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# Patient-Centered Medical Home Exposure and Its Impact on PA Career Intentions

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**BACKGROUND AND OBJECTIVES:** The transformation of primary care (PC) training sites into patient-centered medical homes (PCMH) has implications for the education of health professionals. This study investigates the extent to which physician assistant (PA) students report learning about the PCMH model and how clinical exposure to PCMH might impact their interest in a primary care career.

**METHODS:** An electronic survey was distributed to second-year PA students who had recently completed their PC rotation from 12 PA programs. Descriptive statistics and ordered logistic regression analyses were used to characterize the results.

**RESULTS:** A total of 202 second-year PA students completed the survey. When asked about their knowledge of the new health care delivery models, 30% of the students responded they had received instruction about the PCMH. Twenty-five percent of respondents stated they were oriented to new payment structures proposed in the Affordable Care Act and quality improvement principles. Based on their experiences in the primary care clerkship, 64% stated they were likely to pursue a career in primary care, 13% were not likely, and 23% were unsure. Predictors of interest in a primary care career included: (1) age greater than 35 years, (2) being a recipient of a NHSC scholarship, (3) clerkship site setting in an urban cluster of 2,500 to 50,000 people, (4) number of PCMH elements offered at site, and (4) positive impression of team-based care.

**CONCLUSIONS:** PA students lack adequate instruction related to the new health care delivery models. Students whose clerkship sites offered greater number of PCMH elements were more interested in pursuing a career in primary care.

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While the PCMH concept has potential to revitalize primary care, its implementation requires coordination with health professions education.<sup>9-16</sup> Trainees need exposure to PCMH-related concepts such as care coordination, team-based practices, and enhanced access to continuous and comprehensive quality care, health information technology and meaningful use, continuous quality improvement and safety monitoring, as well as value-based payment reforms.<sup>2,14,16,17</sup> There are few studies investigating the impact of PCMH on medical education.<sup>11,18,19</sup> The extent to which academic medicine is teaching PCMH-related concepts and new health care delivery models is largely unknown. The study sought to determine the extent to which physician assistant (PA) students are exposed to elements of PCMH during the didactic and clinical phases of their education and to assess how this exposure affects their interest in primary care careers.

Primary care practices across the United States are adopting new models of care in order to reduce costs and improve access, quality, and patient experiences. In the patient-centered medical home (PCMH) model, health professionals work collaboratively to provide comprehensive, team-based

and patient-centered care in a longitudinal manner.<sup>1-3</sup> This model values care coordination, patient safety, quality innovations, and active patient engagement.<sup>4</sup> The PCMH model has been associated with better patient outcomes, improved provider efficiency, and satisfaction while controlling health care costs.<sup>4-8</sup>

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## Methods

An electronic survey was distributed to second-year PA students who had recently completed their primary care (PC) rotation. Characteristics of study participants are shown in Table 1. Of the 12 PA programs that participated, 202 students completed the survey (41% response rate). A faculty member from each program served as the contact person who distributed an e-mail message with a Survey Monkey link, inviting students to participate. The survey instrument captured training site characteristics and student demographics, experiences, perceptions, and attitudes about PCMH during their clerkship. The concept of PCMH was clearly defined in the survey instrument. Students were then asked whether they received instructions on PCMH concept awareness prior to their clerkship, whether the primary care site offered PCMH-related services, whether the site was considered a PCMH, and the methods by which they were oriented to or instructed on PCMH concepts prior to their clerkship. The survey also asked students to rate the likelihood of pursuing a career in primary care based on their clinical clerkship experiences and how this decision was influenced by their primary care clerkship experience. The study received approval from the Yale School of Medicine Human Investigations Committee.

## Results

The principal finding from the study was that students whose clerkship sites offered a greater number of PCMH elements were more likely to pursue a career in primary care (OR=1.18,  $P=.03$ ), and this increased interest was motivated or inspired by their clerkship experience (OR=1.20,  $P=.02$ ).

### *PCMH Exposure Prior to Clerkships*

Only 30% of students had been oriented to practice in the PCMH model (Figure 1A) prior to starting their

**Table 1: Demographic Characteristics of the Study Sample**

Characteristics	
<b>Place where respondent grew up</b>	<b>(n=168)</b>
Urbanized area of 50,000 or more people	46%
Urban cluster of 2,500–50,000 people	32%
Rural	22%
<b>Age distribution of respondents</b>	<b>(n=169)</b>
<25 years	16%
25–35 years	76%
>35 years	8%
<b>Location of PA Program</b>	<b>(n=179)</b>
East consortium (PA)	2.2%
Heartland (NE)	3.4%
Midwest (MO, MI, SD)	10.1%
Northeast (CT, MA)	27.9%
Southeast (GA, VA, AL)	25.1%
West (CA)	26.3%
Did not specify	5%
<b>Location of primary care site</b>	<b>(n=179)</b>
Urbanized area of 50,000 or more people	58.1%
Urban cluster of 2,500–50,000 people	29.6%
Rural	26.8%
I do not know	2.8%
<b>Setting of primary care experience</b>	<b>(n=174)</b>
Private practice	52.9%
Federally Qualified Community Health Center	15.5%
Academic center	21.8%
Urgent care center	5.2%
Veterans Affairs Clinic	3.4%
Not sure	1.1%
<b>Practice considered a PCMH</b>	<b>(n=171)</b>
Yes	17%
No	50%
Not sure	33%
<b>Participation in Quality Improvement Projects</b>	<b>(n=170)</b>
Yes	9%
No	91%
<b>Recipient of primary care scholarship</b>	<b>(n=168)</b>
Yes	16%
No	84%

primary care clinical clerkships. The most common instructional method (Figure 1B) was traditional lecture

(43%), followed by seminar sessions and guest speakers (27%).

Figure 1A: Didactic instruction About PCMH Prior to PC Clerkships (Participants Were Asked to Select All That Apply)

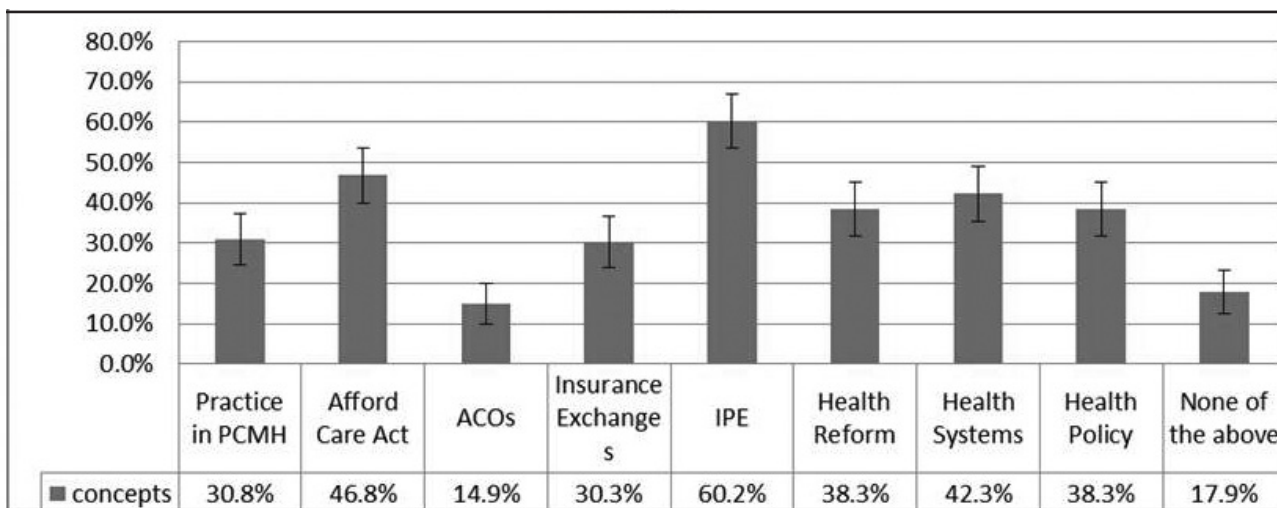
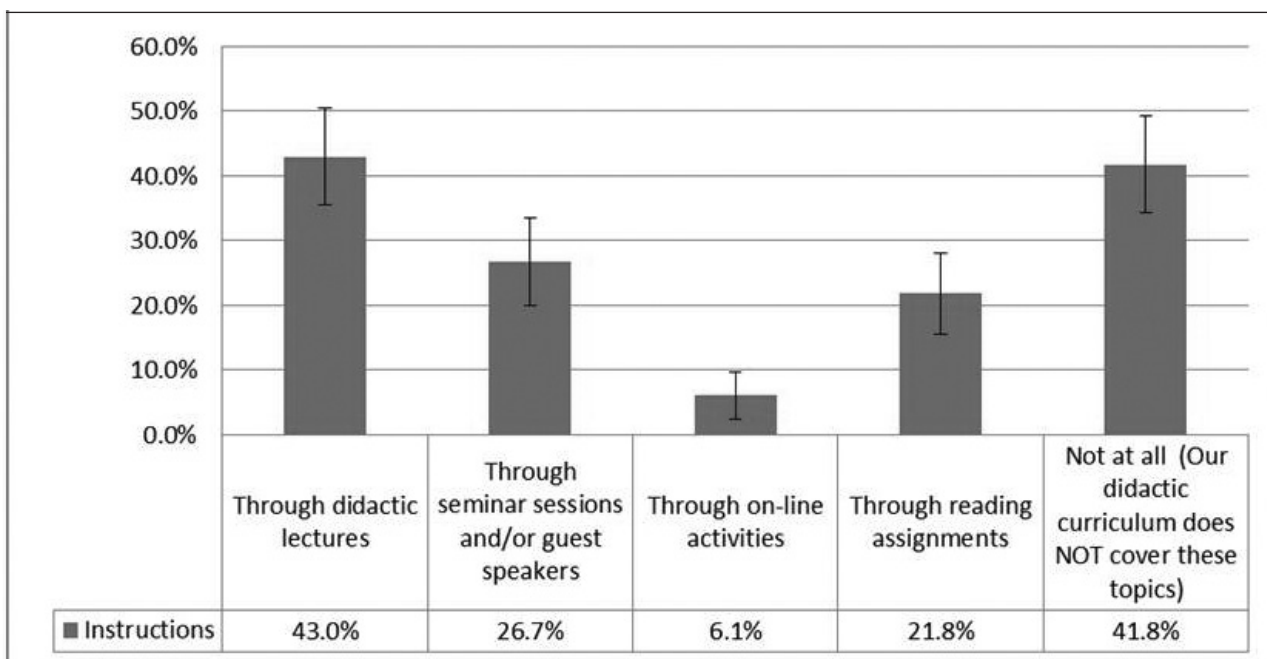


Figure 1B: PCMH Instructional Methods (Participants Were Asked to Select All That Apply)



*PCMH Exposure During Clerkships*

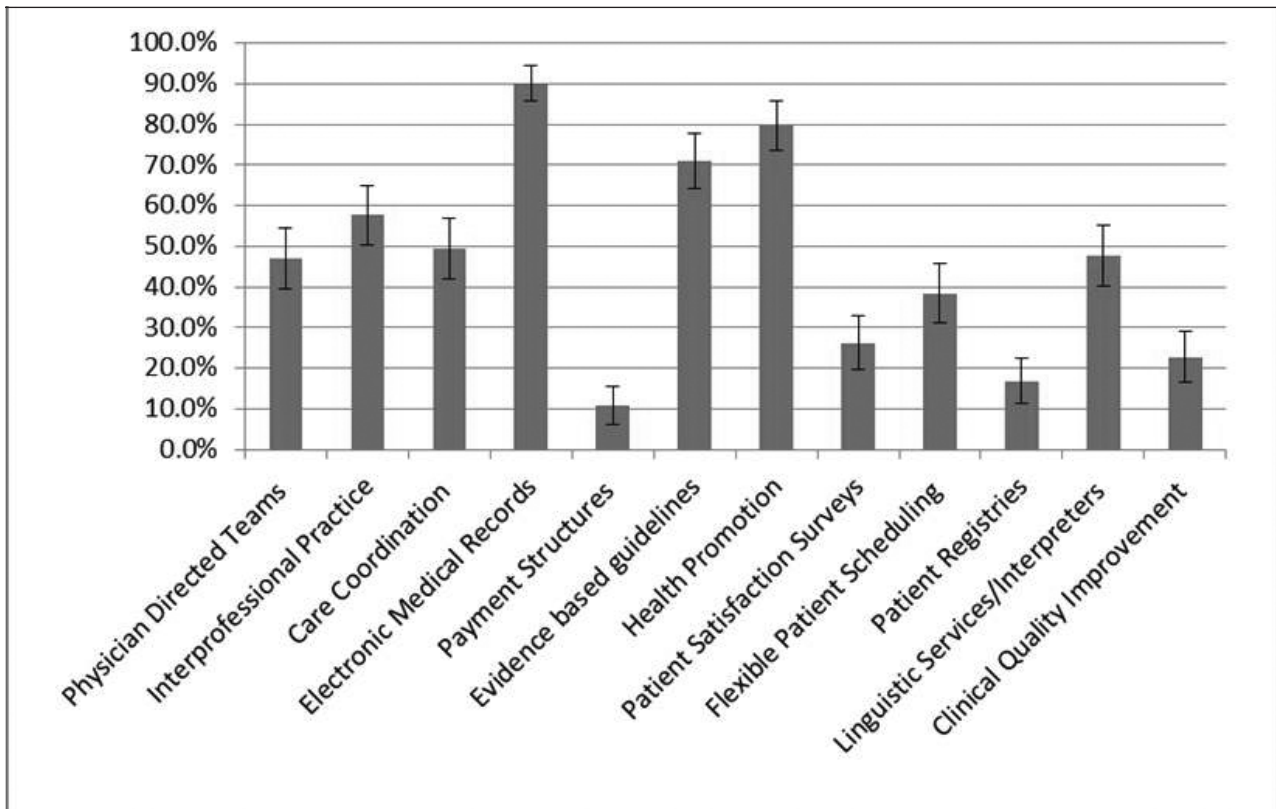
When participants were asked about the various PCMH elements offered at their primary care site, 19% reported that their clerkship site used electronic medical records, 80% had prevention and health promotion services, and 70% followed

evidence-based guidelines (Figure 2). Approximately 50% reported that their primary care sites had physician-directed teams, care coordination services, and linguistic services; 38% had flexible patient scheduling, and 26% used patient satisfaction surveys.

*Likelihood of Pursuing a Career in Primary Care (PC) After Clerkship Experience*

Sixty-four percent of students reported they were likely to pursue a career in PC, whereas 13% were not likely, and 23% were not sure. Seventy percent of the respondents said that their PC clerkship either

Figure 2: PCMH Elements Encountered at PC Sites



motivated or inspired them to consider a career in primary care. About 20% reported a negative experience during the clerkship, and 10% of the cohort reported the PC experience had no impact on their career intentions.

To test for associations between student characteristics, clerkship experiences, and the likelihood of pursuing a career in primary care, univariate logistic regression analyses were performed (Table 2). Students whose clerkship sites offered a greater number of PCMH elements were more likely to pursue a career in primary care (OR=1.18,  $P=.03$ ); and students were more likely to have been motivated or inspired to go into PC because of their clerkship experience (OR=1.20,  $P=.02$ ). Students under the age of 25 were less likely to go into PC as compared to students over 35 years (OR=0.10,  $P=.04$ ), while students whose clerkship site setting was in an urban cluster of between 2,500 to 50,000

people were more likely to pursue a PC career than those in rural areas.

Students who had a very good impression of team-based and interprofessional practices were more likely to have been motivated or inspired to go into PC because of their clerkship experience as compared to those who had a neutral impression (OR=4.81,  $P<.01$ ). Similarly, certain interactions with patients were associated with motivation to pursue primary care due to clerkship experience. Students who provided lab or diagnostic results to patients (OR=2.53,  $P=.05$ ) and collaborated with supervisors in the development of treatment plans (OR=8.24,  $P=.01$ ) were motivated by their experiences; responding to telephone calls appeared to deter students from primary care (OR=0.41,  $P=.02$ ). Students who had received a scholarship related to future primary care practice had 2.26 times the odds of pursuing a career in primary care. There were no significant associations between formal

learning experiences with other professional students and future primary care careers. Similarly, the settings of where the students grew up (urban versus rural) and receiving instructions on PCMH or health reforms prior to their primary care clerkship had no relation with primary care interest.

## Discussion

A majority of PA students lack adequate instruction related to the new health care delivery models, PCMH concepts, care coordination, and quality improvement (QI), even though accreditation standards require that PA curricula should include this instruction.<sup>20</sup> This deficiency could be alleviated by investing in faculty development, longitudinal clinical experiences, or adopting the already developed modules by national agencies.<sup>21-23</sup>

PA students exposed to a greater number of elements of the PCMH may feel better prepared to function

**Table 2: Odds Ratios and 95% Confidence Intervals for the Likelihood of Pursuing a Career in Primary Care After Clerkship Experience (\*= statistically significant values)**

Question	Likelihood of Pursuing Career in PC			Decision Affected by Clerkship Experience		
	OR	95% CI	P Value	OR	95% CI	P Value
Age						
< 25 years	0.10*	(0.01, 0.87)	.037	0.25	(0.05, 1.37)	.109
25–35 years	0.17	(0.02, 1.39)	.099	0.49	(0.10, 2.35)	.374
> 35 years (Ref)	—	—	—	—	—	—
Clerkship site setting						
Urban area (>50 K)	1.52	(0.69, 3.32)	.296	1.38	(0.62, 2.05)	.430
Urban cluster (2.5 K–50 K)	2.39*	(1.01, 5.67)	.047	0.99	(0.43, 2.27)	.974
Do not know	1.13	(0.17, 7.68)	.898	2.13	(0.22, 20.68)	.515
Rural (Ref)	—	—	—	—	—	—
# of services offered at clerkship site	1.18*	(1.02, 1.38)	.031	1.20*	(1.03, 1.41)	.024
Impression of team based and inter-professional practices						
Very Good	1.41	(0.64, 3.09)	.394	4.81*	(2.13, 10.86)	<.001
Fair	0.78	(0.25, 2.50)	.696	1.76	(0.56, 5.56)	.338
Unsatisfactory	0.85	(0.17, 4.37)	.844	0.45	(0.08, 2.61)	.372
Neutral (Ref)	—	—	—	—	—	—
Interaction with patients						
Providing lab or diagnostic results	1.41	(0.58, 3.42)	.454	2.53*	(1.00, 6.40)	.049
Developing treatment plans	4.06	(0.94, 17.59)	.062	8.24*	(1.56, 43.47)	.013
Responding to telephone calls	0.89	(0.42, 1.85)	.745	0.41*	(0.19, 0.88)	.023
Better prepared for team-based practice						
Very well prepared	1.59	(0.40, 6.38)	.515	14.39*	(2.84, 72.96)	.001
Well prepared	1.04	(0.33, 3.32)	.950	4.74*	(1.47, 15.29)	.009
Not sure	0.63	(0.15, 2.66)	.525	1.60	(0.38, 6.82)	.525
Not prepared (Ref)	—	—	—	—	—	—

in team-based practices. Positive impressions of team-based and inter-professional practices, providing diagnostic results, and developing treatment plans in collaboration with their supervisors were factors that motivated students to pursue a career in primary care. Other predictors of interest in a primary care career included age greater than 35 years, being a recipient of a NHSC scholarship, and primary care site settings within an urban cluster of between 2,500 and 50,000 people, observations reported among other health professionals.<sup>24</sup> However, there did not appear to be an association between these factors and

students' motivation to pursue primary care due to their clerkship experience, which suggests that these trends exist regardless of the quality of students' clerkship experiences. The impact of a training site's population size (urban versus rural) on future career choice needs further investigation. There were no significant relationship between formal learning experiences or prior instruction and future careers suggesting that greater impact on student career choices occur during experiential learning. This type of learning is conducted in the real work environment and may solidify student career goals.<sup>25</sup>

### Limitations

This study was limited by a small sample size of 12 PA programs, possible recall biases, and students' unfamiliarity with the concept of PCMH. Despite these limitations, the study indicates that PA students whose clerkship sites offered a greater number of PCMH elements were more interested in pursuing careers in primary care. Therefore, more concerted effort is needed from PA educators to design curricula that expose students to the PCMH concepts preferably in experiential settings.

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