

heart failure, such as the use of angiotensin-receptor blockers,^{12,13} might eventually have a clinical effect. We should also not neglect preventive measures with proven efficacy (such as antihypertensive therapy),¹⁴ given that there is no effective cure for aging. The prevention of a first or recurrent myocardial infarction is likely to be the best means we have to keep the ejection fraction “preserved.” However, the development of specific, effective management approaches for diastolic heart failure must also become a high priority.

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Women in Academic Medicine — Progress and Challenges

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In 1960, only about 5 percent of medical students in the United States were women; today, the numbers of women and men in medical school are approximately equal. This apparent success story, however, is tempered by observations that women who enter academic medicine have been less likely than men to be promoted or to serve in leadership positions.¹ As of 2005, only 15 percent of full professors and 11 percent of department chairs were women.²

In this issue of the *Journal*, Jagsi et al.³ document similar trends for women as authors of articles in prominent medical journals. They report that nearly five times as many women authored original articles published in six major journals in 2004 than in 1970. Despite this progress, in 2004 small proportions of first and senior (last listed) authors were women (29.3 percent and

19.3 percent, respectively). Percentages of female authors were highest in those journals focused on pediatrics and obstetrics and gynecology — fields in which women compose a larger proportion of faculty members overall. In 2004, rates of female authorship were likewise low for guest editorials in two general medical journals (this journal and *JAMA*). As Jagsi and colleagues point out, invited editorialists and senior authors of original articles are typically more senior faculty members; the same may be true of first authors of articles in the high-impact journals included in this study. The authorship gap is likely to narrow substantially only when more women reach senior faculty positions.

What accounts for the apparent paradox of dramatic growth in the rate of women entering the field of medicine and the achievement of less

success in academic medicine by women as compared with men, at least according to the conventional metrics of authorship and promotion? The answer remains unclear, but on the basis of available evidence and our own experiences in academic medicine, we believe that both institutional barriers to success and sex differences in career and life goals are important.

Published data during the past two to three decades, although limited, support real differences in the advancement and treatment of men and women in academic medicine. In a study of faculty members appointed to U.S. medical schools between 1979 and 1981, after a mean of 11 years as faculty members, only 5 percent of women, as compared with 23 percent of men, had achieved the rank of full professor; the difference was not fully explained by the number of hours worked or the number of articles published.⁴ This same study found that female faculty members were less likely than male faculty members to have laboratory space and grant support at the start of their academic careers.⁴ Studies have also documented that women receive lower salaries than men with similar experience and academic rank.^{5,6} In some surveys, female faculty members reported having fewer mentorship relationships or receiving less effective mentoring than that reported by male faculty members.⁷⁻⁹

Certain aspects of institutional culture and policy may pose challenges for women. Success in academic medicine has traditionally required working 60 to 70 hours per week, a time commitment that for many is incompatible with the responsibilities associated with raising children.¹⁰ In addition, tenure clocks at many institutions limit the number of years faculty members may remain at a given rank; this makes it difficult for someone to stay in academic medicine if he or she chooses to reduce work hours, even for a few years. Furthermore, meetings important to career advancement are frequently held outside of traditional working hours, when it is difficult for faculty members with children to attend. According to one study, as compared with male faculty members with children, female faculty members with children reported greater obstacles to career advancement and less institutional support. In contrast, such differences were not observed between male and female faculty members without children.¹¹

While institutional barriers to the advance-

ment of women must be addressed, we believe it is also important to consider the role of choice when comparing sex differences in faculty achievement. Each author of this editorial has experienced the challenges of raising children while working full-time in careers in medicine and science. Spending more time on scholarly activities necessarily means less time with family; women may be less likely than men to accept this trade-off. Indeed, surveys have documented that women in academic medicine work, on average, fewer hours than men work.^{4,12}

Given that the roots of the “gender gap” in medicine are incompletely understood, what — if anything — should be done? Initiatives to support and promote women in academic medicine, which are already in place in some institutions and departments, should be encouraged and extended. Successful interventions should be emulated. For example, a program in a department of medicine that educated female faculty members about promotion criteria and provided a yearly assessment of each faculty member’s appropriateness for promotion led to an increase from 4 to 20 female associate professors in just three years.⁷ National data also suggest that efforts may be paying off. Between 1999 and 2004, the Association of American Medical Colleges documented an increase in the promotion of women from assistant professor to associate professor.² Mentorship is critical to academic success. Promotion of more women to senior faculty positions should provide more female mentors and role models for junior faculty members, but both men and women should be educated and encouraged to provide effective mentorship to women. Demonstrated success in providing equal opportunities and support for female faculty members should be included among our measures of job performance for leaders in academic medicine.

Finally, career paths in academic medicine should be more flexible and success less narrowly defined. Scholarly publications are important and are appropriately emphasized in promotion decisions, but achievements in medical education and clinical care also should be highly valued for both female and male faculty members. In many medical schools, promotion criteria and timelines require academic productivity that is unattainable without devotion of most waking hours to career activities, leaving little time for family and other priorities. This approach

may prove untenable in the future, as women make up an increasing portion of the physician pool and as many male physicians take on more responsibility for child rearing and want more time for personal life.

Continued tracking of women's academic progress by the Association of American Medical Colleges and individual medical schools and attention to other measures of academic success, such as those reported by Jagsi and colleagues, are critical to the recognition of persistent inequities. Qualitative studies are also needed to assess the professional and personal aspirations of women and men in academic medicine. The future of academic medicine depends on its ability to attract and retain talented young men and women by offering opportunities that afford success and satisfaction in both their professional and personal lives.

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