3. Cade WT, Reeds DN, Mondy KE, et al; Centers for Disease Control and Prevention (CDC). Vital signs: HIV prevention through care and treatment—United States. *MMWR Morb Mortal Wkly Rep*. 2011;60(47):1618-1623.

4. Hanna DB, Buchacz K, Gebo KA, et al; North American AIDS Cohort Collaboration on Research and Design (NA-ACCORD) of the International Epidemiologic Databases to Evaluate AIDS. Trends and disparities in antiretroviral therapy initiation and virologic suppression among newly treatment-eligible HIV-infected individuals in North America, 2001-2009. *Clin Infect Dis*. 2013;56(8):1174-1182.

5. Nakagawa F, May M, Phillips A. Life expectancy living with HIV: recent estimates and future implications. *Curr Opin Infect Dis*. 2013;26(1):17-25.

6. Centers for Medicare and Medicaid Services. Clinical diagnostic laboratory fee schedule. https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ClinicalLabFeeSched/clinlab.html. Accessed February 28, 2013.

Editor's Note

Directing Resources to Where They Are the Most Needed

Old habits die hard. Since the 1980s, when we first came to understand that CD4 cell depletion is one of the hallmarks of immune deficiency in persons with AIDS, we clinicians have checked the CD4 counts of our stable patients every 3 months (more often for those who were sick or starting new therapy). Our patients (and we) worried from visit to visit whether their CD4 counts (we called them T-cells then) rose or dropped (mostly they dropped), and our spirits rose and fell with their counts.

That was then. Today we have highly effective antiretroviral treatment for human immunodeficiency virus (HIV) and a much better marker of how our patients are doing: the HIV viral load. Patients with undetectable virus in their blood are likely to do well as long as they keep taking their medication. The first sign of trouble is an elevated viral load. If perchance a patient of mine had a major drop in the CD4 count despite having an undetectable viral load, my first thought would be that the CD4 count was in error.

So, if CD4 counts are no longer driving treatment decisions in stable patients who are virally suppressed while receiving antiretroviral treatment, why do we still order these tests? Because it is our habit, and our patients expect it. Although ordering the test likely causes little harm to our patients (unnecessary anxiety if there is a false-negative drop in the count), the tests are expensive. As demonstrated by Hyle et al, if we would order them at most yearly for our stable virally suppressed patients (instead of every 6 months), we would save $10 million a year in the United States. We could use that money in ways that would likely have a much greater impact on the population of HIV-infected persons, including early HIV detection and linkage to medical care, medication adherence counseling (so that CD4 counts do not drop owing to missed doses), substance abuse treatment, and supportive housing.

Resources are finite. We should always seek to spend them in ways that bring the greatest good. Eliminating unnecessary CD4 counts and providing treatment with more impact is a good way to start.

Mitchell H. Katz, MD

Disclaimer: The views expressed herein are those of the author and not necessarily the views of the County of Los Angeles, California.

Trends in the Earnings of Male and Female Health Care Professionals in the United States, 1987 to 2010

Nearly 40 years after the adoption of the Title IX Amendments of the US Civil Rights Act, women account for almost 50% of US medical students and more than one-third of all physicians. Historically, female physicians have earned considerably less than male physicians, though in the 1990s much of this was attributable to gender differences in specialty choice and hours worked.[1] However, more recent data suggest that female physicians currently earn less than male physicians even after adjustment for specialty, practice type, and hours worked.[2] Salary differences between men and women currently exist among physician researchers as well.[3] This raises questions about whether the gender gap in earnings among US physicians has closed over time, particularly compared with the earnings gap for other health care professionals and workers overall. Comparing earnings of male and female physicians over time is important in assessing the impact of policies to promote gender equality among physicians.

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Methods | Using nationally representative data from the March Current Population Survey (CPS) from 1987 to 2010, we estimated trends in the male-female earnings gap among physicians, other health care workers, and workers overall. The CPS has been used to study trends in physician work hours and earnings.[4,5] The CPS data are collected monthly and are based on personal and telephone interviews of approximately 60 000 households. The data are deidentified and made publicly available, and thus this study was exempt from institutional board review.

We used self-reported data from the CPS on occupation, hours worked, annual earnings, age, sex, and race. Response rates exceeded 90% across years.[5] Physicians were identified based on a self-reported occupation of physician or surgeon. Other health care professionals were identified based on a self-reported occupation of dentist, pharmacist, nurse, physician assistant, or health care and insurance executive. Because the values of earnings reported were capped by the US census to protect identities (eg, the cap was $250 000 in 2010), we analyzed trends in median annual earnings. We analyzed 3 periods (1987-1990, 1996-2000, and 2006-2010) to smooth annual fluctuations in the data. We excluded individuals younger than 35 years to focus on physicians completing residency.[6] The CPS does not collect data on physician specialty. Additional limitations of the CPS for studying physician earnings have been noted elsewhere.[5]

We used median regression analysis to study trends in earnings across occupations, adjusting for age, sex, race, hours worked, and state. We adjusted for hours worked to avoid overstating gender differences in earnings if female physicians work fewer hours. For each occupation, we estimated a pooled regression model of both women and men, with interaction terms between sex and year to estimate sex-specific trends. We predicted earnings holding covariates other than sex and year fixed at their mean values. Dollar values were normalized to 2010 dollars.

Table. Trends in Adjusted Annual Earnings of Health Care Professionals According to Occupation and Sex, 1987 to 2010[a]

Variable	Adjusted Annual Earnings, Median, $		
	1987-1990	1996-2000	2006-2010
Physicians			
Male (n = 5689)	168 795	212 317	221 297
Female (n = 1964)	134 955	177 696	165 278
Male-female gap, %	20.0	16.3	25.3
P value	.008	.001	<.001
Dentists			
Male (n = 1623)	129 388	166 373	182 657
Female (n = 326)	77 408	113 788	109 589
Male-female gap, %	40.2	31.6	40.0
P value	<.001	<.001	<.001
Pharmacists			
Male (n = 1377)	64 887	80 095	110 375
Female (n = 1145)	56 107	70 066	97 831
Male-female gap, %	13.5	12.5	11.4
P value	.06	.02	.01
Registered nurses			
Male (n = 1602)	50 320	48 410	56 466
Female (n = 22 274)	44 961	46 165	53 316
Male-female gap, %	10.7	4.6	5.6
P value	.006	.17	.01
Physician assistants			
Male (n = 284)	41 304	58 438	86 236
Female (n = 477)	38 185	47 110	61 010
Male-female gap, %	7.6	19.4	29.3
P value	.81	.17	.005
Health care and insurance executives			
Male (n = 1447)	120 105	118 338	130 106
Female (n = 1302)	78 793	92 602	104 277
Male-female gap, %	34.4	21.7	19.9
P value	<.001	<.001	<.001
Non–health care workers			
Male (n = 713 007)	45 873	43 549	45 438
Female (n = 582 377)	32 905	34 785	38 444
Male-female gap, %	28.3	20.1	15.4
P value	<.001	<.001	<.001

[a] Authors' calculations using earnings data from the US Census Consumer Population Survey from 1987 to 2010. Adjusted earnings are the predicted values from a median regression of annual earnings against age, age squared, race, specific occupation (among nonphysicians), hours worked, and state-fixed effects. All dollar values were normalized to 2010 dollars according to the Consumer Price Index. *P* values reflect a comparison of adjusted male and female earnings in a period for each occupation.

Results | Our sample included 1 334 894 individuals, including 6258 physicians and 31 857 other health care professionals. The percentage of physicians surveyed who were female increased from 10.3% in 1987-1990 to 28.4% in 2006-2010, consistent with prior reports.[7] Men accounted for a majority of workers in other health care occupations except for registered nurses and physicians assistants.

Adjusted earnings of male physicians in 1987-1990 exceeded those of female physicians by $33 840 (20.0%) (**Table**). There was no statistically significant improvement over time in the earnings of female physicians relative to male physicians. The physician earnings gender gap was $34 620 (16.3%) in 1996-2000 (*P* = .65, compared with 1987-1990) and was $56 019 (25.3%) in 2006-2010 (*P* = .46, compared with 1987-1990). Overall, the gender gap fell considerably outside of the health care industry but inconsistently within it. The gender earnings gap for registered nurses and pharmacists was smaller than for physicians and workers overall, and it fell over time. For dentists, physician assistants, and health care executives, the gender gap was greater than for workers in a non–health care occupation and fell consistently only for health care executives.

Discussion | A gap in earnings between male and female US physicians has persisted over the last 20 years. Although we adjusted for differences in hours worked and years of experience, our study was limited because the CPS does not include data on specialty, practice type, procedural volume, and insurance mix, all of which could influence our findings. Our inability to adjust for these factors likely explains why we found a gender gap in earnings in 1987-1990, while a previous analy-

sis in this period that adjusted for these factors did not.[1] Recent studies suggest, however, that gender differences in earnings still exist even after adjustment for these factors.[2]

While it is important to study gender differences in earnings after accounting for factors such as specialty choice and practice type, it is equally important to understand overall unadjusted gender differences in earnings. This is because specialty and practice choices may be due to not only preferences of female physicians but also unequal opportunities. For example, are unadjusted earnings differences between male and female physicians due to a preference of female physicians for lower-paying specialties (eg, pediatrics or primary care) or do female physicians have less opportunity to enter higher paying specialties despite having similar preferences as male physicians? The etiology of the persistent gender gap in physician earnings is unknown and merits further consideration.

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1. Baker LC. Differences in earnings between male and female physicians. *N Engl J Med*. 1996;334(15):960-964.

2. Lo Sasso AT, Richards MR, Chou CF, Gerber SE. The $16,819 pay gap for newly trained physicians: the unexplained trend of men earning more than women. *Health Aff (Millwood)*. 2011;30(2):193-201.

3. Jagsi R, Griffith KA, Stewart A, Sambuco D, DeCastro R, Ubel PA. Gender differences in the salaries of physician researchers. *JAMA*. 2012;307(22):2410-2417.

4. Staiger DO, Auerbach DI, Buerhaus PI. Trends in the work hours of physicians in the United States. *JAMA*. 2010;303(8):747-753.

5. Seabury SA, Jena AB, Chandra A. Trends in the earnings of health care professionals in the United States, 1987-2010. *JAMA*. 2012;308(20):2083-2085.

6. Staiger DO, Auerbach DI, Buerhaus PI. Trends in the work hours of physicians in the United States. *JAMA*. 2010;303(8):747-753.

7. Association of American Medical Colleges. *2011 State Physician Workforce Data Book: Center for Workforce Studies*. Washington, DC: Association of American Medical Colleges; November 2011.

Invited Commentary

Persistent Earnings Inequities for Female Physicians: Still the Same Old Story

Twenty-four years ago, as a new associate professor of medicine, I was appointed to the Chancellor's Advisory Committee on the Status of Women of my university (University of California, San Francisco) and simultaneously made chair of its Faculty Issues subcommittee. The committee's energetic chair assigned to my subcommittee the task of performing a salary equity study across our 4 health professions schools.

We chose a conservative design, identifying matched pairs of faculty members, a man and a woman, in the same department, who had achieved tenure within just a few years of each other. Our reasoning was that by focusing on faculty members who were by academic definition successful, having achieved tenure, we could eliminate arguments about differences in ambition, talent, and personal circumstances as explanations for discrepancies between the members of the pairs.

We compared the pairs with respect to current salary and the rate at which each had proceeded up the academic ladder. We defined a salary difference of less than 15% as trivial, although over a career it is not a trivial difference. By this conservative definition, a modest majority of our pairs were receiving equitable pay. However, a substantial minority of pairs showed salary disparities of greater than 15%, and in virtually every instance, the disadvantaged party was the woman.

Pay discrepancies between men and women for the same work has remained a pervasive and refractory problem. In this issue of *JAMA Internal Medicine*, Seabury and colleagues[1] demonstrate this yet again. After adjusting for hours worked, the authors found that between 2006 and 2010, male physicians earned a third more than their female counterparts. At $56 019 per year, the difference is consequential; multiplied over a 30- or 40-year professional lifetime, it is huge. Why does this continue to happen?

Various explanatory factors have been invoked to account for earnings differences across sexes in medicine. Often the income differential is represented as consequent to the choices women make. Women are considerably more likely than men to work part-time and, even among physicians working full-time, women work slightly fewer hours per week than men. In outpatient settings, women may take slightly longer per patient than male clinicians. Furthermore, women choose different specialties than men, although these differences are abating with time. In the graduating class of 2012, of high-earning specialties, women entered dermatology at the same rate as men, while substantially more men chose anesthesia. Men selected diagnostic radiology at more than twice the rate of women, while 8 times as many male than female medical students selected orthopedic surgery.[2] However, there is evidence that a preference for different specialties does not account for the earnings gap. Our salary equity study compared faculty members with the same degree in the same department; using much more powerful methods, Lo Sasso and colleagues[3] found a systematic salary advantage across specialties as recently trained physicians entered practice in New York State.