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# How Do Medical Students View the Work Life of Primary Care and Specialty Physicians?

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## Abstract

**Background and Objectives—**Student perceptions of day-to-day physician work life, and relationships between these perceptions and specialty choices, have not been quantitatively explored. The study's purposes were to measure student perceptions of primary care and specialist physician work life, including administrative burden, time pressures, autonomy, and relationships with patients; to determine whether senior students' perceptions vary from junior students' perceptions; and to determine whether students with primary care career plans view primary care work life differently than their peers.

**Methods—**A cross-sectional anonymous survey was offered to all students at three allopathic U.S. medical schools between 2006 and 2008.

**Results—**Of 1533 eligible students, 983 submitted usable surveys (response rate 64.1%). Students viewed the day-to-day work life of all physicians negatively, but viewed primary care physician work life more negatively. Senior students viewed specialist work life more positively, and primary care work life more negatively, than junior students. Students planning primary care and specialist careers had similar views of primary care and specialist work life.

**Conclusions—**Students have negative views of the work life of all physicians, especially primary care physicians. Students planning careers in primary care share this negative view of their future work life, suggesting that their career choices are not based on different work life perceptions.

## INTRODUCTION

In order to help educators and policy makers build the primary care physician work force, researchers must systematically evaluate medical students' reasons for choosing primary care or specialty practice.[1] Bland et al.'s theoretical model of specialty choice suggests that both student "needs" and "perceptions" are important in formulating career decisions.[2] Previous authors have explored the "needs," or values and goals, of students choosing primary care.[3, 4, 5, 6, 7, 8, 9] Researchers have also demonstrated that students who choose primary care describe primary care physicians' competence,[10] "appropriate" scope of

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practice,[11] quality of scholarship,[10, 11] "importance,"[12] and appropriate role in the health care system[13] differently than students who choose specialty careers. In summary, primary-care-oriented students have different beliefs about the value of primary care. However, no quantitative studies have focused on students' understanding of actual day-to-day primary care medical practice: their perceptions of primary care physician work life.

Work life perceptions are influenced by both students' direct observations of practicing physicians and the culture of medical education, including the "informal curriculum."[14, 2, 15, 16] Within this informal curriculum, students at many U.S. institutions have described hearing negative messages about primary care from peers, residents, and faculty.[17, 18, 19, 20] Among other criticisms, primary care has been labeled "unchallenging and mundane"[21] and is associated with short visits, restrictive cost controls, burdensome paperwork, and overwhelmed and unhappy physicians.[22, 17, 19] By examining student perceptions, we aim to assess whether students who choose primary care view primary care work life more positively than their peers, or whether they view primary care work life negatively, but choose primary care despite these negative perceptions.

We assessed U.S. medical students' perceptions of primary care and specialty medicine, focusing on day-to-day physician work life, including relationships with payers, administrative burden, time pressures, control over scheduling, and relationships with patients. We hypothesized that students would view primary care work life more negatively than specialist work life, but that students planning to practice primary care would view primary care work life more positively. We further hypothesized that negative views of primary care would be stronger among senior students, who have had longer exposure to the informal curriculum. Finally, we hypothesized that students with a negative view of both primary care and specialist work life would be more likely to prefer technically-oriented support specialties, such as Radiology, Pathology, and Anesthesiology. This is one of several planned studies[23] exploring student specialty intentions based on survey data collected from medical students at the University of Michigan, Brown University, and Michigan State University between 2006 and 2008.

## METHODS

### Study design and participants

We distributed a cross-sectional questionnaire to all enrolled students at the University of Michigan Medical School, Alpert Medical School at Brown University, and Michigan State University College of Human Medicine between August 2006 and February 2008. These schools were purposefully selected based on their institutional characteristics, with the assumption that they would have varying educational cultures (Table 1). We obtained approval or were granted exemption by the Institutional Review Board of each medical school. The piloting and administration of the 75-item questionnaire has been described in detail previously.[23]

The questionnaire defined primary care to include Family Medicine, Internal Medicine, Pediatrics, and Medicine-Pediatrics physicians who had not pursued further specialized training. All other physicians were defined as "specialists," including Internal Medicine,

Pediatrics, and Medicine-Pediatrics physicians who had completed specialty training and Obstetrics and Gynecology physicians.

Students were given two sets of parallel statements, one set about “primary care physicians” and another set about “specialists.” They were asked to indicate agreement or disagreement with these statements on a 5-point Likert scale. Seven statements about physician autonomy, administrative work, and patient relationships were selected from the Physician Worklife Survey, which has been extensively validated as an assessment of physician satisfaction.[24] We modified some statements to make them appropriate for a contemporary medical student audience. For example, “gatekeeping requirements” was changed to “insurance requirements.” We augmented our assessment of time pressure and autonomy by creating the statements, “(Primary care physicians/specialists) do not feel harried by the pace of their work,” and “(Primary care physicians/specialists) have control over their work schedule.” (In the original study, physicians were asked to report the amount of time given and the amount “needed” for a given task.[25]) We added an additional question, correlated with physician satisfaction in a smaller study,[26] to further assess doctor-patient relationships: “Patients have confidence in (primary care physicians/specialists).” The questionnaire did not specify a practice setting. Students were asked to choose a single intended specialty choice. Students choosing Internal Medicine, Pediatrics, or Internal Medicine-Pediatrics were also asked to choose either “primary care focus” or “planning to subspecialize.” Students were also asked to supply demographic information.

### Analysis

Students were defined as planning primary care careers if they indicated the intent to practice Family Medicine; or Pediatrics, Internal Medicine, or Internal Medicine-Pediatrics “with a primary care focus.” Potential differences in medical student perceptions of primary care and specialist physicians were assessed with paired T-tests. Further ANOVA analyses were used to compare the perceptions of three groups: students in different years of medical school; third year students who had or had not completed the Family Medicine clerkship; and students planning careers in Anesthesiology, Radiology, or Pathology, compared to all other students. Analyses accounting for differing variances between medical schools were conducted within the PROC SURVEYMEANS and PROC SURVEYREG procedures of SAS 9.1 (SAS Institute Inc, Cary, North Carolina).

## RESULTS

### Participants

Of 1533 eligible students, 983 returned surveys adequate for analysis (response rate 64.1%). The race and gender distribution of respondents from each institution was similar to that institution’s overall student body, as measured independently by each school’s administration, suggesting that our sample was representative. Study participants were also similar to all U.S. medical students in family income, race/ethnicity, educational debt, and intended specialty choice.[27] A complete description of respondent demographics has been published previously.[23]

145 respondents (14.8%) planned primary care careers. Of note, first and second year students were significantly less likely to indicate interest in a primary care career than third and fourth year students (11.2% and 10.8% of first and second year students, respectively, v. 18.3% and 21.0% of third and fourth year students, respectively; $p<0.01$).

### Perceptions of Physician Work Life

Overall, students' responses to the statements about primary care and specialist work life were negative (Table 2). They agreed that payers restrict quality of care and conflict with physicians' clinical judgment. They endorsed that both groups of physicians have too much administrative work and are harried by the pace of their work. They were uncertain whether physicians have control over their work schedules, are able to develop good patient relationships, or are overwhelmed by patient needs. However, they agreed that patients have confidence in physicians, and did not view the physician-patient relationship as adversarial.

### Perceptions of Primary Care

Students viewed primary care physician work life more negatively than specialist work life on the majority of statements measured (Table 2), but indicated that primary care physicians' relationships with patients are less adversarial than specialists' relationships.

### Perceptions and Year in Medical School

Senior students' views of primary care work life were generally the same or more negative than junior students' views (Table 3). In contrast, senior students' views of specialist work life were generally the same or more positive than junior students' views (Table 4). Overall, the differences between medical school classes were small in magnitude, and were present for only a few of the statements assessed. Only one apparent change was concordant between primary care and specialist physicians: more senior students were less likely to believe that time pressures kept physicians from developing good patient relationships.

### Perceptions of Primary Care after a Family Medicine Clerkship

Third year students who had completed the required Family Medicine clerkship were less likely than third years who had not finished the clerkship to believe that time pressures keep primary care physicians from developing good patient relationships (mean 2.68 vs. 3.02, $p=0.05$). However, the remaining views of primary care work life did not differ significantly between students who had and had not completed the clerkship.

### Intended Career Choice

Students planning primary care careers did not view the work life of either primary care or specialist physicians differently than students planning specialty careers. Students planning careers in technically-oriented support specialties (Anesthesiology, Pathology, or Radiology) did not have different views than all other students.

## DISCUSSION

Students have negative views of the work life of both primary care and specialist physicians at all levels of training. The presence of negative views of physician work life in first year

students suggests that they are strongly influenced by experiences before medical school and by the views of the larger culture. However, the experience of directly observing and participating in the day-to-day work of contemporary physicians does not appear to change student perceptions substantially. It should be acknowledged that physicians who are teaching a student during patient care experience alterations in their productivity and work flow,[28] and students are disproportionately exposed to academic and residency clinics, which have less patient continuity and provider efficiency than private practice clinics.[29] Nonetheless, contemporary physicians struggle to meet the high expectations set by patients and their profession with limited time and resources.[30] Our data demonstrate that students are paying attention to the struggle.

Only 14.8% of students in our sample anticipated primary care careers. The low proportion of first and second year students interested in primary care (about 11%) was unexpected, because longitudinal studies of medical students have reported higher primary care interest in the pre-clinical years.[31] Although it is impossible to know the eventual career paths of the current generation of U.S. medical students, interest in primary care may be declining further. In 2010, only 14.0% of U.S. medical students matched in family medicine, medicine-pediatrics, primary care internal medicine, or primary care pediatrics. Although family medicine and medicine-pediatrics match rates have stabilized, primary care internal medicine and primary care pediatrics match rates have declined by about 20% since 2006.[32] Graduates of these programs make a small contribution to the overall primary care workforce, but reflect U.S. student interest in primary care internal medicine and pediatrics. Using a large sample, Hauer et al. found that only 2% of fourth-year medical students in 2007 were interested in general internal medicine.[33]

As we hypothesized, in aggregate, primary care work life is viewed more negatively than specialist work life by students at all levels, paralleling declines in primary care physician satisfaction in recent years.[34] Our data suggest that although medical school does not create these negative views of primary care work life, it may reinforce them. The gap between perceptions of primary care and specialist work life appears to increase slightly over the course of medical school.

Contrary to our expectations, senior students were less likely to believe that time pressures kept both primary care and specialist physicians from developing good patient relationships. It may be that actually spending time observing physicians helps to break some negative stereotypes. A previous study of medical students' observations of physicians in practice found that students "reported that physicians did not appear rushed with patients… students indicated their own surprise about how frequently the physician spent a considerable amount of time with individual patients."[35] The more positive perceptions of senior students may also reflect an expanding knowledge base, an increasing grasp of the management of complex medical problems, or an increasing acceptance of medical culture – learning to view the patient-physician relationship like a doctor, rather than like a patient. Further study of students' beliefs about time pressure and the physician-patient relationship, and how these beliefs evolve as students develop into professionals, would enhance our understanding of the formal and informal educational process.

Interestingly, students choosing primary care do not have a very different view of primary care work life, suggesting that their career plans are not based on their perceptions, but on their values and goals.[2] Students in our sample indicated an interest in primary care *despite* negative beliefs about primary care physician work life. The study reinforces the importance of admitting students with primary care-oriented values and primary care interest, and reinforcing those values over the course of medical school, if we are to produce greater numbers of primary care physicians.

New models of primary care have the potential to substantially improve provider satisfaction.[36] Medical educators should work to share this data with medical students as it emerges, so that we can engage them in our own hopes and plans for a better future. Teaching students about innovative models may help us build a primary care physician workforce capable of delivering the care our nation needs.

## Limitations

Students from only three U.S. medical schools were included. We attempted to include schools with diverse educational cultures, and the responding students were comparable to all U.S. medical school graduates in their demographics and career plans. However, their perceptions reflect the local working environments of their learning communities, and may not be generalizable to all U.S. medical students.

Students' career preferences were only assessed at a single point in time, and cannot be expected to remain stable. However, students less frequently switch between primary care and specialist career preferences, than adjust career plans within the broad categories of "primary care" and "non-primary care."[37] Thus, the categories of interest for this study change less often than specific specialty choices. The percentage of students in our sample indicating a primary care preference also reflects national trends.

Because the study was a cross-sectional evaluation, perceptions of students in different classes may reflect secular trends, rather than student development, and should be interpreted with caution. This is particularly true in this study because the proportion of students expressing interest in primary care was substantially lower for students in their first and second years of medical school.

The effects of other factors on specialty choice, including expected income, are not addressed in this analysis, but have been described elsewhere.[38]

## Conclusions

Our learners' negativity about their future work lives reflects and portends a pessimistic culture of medicine. Student views of primary care work life are particularly negative, but some students indicate an interest in primary care despite negative perceptions. Although student perceptions of primary care were not predictive of specialty choice, improvements in the work life of primary care physicians may be necessary to attract more students to primary care.

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## Table 1

Characteristics of Study Medical Schools

| | Michigan State University College of Human Medicine | The University of Michigan Medical School | Warren Alpert Medical School at Brown University |
|---|---|---|---|
| Location | East Lansing and Grand Rapids, Michigan (Midwest) | Ann Arbor, Michigan (Midwest) | Providence, Rhode Island (Northeast) |
| Class Size (Approximate) | 200 | 170 | 90 |
| Institutional Funding | public | public | private |
| Primary Setting for Clinical Education | multiple community settings across Michigan (community- based*) | academic medical center | multiple community hospitals in Providence |
| Environment | various urban, suburban, and rural settings | mid-sized city | large city |
| Research Rank (of 146 ranked schools)** | 85 | 6 | 32 |
| Proportion of Underrepresented Minority Students* | 23.7% | 14.7% | 15.0% |
| Social Mission Rank (of 141 ranked schools)* | 6 | 61 | 66 |
| Percent of Graduates Choosing Family Medicine, 2007–2009 (2009 national average: 7.5%)*** | 13.4% | 6.5% | 5.8% |

* Mullan F, Chen C, Petterson S, Kolsky G, Spagnola M. The social mission of medical education: ranking the schools. Appendix. *Ann Internal Med* 2010;152:804–811.

** U.S. News and World Report Best Medical Schools 2010: Research Rankings. http://grad-schools.usnews.rankingsandreviews.com/best-graduate-schools/top-medical-schools/research-rankings. Accessed February 6, 2011.

*** 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):540–551.

## Table 2

Medical Student Perceptions of Primary Care and Specialist Physician Work Life.[1] *(Negative statements italicized.)*

| Statement | | Average Perception of Primary Care Physicians | Average Perception of Specialist Physicians | P value |
|---|---|---|---|---|
| Autonomy | *"Formularies or prescription limits restrict the quality of care (primary care physicians/ specialists) provide."* | 3.63 | 3.36 | 0.02 |
| | Insurance requirements seldom conflict with (primary care physicians/specialists) clinical judgment." | 2.09 | 2.17 | 0.16 |
| Administration | "(Specialists'/Primary care physicians') role in managing the business aspects of practice is not a burden to them." | 2.02 | 2.14 | 0.02 |
| | *"(Specialists/Primary care physicians) have too much administrative work to do."* | 3.85 | 3.34 | 0.05 |
| Work pace and schedule autonomy | "(Specialists/Primary care physicians) have control over their work schedule." | 3.08 | 3.34 | 0.01 |
| | "(Specialists/Primary care physicians) do not feel harried by the pace of their work." | 2.20 | 2.45 | 0.12 |
| Patient Relationships | *"Time pressures keep (specialists/primary care physicians) from developing good patient relationships."* | 2.94 | 3.11 | 0.24 |
| | *"(Specialists/primary care physicians) are overwhelmed by the needs of their patients."* | 3.17 | 2.59 | 0.05 |
| | "Patients have confidence in (primary care physicians/ specialists)." | 3.84 | 4.13 | < 0.01 |
| | *"(Primary care physicians'/specialists') relationships with patients are adversarial."* | 2.03 | 2.12 | 0.03 |

[1] Numbers are mean responses to a 5-point Likert scale. 1: strongly disagree; 2: disagree; 3: unsure; 4: agree; 5: strongly agree.

**Table 3**

Variance in Medical Student Perceptions of Primary Care Work Life by Year in Medical School.[1] *(Negative statements italicized.)*

| Characteristic | | Year in Medical School (n) | | | | P value |
|---|---|---|---|---|---|---|
| | | 1 (303) | 2 (195) | 3 (191) | 4 (252) | |
| Autonomy | *"Formularies or prescription limits restrict the quality of care primary care physicians provide."* | 3.61 | 3.62 | 3.62 | 3.67 | 0.98 |
| | Insurance requirements seldom conflict with primary care physicians' clinical judgment." | 2.13 | 2.07 | 1.97 | 2.14 | 0.29 |
| Administration | "Primary care physicians' role in managing the business aspects of practice is not a burden to them." | 2.13 | 2.04 | 2.00 | 1.90 | 0.04 |
| | *"Primary care physicians have too much administrative work to do."* | 3.68 | 3.84 | 3.95 | 3.97 | 0.03 |
| Work pace and schedule autonomy | "Primary care physicians have control over their work schedule." | 3.17 | 2.92 | 3.15 | 3.07 | 0.12 |
| | "Primary care physicians do not feel harried by the pace of their work." | 2.48 | 2.10 | 2.08 | 2.01 | <0.01 |
| Patient Relationships | *"Time pressures keep primary care physicians from developing good patient relationships."* | 3.09 | 3.01 | 2.83 | 2.80 | 0.04 |
| | *"Primary care physicians are overwhelmed by the needs of their patients."* | 3.01 | 3.28 | 3.14 | 3.26 | 0.76 |
| | "Patients have confidence in primary care physicians." | 3.80 | 3.78 | 3.96 | 3.84 | 0.58 |
| | *"Primary care physicians' relationships with patients are adversarial."* | 2.22 | 2.04 | 1.91 | 1.90 | 0.17 |

[1] Numbers are mean responses to a 5-point Likert scale. 1: strongly disagree; 2: disagree; 3: unsure; 4: agree; 5: strongly agree

**Table 4**

Variance in Medical Student Perceptions of Specialist Work Life by Year in Medical School.* *(Negative statements italicized.)*

| | | Year in Medical School (n) | | | | P value |
|---|---|---|---|---|---|---|
| | | 1 (303) | 2 (195) | 3 (191) | 4 (252) | |
| Autonomy | *"Formularies or prescription limits restrict the quality of care specialists provide."* | 3.42 | 3.33 | 3.31 | 3.34 | 0.76 |
| | Insurance requirements seldom conflict with specialists' clinical judgment." | 2.06 | 2.17 | 2.14 | 2.34 | 0.02 |
| Administration | "Specialists' role in managing the business aspects of practice is not a burden to them." | 2.11 | 2.10 | 2.19 | 2.16 | 0.89 |
| | *"Specialists have too much administrative work to do."* | 3.38 | 3.28 | 3.35 | 3.31 | 0.99 |
| Work pace and schedule autonomy | "Specialists have control over their work schedule." | 3.38 | 3.19 | 3.38 | 3.37 | 1.00 |
| | "Specialists do not feel harried by the pace of their work." | 2.38 | 2.45 | 2.44 | 2.49 | 0.49 |
| Patient Relationships | *"Time pressures keep specialists from developing good patient relationships."* | 3.32 | 3.14 | 2.92 | 2.94 | 0.30 |
| | *"Specialists are overwhelmed by the needs of their patients."* | 2.80 | 2.58 | 2.46 | 2.43 | 0.02 |
| | "Patients have confidence in specialists." | 4.13 | 4.09 | 4.14 | 4.19 | 0.44 |
| | *"Specialists' relationships with patients are adversarial."* | 2.27 | 2.15 | 2.04 | 1.94 | 0.02 |

*Numbers are mean responses to a 5-point Likert scale. 1: strongly disagree; 2: disagree; 3: unsure; 4: agree; 5: strongly agree