ORIGINAL RESEARCH

The Gender Wage Gap Among Early-Career Family Physicians

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Purpose: **Numerous studies have documented salary differences between male and female physicians. For many specialties, this wage gap has been explored by controlling for measurable factors that influence pay such as productivity, work-life balance, and practice patterns. In family medicine where practice activities differ widely between physicians, it is important to understand what measurable factors may be contributing to the gender wage gap, so that employers and policymakers and can address unjust disparities.**

Methods: **We used data from the 2017 to 2020 American Board of Family Medicine (ABFM) National Graduate Survey (NGS) which is administered to family physicians 3 years after residency (n = 8608; response rate = 63.9%, 56.2% female). The survey collects clinical income and practice patterns. Multiple linear regression analysis was performed, which included variables on hours worked, degree type, principal professional activity, rural/urban, and region.**

Results: **Although early-career family physician incomes averaged $225,278, female respondents reported incomes that were $43,566 (17%) lower than those of male respondents (*P = .001*). Generally, female respondents tended toward lower-earning principal professional activities and US regions; worked fewer hours (2.9 per week); and tended to work more frequently in urban settings. However, in adjusted models, this gap in income only fell to $31,804 (13% lower than male respondents, *P = .001*).**

Conclusion: **Even after controlling for measurable factors such as hours worked, degree type, principal professional activity, population density, and region, a significant wage gap persists. Interventions should be taken to eliminate gender bias in wage determinations for family physicians. (J Am Board Fam Med 2024;37:270–278.)**

Keywords: **Diversity, Family Medicine, Family Physicians, Gender Equity, Policy, Regression Analysis, Surveys and Questionnaires, Wages, Worker's Compensation, Workforce**

Introduction

The gender wage gap in medicine has been widely reported with studies estimating that female primary care physicians make up to 22% less than their male counterparts.[1] Many potential hypotheses, that are themselves rooted in biased social norms or discriminatory practices, have been offered to explain the gender wage gap including a voluntary reduction of clinical hours to allow for a better work-life balance, lack of seniority or leadership roles, poor negotiating ability, or interruptions to career trajectory because of parental leave.[2–5] Other explanations take on a more economic spin and are, at face value, less prone to gender discrimination as a contributing factor: namely that the gender pay gap can actually be explained by examining revenue production or specialty choice.

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Studies do show that female physicians generate less clinical revenue than their male counterparts. Ganguli *et al* used national all-payer claims and data from electronic health records to show that female primary care physicians generated 10.9% less revenue and conducted 10.8% fewer visits than their male counterparts after adjusting for age, specialty and number of sessions worked per week. Yet, this percent difference still does not fully explain the 22% gender pay gap that was reported in primary care in 2022.[1]

Research also shows that females choose lower paying specialties. Women are highly represented in the lowest paying specialties of pediatrics, family medicine and internal medicine, but have much lower representation in the highest paid specialties such as orthopedic surgery and urology.[6,7] Yet even when controlling for specialty choice, the gender wage gap persists.[8]

Within the same specialty, and even when controlling for revenue production, differences in income by gender have been observed.[9] Family medicine, a specialty where the female workforce is growing and will likely continue to grow given the current composition of medical trainees, is not immune to this gender pay gap. A study of recent family medicine graduates reported a 16% difference in their hourly compensation with male family physicians earning more than female family physicians.[10] Given that this study examined recent graduates and hourly wages, the likelihood that seniority or hours worked, 2 commonly used explanations to dismiss the gender wage gap, contributed is unlikely. For Black or African American family physicians, this wage gap is even more pronounced[11] and given that there is a higher proportion of Black female family physicians than Black male family physicians,[12,13] racial biases likely also contribute to this phenomenon.

Although we know the gender wage gap in family medicine does exist, the reasons remain elusive. As discussed by Ganguliet al, in their examination of outpatient primary care, revenue generation could be 1 factor. Yet, for family medicine in particular, the revenue generation argument is more complicated than simply the number of patients seen in a day. Family physicians vary widely in their professional activities—with some working purely in outpatient continuity clinics whereas others are hospitalists or work in urgent care settings. In addition, family physicians perform many nonclinical activities that generate lower reimbursement such as administrative activities or teaching. Unlike other specialties, family physicians are not concentrated in urban/suburban settings and rural/urban pay gaps may contribute to gender pay gaps .[14] Because family physicians have such a broad scope of practice patterns and settings, the specialty lends itself well to understanding whether factors that may be more in the control of the physician themselves, such as work setting and practice location, are contributing to the gender wage gap. The objective of this study is to examine whether hours worked, type of professional activity, or setting of practice explain the gender wage gap in family medicine.

Methods

We used data from the 2017 to 2020 American Board of Family Medicine (ABFM) National Graduate Survey (NGS) which is administered to ABFM Diplomates 3 years after the completion of their residency programs (pooled response rate = 63.9%).[15,16] Respondents to the survey are representative of all ABFM Diplomates in their graduation cohort.[16] For analysis, we pooled these cross-sectional data and included only respondents practicing direct patient care (n = 8457). Race and ethnicity were self-reported by Diplomates 3 years prior when registering for their initial certification examination. Additional data on gender and degree type were gathered from ABFM administrative data. During the study period, gender was coded as binary in ABFM data.

Each respondent reported income as a dollar-based value, in response to the following prompt: "In the most recent tax year, what was your pre-tax clinical income, combined from all sources, including bonuses but excluding benefits (yours alone, not household)?" Incomes were adjusted for inflation by converting all values to 2020 dollars using the consumer price index for all urban consumers (CPI-U).[17] 343 responses were dropped where information on income and hours worked was insufficient.

We used county-level Rural-Urban Continuum Codes to classify rural or urban practice location based on the reported practice address.[18]

We used bivariate statistics to observe differences in practice type by gender (see Table 1). In addition, a multiple linear regression analysis was

Table 1. Characteristics of Early-Career Family Physicians by Gender: National Graduate Survey 2017–2020

	Full Sample % (N)	Female % (N)	Male % (N)	*P* value
Overall	100.00% (7461)	55.88% (4169)	44.12% (3292)	
Personal Characteristics				
Degree type				0.394
M.D.	80% (5998)	80.04% (3337)	80.83% (2661)	
D.O.	19.61% (1463)	19.96% (832)	19.17% (631)	
Race				0.001
Asian	21.12% (1576)	21.76% (907)	20.32% (669)	
Black or African American	7.28% (543)	8.95% (373)	5.16% (170)	
White	68.49% (5110)	66.01% (2752)	71.63% (2358)	
Other	3.11% (232)	3.29% (137)	2.89% (95)	
Ethnicity				0.255
Non-Hispanic or Latino	91.54% (6830)	91.87% (3830)	91.13% (3000)	
Hispanic or Latino	8.46% (631)	8.13% (339)	8.87% (292)	
Professional Activity and Practice Setting				
Principal professional activity				0.001
Continuity Care	81.41% (6074)	85.30% (3556)	76.49% (2518)	
Emergency Medicine	2.91% (217)	1.39% (58)	4.83% (159)	
Geriatrics	0.27% (20)	0.31% (13)	0.21% (7)	
Hospitalist	8.75% (653)	6.55% (273)	11.54% (380)	
Palliative Care	0.68% (51)	0.77% (32)	0.58% (19)	
Sports Medicine	0.70% (52)	0.31% (13)	1.18% (39)	
Urgent Care	4.26% (318)	4.25% (177)	4.28% (141)	
Other	1.02% (76)	1.13% (47)	0.88% (29)	
Mean Total Hours Worked per Week (Std. Err.)	53.82 (0.22)	52.54 (0.28)	55.44 (0.33)	0.001
Population density				0.001
Urban	84.24% (6285)	86.23% (3595)	81.71% (2690)	
Rural	15.76% (1176)	13.77% (574)	18.29% (602)	
Region				0.001
Midwest	23.78% (1774)	23.41% (976)	24.24% (798)	
Northeast	13.46% (1004)	14.61% (609)	12.00% (395)	
South	34.26% (2556)	32.45% (1353)	36.54% (1203)	
West	28.51% (2127)	29.53% (1231)	27.22% (896)	
% Time in Care Modality(Std. Err.)				
Direct Patient Care	68.29% (0.002)	67.09% (0.003)	69.82% (0.004)	0.001
Administrative Activities	3.42% (0.001)	3.54% (0.001)	3.25% (0.001)	0.102
Telephone Patient Care	16.76% (0.002)	17.39% (0.002)	15.96% (0.002)	0.001
E-visits	3.29% (0.001)	3.53% (0.001)	2.98% (0.001)	0.001
Teaching/Precepting	6.55% (0.001)	6.77% (0.002)	6.27% (0.002)	0.063
Other	1.70% (0.001)	1.68% (0.001)	1.72% (0.001)	0.763

Note: Data collected by the ABFM from board-certified Diplomates three years after completing residency. Total percentage may not add up to 100 due to rounding.

performed to assess gender differences in incomes when controlling for race, ethnicity, hours worked, degree type, population density of the area served, region in the US, percentage of time spent on work activities, and principal professional activity (analysis sample size was 7461).

All data analysis was performed using Stata version 16.1. This study was approved by the American Academy of Family Physicians Institutional Review Board.

Results

Summary statistics of the analysis sample can be found in Table 1. Nearly 56% of the early-career family physicians included in the analysis sample

were female. Substantial differences in gender representation are seen in several principal professional activities, with higher percentages of male respondents working in emergency medicine, sports medicine, and as hospitalists whereas higher percentages of female respondents worked in continuity care, geriatrics, palliative care, and other. For example, although 4.83% of male respondents reported working in emergency medicine, only 1.39% of female respondents reported doing so. A higher percentage of male respondents (18.29%) reported practicing in rural areas compared with female respondents (13.77%). Furthermore, differences in gender representation can be seen by region, with the largest difference being seen in the South, where 36.54% of male physicians and 32.45% of female physicians practice within our sample.

As can be seen in Table 2, overall, female respondents reported incomes that were $43,566 (17.5%) lower than male respondents. This gap seems to have been relatively consistent across the years studied (see Figure 1). Although female respondents reported working fewer hours (2.9 hours less per week), their hourly income trailed by more than $13 (14.0%) per hour. Hourly income was calculated by dividing annual income by annual hours worked

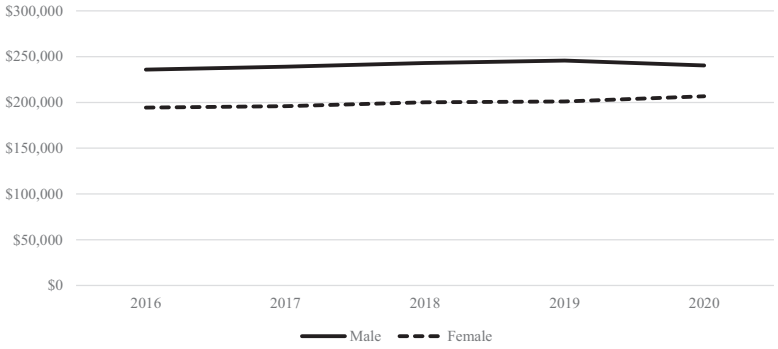
Table 2. Income Comparison Among Early-Career Family Physicians by Gender, 2017–2020

	Full Sample	Female ($)	Male ($)	Diff. ($)	95% Confidence Interval around Diff ($)	
Overall	$225,278	$206,059	$249,625	−$43,566	$40,026	$47,106
Hourly income*	$87.30	$81.47	$94.68	−$13.21	$10.44	$15.99
Degree type						
M.D.	$226,441	$205,643	$252,536	−$46,892	$42,963	$50,822
D.O.	$220,512	$207,725	$237,365	−$29,639	$21,523	$37,755
Principal professional activity						
Continuity Care	$214,920	$200,936	$234,662	−$33,726	$30,271	$37,180
Emergency Medicine	$371,424	$322,648	$389,106	−$66,457	$24,266	$108,648
Geriatrics	$194,995	$189,774	$204,691	−$14,916	−$27,254	$57,087
Hospitalist	$281,725	$255,916	$300,335	−$44,419	$32,458	$56,379
Palliative Care	$209,951	$200,094	$227,073	−$26,979	−$8291	$62,249
Sports Medicine	$225,303	$217,801	$227,804	−$10,003	−$33,101	$53,107
Urgent Care	$223,388	$205,341	$246,299	−$40,958	$25,070	$56,847
Other	$174,623	$167,313	$186,470	−$19,157	−$16,355	$54,669
Population density						
Urban	$220,242	$202,618	$243,797	−$41,179	$37,449	$44,909
Rural	$252,188	$227,587	$275,685	−$48,098	$38,106	$58,090
Region						
Midwest	$232,006	$212,138	$256,276	−$44,138	$37,187	$51,089
Northeast	$205,612	$192,530	$225,849	−$33,319	$25,621	$41,016
South	$231,988	$207,950	$259,021	−$51,071	$44,187	$57,954
West	$220,895	$205,874	$241,550	−$35,676	$29,572	$41,780
Race						
Asian	$222,832	$203,299	$249,343	−$46,044	$39,004	$53,084
Black or African American	$223,364	$208,208	$256,705	−$48,497	$35,013	$61,980
White	$226,270	$206,352	$249,512	−$43,160	$38,738	$47,582
Other	$224,520	$212,583	$241,734	−$29,151	$12,338	$45,963
Ethnicity						
Non-Hispanic or Latino	$225,342	$205,944	$250,115	−$44,171	$40,474	$47,867
Hispanic or Latino	$224,584	$207,355	$244,587	−$37,232	$24,891	$49,573

Note: Data collected by the ABFM from board-certified Diplomates three years after completing residency. Incomes have been adjusted for inflation using the CPI-U to reflect their value in 2020 dollars. Total percentage may not add up to 100 due to rounding.

*Female respondents reported working 2.9 fewer hours per week. Hourly income was calculated by dividing annual income by annual hours worked (weekly reported hours multiplied by 52).

Figure 1. Comparison of income by gender, 2017–2020.



Note: Data collected by the ABFM from board-certified Diplomates three years after completing residency. Incomes have been adjusted for inflation using the CPI-U to reflect their value in 2020 dollars.

(weekly reported hours multiplied by 52). When observing income by degree type, the gender pay gap was $46,892 (18.6%) among respondents with an M.D. and $29,639 (12.5%) among those with a D.O. Female respondents showed a strong trend toward lower-earning principal professional activities (see Figure 2) and reported lower earnings in many roles, with the largest difference being observed in emergency medicine ($66,457 or 17.1%) and the smallest difference being observed in sports medicine ($10,003 or 4.4%). In addition, female respondents lived more commonly in lower-paying regions in the US (see Figure 3). Furthermore, female respondents reported substantially lower incomes in the higher-paying regions ($51,071 or 19.7% less in the South and $44,138 or 17.2% less in the Midwest). Female respondents also spent significantly less of their time on direct patient care, and more time on lower-paying care modalities relative to male respondents Finally, although rural family physicians earned $31,946 more than urban doctors overall, female rural family physicians earned $48,098 (17.5%) less than male rural family physicians.

Even after controlling for hours worked, degree type, principal professional activity, population density, and region, a significant wage gap persists (Table 3). On average, holding these variables constant, early-career female family physicians earn $31,804 less than their male peers. Controlling for these variables reduces the initially observed variation in income based on gender by only $11,762 (26%).

We found no significant differences in wages by race and ethnicity when controlling for practice features. In addition, interactions between gender and race/ethnicity were not significant.

Discussion

Although female family physicians tended to work in lower paying settings and were more represented in the lower paying professional activities, these

Figure 2. Average income and gender representation by principal professional activity, 2017–2020.

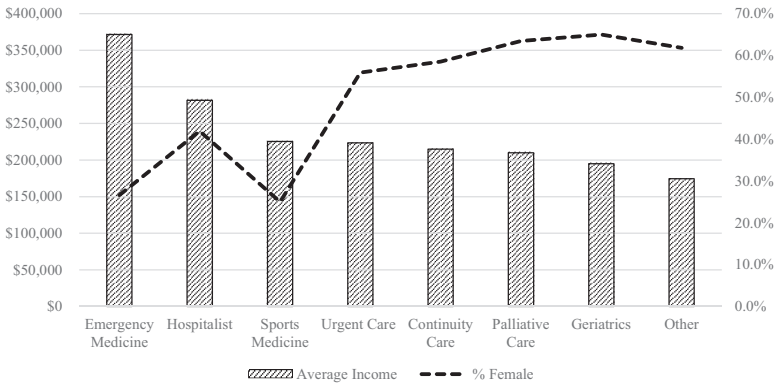
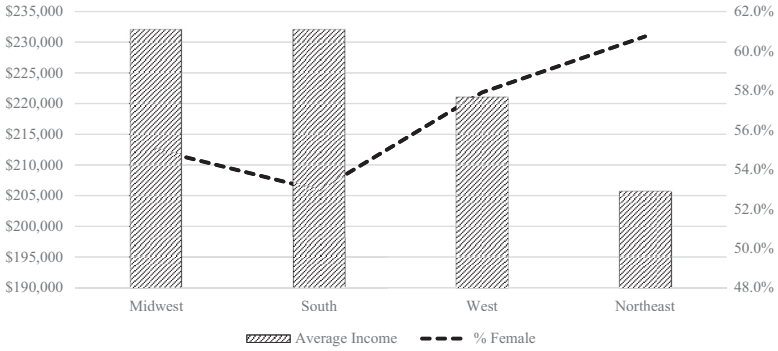


Figure 3. Average income and gender representation by US region, 2017–2020.



Note: Data collected by the ABFM from board-certified Diplomates three years after completing residency. Incomes have been adjusted for inflation using the CPI-U to reflect their value in 2020 dollars.

variables alone could not explain the gender wage gap. In fact, we found that female physicians still made less than their male counterparts within professional settings (eg, emergency department) and different geographic settings (eg, rural and Census Region). When controlling for all variables in the model, the wage gap persisted. For example, the gender gap in reported incomes among family physicians practicing emergency medicine was $66,457 and the gap among those serving in rural areas was $48,098. Although interactions between gender and race/ethnicity were not significant in this study, the intersectionality of race and gender is an important topic as studies have shown that Black female physicians make less than female physicians of other races.[11]

We are not able to account for gender differences in clinical revenue generation with our dataset, but previous studies indicate that this is unlikely to explain the gender wage gap. Inherent bias in the way salaries are set and opportunities are offered to female physicians continue to persist. Female physicians are not promoted in academic settings at the same rate as male physicians despite similar qualifications.[19] Female physicians have much lower representation in leadership positions within medical systems and academic settings.[20] Female physician starting base salaries are shown to be lower than their male counterparts, and simulation studies show that when female workers do negotiate for a fair wage they are less likely than their male counterparts to be hired and more likely to leave a negative impact on their hiring managers.[5,21]

Although this study does support that choices female physicians are making that may be affecting their salaries, these choices cannot be separated from inherently patriarchal systems and societal norms. Studies have demonstrated that specialty choice in medicine is subtly influenced by stereotypical beliefs about gender norms and, in turn, this specialty choice drives salaries. Women are more likely to be seen as a better fit for specialties that are seen as nurturing or valuing relationship such as primary care, whereas men are more likely to be seen as better fits for technical specialties such as orthopedic surgery.[22] Taking family medicine as a microcosm, this pattern is also seen where women are clustering in the relationship-based practice activities such as continuity and men are clustering in the "skills-based" or "technical" specialties that are paid more, such as sports medicine. Social biases, such as the expectation that women will contribute more to parenting work within the household, make practice in rural settings more challenging for women physicians.[23] It is already known that there is a strong negative relationship between the proportion of female physicians in a specialty and its mean salary .[22] Thus, it is not unreasonable to assume the same thing is happening within family medicine—the more women choose a particular focus within family medicine, the lower the salary.

Table 3. Adjusted Associations between Personal and Practice Characteristics with Income for Direct Patient Care Early-Career Family Physicians 2017–2020

Independent Variable	Income Coef./ (Std. Err.)	*P* value
Gender: Female	−$31,804 (1978)	0.001
Ref: Male		
Weekly Hours Worked	$620 (46)	0.001
Degree Type: D.O.	−$1,603 (2080)	0.441
Ref: M.D.		
Principal Professional Activity		
Ref: Continuity Care		
Emergency Medicine	$131,318 (4920)	0.001
Geriatrics	−$12,784 (15,633)	0.414
Hospitalist	$50,072 (3039)	0.001
Palliative Care	$4,099 (9798)	0.676
Sports Medicine	$3,346 (9740)	0.731
Urgent Care	$8,798 (4074)	0.031
Other	−$21,917 (8141)	0.007
Population Density: Rural	$21,210 (2293)	0.001
Ref: Urban		
Region		
Ref: West		
Midwest	$4,226 (2285)	0.064
Northeast	−$14,177 (2686)	0.001
South	−$2,120 (2097)	0.312
Race		
Ref: White		
Asian	−$830 (3122)	0.790
Black or African American	−$5,189 (5581)	0.353
Other	−$3,898 (7346)	0.596
Interaction		
Female*Black or African American	$3,221 (6750)	0.633
Female*Asian	−$2,944 (4058)	0.468
Female*Other	$6,016 (9516)	0.596
Ethnicity: Hispanic or Latino	$256 (3005)	0.932
Ref: Not Hispanic or Latino		
% of Time in Care Modality		
Ref: Direct patient care		
Administrative activities	−$57,182 (11,105)	0.001
Telephone patient care	−$32,651 (6349)	0.001
E-visits	−$38,295 (14,942)	0.010
Teaching/precepting	−$41,140 (7131)	0.001
Other	−$97,562 (13,624)	0.001
R^2	0.2489	

Note: Data collected by the ABFM from board-certified Diplomates three years after completing residency. Incomes have been adjusted for inflation using the CPI-U to reflect their value in 2020 dollars.

Even seemingly objective factors, such as the fee-for-service payment model in the United States, contribute to the gender wage gap.[24] A microsimulation study of different payment models performed by Ganguli *et al* found the largest gender wage gap to be present in the fee-for-service model, which currently dominates US health care. One explanation for this finding is that relative value unit (RVU) generation, which contributes to total physician compensation in most fee-for-service dominated models, may be unfairly penalizing female physicians who, on average, generate less RVUs but spend more time with patients in direct patient care.[24] The microsimulation study also found that the gender wage gap was not significant in an age and risk adjusted capitation model. Given the practice patterns of female physicians, this makes sense. Female physicians are not only more likely to spend more time with their patients, but they are also more likely to address more problems in an office visit, a phenomenon known as "packing." Although "packing" may lead to better patient outcomes and higher patient satisfaction, it is poorly compensated in a fee-for-service system that rewards the volume of visits and not the comprehensiveness of each visit.[25] Taken together, these studies suggest that perhaps there is an inherently biased payment system that penalizes female physicians.

Many other solutions can help reduce, and eventually eliminate, the factors that are contributing to a gender wage gap. First, educating family medicine residents about salary differentials based on practice patterns and locations will ensure that well-informed decisions are being made about career paths. Some family physicians may choose lower-paying paths for a variety of reasons, but these choices should be intentional and guided by evidence. Second, salary transparency on the part of employers is essential for negotiations and for clarifying what factors are associated with higher base pay and bonuses.[26] Until we move toward salary transparency by all health systems, physician advocacy groups could help by collecting salary and bonus data from physicians themselves and publishing it for their members. Although the benefits of negotiating salaries, particularly for women, is debated in the literature, women students, residents, and physicians could be offered specific training in when and whether to negotiate to help them be more successful.[27] Finally, given the evidence on gendered practice patterns,[25]

moving away from a fee-for-service payment model and toward models that financially reward physicians for quality of care instead of visit volume or procedures may help close the gender wage gap.[24]

Limitations

The data assessed in this study included only early-career family physicians, and the findings might not be generalizable across all family physicians. Furthermore, income and hours worked are self-reported, and inaccuracies may exist in reporting. We sought to minimize this issue by removing responses that were clearly errors (eg, incomes lower than minimum wage based on hours worked and incomes reported). As has been seen in other studies,[10,11] when calculating an hourly wage, we assume 52 weeks of work per year. This may have introduced a bias to this indicator as the number of weeks worked per year may vary by gender. Our analysis has focused on annual wages instead of hourly earnings. In addition, gender was only available as a binary variable, making it impossible for the researchers to examine the data in a way that fully reflects the gender diversity of family physicians.

Conclusion

The gender wage gap in family medicine persists even when controlling for several measurable factors, including hours worked, degree type (M.D., D.O.), principal professional activity (eg, continuity care, emergency medicine, etc.), population density (rural, urban), region in the US, race, ethnicity, and percentage of time spent in care modalities (eg, direct patient care, administrative activities, etc.). This implies that gender bias continues to contribute to pay discrepancies. Systemic changes are needed that alter our current physician payment system and reward physicians at higher rates for traditionally female practice patterns.

To see this article online, please go to: http://jabfm.org/content/37/2/270.full.

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