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Primary Care Teams, Composition, Roles, and Satisfaction of PA Students During Primary Care Rotations

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Purpose The goal of this study was to describe the characteristics of primary care teams, activities, and roles of physician assistant (PA) students as they encounter various primary care sites.

Methods An electronic survey was distributed to second-year PA students in 12 programs who had completed at least 4 weeks in a primary care rotation.

Results Of the 179 students who responded (response rate 41%), 88% had completed their primary care rotations in urban settings, mostly in private practices (53%). Physician assistant students reported encountering many types of health care providers on their teams, and the 2 most favored features of the rotations were the interactions with their supervising clinicians and clinical responsibilities. About 68% interacted with other health profession students during their rotation (interprofessional experiential learning). Almost all students completed histories, physical examinations, and treatment plans, but less than 30% reported involvement in billing or care coordination and less than 10% participated in quality improvement projects. More than 60% were satisfied with team-based and interprofessional practices encountered during their primary care rotations, and 39% were more than likely to pursue primary care careers.

Conclusions Team-based primary care had a positive impact on students, but more exposure to underserved clinical settings, care coordination, quality improvement, and billing is needed to prepare PA students for the practice of the future. This study is the first of its kind to explore the relationship between primary care sites and PA training in the era of health care reform.

Feature Editor's Note:
Team-based primary care is becoming the standard, and physician assistants (PAs) are integral to this system of health care delivery. Physician assistant educators must develop teaching strategies and clinical experiences for our students to learn about care coordination, patient-centered medical homes, access to care for the underserved, quality improvement, patient safety, and cost control. This study surveyed PA students from 12 programs about their experiences in team-based primary care, identifying areas that deserve attention as we evolve our curricula to meet the demands of health care reform. These findings may serve to guide programs in exploring primary care clinical experiences that better prepare our graduates for meeting the needs of their future patients.

Michael Huckabee, PhD, MPAS, PA-C

INTRODUCTION

Primary care practices are going through various transformations to advance the "triple aim" of improving the quality of patient experience, improving the health of populations, and reducing the per capita cost of health care, as well as responding to the Affordable Care Act mandates. There has been increased emphasis on care coordination, meaningful use, electronic medical records, and person- and family-centered care. The patient-centered medical home (PCMH) is one of the most rapidly growing primary care models being used to advance the triple aim by creating a team-based health care delivery system that is coordinated, uses electronic medical records, and monitors the health of populations to promote the value of care.[1] As of July 2014, an estimated 7800 sites across America had transformed their medical practices into PCMHs.[2–6]

In 2011, the Society of Teachers of Family Medicine (STFM) and the Physician Assistant Education Association (PAEA) released a joint statement calling for the training and deployment of integrated teams of health professionals that provide and coordinate care within a patient-centered model.[7] To succeed, educators must understand the clinical environment in which students are placed and may choose to practice upon graduation. Educators need to know how care is organized in these practices, the team dynamics, and student and provider expectations in this new era of health care reform so that adjustments to curriculum can be made. In addition, encouraging students to pursue a career in primary care or family medicine requires them to see themselves in the role and is an important factor in predicting practice in this area, as is their satisfaction with the rotation experience.[8,9]

Because they are required to complete clinical rotations in primary care, physician assistant (PA) students inevitably are

beginning to rotate through some of these transformed practices, but studies examining their roles and competence to function in these transformed primary care sites are lacking. The goal of this study was to survey second-year PA students about characteristics of their primary rotations, the composition of care teams, and the roles of PA students as they rotate through various sites in this new era of health care reform.

METHODS

An electronic survey was distributed to second-year students who had completed at least 4 weeks in a primary care rotation (adult internal and family medicine). We solicited a convenience sample of program directors in each of the PAEA regions from differing types of institutions (private vs public, university vs medical school), and 12 programs agreed to participate. The survey instrument was designed to capture site characteristics, team composition, presence or absence of onsite teaching, patient interactions, roles, favorite and least favorite features of the rotation, overall satisfaction, and impact on students' desire to practice in primary care. In the survey, PCMH was defined as "an interdisciplinary model of delivering health care designed and centered on the patients' needs. In this model, the primary care provider leads a team of health care professionals in coordinating care for all of the patient's health needs on an ongoing basis."

The study was approved by the Yale School of Medicine Human Investigations Committee, and the survey was beta-tested by 8 students from 3 PA programs. The link to the anonymous survey was sent to each participating program. A faculty member from each program served as the contact person who distributed an email message with a Survey-Monkey link, inviting their students to participate in the study. Reminder emails were sent at weeks 1, 4, and 6. Data were obtained using SurveyMonkey and were analyzed using the statistical software SAS 9.2. Descriptive statistics were used to characterize the results. Categorical variables are presented as percentages.

RESULTS

A total of 179 PA students responded to the survey (estimated response rate = 41%). The geographical distribution of the students who responded to the survey was as follows: 4 students (2.2%) were from the East consortium, 6 (3.4%) from the Heartland, 18 (10.1%) from the Midwest, 50 (27.9%) from the Northeast, 45 (25.1%) from the Southeast, and 47 (26.3%) from the West, whereas 9 (5%) students did not specify the geographical region of their PA program. The age distribution of the participants was as follows: 76% were between 25 and 35 years of age, 16% were younger than 25 years, and 8% were 35 years or older. The 95% confidence intervals for proportions were first calculated using the normal approximation to the binomial distribution method and confirmed using the Wilson score interval without continuity correction. As shown in Figure 1, most students (87.7%) had completed their primary care rotations in urban or suburban settings and 26.8% had done so in rural areas. It is apparent that some students had completed rotations in more than one setting.

For this study, the US Census Bureau's urban–rural classification was used to delineate the location of primary care sites as follows: urbanized areas of 50,000 or more people, urban clusters of at least 2500 and less than 50,000 people, and rural areas encompassing all of the population not included within an urban area. Most of the primary care sites were in private practices (52.9%). About 22% reported that their primary care setting was in an academic center associated with a university hospital, 15.5% in federally qualified health centers (FQHCs), 5.2% urgent care centers, 3.4% Veterans Affairs (VA) clinics, and just over 1% marked "other" (Figure 2). About 17% of respondents were confident that their primary care site had been designated as a PCMH, 33% were not sure if their primary care site had been designated a PCMH, and the rest (50%) thought their primary care site was not a designated PCMH. However, when asked about their exposure to physician-directed teams, which is one of the key elements of PCMH, more than 50% reported that their primary care sites had physician-directed teams that provided ongoing care for patients. The survey did not inquire about accountable care organizations because this was beyond the scope of this study.

To gain insight into the primary care team composition and PA student experiences working with other health care professionals, students were asked to identify health care providers with whom they worked during their primary care rotation (Figure 3). More than 97% were precepted by a physician, about 71.6% worked with a PA, and 45.6% with a nurse practitioner. The providers listed on the survey that were least likely to be encountered were dental practitioners (3.0%), occupational therapists (5.9%), and physical therapists (8.9%). The scope of practice of PA students, shown in Figure 4, outlines the various ways in which students interacted with patients at their primary care sites. Almost all completed histories and physical examinations, developed treatment plans, and educated patients. Nearly 83% of students provided laboratory and diagnostic results to patients, 74.4% performed medical and surgical procedures, and 76.8% referred patients to specialized care. Less than 30% reported involvement in completing billing forms or responding to telephone
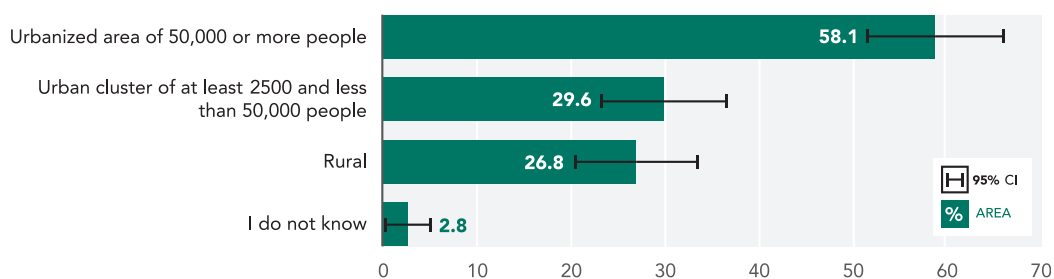

Figure 1. Location of primary care rotation. Participants were asked to check all that apply. CI, confidence interval
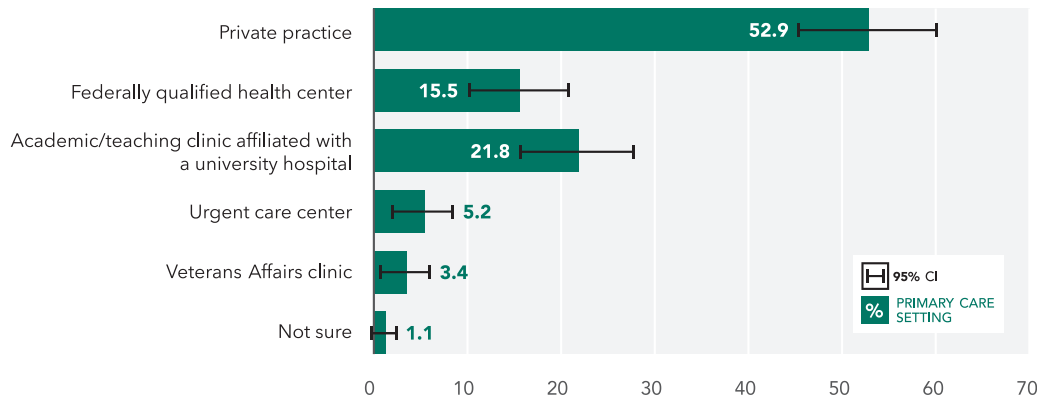
Figure 2. Clinical settings of the primary care rotation. CI, confidence interval

calls. When asked if, during their primary care rotation, they had participated in quality improvement projects, which are a cornerstone of the triple aim project, 91% said no.

Students were also asked about the nature of formal learning experiences with other professional students (interprofessional education) during their primary care rotation. Of the 133 students who responded to this question, 50.4% reported learning together with other professional students during case discussions (interprofessional education) and 67.7% did so during active patient engagement (Figure 5). Other formal interprofessional learning opportunities included lectures on specific clinical subjects (38.3%), clinical simulations (17.3%), team skills training (13.5%), and community projects or service learning activities (9.8%). When asked about their overall impression of team-based and interprofessional practices, 63% reported outstanding or very good impressions, 22% percent were neutral, 11% said fair, and 4% reported unsatisfactory impressions. The 2 most favored features of the clerkships were the clinical responsibilities students were given and their interactions with their supervising clinicians (Figure 6A). When students were asked about the least favorite feature of their primary care clerkships, the most frequently selected features from the list provided were the quality of medical facilities and the formal teaching sessions (Figure 6B). Based on their overall experiences from their primary care rotation, 13% were extremely likely to pursue a career in primary care,

26% very likely, 25% likely, 13% not likely, and 23% were not sure.

DISCUSSION

The US primary health care system is going through a major overhaul designed to enhance its ability to improve care, improve population health, and reduce costs per capita. Educators need a good understanding of the changing clinical environment and new models of care delivery as they prepare students to function in this new climate. To gain insight into the primary care rotation environment, we surveyed second-year PA students about characteristics of their primary care rotation, the composition of care teams, and the roles of PA students as they rotate through various sites. This study is the first of its kind to explore the relationship between primary care sites and PA training in the era of health reform.

The major findings of our study were that PA students surveyed were mostly likely to complete their primary care rotation in an urban setting, do so in a private practice, and to encounter many types of health care providers while on that rotation. Not surprisingly, students reported a wide range of clinical roles and responsibilities, including, most commonly, completing histories and physicals, developing treatment plans, and providing patient education. The most favored aspects of the clerkship were related to direct clinical care, and
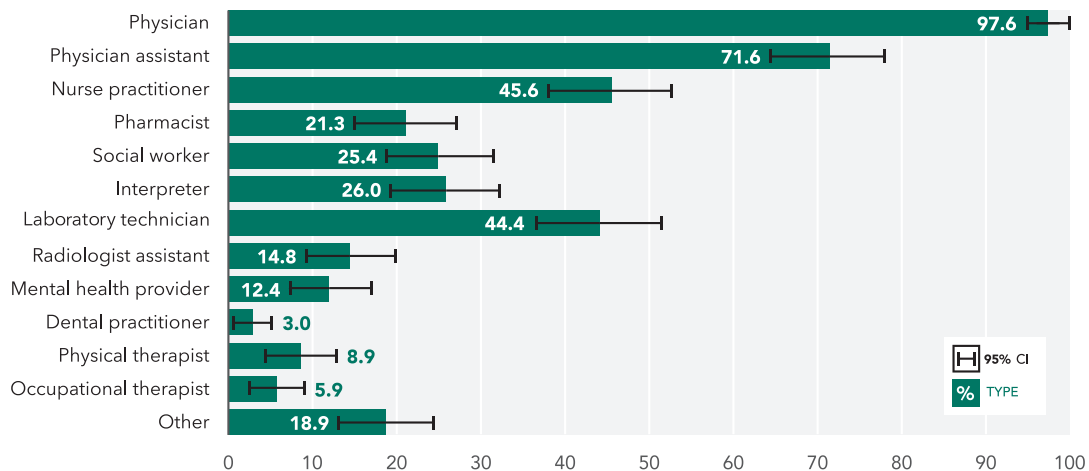

Figure 3. Team composition. The health care providers that students worked with during the primary care rotation. CI, confidence interval
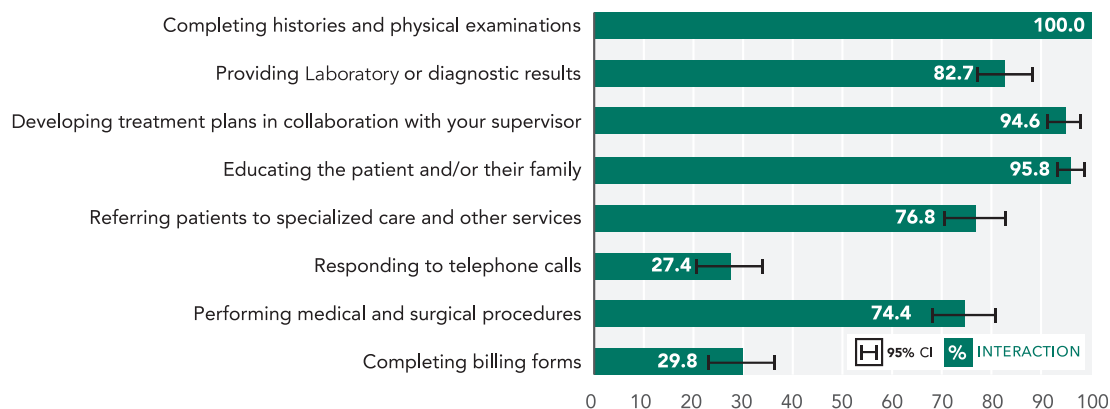
Figure 4. Roles and responsibilities: ways in which students interacted with patients during their primary care rotation. CI, confidence interval

the least favored were related to quality of the facilities and the formal teaching experiences. More than 60% of respondents were satisfied with the team-based and interprofessional practices encountered during their primary care rotations, and 64% (13% extremely likely, 26% very likely, and 25% likely) said they were likely to pursue future careers in primary care. Students also reported a positive team-based interprofessional learning experience that occurred most commonly at the bedside. About 50% reported learning together with other professional students during case discussions, and 68% did so during active patient engagement. These observations reiterate the need to prepare PA students for interprofessional practice, preferably before they start their clinical rotations.

The finding that nearly 88% of students had completed their primary care rotations in urban or suburban settings, mostly in private practices (53%), reinforces the notion that exposure to clinics in underserved areas, such as federally qualified health centers, and to VA clinics is still lacking. Similar findings have been reported from studies with large sample sizes. For example, a survey of 3296 recently certified PAs in 2014 by the National Commission on Certification of Physician Assistants (NCCPA) indicated that only 3.4% had accepted positions at community health centers, 2.6% at rural health clinics, and 0.5% at VA clinics.[10] The limited exposure of PA students to these settings could be due to the lack of primary care sites or preceptors in these geographic areas. One possible solution could be to engage other PA programs that have FQHCs and

VA sites and exchange students. This barter trade strategy may help in alleviating clinical site shortages. Educators could also provide incentives such as continuing medical education to clinicians from these settings in exchange for precepting students. Since it has been repeatedly shown that physicians and PA graduates often practice in environments to which they were exposed during their training,[8–10] more effort is needed to place students in underserved settings to reduce the chronic shortage of health care providers in these areas.

Most of the PA students in this study were engaged in the traditional roles of a primary care provider. In our sample, there were notable scope-of-practice deficiencies in areas of care coordination, billing and coding, and quality improvements. When asked if, during their primary care rotation, they had participated in quality improvement projects, a cornerstone of the triple aim, 91% said no. At the present time, these competencies may not be expected of PA students, but as primary care is increasingly becoming patient-centered and reimbursement is tied to quality and outcomes, health care trainees need to be educated and exposed to care coordination and quality improvement. These types of training could be provided through simulations, standardized patients, longitudinal or student-run free clinics, or online modules; incorporated into case-based training; or integrated into the history and physical diagnosis courses.

The finding that more than 60% of the respondents reported a favorable impression of team-based and interprofessional
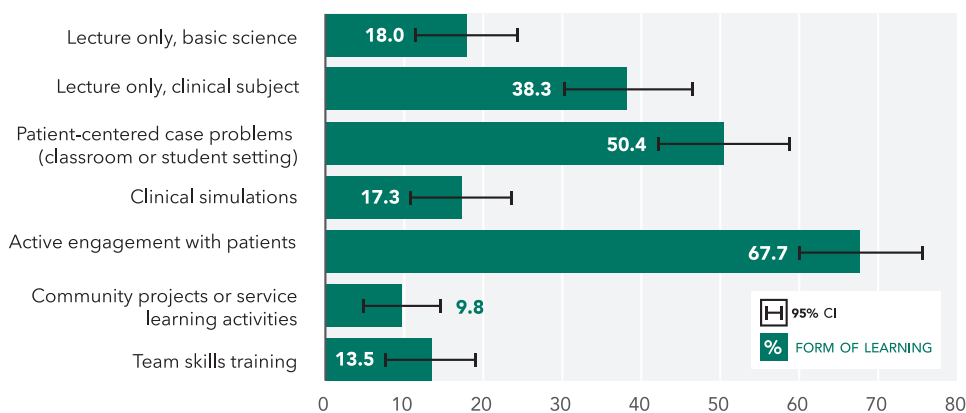

Figure 5. Nature of formal learning experiences with other health professional students during primary care rotation. CI, confidence interval
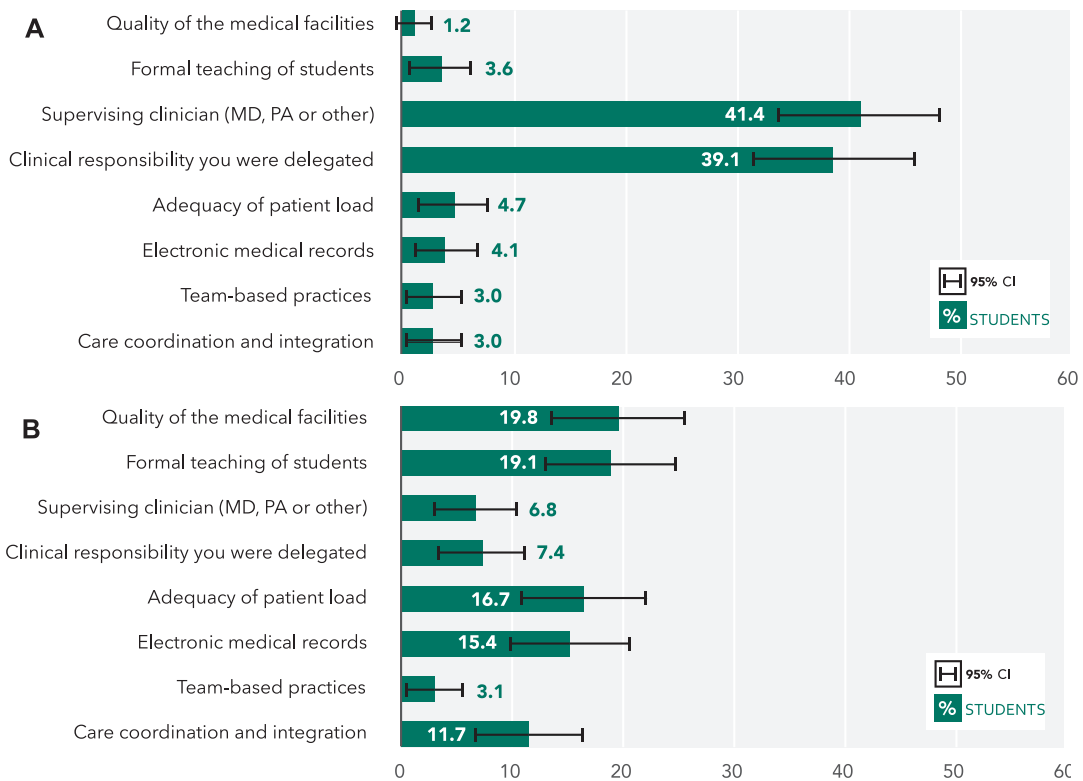
Figure 6. A: Favorite features of the rotation. B: Least favorite features of the rotation. CI, confidence interval

practices suggests that the training and deployment of PAs into integrated teams of health professionals is feasible, as has been advocated by various stakeholders.[7] Only 4% of respondents had unsatisfactory impressions of the team-based and inter-professional practices, 11% had fair impressions, and 22% were neutral. Furthermore, the observation that 39% of the respondents were "extremely likely" or "very likely" to pursue future careers in primary care is fairly consistent with other published reports. For instance, the NCCPA recently reported that 28% of recently certified PAs with a clinical position worked in primary care.[10] The 2013 American Academy of Physician Assistants Annual Survey Report showed that about one-third (32%) of all PAs in clinical practice were working in primary care.[11] Given the declining trend of PAs practicing in primary care over the past 20 years,[12] our study may suggest that the various primary care transformations that are being adopted in the United States might have a positive impact on students and may lead to more students going into primary care careers. There are no similar previous studies before the Affordable Care Act for direct comparison, but it would be interesting to repeat this study with a larger sample size. Future studies also should try to control for the various confounding variables that can influence a PA student's career intentions.

One of the key primary care transformations that is being rapidly adopted is the PCMH model, but the extent to which health care trainees are being exposed to this care model and the impact this exposure might have on their interest in primary care is still not well understood. In our sample, only 17% of the respondents were confident that their primary care site had been designated as a PCMH, which suggests that exposure of PA students to the PCMH is still limited. However, when

asked about their exposure to physician-directed teams, one of the key elements of PCMH, about 50% reported that their primary care sites had physician-directed teams that provided ongoing care for patients. It is therefore possible that the implementation of the PCMH is just beginning and that only a few elements have been implemented at many sites. It is also likely that many of our respondents were not familiar with the concept of the PCMH or may not have been knowledgeable about the PCMH status of their primary care site. More robust studies are needed to confirm these findings.

Limitations of the Study

The small sample size of only 12 PA programs limits the generalizability of our findings. However, the response rate was reasonable from the 12 programs covered, and participants represented most of the US geographical regions. Attempts to recruit more programs were fruitless because of the complex regulations and institutional policies governing student recruitment and participation in research studies. The study is generally descriptive, designed to provide baseline characteristics of PA primary care sites.

CONCLUSIONS

Physician assistant students reported working with diverse teams of health care providers in urbanized primary care practices. However, there is still a need for more exposure to underserved clinics, the PCMH, care coordination, quality improvement, and billing opportunities. Understanding health care teams, roles, and expectations of health care

trainees is critically important for PA programs as they modify their curriculum to prepare a new generation of the primary care workforce that will optimally function in the new models of care. This study of a convenience sample of PA students provides baseline data to characterize the current primary care rotation environment and may have implications for curriculum planning and workforce development. Further studies are needed to elucidate attributes of the primary care rotation experience that are associated with students' positive and negative impressions as well as those factors that predict a higher likelihood of considering a career in primary care.

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