Direct Primary Care: Improving Medical Student Interest in Primary Care

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Abstract—The goal of this study was to quantify the claim that the direct primary care practice model makes working in a primary care setting more attractive to medical students. Survey data were collected from 145 medical students before and after a presentation on the direct primary care model. Responses were collected from seven medical schools in five states and the District of Columbia between the months of February and May 2017. Responses from pre- and post-survey were analyzed for trends. The top two factors that dissuade respondents from working in a primary care setting were found to be too much paperwork (45%) and too little pay (43%). Fifty-percent of medical students surveyed stated that the direct primary care model increases the likelihood that they will work in a primary care setting. Likewise, 81% believe the direct primary care model makes primary care more attractive for future healthcare providers. Overall, 31% of respondents demonstrated increased interest in primary care per changes between pre- to post-survey Likert scores. No consistent evidence was discovered to suggest that the direct primary care model decreases student interest in primary care. The pre-survey group that demonstrated the most significant Likert score increase from pre- to post-survey were students who listed I have my heart set on another specialty as a factor that dissuaded them from working in primary care.

Keywords — Direct Primary Care, DPC, Physician Shortage, Primary Care Shortage, Triple Aim

I. INTRODUCTION

Nationwide, healthcare is falling short in part because of a shortage of physicians. Ameliorating the physician shortage is one thing most healthcare leaders and policymakers agree on. Primary care and family medicine are particularly affected. In 2012, analysis by the American Academy of Family Physicians (AAFP) suggested 52,000 additional physicians would be needed by 2025 to cover primary care alone1.

There is no single explanation that can show how things got this way, but there are a few reasons which have certainly played a role. One factor is called the “silent exodus,” referring to physicians leaving the profession for early retirement, alternative careers, elective-only medicine, etc2. A survey by the Physicians Foundation sheds light on why physicians are leaving primary care for greener pastures. The survey found that most doctors are profoundly dissatisfied and believe that their profession is in decline. Among the “very important” reasons given for the decline are too much regulation and paperwork (79.2 percent of physicians); loss of clinical autonomy (64.5 percent); lack of compen-sation for quality (58.6 percent); and erosion of physician–patient relationship (54.4 percent)3.

Another contributor to the shortage is that the supply of medical students going into primary care is insufficient to meet the already unmet and growing demand4. While data from the AAFP show modest growth in those choosing family medicine, the increase in family doctors is not meeting the growth in demand. Even the bump in family physician residents is offset by more and more internal medicine residents pursuing specialization and hospital medicine rather than primary care. There are many reasons for this5. Students saddled with six-figures in debt are hesitant to choose a lower-paying field for fear of ability to repay loans within a reasonable period of time. Training for medical students largely takes place in academic, tertiary care medical centers, where exposure to primary care is limited and greater perceived significance is given to complicated, rare, and unique medical problems6,7. Maybe most importantly, students are impressionable. If a family medicine preceptor is struggling with the problems listed in the previous paragraph, and it is affecting his or her satisfaction with the job, then a student working under said physician is going to remember that when considering application to such an apparently miserable field.

Demand for family physicians is on the rise because of population growth, the aging population, and increased demand to care for those without previous access8. On the supply side, things fall woefully short as physicians retire early, switch professions, opt for specialization, or abstain from entering primary care entirely. Many proposed solutions have been considered and undertaken in an attempt to address this, and most have fallen short of expectations. Direct primary care remains one solution which has steadily gained traction and been well-received, all while addressing the underlying causes of the physician shortage.

Direct primary care (DPC) is an alternative payment model for primary care in which physicians contract directly with patients, rather than through costly and obfuscatory third-party schemes. Direct primary care works like a gym membership for health care services. In exchange for a membership fee (the industry average monthly payment ranges from $25 to $85), patients have access to around-the-clock primary health care. They can schedule same-day appointments and longer office visits with their doctors as needed. Additionally, most direct primary care practices help their patients realize significant savings on routine labs, medications, and imaging - often resulting in discounts of over 90 percent compared to prices billed by way of health insurance9. Traditional practices spend 40 cents of every dollar on dealing with insurance companies, with no added value to patients10. By eliminating this wasteful overhead, DPC practices are able to reach a price point which is available to the masses.

In fact, direct primary care enrollment can even save most patients money. The nature of direct primary care allows more frequent and careful monitoring of chronic diseases, which manifests in fewer costly long-term outcomes (such as preventable hospital visits). A study in the American Journal of Managed Care corroborated this finding, noting DPC patients have 35% fewer hospitalizations, 65% fewer emergency department visits, 66% fewer specialist visits, and 82% fewer surgeries than similar populations without DPC12. Additional savings can be realized by coupling DPC enrollment with a high-deductible health plan. Since the majority of healthcare needs can be met by DPC physicians, patients only need insurance to cover catastrophic, unpredictable scenarios. If the patients were previously enrolled in a comprehensive insurance plan, then the savings by switching are frequently more than enough to cover the cost of enrollment in DPC13.
Physicians, patients, and the healthcare system at large benefit most of all from DPC practices satisfying the triple aim. To the uninitiated, the triple aim is the goal of providing better population care and a better patient experience at a lower per capita cost. Better care is evidenced by fewer preventable hospital visits discussed above. Lower per capita cost was discussed similarly. The patient experience is subjective, but certain conclusions can be drawn from observing the nature of DPC. Because physicians contract directly with patients, there is no incentive for patients to stick around if they are dissatisfied with their care. Unlike certain other systems (e.g. HMOs), the patient is under no coercion to see a particular physician and can leave at will. Additionally, because physicians are readily available for appropriate amounts of time, they are better capable of addressing all the needs and concerns of patients. It is reasonable to conclude that a patient may be more satisfied under such a system rather than one in which they are shuffled through an assembly-line style of truncated care. The doctor-patient relationship is keystone to DPC, and as a result most patients are very satisfied with the care they receive.

In addition to the triple aim, direct primary care achieves a much needed fourth aim: increased physician satisfaction. As discussed previously, declining autonomy and remuneration are factors which cause much dissatisfaction for physicians in the primary care workforce - a reality of which medical students are aware. However, with the realization of the quadruple aim, the DPC practice model makes primary care a much more attractive option for medical students than heretofore. The goal of this study was to quantify this statement using survey analysis.

II. METHODS

Responses were collected from seven medical schools in five states and the District of Columbia between the months of February and May 2017. The on-site data collection process involved a 30 to 40-minute presentation about the DPC model followed by a 10 to 15-minute Q&A session. Each presentation was bookended by anonymous pre- and post-surveys, over 90% of which were deployed via paper surveys while the rest were collected electronically using a shortened URL that limited respondents to a single response each. Respondents were first asked two background questions (overall question numbers 1 & 2) to ascertain their degree program, year in school, and amount of prior experience working in primary care medicine. Question #1 asked students their year and program in school, with distinctions made between MD and DO programs. Question #2 asked students to quantify their prior experience working in primary care.

For simplicity, family, pediatric and internal medicine were specified as a primary care setting for the purposes of this study.

Pre-Survey

The pre-survey consisted of three questions (overall question numbers 3, 4, & 5). In question #3, respondents were asked to rank their interest in a primary care setting using a 1 to 7 Likert-type scale. Selecting a value of 1 corresponded to absolutely no interest, while a selection of 7 corresponded to very interested, with a selection of 4 serving as a neutral response. Question #4 asked respondents to select factors (if any) that dissuade them from working in a primary care setting. Multiple selections and custom responses were allowed. Lastly, question #5 asked respondents if they were familiar with the concept of direct primary care.

Presentation

For this study, the direct primary care model is defined in the following manner: (1) a periodic fee is charged for pre-determined medical services, (2) no third parties are billed on a fee-for-service basis, and (3) any per visit charge must be less than the monthly equivalent of the periodic fee. Each presentation was given by a DPC physician practicing in or near the geographical area of the respective medical school. It was felt that in-person presentations delivered by guest lecturers were the ideal method of conveying information about the DPC model, as opposed to a single, pre-recorded video presentation. While the latter would have ensured absolute scripting and duplication of content, the former was chosen in hopes of offering a more intimate approach in which to communicate the authentic nature of direct primary care. In order to keep from sacrificing standardization of presentation content, speakers were given a model PowerPoint presentation and list of specified elements of DPC that were to be covered in the presentation. Speakers were also given the option to create their own slides, as long as the presentation content included - but did not go beyond - the elements of DPC. These elements included:

- Five key tenets of DPC as introduced by the Direct Primary Care Coalition, namely: service, patient choice, elimination of fee-for-service (FFS), advocacy, and stewardship. More information on these tenets can be found on the DPC foundation’s website (www.dpcare.org).
- Benefits to clinicians – including more time with each patient, less patients per day, less overhead, freedom to practice without insurance requirements, etc. Ideally clinic revenue/overhead numbers will be shared that compare traditional insurance FFS primary care vs DPC.
- Benefits to patients – including discussion of services included in typical DPC memberships: 24/7 access to a provider (phone, text, email, etc.), longer office visits, no extra charge for in-office testing (EKG, urinalysis, spirometry, glucose monitoring, etc.), urgent care visits & reduced visits to the ER, minor in-office procedures (sutures, joint injections, biopsies, cryotherapy, etc.), often savings of over 90 percent on in-house medications, discounts on testing (imaging, labs, pathology).
- Anecdotes – inclusion of multiple anecdotes depicting achievement of the quadruple aim.
- Relationship to health insurance – health insurance and DPC are not replacements for one another, nor are they incompatible with one another. Insurance is still recommended for hospital visits and other high cost, catastrophic services.

Post-Survey

The post-survey consisted of four questions (overall question numbers 6, 7, 8, & 9). Questions #6 read as follows: “Do you believe the direct primary care model makes primary care a more appealing option for future healthcare providers?”. Question #7 read as follows: “Does the direct primary care practice model increase the likelihood that you will work in a primary care setting?”. Question #8 was involved a 1 to 7 Likert-type scale as was found in the pre-survey and read as follows: “Given the availability of working in a direct pay practice, please rank your interest in a primary care setting”. Responses were kept identical to that of question #3. Question #9 asked respondents their overall thoughts regarding DPC, and listed very innovative, undecided, not a fan, and other as available responses.
III. RESULTS

Below are the results of the 145 completed surveys from seven medical schools across the United States. In total, 152 of the 242 presentation attendees filled out surveys, but seven of these were ineligible due to only partial completion. The remaining attendees either did not fill out surveys, or school approval was not obtained for survey deployment.

The answers to the demographic questions prior to the survey can be found in Table 1 and Table 2. These classify student by program type and year, as well as by prior experience in a primary care setting.

Table 1 – Distribution of respondents by program and year

<table>
<thead>
<tr>
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<th>1st year</th>
<th>2nd year</th>
<th>3rd year</th>
<th>Total</th>
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<tr>
<td>DO</td>
<td>48 (33.1%)</td>
<td>32 (22.1%)</td>
<td>-</td>
<td>80 (55.2%)</td>
</tr>
<tr>
<td>MD</td>
<td>47 (32.4%)</td>
<td>17 (11.7%)</td>
<td>1 (0.7%)</td>
<td>65 (44.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>95 (65.5%)</td>
<td>49 (33.8%)</td>
<td>1 (0.7%)</td>
<td>145</td>
</tr>
</tbody>
</table>

Table 2 – Work experience in primary care setting†

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<th>6-12 mo.</th>
<th>1-2 yrs</th>
<th>&gt; 2 yrs</th>
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<tr>
<td>None</td>
<td>92</td>
<td>(63.4%)</td>
<td>24 (16.6%)</td>
<td>14 (9.7%)</td>
<td>12 (8.3%)</td>
</tr>
</tbody>
</table>

†Primary care setting defined as family, pediatric, and internal medicine.

As is shown in Figure 1 below, when respondents were asked in question #4 of the pre-survey about factors that dissuade them from primary care, the top two selections were too much paperwork involved (44.8%), and too little pay (42.8%). In total, 13 respondents (9.0%) selected the option nothing deters me from primary care. Thirty-two respondents (22.1%) selected I have my heart set on another specialty as one of the factors (not necessarily exclusively).

Figure 1 – Factors dissuading students from primary care

Figure 2 – Pre-survey question #5

Are you familiar with the concept of direct primary care?

- "Not Sure" 30%
- "Yes" 36%
- "No" 34%

Post-survey results for questions #6, #7, and #9 are depicted in Figure 3a, Figure 3b, and Figure 3c respectively. These represent answers from all 145 respondents.

Figure 3a – Post-survey question #6

Do you believe the Direct Primary Care practice model makes primary care a more appealing option to future healthcare providers?

- "Undecided" 16%
- "No" 3%
- "Yes" 81%

Figure 3b – Post-survey question #7

Does the direct primary care practice model increase the likelihood that you will work in a primary care setting?

- "Undecided" 11%
- "No" 39%
- "Yes" 50%

Figure 3c – Post-survey question #9

What are your thoughts about direct primary care?

- "Undecided" 16%
- Other 9%
- "Very Innovative" 75%

Results from question #5 in the pre-survey revealed 52 respondents (35.9%) replied yes when asked if they were familiar with the direct primary care model, while the remaining 93 respondents replied either no or not sure (see Figure 2).
For ease of contrast, pre- and post-survey Likert data are shown together in this section (see Figure 4 above). Among all respondents, the average score among pre-survey Likert responses was 4.96, while the average score for post-survey Likert responses was 5.24.

IV. DISCUSSION

As can be seen in Table 1, over 99% of respondents were made up of first- and second-year medical students. This was expected, as most third- and fourth-year students are no longer on campus due to their clinical rotations. Although not quite 1:1, it was felt that the ratio of MD to DO students was a reasonable distribution for this population with regard to program type.

The top factors selected by respondents as those that dissuade them from primary care were not surprising. The administrative burden on physicians and other healthcare providers continues to be a real concern in the clinical setting. Recent studies are finding that being on the computer and doing other clerical work can take 40-66% of a physician’s time6,17. Furthermore, as discussed in the introduction, students tend to seek out higher-paying specialties in order to pay back their student loans, and primary care is notorious for being among the lower paid areas of medicine18.

The sample population seemed to contain a higher than expected interest in primary care when examining pre-survey Likert responses (average score of 4.96). Because student attendance was not required by their institution as part of their program, it is likely that a higher percentage of students already interested in primary care were in attendance and that most non-interested students chose to forgo the presentation, indicating some degree of self-selection bias. Similar logic can be used to explain the surprisingly high percentage of respondents that claimed they were already familiar with the direct primary care model (36%). In the future, self-selection bias could be theoretically eliminated if medical programs were to able to make attendance mandatory.

The data in Figures 3, b, and c were quite striking. Fifty percent of respondents said that the direct primary care model increased the likelihood of them working in a primary care setting, and 81% believed DPC made primary care more appealing to future healthcare providers. When put into the context of a purported shortage of primary care physicians, these frontline data suggest that the direct primary care model will have a meaningful impact by drawing medical students into the fields of family, pediatric, and internal medicine.

With regard to overall Likert data, 45 respondents (31%) demonstrated an increase in their pre- to post-survey Likert scores, while 14 (9.7%) indicated a decrease, and 86 (59.3%) showed no change. To better illustrate the meaningful changes between pre- and post-Likert data, an alternative rendering can be seen in Figure 5a in which two groups are removed: (1) fence-sitters and (2) respondents that indicated in the pre-survey that they were very interested in primary care (Likert score of 7). With regard to the former, fence-sitters were defined as respondents that submitted both pre- and post-survey Likert scores of 4 (neutral). Both groups demonstrated little change, which only adds static values to the stacked bar chart and was noticed to hinder visual interpretation of changes within the ordinal data set.

Interestingly, the one pre-survey group that demonstrated the most significant Likert score increase from pre- to post-survey were students who listed I have my heart set on another specialty as a factor that dissuaded them from working in primary care. Pre-survey and post-survey averages were 3.94 and 4.63, respectively, constituting an increase of 17.5%. Likert data for this group are displayed below (see Figure 5b).
After the removal of fence-sitter Likert data points, the remaining 14 students who gave a neutral pre-survey Likert response all showed increased interest in primary care when looking at their post-survey Likert selection, with an average increase of 1.23 points. The average increase jumped to 1.43 points when including pre-survey Likert scores of 3 into this group, which accounted for about 21% of the overall sample population. This finding suggests that the DPC model will attract a significant number of medical students who are initially neutral or somewhat less interested in primary care.

There were a few paradoxical drops in post-survey Likert data among those who indicated very interested in the pre-survey (Likert responses of 7). Although 25 of the 33 in this group (76%) again chose very interested (score of 7) in the post-survey, five respondents chose scores of 5, and three chose scores of 6. Of these eight respondents, 50% answered yes to question #7, 100% answered yes to question #6, and seven found the DPC model very innovative (question #9), with the eighth respondent describing the model as “appealing”. These findings seem to contradict the findings expected if such a drop were to be associated with dislike of the model, or if the model were to make them somehow less interested in primary care. In fact, these findings were very similar when evaluating the 14 respondents total who demonstrated decreases in Likert scores, and it was found that the answers this group gave to questions #6 and #7 were within the overall standard deviation. Again, the absence of significant differences in other questions, it is unlikely that this group of 14 represents a loss of interest in primary care due to the DPC model. A possible explanation for these decreases could be as simple as the wording of the post-survey Likert scale in question #8. Some students might have perceived that the question was asking them to rank their interest in practicing in a direct primary care practice, and not their interest in primary care overall. Perhaps a more effective choice of wording might have been, “After learning about the direct primary care model, please again rank your interest in a primary care setting”. Of course, it is also possible that the DPC model is not attractive to every medical student interested in a primary care career. If this is the case, it appears to be in the small minority – less than 16% according to this sample population. Another improvement that could be made to the study would be to ask students to select the top area(s) of medicine that is of interest to them, and then repeat this in the post-survey to see if primary care has risen in rank.

In the group of 15 respondents who listed greater than one year experience working in primary care in question #2, 93% and 80% answered in the affirmative to question #6 and #7, respectively. Of the remaining 130 respondents with less than one year of experience in primary care, 79% and 46% answered in the affirmative to the same questions, respectively. This could suggest greater amounts of prior work experience within the current atmosphere in primary care is correlated with a higher interest in direct primary care.

Thirty respondents (~21%) of the sample population overall chose pre-survey Likert scores ranging from 1 to 3, indicating absolutely no interest or less interested in primary care. Of this group 63% of the students demonstrated increased interest in primary care based on post-survey Likert scores, with an average increase of 1.10 points.

Interestingly, DO students are 1.5x more likely to be interested in primary care than MD students based on pre-survey Likert scores of 5 to 7.

V. Conclusion

Fifty-percent of medical students surveyed stated that the direct primary care model increases the likelihood that they will work in a primary care setting. Likewise, 81% believe the direct primary care model makes primary care more attractive for future healthcare providers. Overall, 31% of respondents demonstrated increased interest in primary care according to changes between pre- to post-survey Likert scores. No consistent evidence was discovered to suggest that the direct primary care model decreases student interest in primary care. The pre-survey group that demonstrated the most significant Likert score increase from pre- to post-survey were students who listed I have my heart set on another specialty as a factor that dissuaded them from working in primary care.

VI. Going Forward

To validate the findings of this study, at least two possibilities exist: (1) repeat the study with aforementioned improvements in hopes of higher survey response rates, thereby achieving greater statistical confidence, and (2) follow up with respondents from this study in four to seven years’ time to see if DPC was actually a deciding factor in the selection of a primary care residency and/or practice setting.

Upon verification of these data, we call upon medical schools, primary care residency programs and professional organizations within the realm of primary care to help inform students and patients of the direct care movement and encourage its development.

ACKNOWLEDGEMENTS

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REFERENCES


