

Rejecting Family Practice: Why Medical Students Switch to Other Specialties

Sean Schafer, MD; William Shore, MD; Lloyd French, MS; Jason Tovar;
Susan Hughes, MS; Norman Hearst, MD

Background and Objectives: *Medical schools have been encouraged to increase the number of primary care graduates. This study determined the proportion of medical students who change specialty preference during the clinical years and explored how ultimate choice is affected by perceptions of medical specialties acquired during this period. Methods:* A survey was mailed to 397 graduating medical students at the University of California, San Francisco (UCSF) after the National Resident Matching Program Match and before graduation in 1996, 1997, and 1998. **Results:** *The response rate was 81% (320/397). Of 41 respondents who reported that family practice had been their first specialty choice prior to beginning clinical rotations, only 15 (37%) eventually matched in family practice. Comparable numbers for internal medicine and pediatrics were 50% and 69%. Students rejecting family practice were more likely than their colleagues rejecting other specialties to cite insufficient prestige, low intellectual content, and concern about mastering too broad a content area as reasons. Conclusions:* *At UCSF, family practice retains fewer interested students than other primary care specialties. To reverse this trend, schools such as UCSF need to raise the prestige of family practice and counter concerns about its intellectual content being impossible to master.*

(Fam Med 2000;32(5):320-5.)

Shortage and maldistribution of generalist physicians have been recognized problems in the United States for 3 decades.¹⁻⁴ Federal and state governments offer scholarships and loan repayment for generalists who will practice in underserved areas. Some medical schools have made efforts to enroll students whose backgrounds make them more likely to enter primary care. These include older students, women and minorities, and students with nontraditional backgrounds.⁵⁻⁷ Medical schools that graduate higher proportions of students into primary care residencies are more likely to have departments of family medicine and required ambulatory care rotations emphasizing primary care.⁸

The University of California, San Francisco (UCSF) is well-known for sophisticated technical advances in

medicine and does not graduate large numbers of students who pursue generalist careers. If all graduates matching in internal medicine, pediatrics, and family practice are included, the proportion of graduates who enter primary care has fluctuated around 40%–50% over the past decade (UCSF Office of Curricular Affairs, UCSF Graduating Students' Internship Programs by Specialty, 1998). However, these totals can be misleading because about 50% of those said to have chosen primary care enter internal medicine. Only 40% of internal medicine residency graduates actually go on to practice in primary care settings. In pediatrics, 65% go into primary care.^{2,9}

The California State Assembly made two failed attempts to require UCSF and other public medical schools in California to train more primary care physicians (vetoed California State Assembly Bills 1885 [1994] and 3593 [1993]). UCSF eventually pledged to meet specified goals for training of primary care physicians (P Isenberg, author of Assembly Bills 1885 and 3593, personal communication, June 1999). These goals have not been met.¹⁰

From the University of California, San Francisco (UCSF)-Fresno Family Practice Residency (Dr Schafer and Ms Hughes), Department of Family and Community Medicine, UCSF (Drs Shore and Hearst and Ms French), and the National Human Genome Research Institute (Mr Tovar).

Students' commitment to specialties is tested during the clinical rotations.¹¹⁻¹³ Some students describe being discouraged from choosing generalist specialties during the last 2 years of medical school.¹⁴ We designed this survey to measure the number of students who change their specialty preference after beginning third-year clinical rotations. We explored the students' perceptions of the rejected and chosen specialties, comparing those who switched away from an initial preference for family practice to those who switched away from other specialties.

Methods

Sample

A survey was mailed to all 397 UCSF School of Medicine students enrolled in the National Resident Matching Program (NRMP) Match shortly after the release of the results in 1996, 1997, and 1998. Students were offered a \$10 gift certificate from the campus bookstore in return for completing the questionnaire. Nonrespondents received two reminders. All analyzed responses were received before graduation.

Questionnaire

A questionnaire was developed for this study; portions were adapted from the Association of American Medical Colleges (AAMC) Graduation Survey.¹⁵ No reliability or validity data have been collected for the AAMC survey, but it is the only instrument of its type used to study all graduating US medical students (J. Lockwood, PhD, Division of Medical Education, AAMC, personal communication, November 1999).

Our survey asked students about personal characteristics such as race, age, gender, urban versus rural hometown, and self-estimated class standing. We also asked, "Prior to beginning clinical clerkships, what did you anticipate would be your top three residency preferences?" and provided a list of all specialties in the NRMP.

The first ranked of these specialties was identified as the "initial" or "preclinical" preference. Students were also asked to identify from the same list the specialty that they ultimately selected in the Match. This was identified as the "chosen" or "matched" specialty. Similar to the AAMC questionnaire, we asked students to respond to two multipart questions. The first question asked participants to rate the degree (5-point scale: 1=strongly agree, 3=neither agree nor disagree, 5=strongly disagree) to which "the following factors positively influenced my choice of specialty in the Match." Examples of the 28 positive influences given include, "excellent clerkship experiences" and "opportunity for greater flexibility in determining professional lifestyle."

The second part of this two-part question asked the students to rate the degree to which "the following were

important factors in excluding alternative specialties." Examples of the 28 negative influences given include, "negative clerkship experience" and "lack of flexibility in determining professional lifestyle." All of the positive questions posed in part 1 were posed in the form of the negative complement in part 2. Many questions were combined, taken directly, or adapted slightly from the AAMC survey. Additional questions about the positive and negative influences of advisors, geographic location of residency programs, possibility of content mastery, and student interest groups were added. Students were also asked to describe other influences in open-ended fashion. Respondents were not asked to specify which alternative specialty was affected by negative perception, so students may have referred to one or more of several rejected alternatives in rating the importance of negative influences.

Analysis

Data were entered into Microsoft Access[®] database software (Microsoft Corporation, Redmond, Wash, 1996) and analyzed using SAS[®] statistical analysis software (SAS Institute Inc, SAS System for Microsoft Windows, Release 6.12, Cary, NC, 1996). Means with standard deviations and proportions were calculated for descriptive data. We tested the importance of all factors on specialty choice between groups by using Wilcoxon ranked sums to compare strength of agreement across the full range of the scale. These same data were then collapsed into "some agreement" that a factor was influential (1 to 2 on the scale) or "no agreement" (3 to 5 on the scale) and compared using chi-square tests to determine significance levels. No corrections were made for multiple comparisons. These two methods generated substantially similar results, and, hence, only the collapsed form is presented here.

Results

Of 397 students entered in the NRMP Match in the year of their graduation between 1996 and 1998, 320 (81%) completed the survey. Demographic characteristics of the students are listed in Table 1.

A total of 131 respondents (41%) reported matching in a primary care specialty (family practice [25], internal medicine [66], pediatrics [34], or combined internal medicine and pediatrics [6]). When we included nonrespondents, this changed only slightly to 173/397 students (44%) matching in a primary care specialty. Only female gender was significantly related to matching in primary care. No significant social or demographic differences were seen between primary care specialties, although we noted trends toward family practice for students of rural origin and toward internal medicine or pediatrics versus family practice for female students (data not presented).

Table 1
Demographics of 320 Graduating UCSF
Medical Students

Characteristics	All Graduates (%) (n=320)	Graduates Matched in Primary Care* (%) (n=131)
Gender		
Female	48	57**
Mean age (SD)	27.7 (3.1)	27.8 (3.2)
Race		
Asian	31	25
African-American	7	8
Latino	10	11
White	48	53
Other	5	3
Hometown		
Rural	9	8
Suburban	71	69
Urban	21	24
Marital status		
Married	43	46

UCSF—University of California, San Francisco
SD—standard deviation

* Matched in internal medicine, pediatrics, family practice, or combined internal medicine-pediatrics

** $P < .01$

Persistence of Interest in Primary Care

Disregarding switching among primary care specialties (eg, preclinical preference is family practice, and matched specialty is internal medicine), 66% of the 133 students who began clerkships preferring one of the four primary care specialties went on to match in one. Likewise, of the 187 students who began clinical clerkships with a preclinical preference for a non-primary care specialty, 77% matched in one. Although the majority of students remained within the broadly defined categories of primary care or non-primary care throughout the clinical years, considerable switching among individual primary care specialties occurred during this period (Table 2).

Retention rates also differed markedly among the four primary care specialties. Only 37% (15/41) of students with a preclinical preference for family practice ultimately matched there, compared with retention rates of 50% (30/60) for internal medicine and combined medicine-pediatrics and 69% (22/32) for pediatrics ($P=.03$). Of the 26 students who initially favored family practice and eventually matched in other specialties, 11 matched in another primary care specialty, and 15 matched in a non-primary care specialty.

Factors That Influenced Specialty Choice

Among all students, intellectual content (90%), excellent clerkship experience (87%), positive physician example (86%), opportunity for diversity in diagnosis (85%), type of patients seen (82%), and challenging diagnostic problems (81%) rated the highest proportion of agreement among positive influences on specialty choice. Negative clerkship experience (68%), negative example of a physician (68%), lack of flexibility in lifestyle (60%), apparent excessive emotional stress (40%), length of residency (37%), and dislike of type of patients seen (37%) rated the most agreement among negative influences on specialty choice.

In further analyses, we focused on the group of all students (177) that matched in a specialty other than their initial preference. We compared factors that influenced final specialty choice between the group of students who rejected family practice ($n=26$) and students who rejected other specialties ($n=151$). This was done to identify unique factors that dissuade students from entering family practice and that might be modified to increase retention of students in family practice.

Table 2
Retention of UCSF Medical Students Through the Clinical Years
(by Preclinical Specialty Preference)

Preclinical Specialty Preference	MATCHED SPECIALTY (%)				Total
	Family Practice	Internal Medicine	Pediatrics	Non-Primary Care	
Family practice	15 (37%)*	8 (20%)	3 (7%)	15 (37%)	41
Internal medicine**	4 (7%)	30 (50%)	2 (3%)	24 (40%)	60
Pediatrics	1 (3%)	0	22 (69%)	9 (28%)	32

* $P=.03$ for proportion retained by family practice, compared with proportions retained by internal medicine and pediatrics.

** Two students whose preclinical preference was combined internal medicine-pediatrics were included with internal medicine. (One matched in internal medicine-pediatrics and the second in a non-primary care specialty.)

Students who rejected family practice were significantly more likely to cite lack of prestige, insufficient intellectual content, and excessive breadth of content area as weighing against the specialty they rejected. They were less likely to cite fewer opportunities to provide sophisticated technology as a negative influence (Table 3).

Students switching from family practice were less likely to report opportunities to do something definitive about medical problems ($P=.04$), good income ($P=.01$), provision of sophisticated technology ($P=.03$), and encouragement from advisor ($P=.05$) attracted them to their matched specialty. (Tabular comparison of positive influences not presented. Complete data for comparisons of individual influences available from authors on request.)

Approximately 30% of respondents provided open-ended comments about influences on their career choices. These were consistent with the themes of the quantitative comparisons. Students rejecting family practice consistently emphasized the belief that impossibly broad expertise is required in family practice. Students also reported that fellow students, residents, and faculty often denigrate family practice. Interestingly, a number of students who were never interested in family practice complained about the overt "marketing" of primary care in general and family practice in particular.

Discussion

At UCSF, the retention rate for family practice (37%) differs significantly from retention rates for internal medicine (50%) and pediatrics (69%). This is consistent with national data.⁶ Our findings suggest that this difference is partly due to the perception that family practice is less likely than other specialties to offer enough prestige within the medical profession, adequate intellectual depth, or possibility of content mastery.

Other investigators have examined factors that affect specialty selection or low retention of students originally interested in family practice.^{5,6,12,16-22} Ours is the first quantitative study to focus on factors that distinguish students who reject family practice from students who reject other specialties. By focusing on students who changed specialty preference during the clinical years, we narrowed the analysis to those factors that contributed to greater differential losses from family practice.

The negative perceptions of family practice were not accompanied by unique positive factors drawing students to alternative choices. Students switching from family practice were less likely to be influenced by the allure of higher income, definitive care, and sophisticated technology. The relative unimportance of these three issues among this group suggests that students who highly value these considerations are unlikely to be interested in family practice at any time. The absence of any relatively more-important positive factors among this group suggests that students rejecting family practice are more influenced by negative factors. They are more likely to decide against family practice rather than for an alternative.

All UCSF students appear most motivated by their perceptions of intellectual content, clerkship experiences, examples of physicians in the field, and opportunities for diversity in their work. Perceived lifestyle constraints are commonly cited as dissuading students from a particular choice. For many students at UCSF, specialty choice is clear before they begin clinical rotations. Sixty-six percent of those whose preclinical preference is a primary care specialty go on to match in one, and 77% of those whose preclinical preference is a non-primary care specialty ultimately choose one. On the other hand, family practice retained only 37%

Table 3

Negative Influences on Specialty Choice: 177 Medical Students Who Switched Their Favored Specialty During Third and Fourth Years*

Negative Influence	Switched From Family Practice (n=26)	All Other Switchers (n=151)	P Value
Negative clerkship experience	62%	69%	.50
Negative example of a physician in the preclinical preferred specialty	54%	63%	.39
Lack of flexibility in determining professional lifestyle (eg, setting hours, working in different settings)	46%	65%	.08
Not enough prestige within the medical profession	39%	15%	.01**
Intellectual content too low	52%	31%	.04**
Inability to provide the most sophisticated technology that medicine has to offer	0	15%	.03**
Inability to master content area and remain an expert in this area.	50%	29%	.04**

* Values in columns reflect percent of that group that agreed that the negative factor about their initially preferred specialty significantly influenced their decision. All items with more than 50% agreement or significant differences (**) between groups are listed.

of interested students. These findings are consistent with earlier reports by Markert²¹ and Bowman et al,⁶ who reported that family practice retains only 34% of originally interested students and attracts only 8% of students not originally interested in family practice.

In an effort to expose students to generalist role models during the preclinical years, UCSF was one of 10 schools awarded a Health Resources and Services Administration subcontract in 1995 for the Interdisciplinary Generalist Curriculum project.²⁴ UCSF developed a six-quarter integrated curriculum for all medical students, including an early clinical preceptorship, in which all students are assigned to a generalist office (family practice, general internal medicine, or pediatrics) for a half day every other week throughout their first 2 years. These curricular changes were implemented after the participants in our study had completed the first and second years. Participants in our study did complete a required 8-week primary care clerkship, sponsored by the UCSF Department of Family and Community Medicine (DFCM). These students were also exposed to a broad menu of additional DFCM elective offerings: summer preceptorships; clinical, geriatrics, research, and legal medicine electives; sub-internships; a family practice seminar; and a family practice student interest group.

Limitations

Our survey has several limitations. The questionnaire was administered to each graduating class only once, between NRMP results and graduation in the spring of the fourth year. It was a retrospective, recall-based, self-report instrument. Students who recently learned that they matched in a particular specialty may not have recalled their earlier intended choice and may have reported an original preference closer to their ultimate Match choice. This would have the effect of inflating the predictive value of the preclinical choice and deflating the proportions of students who changed their minds. Further, individuals' explanations of their behavior may differ from the actual causative factors.²⁴ The structure of our questionnaire may also allow for some incorrect reporting of original preferences among students who changed specialty preference more than once.

Finally, although our findings might be expected to apply to medical schools like UCSF with traditions for sophisticated research, highly competitive enrollment, and large proportions of graduates who enter specialized fields, they may not generalize to all medical schools. There is some evidence, however, to suggest that the circumstances we have observed at UCSF exist elsewhere. While ours is the first quantitative study that focused on students rejecting family practice, Mutha et al¹² identified similar themes about perceived difficulty of content mastery and perceived prestige of family practice in a qualitative study of medical students done at three California medical schools.

Conclusions

We conclude that for students graduating between 1996 and 1998, UCSF sustained a net loss of students from family practice. Family medicine educators and others interested in changing this trend should consider interventions that raise the perceived prestige of family practice and counter concerns about intellectual rigor and difficulty of mastering broad content. Establishing departments of family medicine and required rotations in family practice may mitigate these concerns and may have already served to increase the number of graduates choosing family practice. However, these measures alone (both in place at UCSF for more than a decade) are not sufficient. Other interventions might include earlier longitudinal exposure to family practice and other primary care specialties, an approach now being implemented at UCSF. A combined strategy of recruiting students with an initial interest in family practice and taking all possible steps to support this interest throughout medical school is likely to have the greatest success. Prospective tracking from a varied sample of medical schools may suggest more strategies. The effectiveness of early longitudinal primary care curricular programs needs further study. The prestige and intellectual content sought by students requires further clarification, perhaps through qualitative approaches.

Medical workforce studies continue to emphasize the importance of increasing the proportion of physicians who enter primary care specialties. While family practice is not the best choice for every student, it is in the interest of the specialty and society that students not switch away from primary care because of misinformation or because of a hierarchy of prestige in medical school that undervalues the importance and rewards of family practice.

Acknowledgments: Portions of this manuscript were presented at the Society of Teachers of Family Medicine (STFM) 1996 Western Regional Meeting, the STFM 1997 Predoctoral Education Conference, and the April 24, 1998 Central California Research Symposium.

Corresponding Author: Address correspondence to Dr Schafer, UCSF-Fresno Family Practice Residency, University Medical Center, 445 South Cedar Avenue, Fresno, CA 93711. 559-459-5705. Fax: 559-459-4443. E-mail: schaffer@ucsfresno.edu.

REFERENCES

1. Council on Graduate Medical Education. COGME 1995 Physician workforce funding recommendations for Department of Health and Human Services Programs. Washington, DC: Council on Graduate Medical Education, 1995:1-22.
2. Rivo M, Satcher D. Improving access to health care through physician workforce reform: directions for the 21st century. *JAMA* 1993;270:1074-8.
3. Meltzer D. Are generalists the answer for primary care? *JAMA* 1993;269:1711,1714.
4. Coffman J, Young J, Vranizan K, Blick N, Grumbach K. California needs better medicine: physician supply and medical education in California. San Francisco: California Primary Care Consortium and Center for Health Professions, 1997.

5. Schieberl JL, Covell RM, Berry C, Anderson J. Factors associated with choosing a primary care career. *West J Med* 1996;164:492-6.
6. Bowman M, Haynes R, Rivo M, Killian C, Davis H. Characteristics of medical students by level of interest in family practice. *Fam Med* 1996;28:713-9.
7. Rabinowitz H, Diamond J, Markham F, Hazelwood C. A program to increase the number of family physicians in rural and underserved areas. *JAMA* 1999;281:255-60.
8. Rucker L, Morgan C, Ward KE, Bell BB. Impact of an ambulatory care clerkship on the attitudes of students from five classes (1985-1989) toward primary care. *Acad Med* 1991;66:620-1.
9. Hensel W. Calculating the number of new generalist physicians [letter]. *Acad Med* 1993;68:498.
10. Hoagland S. UC fails to meet terms of agreement. *California Family Physician* 1999;spring:25-6.
11. Miller K, Fox B, Mitchell G. Medical students' and private family physicians' perceptions of family practice. *Fam Med* 1996;28(1):33-8.
12. Mutha S, Takayama J, O'Neil E. Insights into medical students' career choices based on third- and fourth-year students' focus-group discussions. *Acad Med* 1997;72:635-40.
13. Duerson M, Crandall L, Dwyer J. Impact of a required family medicine clerkship on medical students' attitudes about primary care. *Acad Med* 1989;64:546-8.
14. Hearst N, Shore W, Hudes E, French L. Family practice bashing as perceived by students at a university medical center. *Fam Med* 1995;27(6):366-70.
15. Association of American Medical Colleges. Medical school graduation questionnaire: summary report for all schools. Washington, DC: Association of American Medical Colleges, 1994.
16. Babbott D, Baldwin D, Killian C, Weaver S. Racial-ethnic background and specialty choice: a study of US medical school graduates in 1987. *Acad Med* 1989;64:595-9.
17. Godkin M, Quirk M. Why students chose family medicine: state schools graduating the most family physicians. *Fam Med* 1991;23(7):521-6.
18. Kassebaum D, Szenas P. Relationship between indebtedness and the specialty choices of graduating medical students. *Acad Med* 1992;67:700-7.
19. Kassler W, Wartman S, Silliman R. Why medical students choose primary care careers. *Acad Med* 1991;66:41-3.
20. Lieu T, Schroeder S, Altman D. Specialty choices at one medical school: recent trends and analysis of predictive factors. *Acad Med* 1989;64:622-9.
21. Markert R. Why medical students change to and from primary care as a career choice. *Fam Med* 1991;23(5):347-50.
22. Martini C, Reloski J, Barzansky B, Xu G, Fields S. Medical school and student characteristics that influence choosing a generalist career. *JAMA* 1994;272:661-8.
23. Kahn NB Jr, Davis A, Wartman S, Wilson M, Kahn R. The Interdisciplinary Generalist Curriculum Project: a national medical school demonstration project. *Acad Med* 1995;70(suppl-January):S75-S80.
24. Pathman D, Konrad T, Agnew C. Studying the retention of rural physicians. *J Rural Health* 1994;10:183-92.

