — shone a searing light on the depth of gender bias in America.

Today, one might assume that the answer to the riddle would be obvious. After all, high-profile female physicians

are no longer fodder for *Ripley's Believe It or Not!* Gone are the days when little girls interested in medical careers had a not-so-wide "variety" of options: Registered Nurse, Licensed Practical Nurse, or Certified Nursing Assistant.

Indeed, last fall, for the first time ever, U.S. medical schools enrolled more women than men. According to the Association of American Medical Colleges (AAMC), 50.7 percent of 21,338 students who matriculated in 2017 were female (Glicksman 2017).

That milestone highlights an undeniable — and undeniably positive — trend spanning at least five decades. Fifty years earlier, in 1967, 9.8 percent of U.S. medical school matriculants were female. The corresponding figures in 1977, 1987, 1997, and 2007 were 25.5 percent, 36.2 percent, 43.3 percent, and 48.3 percent, respectively (AAMC *Data Book* 2011 28-31).

Perhaps the time has come for the medical community to remove "eliminate gender discrimination" from its to-do list. Mission accomplished, right?

Not so fast.

The path from first-year medical student to practicing physician is long — usually 9 to 11 years, depending on residencies and fellowships — and often circuitous. Just as applicants don't necessarily win acceptance, and just as accepted applicants don't necessarily matriculate, first-year medical students don't necessarily graduate — much less become licensed physicians.

Although the graduation rate for all medical students is extremely high — more than 96 percent complete their degrees within eight years — women have a somewhat higher attrition rate than men (“Medical Education — Attrition in Medical School”).

It's worth noting, however, that in contrast to men, women almost never get derailed by academic factors, such as insufficient scholastic preparation, an inability to retain large amounts of complex information, or a lack of organization or self-discipline.

Women who withdraw from medical school typically do so for *nonacademic* reasons. Some turn their attention, at least temporarily, to having and/or raising children. Some accompany spouses or partners who are relocating for professional opportunities. Some leave medicine for research careers in related (or unrelated) fields.

For better or worse, the attrition disparity continues beyond graduation, with the stop-out phenomenon peaking for women in their early- to mid-30s.

A survey of female physicians who attended Yale Medical School between 1922 and 1999 found that 90 percent of respondents either had children or were planning to have children — and that the perceived need for greater flexibility had grown over time, triggering incrementally longer maternity leaves (Potee 74: 911-919).

A study of southern California physicians who were parents revealed that 85 percent of female physicians had

made career changes because of their children, compared with 35 percent of male physicians (Warde & Gelberg 1996 11: 729–735). The most common change: a reduction in work hours. Between 1976 and 2008, female physicians worked, on average, about 45 hours per week — 15 percent to 20 percent less than their male counterparts (Staiger et al. 303: 747–753.)

There was a time, of course, when many medical schools used such figures to justify the rejection of female applicants.

Stanford University School of Medicine Professor Donald

A. Barr, M.D., Ph.D., described the practice — and his still-jarring introduction to it — in a commentary published last year in the *Mayo Clinic Proceedings* (Barr 2017 855).

“In 1969, as the first medical student to be a member of my medical school's admission committee, I witnessed a level of gender discrimination I had never even imagined,” Barr wrote.

“In considering the application of a female student, a senior member of our committee (and a nationally known clinical scholar) said, ‘She'll probably have kids and drop out of medicine, so let's not waste the spot on her.’

“Even though her grades, test scores, and documented extracurricular

activities were noticeably more impressive than those of the male candidate we admitted immediately after her, we turned down her application for admission.”

Barr pointed out that, at the time, such thinking was hardly uncommon. He cited a 1975 analysis in the *Journal of Medical Education*: “Medical education for women: how good an investment?” Perhaps the only thing more unsettling than the study's title was its premise — that a

WHERE THE BOYS (AND GIRLS) ARE

Medical schools with the highest concentrations of male and female enrollees *



Top 10 Female

Institution	Percentage
1. CUNY	65.7
2. Quinnipiac-Netter	64.5
3. UC Davis	64.0
4. (Tie) George Washington	62.3
Missouri Kansas City	62.3
5. Arizona Phoenix	60.0
6. Pittsburgh	59.9
7. Maryland	59.4
8. LSU Shreveport	59.1
9. UC San Francisco	59.0
10. Miami Miller	58.3

Top 10 Male

Institution	Percentage
1. Tennessee	62.9
2. St. Louis	61.6
3. South Dakota Sanford	58.6
4. Indiana	57.8
5. Eastern Virginia	57.6
6. Creighton	57.4
7. Nebraska	56.8
8. Loma Linda	56.5
9. East Tennessee-Quillen	56.3
10. (Tie) UT Rio Grande Valley	56.0
Utah	56.0

* Based on 2017-2018 matriculation figures compiled by the AAMC

BY THE NUMBERS

34

Percentage of practicing U.S. physicians who are female

200

Approximate number of female physicians in the United States in 1860

326,902

Number of female physicians currently practicing in the United States

41

Percentage of physicians who are women in Massachusetts, the state with the highest concentration of female doctors (not counting the District of Columbia, where the figure is 46 percent)

23

Percentage of physicians who are women in Idaho, the state with the lowest concentration

105,000

Disparity, in dollars, between the average annual earnings of male and female doctors, respectively

32,000

Number of lives that would be saved annually if male physicians performed at the same level as their female counterparts, according to a 2016 study by the Harvard School of Public Health

Sources: U.S. Census Bureau, Kaiser Family Foundation, American Medical Association, *The Washington Post*

“reluctance to train women for medical careers has been justified by the failure of women to use their education” (Jussim & Muller 1975 571-580).

Fortunately, as the AAMC’s most recent matriculation figures suggest, that school of thought has disappeared or at least receded into the proverbial shadows.

Accordingly, recruiting and retaining female medical students is not the biggest challenge facing those of us who long to see the U.S. medical profession reflect the nation’s overall population — in terms of not only gender but also race and ethnicity.

The more formidable task now is twofold: encouraging female medical school graduates to take full advantage of their credentials in the practice of medicine and ensuring that they have every opportunity to enter, and rise through, the hierarchy of medical education.

The reasons should be obvious: With the United States facing a critical doctor shortage — the shortfall may well exceed 159,000 by 2025 — women and other historically underrepresented populations represent an essential source of future physicians (Young et al. 2015 8). Simply put, they could be a lifesaver — quite literally.

To that end, most of us would stipulate that female faculty members, department chairs, and medical school deans are ideally positioned to recruit, mentor, and simply *inspire* future generations of female practitioners.

Atul Grover, M.D., Ph.D., executive vice president of the AAMC, made a compelling case for greater gender diversity in a recent guest column in *The Wall Street Journal*.

“Increasing the number of women in faculty and leadership positions at medical schools will be critical to providing role models for junior faculty and a diverse, well-balanced leadership team,” Grover wrote. “Despite modest progress, much work remains as the academic medicine community continues to work toward greater diversity among students, physicians, faculty, and researchers (Grover 2015).

The numbers tell the tale. Although women now constitute a majority of first-year medical students, they make up just 34 percent of “professionally active physicians,” according to the Kaiser Family Foundation (“State Health Facts” 2017).

Moreover, although women occupy nearly 41 percent of full-time faculty positions in U.S. medical schools, they are clustered on the lowest rung of the faculty ladder. Women make up 58 percent of instructors but only 46 percent of assistant professors, 37 of associate professors, and 22 percent of full professors (*AAMC Faculty Roster* 2018).

The AAMC reports that female representation is even more anemic at the administrative level — with women accounting for just 17 percent of deans and department chairs (“U.S. Medical School Dean Trends by Dean Type and Sex” 2018).

The medical community is fond of talking about the “pipeline” — i.e., the flow of qualified individuals into the field. In keeping with that metaphor, one could argue that although the talent pool, or reservoir, is at a high-water mark, the pipeline to the ranks of academic leadership remains leakier, statistically speaking, than New York City’s 85-mile-long Delaware Aqueduct — and it has been hemorrhaging an estimated 20 million gallons of water a day (out of about 600 million) for decades.

Seven distinguished researchers explored the problem in a just-published study of academic promotion at Tufts University: “Where is the leak in the pipeline? Investigating Gender Differences in Academic Promotion at an Academic Medical Centre.” (Paulus et al, 5: 125–128).

The researchers endorsed what has become the conventional wisdom — that women leave academic medicine at rates higher than men because they tend to bear a disproportionate share of family responsibilities. However, the researchers noted, premature departures from the academy “do not completely account for observed gender differences in academic rank.”

Other possibilities? The researchers pointed out, among other things, that female academics appear to shoulder a disproportionate share of teaching and patient-care responsibilities — “activities not typically associated with academic productivity.” They also identified gender differences in how faculty interact with division leadership and mentors and in how they “navigate the promotion process.”

For example, only 32 percent of the female faculty members who participated in the Tufts study had requested consideration for promotion, compared with 49 percent of males — a disparity that held up even when the researchers adjusted the data for the amount of time that had passed since the respondents completed their degrees.

Among those who had yet to request promotion consideration, 69 percent of women reported that they did not think an academic promotion would benefit them — more than twice the proportion of men (32 percent) who held such a view. “While possible sources of gender differences in perceived value of promotion were not explored in our survey, they are likely the result of complex interactions between culture, academic environment, and psychological factors, such as the ‘confidence gap’ between men and women,” the researchers noted.

Women on the Tufts faculty also were more likely than men to report that they had received no encouragement to request a promotion (52 percent vs. 29 percent) and that they felt they had not met the “minimum time requirement” for promotion (60 percent vs. 36 percent).

The researchers offered several recommendations: Require an annual promotion review with each faculty member; expand division chiefs’ performance reviews to include advancement data for the faculty members they oversee; spell out promotion criteria at the time of hire; and keep the promotion process top of mind through regularly scheduled presentations and the assignment of faculty mentors.

The researchers’ conclusion: “Reducing gender disparities in leadership has important implications for the success of both the individual and the institution, and the responsibility to fix the leaking pipeline must be shared by all, with consideration of how organizational structures and culture can be adapted to maximize gender equality.”

Edith Bunker no doubt would agree. And who knows? Maybe, by now, even *Archie* has come around.

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