Opportunities for Medical Student Engagement With Family Medicine

Joel Heidelbaugh, MD; James Cooke, MD; Leslie Wimsatt, PhD

BACKGROUND AND OBJECTIVES: Several factors have been linked to the decline in medical student choice of a career in primary care (eg, gender, race, family income, student debt), yet understanding remains limited regarding the availability of curricular and co-curricular experiences for medical students within family medicine that may play a role, particularly one-on-one opportunities such as faculty mentoring and advising. Our study sought to collect baseline data on family medicine learning experiences during predoctoral training.

METHODS: An online 21-question survey was sent to family medicine departments at US allopathic medical schools between January and March 2012 (84.6% response rate) to capture institutional representation and experiences within family medicine.

RESULTS: Most institutions reported offering family medicine interest groups (98.1%), electives (97.1%), and clerkships (90.4%). Career advising as an elective course component was available at 53.8% of schools and as part of a required course at 46.2%. Comparison of public versus private institutions revealed differences in rural medicine experiences, admissions preferences, and residency director involvement in hands-on and small- group teaching. Additional differences were noted by total enrollment, number of family medicine faculty in senior leadership positions, and proportion of full-time clinical faculty teaching family medicine.

CONCLUSIONS: Availability of family medicine curricular programming, formal advising/mentoring opportunities, and full-time faculty as teachers and senior administrators differed across various characteristics of medical schools. Results can be used to direct future research on medical student engagement with family medicine educational experiences relative to recruitment.

(Fam Med 2013;45(7):484-91.)

At the current rate of US population growth and with the decreasing proportion of medical students seeking careers in primary care medicine, it is estimated that there will be a shortage of up to 46,000 primary care physicians by 2025.[1-6] Declining interest in family medicine begins as early as the second year of medical school and has been linked to lack of engagement with family medicine curricular experiences and role models.[7,8] The American Academy of Family Physicians (AAFP) has identified several factors from the extant literature associated with increased selection of medical students into family medicine careers: communications and image, admissions and pipeline, role models, and curriculum and education.[9]

Accreditation standards now require career advising and counseling for students as a way of supporting student decision making related to course electives, career selection, and the preparation of residency program applications.[10] Personalized career counseling has traditionally occurred outside the formal curriculum,[11] sometimes functioning as one-on-one learning opportunities in which students engage with individual faculty who informally serve as role models or mentors. The American Association of Medical Colleges (AAMC) Careers in Medicine (CIM) program has been instrumental in encouraging medical schools to embrace career development programming.[11,12] Medical students can access CIM resources to support specialty selection and residency application, including descriptions of specialty area practice characteristics, average compensation, training requirements, Match data, professional associations, and publications.[13]

From the Departments of Family Medicine and Urology (Dr Heidelbaugh), Departments of Family Medicine and Medical Education (Dr Cooke), and Educational Research, Development, and Assessment (Dr Wimsatt), University of Michigan.

Although primary care career choice has been shown to be related to curricular factors, including exposure to required family medicine educational experiences during the third or fourth year of predoctoral training,[14-17] further data are needed to guide institutional planning. Within family medicine, understanding remains limited regarding specific curricular and co-curricular experiences provided to medical students, particularly one-on-one mentoring and advising. To address this gap, we conducted a study to explore student opportunities for engagement in family medicine curricular and co-curricular learning experiences at US medical schools with departments of family medicine. We hypothesized that the availability of family medicine learning opportunities would likely vary by medical school mission, student enrollment, and the proportion of full-time family medicine faculty involved in medical school teaching and leadership. Our results provide a framework on which future studies of curricular engagement with family medicine can be developed.

Methods

Between January and March 2012 we conducted an online survey of family medicine department representatives at US allopathic medical schools. The study was approved by the University of Michigan Institutional Review Board. Invitations to participate in the study were sent via e-mail with an embedded link to the web-based survey. Reminder e-mails were sent to campuses that did not initially respond. The invitation contained a complete description of the study, an outline of participant rights (including the right to decline participation without prejudice), and the opportunity to continue or terminate study participation at any point. There were no financial or material incentives provided.

Following an initial review of medical school and department listings,[18,19] family medicine programs were identified and email addresses for institutional representatives at 141 schools located using campus directories and family medicine professional membership lists. Because schools with family medicine departments tend to produce graduates more likely to enter family medicine residency programs[20] and generalist careers,[21,22] we considered the presence of a family medicine department to be our primary criterion for medical school inclusion. Fourteen schools originally identified did not have a department of family medicine and were deemed ineligible for participation. Contact emails for four additional schools were invalid. We ultimately obtained email addresses for institutional representatives at 123 medical schools with departments of family medicine. We received survey responses from 104 of 123 eligible medical schools for a response rate of 84.6%. Only one response per institutional setting was entered into the study database, with clerkship directors designated as the primary respondents and responses from other institutional representatives only entered when direct input from the affiliated clerkship directors was unattainable. Institutional enrollment data was then entered based on information collected by the AAMC,[18,23] and each institution assigned a confidential data tracking number.

Study Measures

The survey contained 21 items aimed at identifying the types of curricular and co-curricular opportunities available to students for engagement with family medicine during medical school. Demographic data collected from the institutional representative included current appointment in family medicine and highest degree earned. Three questions were used to gather information regarding the total number of family medicine faculty who served as senior members of the medical school administration (ie, vice president/executive vice president, provost, dean, associate dean, vice dean, assistant dean, other), whether family physicians served on the admissions committee, and whether applicants interested in a career in family medicine received preference during the admissions process.

The remaining 17 questions addressed educational experiences in family medicine. One question explored residency director teaching roles, and another focused on the number of full-time family medicine clinical faculty engaged in teaching, ie, those with a .50 full-time equivalent (FTE) or greater clinical appointment. Respondents were also asked to identify the types of family medicine curricular and co-curricular opportunities available on their campuses. Co-curricular experiences were defined as learning activities that fell outside the regular curriculum such as participation in family medicine interest groups and advising informally provided outside the formal classroom setting. In addition, the survey included an extended set of questions about family medicine clerkships, including number per year, duration, and average enrollment per session. Clerkship questions also focused on the numbers and types of faculty involved in clerkship teaching and precepting, and queried each campus about the percentage of time that clerkship students spent on the job shadowing/observing others in practice, hands-on work with patients, and other activities.

Statistical Analysis

Descriptive statistics were calculated for all variables of interest. Several variables were recoded as dichotomous measures for purposes of statistical comparison (administrative role, school enrollment, year 1 class size, residency director teaching role, full-time faculty percentages). Median values were used to identify enrollment cut-points. Mean comparisons were conducted using chi-square analyses and *t* tests. Quantitative analyses were performed using PASW 18.0 statistical software package (SPSS Inc,

Chicago, IL). All tests were two-sided with significance cut-off set at $P<.05$.

Results

The overall survey response rate was 84.6% (104/123). The majority of institutional representatives who answered the survey held MD degrees (95.2%), and 88.5% were either clerkship or residency directors. Characteristics of the respondent institutions are shown in Table 1. Sixty-five percent of the respondent institutions were public and 35% private, with total enrollment ranging from 84 to 1,309 medical students. We found no statistically significant difference in response rates among the respondents by institutional type or enrollment size. The teaching faculty at more than half of the schools held full-time clinical appointments. Most schools (83.0%) reported having at least one family medicine faculty member on their staff who served as a senior member of the medical school administration. Only 17.3% of schools offered preferential admission to applicants who expressed an interest in primary care careers.

Educational Experiences

Each campus offered a variety of curricular and co-curricular opportunities for student interactions with family medicine faculty (Table 2). Almost all campuses (98.1%) offered a family medicine interest group for students interested in learning more about careers in family medicine. Somewhat fewer provided family medicine elective or clerkship opportunities (97.1% and 90.4%, respectively). The curriculum at a majority of schools included small-group discussions led by family medicine faculty (85.6% years 1 and 2; 89.4% years 3 and 4), but less than half of institutions provided required courses that had a career advising component or large-group lectures taught by family medicine faculty in years 3 or 4 (46.2%). Integration of case studies with a family medicine component appeared more common within clinical than preclinical curricula (66.3% versus 51.0% schools).

Extended analyses revealed variations in teaching. Ninety-four percent of schools with fewer than 605 students (median enrollment size) involved family medicine faculty in small-group discussions (79.2% larger schools, $P=.043$), and 80.0% involved their faculty in delivering large-group lectures in years 1 and 2 (compared with 56.6% at the larger schools, $P=.012$). Faculty at 98.0% of the smaller and 83.0% of the larger institutions led small-group discussions with year 3 and 4 students ($P=.016$). Conversely, 56.6% of the larger schools provided career advising as a required course component as opposed to 36.0% of the smaller institutions ($P=.048$).

The respondent campuses also provided information about the extent to which medical students could engage in one-on-one learning experiences with family medicine role models (Figure 1). Only about half of the schools provided formal advising activities with family medicine faculty during the clinical and preclinical years. Greater variation existed in the informal advising provided to students: 65.4% of the schools in year 1 and 2 and 81.7% during the clinical training years. Mentors were infrequently paired with family medicine interest group participants or clerkship students (14.9% and 7.5% schools, respectively).

Differences by Institutional Type

Admissions preferences differed by institutional type (public versus private) (Table 3). A significantly greater percentage of public than private

Table 1: Characteristics of Respondent Institutions

Variable	# (%)
Institution type (n=103)	
Public	67 (65.0)
Private	36 (35.0)
Institution—total enrollment (n=103)*	
< 605 students	50 (48.5)
≥ 605 students	53 (51.5)
Institution—class size, year 1 (n=103)	
< 145 students	52 (50.5)
≥ 145 students	51 (49.5)
Institution—admissions policy (n=104)	
Admissions preference if primary care career interest	18 (17.3)
Full-time clinical faculty engaged in teaching medical students (n=104)	
< 10%	11 (10.6)
10%–25%	13 (12.5)
26%–50%	17 (16.3)
51%–75%	25 (24.0)
> 75%	35 (33.7)
Not indicated	3 (2.9)
Family medicine faculty roles	
Faculty as medical school senior administrators (n=94)	78 (83.0)
Faculty as admissions committee members (n=104)	87 (83.7)
Residency director teaches medical students (n=104)	104 (100.0)

* Total enrollment ranged from 84 to 1,309 students; median = 605 students. 2011–2012 enrollment not available for one institution.
** Class size (year 1) ranged from 42 to 322 students; median = 145 students.

Table 2: Frequency of Family Medicine Educational Experiences Offered Across Medical Schools*

Curricular Experience(s)	# (%)
FM interest group	102 (98.1)
FM elective	101 (97.1)
FM clerkship (Year 3–4)	94 (90.4)
Small-group discussion led by FM faculty (Year 3–4)	93 (89.4)
Small-group discussion led by FM faculty (Year 1–2)	89 (85.6)
Ambulatory care experience with full-time FM faculty (Year 3–4)	84 (80.8)
Rural community medicine experiences	84 (80.8)
Global health experiences	79 (76.0)
FM orientation session	78 (75.0)
Community medicine elective	71 (68.3)
Large-group lecture taught by FM faculty (Year 1–2)	70 (67.3)
Case studies with FM component (Year 3–4)	69 (66.3)
Ambulatory care experience with full-time FM faculty (Yearr 1–2)	66 (63.5)
Career advising—elective course component	56 (53.8)
Case studies with FM component (Year 1–2)	53 (51.0)
Career advising—required course component	48 (46.2)
Large-group lecture taught by FM faculty (Year 3–4)	48 (46.2)

FM—family medicine
*n=104

institutions offered rural community medicine experiences (89.6% versus 63.9%, *P*=.003). We found that 33.3% (15/45) of the public medical school respondents extended admissions preferences to students who expressed a family medicine career interest, but only 6.9% (2/29) of the private schools reported such practices (*P*=.010). Residency directors at 80.6% of the public and 58.3% of the private schools engaged in hands-on learning experiences with students (*P*=.021), and they were involved in teaching medical students during small-group discussions at 67.2% of the public and 44.4%of the private medical schools (*P*=.035).

Differences by Faculty Role

Several educational opportunities were found to be associated with the proportion of family medicine faculty available as teachers and senior leaders within the medical school (Table 4). The presence of two or more members of the family medicine faculty as senior medical school administrators was significantly and

Figure 1: Opportunities for One-on-One Engagement With Family Medicine Mentors and Advisors

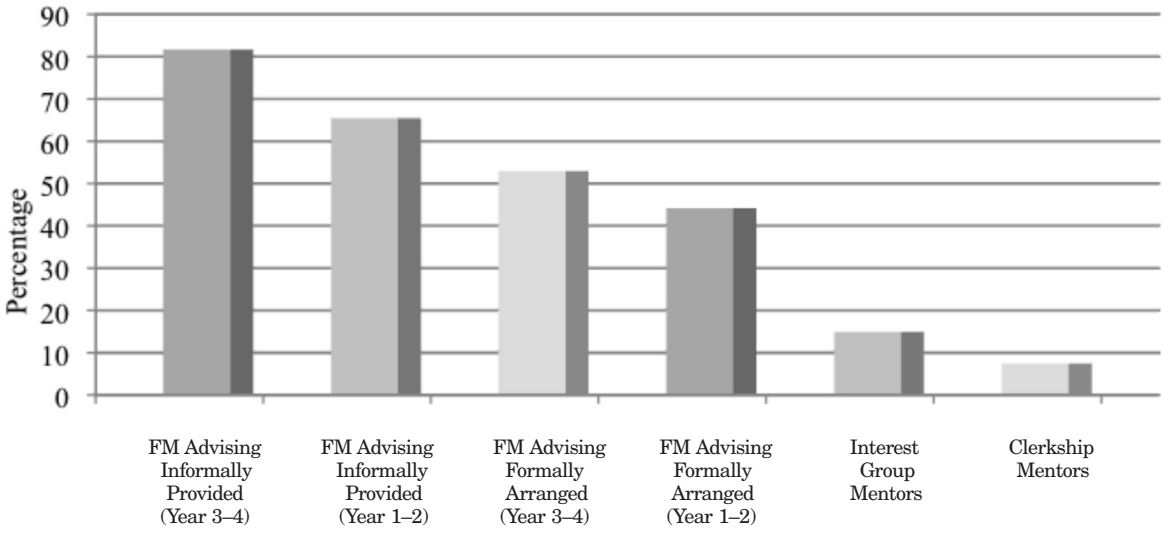

Table 3: Differences in Educational Opportunities by Institutional Type

Educational Opportunities	Institutional Type: Private (n=36)	Institutional Type: Public (n=67)	
	# (%)	# (%)	P Value*
Institution—admissions policy			
Admissions preference if primary care career interest*	2 (6.9)**	15 (33.3)***	.010
FM faculty roles			
Residency director leads small-group discussions	16 (44.4)	45 (67.2)	.035
Residency director leads hands-on learning experiences	21 (598.3)	54 (80.6)	.021
FM curricular experience			
Rural community medicine	23 (63.9)	60 (89.6)	.003

FM—family medicine
* Calculated by 2x2 chi-square test.
** Private (n=29); no response (n=7)
*** Public (n=45); no response (n=22)

Table 4: Differences in Educational Opportunities in Relation to FM Senior Administrators and Full-Time Clinical Teaching Faculty

	# FM Faculty as Medical School Senior Administrators*		
	0–1 (n=53)	≥ 2 (n=41)	
	# (%)	# (%)	*P* Value*
FM educational experiences			
Rural community medicine	38 (71.7)	37 (90.2)	.037
Ambulatory care experience with full-time FM faculty (Year 1–2)	29 (54.7)	32 (78.0)	.029
Career advising—required course component	19 (35.8)	24 (58.5)	.037
Large-group lecture taught by FM faculty (Year 3–4)	20 (37.7)	25 (61.0)	.037
	% Full-Time FM Clinical Faculty With Teaching Responsibilities		
	≤ 25 (n=246)	26-100 (n=77)	
	# (%)	# (%)	*P* Value**
FM advising/mentoring			
Informally provided (Year 1–2)	11 (45.8)	55 (71.4)	.028
Informally provided (Year 3–4)	16 (66.7)	67 (87.0)	.033

FM—family medicine
* Family medicine faculty serving as senior members of medical school administration, coded as vice president/executive vice president, provost, dean, associate dean, vice dean, assistant dean, other.
** Calculated by 2x2 chi-square test.

positively related to the provision of rural community medicine experiences, large-group lectures led by family medicine physicians in years 3 and 4, and career advising as a required course component (*P*=.037). In addition, a greater percentage of institutions with greater senior leadership representation offered ambulatory care experiences in years 1 and 2 (*P*=.029).

We found no significant correlations between the percentage of full-time family medicine clinical faculty involved with teaching medical students and institutional type, total enrollment, or number of faculty serving in senior administrative positions. However, the percentage of full-time clinical faculty engaged in medical student teaching did relate to the types of educational opportunities offered at the respondent campuses (Table 4). Only 45.8% of the schools with fewer than 25% full-time clinical faculty engaged in teaching were able to offer informal student advising/mentoring in years 1 and 2 compared to 71.4% schools with a greater proportion of full-time clinical faculty involvement (*P*=.028). Similar differences were found in year 3 and 4 (*P*=.033).

Comparison of Clerkship Experiences

Table 5 provides a comparison of clerkship experiences provided at the respondent campuses with differences highlighted by medical school enrollment. Statistical variation existed in the number of students per clerkship session (*P*=.026) and in the number of community physicians involved in clerkship teaching and precepting: 23.3 physicians per month at schools with larger enrollment compared to 11.7 at smaller schools (*P*=.018). Standard deviations reflected large within-group differences in terms of the number of clerkship faculty and students involved and with regard to the percentage of time spent on clerkship instructional activities. On average, the majority of clerkship time (78.1%) was dedicated to direct patient contact, with 11.2%

Table 5: Comparison of Family Medicine Clerkship Experiences by Medical School Enrollment

				Medical School Enrollment* Mean (SD)		
Clerkship Experiences	**Mean (SD)**	**Median**	**Range**	**< 605 students**	**≥ 605 students**	***P* Value†**
Clerkship—scheduling						
# of sessions per year (n=91)	8.2 (3.43)	8.0	1–24	7.8 (3.44)	8.8 (3.41)	.184
# of weeks per session (n=91)	5.6 (1.52)	6.0	3–9	5.9 (1.54)	5.3 (1.48)	.056
# of students per session (n=87)	14.4 (7.32)	15.0	2–35	12.8 (6.10)	16.3 (8.01)	.026
Clerkship—academic FM faculty						
# serving as clerkship preceptors per month (n=88)	10.1 (7.75)	8.0	0–35	10.3 (7.74)	9.9 (7.95)	.837
# engaging in clerkship teaching per month (n=89)	8.1 (5.71)	7.0	0–35	7.9 (5.23)	8.3 (6.32)	.764
Clerkship—community physicians						
# serving as clerkship preceptors per month (n=89)	17.1 (21.99)	10.0	0–153	11.7 (10.32)	23.3 (29.08)	.018
# engaging in clerkship teaching per month (n=88)	7.9 (18.73)	2.0	0–153	5.0 (10.66)	11.3 (25.05)	.151
Clerkship activities						
% time spent—job shadowing/ observing others in practice (n=78)	11.2 (13.23)	10.0	0–75	11.6 (12.38)	10.4 (14.27)	.686
% time spent—hands-on work with patients (n=90)‡	78.1 (16.22)	80.0	25–100	75.9 (15.86)	80.7 (16.61)	.161
% time spent – other activities (n=61)	17.9 (11.53)	20.0	0–50	19.4 (12.37)	16.1 (10.32)	.269

FM—family medicine
* Cut-point based upon median enrollment size of 605 students
† Calculated by *t* test analyses
‡ eg, history taking, direct patient care

of the time spent job shadowing/observing others in clinical practice and 17.9% spent on other clerkship-related activities. No differences in frequency of clerkship experiences were noted by public/private governance or in accordance with the number of faculty in senior administrative positions. However, additional analyses revealed that schools with fewer than 25% full-time clinical faculty involved their students in job shadowing/observing 7.0% of the time versus 11.9% of time spent at other institutions (*P*=.044).

Discussion

This study enhances current understanding of curricular and co-curricular experiences provided by medical schools to engage students with family medicine educators. The findings identify variation across medical schools in the availability of family medicine curricular programming, formal advising/mentoring opportunities, faculty with full-time appointments, and faculty role models in senior leadership positions.

Medical schools staffed with greater than 25% full-time clinical faculty reported offering more opportunities for informal advising and mentoring than schools with fewer full-time clinical faculty. This finding raises interesting questions regarding the extent to which the engagement of full-time clinical teaching faculty influences the types of educational opportunities available to students, particularly less formally structured learning activities. While past research has yielded inconclusive results regarding the influence of full-time faculty percentages on medical student career choice,[24] our results suggest that a more nuanced measurement approach might prove useful to such research efforts in the future. Our research also suggests student exposure to rural medicine and ambulatory care occurs at a greater number of schools where two or more family medicine faculty serve in senior leadership positions. Thus, the engagement of family physicians as full-time clinical teaching faculty and senior administrators could offer a unique vehicle for launching positive communication,

image projection, and curricular development in support of family medicine as a career choice.[9]

Fewer than one fifth of the schools offered preferential admission to applicants who expressed an interest in a primary care career but, if offered, it was more likely at the public institutions. Offering admissions preferences for applicants with a primary career interest has been associated with career choice in several studies.[21,25,26] Institutions with a primary care focus may want to consider adoption of such a policy as one approach in support of student recruitment into a family medicine career.

Our research findings indicate that a relatively small percentage of institutions use case studies as a method of embedding exposure to family medicine in the curriculum but that a majority of schools offer interest groups, electives, clerkships, and small discussion group opportunities to medical students. Over the past 25 years, the existence of a third-year family medicine clerkship has consistently been shown to increase the selection of careers in family medicine.[21,24,27-30] Clerkships generate interest in the clerkship specialty, and post-clerkship interest in a particular specialty is associated with students' choice to pursue a career in that field.[29] We note that clerkship duration is a contributing factor, with lengthier sessions found most effective in increasing the proportion of medical students who choose family medicine careers.[31] Although research suggests that brief family medicine experiences during the first 2 years of medical school have little influence on career choice,[14,24] shorter-term electives in primary care and family medicine have been correlated with an increased level of student interest in primary care careers during medical school and career choice at graduation.[21,25,32] While the majority of medical schools examined appear to offer elective and clerkship experiences, additional opportunities may exist for extending the length of clerkship sessions and/or improving longitudinal exposure to family medicine.

In addition, although career advising and mentoring play an important role in supporting medical student career selection,[7,33-36] few schools in our study partnered interest group or clerkship participants with mentors. This is of some concern because both role models and mentors help guide medical student training development and specialty choice.[37,38] Also, research indicates that role models have an impact on the process of choosing a career in medicine by influencing students' understanding of their fit with the profession.[39] Formally arranged advising or mentoring may provide institutions with additional methods of student engagement. Resource materials available through the AAMC Careers in Medicine (CIM) program could prove useful in this regard.[13]

We note several benefits and potential limitations of our study. Existing research evidence suggests that medical school learning environments and clinical experiences can influence the career paths of medical students.[25] In this study we were able to disaggregate and examine multiple measures of student engagement with family medicine curricular and co-curricular educational opportunities across all 4 years of medical school. While some institutions included in our study may not have a primary mission of recruiting students into careers in family medicine, our findings suggest several potential ways of enhancing engagement with family medicine through personal contact and mentorship.

Although we achieved a relatively high survey response rate and were able to take into account a broad cross-section of medical school characteristics in our analyses, a potential for bias exists toward institutions with a greater emphasis on family medicine training due to the content and focus of the survey. Also, schools with greater resources might have been the most inclined to participate, thereby biasing the results. To control for this, we consciously limited the number of questions included to facilitate survey completion. We recognize that recall bias could skew the results, leading to misidentification of opportunities for student engagement with faculty medicine, but do not regard this as likely given that all respondent data came from currently active department faculty and, of this group, almost all from clerkship and residency program directors. We focused exclusively on family medicine as a metric for primary care specialty choice as family medicine now comprises over half of all active primary care physicians in the US. Better understanding of curricular experiences in other primary care fields remains warranted.

Conclusions

This study represents a first step toward understanding the current state of family medicine curricular and co-curricular offerings within the nation's medical schools, which have rapidly expanded in number and enrollment over the past few years in response to the AAMC's call for increasing the physician pipeline. The findings can be used to inform future research on medical student engagement with family medicine educational experiences and also used by department administrators as a framework on which to base ongoing curricular review.

ACKNOWLEDGMENTS: An overview of this study was presented at the 2012 Society of Teachers of Family Medicine Annual Spring Conference in Seattle, prior to compilation and statistical review of the results.

CORRESPONDING AUTHOR: Address correspondence to Dr Heidelbaugh, Ypsilanti Health Center, 200 Arnet, Suite 200, Ypsilanti, MI 48198. 734-544-3210. Fax: 734-484-7292. jheidel@umich.edu.

References

1. Association of American Medical Colleges (AAMC). State physician workforce data book. Washington, DC: AAMC, 2011. https://www.aamc.org/download/263512/data/statedata2011.pdf. Accessed November 12, 2011.

2. Association of American Medical Colleges (AAMC). Recent studies and reports on physician shortages in the US. Washington, DC: AAMC, 2011. https://www.aamc.org/download/100598/data/recentworkforcestudiesnov09.pdf. Accessed November 12, 2011.
3. Colwill JM, Cultice JM, Kruse RL. Will generalist physician supply meet demands of an increasing and aging population? Health Aff 2008;27(3):w232-41. http://content.healthaffairs.org/content/27/3/w232. Accessed November 10, 2011.
4. Phillips RL Jr, Dodoo MS, Petterson S, et al. Specialty and geographic distribution of the physician workforce: what influences medical student and resident choices? Washington, DC: The Robert Graham Center, 2009. http://www.grahamcenter.org/online/etc/medialib/graham/documents/publications/mongraphsbooks/2009/rgcmo-specialty-geographic.Par.0001.File.tmp/Specialty-geography-compressed.pdf. Accessed November 10, 2011.
5. Brotherton S, Rockey PH, Etzel S. US graduate education, 2004–2005: trends in primary care specialties. JAMA 2005;294(9):1075-82.
6. Dill MJ, Salsberg ES. The complexities of physician supply and demand: projections through 2025. 2008. Washington, DC: Association of American Medical Colleges, Center for Workforce Studies, 2008.
7. Bethune C, Hansen PA, Deacon D, Hurley K, Kirby A, Godwin M. Family medicine as a career option: how students' attitudes changed during medical school. Can Fam Physician 2007;53(5):881-5.
8. Scott I, Wright B, Brenneis F, Brett-MacLean P, McCaffrey L. Why would I choose a career in family medicine? Can Fam Physician 2007;53(11):1956-7. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2231492/pdf/0531956.pdf. Accessed July 5, 2012.
9. American Academy of Family Physicians (AAFP). Commission on resident and student issues. Leawood, KS: AAFP, 2004.
10. Liaison Committee on Medical Education (LCME). LCME accreditation standards. http://www.lcme.org/functionslist.htm. Accessed June 10, 2012.
11. Zink BJ, Hammoud MM, Middleton E, Moroney D, Schigelone A. A comprehensive medical student career development program improves medical student satisfaction with career planning. Teach Learn Med 2007;19(1):55-60.
12. Patel SG, Ahmed R, Rosenbaum BP, Rodgers SM. Career guidance and the Web: bridging the gap between the AAMC Careers in Medicine Web site and local career guidance programs. Teach Learn Med 2008;20(3):230-4.
13. Association of American Medical Colleges (AAMC). Careers in medicine program. https://www.aamc.org/students/medstudents/cim. Accessed August 16, 2012.
14. Senf JH, Campos-Outcalt D, Kutob R. Factors related to the choice of family medicine: a reassessment and literature review. J Am Board Fam Pract 2003;16(6):502-12.
15. Campos-Outcalt D, Senf J, Pugno PA, McGaha AL. Family medicine specialty selection: a proposed research agenda. Fam Med 2007;39(8):585-9.
16. Senf JH, Campos-Outcalt D, Watkins AJ, Bastacky S, Killian C. A systematic analysis of how medical school characteristics relate to graduates' choices of primary care specialties. Acad Med 1997;72(6):524-33.
17. Campos-Outcalt D, Senf J. A longitudinal, national study of the effect of implementing a required third-year family practice clerkship or a department of family medicine on the selection of family medicine by medical students. Acad Med 1999;74(9):1016-20.
18. Association of American Medical Colleges (AAMC). Results of the 2011 medical school enrollment survey—Table 31: total enrollment by US medical school and race and ethnicity, 2011. Washington DC: AAMC, 2011. https://www.aamc.org/download/160146/data/table31-enrll-race-sch-2011.pdf. Accessed November 12, 2011.
19. Pugno PA, McGaha AL, Schmittling GT, DeVilbiss Bieck AD, Crosley PW, Ostergaard DJ. Results of the 2010 National Resident Matching Program: family medicine. Fam Med 2010;42(8):552-61.
20. McGaha AL, Schmittling GT, DeVilbiss Bieck AD, Crosley PW, Pugno PA. Entry of US medical school graduates into family medicine residencies: 2009–2010 and 3-year summary. Fam Med 2010;42(8):540-51.
21. Kassebaum DG, Szenas PL, Schuchert MK. Determinants of the generalist career intentions of 1995 graduating medical students. Acad Med 1996;71(2):198-209.
22. Martini CJ, Veloski JJ, Barzansky B, Xu G, Fields SK. Medical school and student characteristics that influence choosing a generalist career. JAMA 1994;272(9):661-8.
23. Association of American Medical Colleges (AAMC). Medical school admission requirements, 2011. Washington, DC: AAMC, 2011.
24. Bland C, Meurer L, Maldonado G. Determinants of primary care specialty choice: a non-statistical meta analysis of the literature. Acad Med 1995;70(7):620-41.
25. Phillips RL Jr, Dodoo MS, Petterson S, et al. Specialty and geographic distribution of the physician workforce: what influences medical student and resident choices? Washington, DC: The Robert Graham Center: Policy Studies in Family Medicine and Primary Care, 2009.
26. Zink T, Center B, Finstad D, et al. Efforts to graduate more primary care physicians and physicians who will practice in rural areas: examining outcomes from the University of Minnesota-Duluth and the Rural Physician Associate Program. Acad Med 2010;85(4):599-604.
27. Campos-Outcalt D, Senf JH. Characteristics of medical schools related to the choice of family medicine as a specialty. Acad Med 1989;64(10):610-5.
28. Kassebaum DG, Haynes RA. Relationship between third-year clerkship in family medicine and graduating students' choices of family practice careers. Acad Med 1992;67(3):217-9.
29. McLaughlin MA, Daugherty SR, Rose WH, Goodman LJ. Specialty choice during the clinical years: a prospective study. Acad Med 1993;68(10suppl):S55-S57.
30. Ellsbury KE, Carline JD, Irby DM, Stritter FT. Influence of third-year clerkships on medical student specialty preferences. Adv Health Sci Educ Theory Pract 1998;3(3):177-86.
31. Meurer LN. Influence of medical school curriculum on primary care specialty choice: analysis and synthesis of the literature. Acad Med 1995;70(5):388-97.
32. Xu G, Hoja M, Brigham TP, Veloski JJ. Factors associated with changing levels of interest in primary care during medical school. Acad Med 1999;74(9):1011-5.
33. Navarro AM, Taylor AD, Pokorny AP. Three innovative curricula for addressing medical students' career development. Acad Med 2011;86(1):72-6.
34. Chang JC, Michele R, Odrobina MR, McIntyre-Seltman K. Residents as role models: the effect of the obstetrics and gynecology clerkship on medical students' career interest. J Grad Med Ed 2010;2(3):341-5.
35. Burack JH, Irby DM, Carline JD, Ambrozy DM, Ellsbury KE, Stritter FT. A study of medical students' specialty-choice pathways: trying on possible selves. Acad Med 1997;72(6):535-41.
36. Campos-Outcalt D, Senf J, Watkins A, Bastacky S. The effects of medical school curricula, faculty role models, and biomedical research support on generalist physician career choice: a review and quality assessment of the literature. Acad Med 1995;70(7):611-9.
37. Coutts-van Dijk LC, Bray JH, Moore S, Rogers J. Prospective study of how students' humanism and psychosocial beliefs relate to specialty matching. Acad Med 1997;72(12):1106-8.
38. Hauer KE, Durning SJ, Kernan WN, et al. Factors associated with medical students' career choices regarding internal medicine. JAMA 2008;300(10):1154-64.
39. Senf JH, Kutob R, Campos-Outcalt D. Which primary care specialty? Factors that relate to a choice of family medicine, internal medicine, combined internal medicine-pediatrics, or pediatrics. Fam Med 2004;36(2):123-30.

Each summer, thousands of medical students and family medicine residents travel to Kansas City, Mo., for National Conference. At this three-day event, clinical skills, leadership development, and career planning are covered in workshops and procedural skills courses. Students can network with and learn about nearly any family medicine residency program in the country at the nation's largest specialty residency fair.Â Registration is discounted for students and residents. The State Legislative Conference presents opportunities for you to connect with health policy experts, family physicians, chapter leaders, and AAFP staff. You can build your list of contacts to call on for insights and recommendations. Family Medicine Advocacy Summit. Increasing attention is being paid to medical student and resident well-being, as well as to enhanci.Â So, why should medical schools and residency programs create additional structured opportunities for trainees to establish meaningful connections with others? In part, because these connections provide greater social support for potentially vulnerable individuals. Several studies in the hospital environment have suggested a relationship between poor social support at work (i.e., feeling unable to share experiences and feelings with colleagues) and burnout, as well as the potential for high levels of social support to reduce burnout.19â€“22 Not surprisingly, GarcÃa-Sierra et al19 report that for @article{Heidelbaugh2013OpportunitiesFM, title={Opportunities for medical student engagement with family medicine.}, author={Joel J. Heidelbaugh and James Francis Cooke and Leslie A. Wimsatt}, journal={Family medicine}, year={2013}, volume={45 7}, pages={. 484-91 } }.Â BACKGROUND AND OBJECTIVES Several factors have been linked to the decline in medical student choice of a career in primary care (eg, gender, race, family income, student debt), yet understanding remains limited regarding the availability of curricular and co-curricular experiences for medical students within family medicine that may play a role, particularly one-on-one opportunities such as faculty mentoring. and advising.