Are Direct Primary Care Practices Located in Health Professional Shortage Areas?

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ABSTRACT

Direct primary care (DPC) is a model of health care delivery that relies on membership fees for service; however, it has been criticized as potentially worsening the shortage of primary care physicians. We sought to compare the distribution of DPC practices in the United States to that of non-DPC primary care and assess the overlap with Health Resources and Services Administration designated health professional shortage areas (HPSAs). We mined data from publicly available sources on DPC practices, HPSAs, and other primary care physicians. We stratified analyses by degree of rurality and HPSA priority need scores. We found that DPC practices were less likely to be in HPSAs overall and less likely to be in a high-priority–need HPSA but more likely to be in a rural or partially rural HPSA compared to primary care physicians. There is ample opportunity to grow DPC presence in many HPSAs that remain underserved, especially high-priority HPSAs in urban areas.

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INTRODUCTION

Direct primary care (DPC) is a model of health care delivery that uses periodic membership fees for service in lieu of traditional fee-for-service, third-party reimbursement. Direct primary care, as well as the related but distinct concierge medicine practice, has been criticized because it could worsen the shortage of primary care physicians[1] and exacerbate existing inequities in health care access.[2] This might be especially true if DPC practices are not located where there is a need for primary care clinicians in the United States; instead relying on communities that are already well served.

In the United States, the Health Resources and Services Administration (HRSA) designates primary care need via the identification of health professional shortage areas (HPSAs), which indicate "areas, population groups, or facilities within the United States that are experiencing a shortage of health care professionals."[3] We sought to understand the overlap between HPSAs and DPC practices in the United States overall and by degree of rurality. We then compared DPC practices to a random subset of all primary care physicians (PCPs) in the United States to assess whether the observed patterns were meaningfully different between the 2 groups.

METHODS

We obtained data on Oct 9, 2023 from the HRSA,[4] DPC Frontier Mapper (a voluntary clearinghouse for US DPC practices),[5] and the Centers for Medicare and Medicaid Services.[6] Health professional shortage areas correspond to area- or population-based geographic entities; we did not include HPSA facilities in this analysis because those are point-level data. Health professional shortage areas include a score based on the priority of primary care need, ranging from 1 (lowest) to 25 (highest). We stratified analyses by score categories as defined by the HRSA[7]—1-13 (low), 14-17 (medium), 18-25 (high)—and by degree of rurality (rural, partially rural, nonrural).[8]

We obtained address data for DPC practices in the United States using DPC Frontier Mapper.[5] Non-DPC PCPs were selected via the Centers for Medicare and Medicaid Services National Plan and Provider Enumeration System.[6] This system is used to create and track the National Provider Identifier (NPI) required by all entities covered by the Health Insurance Portability and Accountability Act (HIPAA) in the United States. We identified PCPs according to a primary classification taxonomy of family medicine, general outpatient internal medicine, general pediatrics,

Conflicts of interest: P.Y. is co-owner of a direct primary care practice in Pennsylvania and current president of the Delaware Academy of Family Physicians. N.D.G. reports no conflicts.

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and obstetrics and gynecology. All non-DPC physicians with a valid US address (n = 422,028) were geocoded for analysis, and an equality of proportions test was used to determine if PCPs were statistically different from DPCs by HPSA characteristics. Analyses included both "designated" and "proposed for withdrawal" HPSAs because as of this writing, the latter were still receiving federal support; thus, percentages might sum to greater than 100% if a location had multiple designations. We conducted a sensitivity analysis that excluded obstetrics and gynecology (n = 46,579) from the definition of a PCP. Computational codes are available for download (https://doi.org/10.5281/zenodo.11454774).

RESULTS

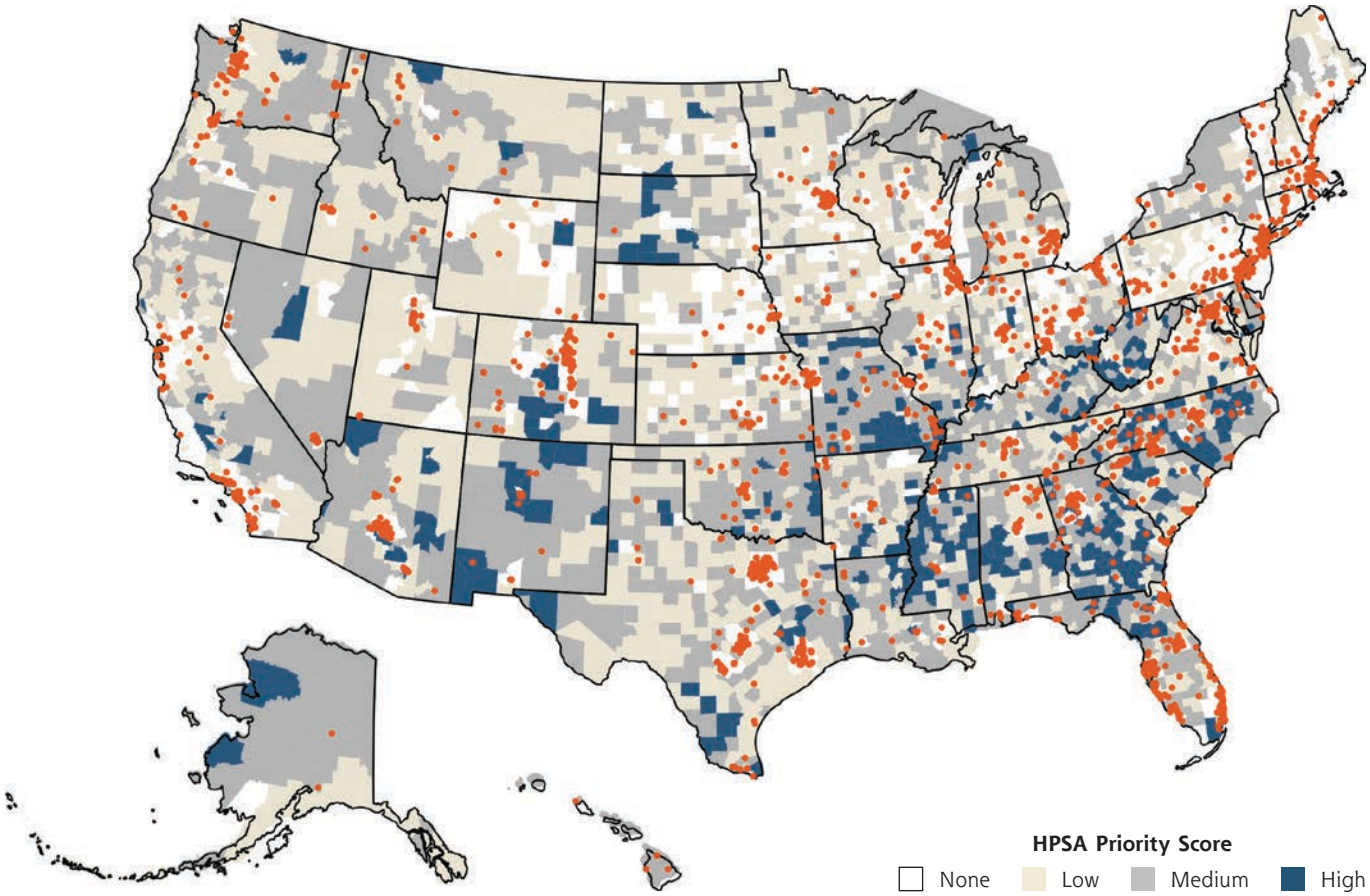
As of the date of data download, there were 3,935 area- or population-based HPSAs in the United States (by score: low = 1,626 [41%], medium = 1,733 [44%], high = 576 [15%]; by rurality: rural = 2,572 [65%], partially rural = 413 [10%], nonrural = 927 [24%], unknown = 23 [1%]) and 2,125 DPC practices cataloged on DPC Frontier Mapper. Forty-four percent of DPCs were in an HPSA, and of these, 45% were in a low-priority–need area, 47% were in a medium-priority–need area, and 14% were in a high-priority–need area. Similarly, among DPCs in an HPSA, 25% were in a rural area, 22% were in a partially rural area, 53% were in a nonrural area. Figure 1 illustrates these results.

In contrast, we found that 47% of the NPI PCPs were in an HPSA ($P = .02$ for comparison with DPCs), and of these, 39% were in a low-priority–need area, 49% were in a medium-priority–need area, and 20% were in a high-priority–need area ($P < .01$, $P = .14$, and $P < .01$, respectively, compared with DPCs). Among PCPs in an HPSA, 19% were in a rural area, 19% were in a partially rural area, and 63% were in a nonrural area ($P < .01$ for all compared with DPCs). Excluding obstetrics and gynecology did not alter statistical conclusions.

DISCUSSION

In this analysis, we found that DPC practices were less likely to be in HPSAs overall and less likely to be in a high-priority–need HPSA but more likely to be in a rural or partially

Figure 1. Alignment of direct primary care practices in the United States with Health Resources and Services Administration health professional shortage areas (HPSAs).



Health professional shortage areas were categorized according to priority need score: 1-13 (low), 14-17 (medium), 18-25 (high).

rural HPSA compared to NPI-identified PCPs in the United States. We offer several observations on these findings. Optimistically, there is evidence that DPC practices are located in nonurban areas, where there is a need for primary care physicians, yet overall, DPC practices are not as geographically dispersed as PCPs across the United States with respect to HPSAs. However, geographic availability might not equate to accessibility, which is driven by multiple factors such as cost, coverage, distance, patient volume, patient comfort, etc. We also recognize that DPCs in a high-priority–need HPSA might in fact not serve the target population if the DPC draws from (the relatively small number of) people who already have access to primary health care in that area or the cost of the DPC practice precludes those without primary health care from participating.

We did not include concierge medicine practices in this analysis because they tend to skew toward higher-income households—22% of adults in the top 1% income bracket participate in a concierge practice[9]—with average fees more than double those of DPC.[10] Their geographic distribution across the United States might mirror that of PCPs in general. A survey found that approximately 33% of concierge medicine offices operated in an urban area, 42% in a suburban area, and 25% in a rural area.[11] We are unaware of equivalent data regarding the income distribution of DPC vs non-DPC patients; this is an important area for follow-up research because it might relate to access to primary care.

There are several potential limitations to our analysis. First, our data identified DPC practices and not individual DPC physicians; thus, the actual number of physicians is likely greater unless all DPC practices comprise solo practitioners. Second, the volunteer nature of DPC Frontier Mapper might result in an underestimation of practices; this might be especially true for DPC practices that marketed to businesses as opposed to individuals. The Direct Primary Care Coalition, an advocacy organization for DPC, estimated there to be 1,600 practices in the United States,[12] suggesting that DPC Frontier Mapper might be a more complete data source. It might also be possible that DPC Frontier Mapper practice addresses do not align with patient catchment areas, for example, if there are multiple practice locations. Third, the self-reported nature of the NPI taxonomy could result in a misclassification of primary care physicians. If misclassification of either data source is differential by HPSA characteristic, our results might be biased by the degree of misclassification. However, others have extolled the use of publicly available data on NPIs for identification of PCPs,[13] and a validation study comparing the taxonomy to Medicare charges reported a sensitivity of 0.9 (95% CI, 0.8-1.0) and a specificity of 0.8 (95% CI, 0.7-0.8), suggesting high agreement.[14] Finally, patient panels tend to be smaller at DPC (and concierge) practices;[15] thus, to balance out demand should practices transition from a traditional fee-for-service model would require additional DPC physicians.

In conclusion, there remains ample opportunity to grow DPC presence in many HPSAs, especially high-priority HPSAs in urban areas. As others have stated, there is a need to show that expansion of DPC practices into HPSAs will not further marginalize groups that have historically lacked access to primary care.[16]

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Key words: direct primary care; health professional shortage areas; spatial accessibility

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