Revitalizing Primary Care, Part 1: Root Causes of Primary Care's Problems

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ABSTRACT

This 2-part essay offers a discussion of the health of primary care in the United States. Part 1 argues that the root causes of primary care's problems are (1) the low percent of national health expenditures dedicated to primary care (primary care spending) and (2) overly large patient panels that clinicians without a team are unable to manage, leading to widespread burnout and poor patient access.

Information used in this essay comes from my personal clinical and policy experience bolstered by summaries of evidence. The analysis leans heavily on my visits to dozens of practices and interviews with hundreds of clinicians, practice leaders, and practice staff.

In 2016, the United States spent approximately 5.4% of total health expenditures on primary care, compared with an average among 22 Organization for Economic Co-operation and Development (OECD) countries of 7.8%. With average US primary care panel size around 2,000, it would take a clinician without an effective team 17 hours per day to provide good care to that panel. Low primary care spending and excessive panel sizes are related because most medical students avoid careers featuring underfunded practices with unsustainable work-life balance.

Over the past 20 years, many initiatives—explored in Part 2 of this essay—have attempted to address these problems. Part 2 argues that to revitalize primary care, 2 fundamental changes are needed: (1) increased spending dedicated to primary care and (2) creating powerful teams that add capacity to care for large panels.

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INTRODUCTION

During the first 20 years of the current millennium, primary care appeared to be entering its golden age. Evidence-based prevention is widely accepted. Patients are accessing care through electronic portals. The Chronic Care Model has been implemented to address care gaps in essential services. Nurse practitioners and physician assistants are becoming trusted clinicians. Moving from the "I" of the lone physician to the "we" of the team is catching hold. Some practices—bright spots—are inching toward true transformation.

But casting a gloom over these rays of light is an inexorable logic of decline. For decades, the United States has undervalued and underfinanced primary care. For most aspiring young clinicians, primary care is viewed as too much work for too little reward, with orthopedics and gastroenterology looking more attractive. Not enough primary care clinicians means too many patients for each clinician to manage. Vulnerable populations with greater health needs live in areas with fewer primary care clinicians, creating a double dose of inequity.

As too much work is heaped upon too few clinicians, exhaustion and cynicism—burnout—is pervasive in primary care. The quantum advance of electronic records has turned into its opposite as clinicians spend up to 5 hours each day on electronic medical record (EMR) documentation,[1] in part designed to generate revenue through a perverse fee-for-service juggernaut. The long-awaited 2021 National Academies of Sciences, Engineering and Medicine report on primary care warned that "primary care in the United States is slowly dying."[2] COVID may have accelerated this trajectory. Some wonder if primary care is actually doable.

As someone who spent 32 years in full-time community practice and 18 more years in academic observation and study, primary care is my life. The patients I was honored to care for were sometimes inspiring, sometimes frustrating, and often very

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sick. I had the privilege to visit many "bright spot" practices with hardworking, empathetic, selfless professionals and cohesive teams, searching for joy in practice. Bright spots are rare. Self-sacrifice is not sufficient motivation to build a solid and lasting foundation for our health care system.

The 2-part essay presented here welcomes debate. The arguments advanced are not primarily about the health of patients, but address the health of primary care. The 2 are closely related: a greater supply of primary care physicians per 10,000 people has been linked to lower mortality rates, longer life expectancy, better self-reported health, and reduced rates of low birth weight.[3]

Throughout the essay, I focus on 4 issues, each of which has a profound impact on the health of primary care. These are (1) financial neglect: the small proportion of total health expenditures going to primary care; (2) excessive panel size: too many patients for a clinician to adequately care for; (3) access for patients, and (4) burnout. The first 2 are viewed as root causes of primary care's problems and profoundly impact access and burnout. A national survey found that average wait times for new family medicine appointments increased from 20 to 29 days between 2014 and 2017.[4] Poor patient access also creates more burnout, as I learned during my clinical years. On days when patients were unable to get the appointments or phone advice they needed, they kept calling or showing up to be squeezed into my schedule, intensifying the usual daily stress. Excessively large panels without strong teams create too much work, which exacerbates burnout. Part of that work is the 49% of clinician time spent on EMR documentation and administrative work.[5] Revitalizing primary care requires a reduction in total work and especially the hours of frustrating documentation.

The 2-part essay proceeds in 3 sections: (1) root causes of primary care's problems, (2) limited improvement initiatives, and (3) hopes for the future.

METHODS

The thrust of the essay comes from my clinical and policy experience, bolstered by nonsystematic summaries of evidence. The evidence summaries were prepared by searching in Google, Google Scholar, PubMed, and the reference lists of articles. I tried to base the evidence on systematic reviews that others have done. The analysis leans heavily on my visits to dozens of practices and interviews with hundreds of clinicians, practice leaders, and practice staff.

ROOT CAUSES OF PRIMARY CARE'S PROBLEMS

Why is primary care in trouble? Many hypotheses have been offered. Confronting thousands of symptoms, diagnoses, and treatments to sort out, primary care is too complicated. The nation lacks a universal system of empanelment, linking each person to a primary care clinician. Medical students prefer specialist rather than generalist careers. All are correct.

Part 1 of this essay makes a more specific argument: primary care's maladies are rooted in 2 interrelated realities: financial neglect and excessively large panels without teams. Financial neglect—insufficient funding—leads to large panels by discouraging medical students from choosing primary care careers. Even adding the growing nurse practitioner and physician assistant workforce, the shortage of primary care clinicians results in each clinician caring for too many patients. Financial neglect also means insufficient funds to create powerful teams that share the care of large panels.

Financial Neglect

The 2021 National Academies of Sciences, Engineering and Medicine report on primary care states that in 2016, the United States spent approximately 5.4% percent of total health expenditures on primary care, compared with an average of 7.8% among 22 Organization for Economic Co-operation and Development (OECD) countries.[2] Other estimates place the US-OECD gap as wider, with the OECD average at 12%.[6] Primary care spending has been dropping, accounting for 6.5% of total expenditures in 2002 and 4.67% in 2019. During these years, procedural specialist and prescription drug costs rose as a percent of total health expenditures.[7,8] Low primary care spending particularly affects low-income elderly and minority populations who have a higher burden of disease and need primary care the most. For fee-for-service Medicare beneficiaries in 2015, primary care received a mere 2.12% to 4.88% of total medical and prescription spending.[9] Primary care spending varies depending on (1) how total medical expenses is calculated, and (2) narrow vs broad description of primary care.[10]

Consider the primary care spending gap of 7.8% for OECD nations vs 5.4% for the United States. In 2020, US health expenditures reached $4 trillion. Increasing primary spending from 5.4% to 7.8% would provide primary care with an additional $96 billion each year, or $480,000 per primary care physician.

Financial Neglect Discourages Primary Care Careers

In 2015, 8,000 new primary care physicians entered the workforce, a number projected to remain the same through 2022 and into the future. In 2022, an estimated 8,500 will retire, a number projected to increase over time.[11] With retirements exceeding entrants, the shortage of primary care physicians is projected to reach between 17,800 and 48,000 by 2034.[12] Persons living in counties with fewer primary care physicians per capita have lower life expectancy than those in counties with more primary care physicians.[13]

Why do only 30% of US physicians work in primary care compared with 50% in many European nations? One-quarter of non–primary care medical students indicated that they would switch to a primary care career if primary care income increased and/or work hours decreased.[14] Medical students are influenced by the burnout their primary care residents and faculty experience.[15] Primary care student rotations

may feature stress, disorganization, and lack of continuity of care—discouraging primary care career choice.[16] When medical students rotated into my community practice, I worried that the daily chaos would channel them straight into radiology or pathology.

Racial and ethnic minority medical students are more likely to choose primary care careers and practice in underserved communities.[17,18] Yet, although underrepresented minorities constitute 34% of the population, they make up only 11% of physicians and 13% of medical students.

Increasing primary care spending could reduce the primary care-specialty income gap and thereby increase entrants into primary care. Rather than a downward spiral, with fewer primary care physicians meaning larger panel sizes, the stress of which leads to even fewer primary care physicians, one could envision an upward trajectory with more primary care physicians allowing panel size to drop which—by improving work-life balance—would attract even more physicians.

What about nurse practitioners (NPs) and physician assistants (PAs)? In 2019-2020, 228,700 office-based, patient-care primary care physicians were joined by 94,000 NPs and 42,000 PAs working in primary care.[19] Many of these practice in urgent care or retail clinics, however, rather than full-scope primary care. NPs/PAs reduce the primary care clinician shortage, but not enough. Even counting NPs/PAs, a significant primary care clinician shortage will continue, perpetuating excessive panel sizes.[12]

Community health centers delivered primary care to 27.2 million minority and low-income people in 2017. Yet in 2018, 66% of health centers reported unfilled positions for primary care physicians, up from 56% in 2013. The COVID-19 pandemic made it more difficult to recruit and retain clinicians and staff.[20] Community health centers are especially vulnerable to low primary care spending.

In summary, the United States spends a very low proportion of total health expenditures on primary care, a policy choice—that could be changed—with major implications for primary care's viability. In contrast to other nations, the United States has no health care policy aligning workforce production with social needs.

Large Patient Panels

Primary care has the calamity of too many patients per clinician: excessive panel size. In most practices, clinicians try to care for their panels with little help from under-resourced teams. In this essay, "panel size" refers to panels without effective teams—panels for which the great majority of care is performed by the clinician (Table 1).

Modern understanding of panel size starts with the work of family physician Mark Murray,[21] who looks at primary care through the lens of demand and capacity. Demand is the number of appointment slots (in-person or virtual) desired by a clinician's panel of patients. Capacity is the number of appointment slots offered by a clinician. For primary care to be in equilibrium, with patients able to get prompt appointments, demand equals capacity. For most practices, demand exceeds capacity (Table 2).

Average US Panel Size

Panel size is the number of patients for whom a clinician is responsible. Many clinicians do not know their panel size.[22] During my years in practice, my panel size was a mystery; I only knew that I had too many patients and not enough time for each patient.

In 2015, average family physician panel size was estimated at 2,194.[23] A similar figure—2,271—comes from a 2019 survey, though only 42.5% of respondents could estimate their panel size.[24] Yarnall et al estimated that a primary care physician needs to work 21.7 hours per day to deliver recommended services to a standard panel of 2,500 patients.[25] Another study concluded that large panels place "unrealistic expectations on already overwhelmed providers and leaves patients at risk."[26] Clearly, panel size without teams is far too large—an effect of the clinician shortage and ultimately of low primary care spending.

Refining the Panel Size Metric

Panel size is a crude metric and requires refinement. Most important: who is caring for the panel. A lone clinician with no team? A clinician with a medical assistant scribe? A clinician with an RN care manager who independently manages most patients with diabetes? Yet panel size is rarely adjusted based on the composition and skill of the care team.[27,28]

Second, how sick are the patients in the panel? A panel of 3,000 young healthy adults is easier to manage than a panel of 1,500 elderly patients with chronic disease. The Veterans Affairs (VA) system sets panel size at 1,200 because many patients are high-acuity veterans. Panel size may be adjusted on the basis of patient age, sex, clinical risk score, visit frequency, and such factors as social isolation.[29]

A third refinement has to do with comprehensiveness: are most patients cared for in primary care or are many referred to specialists, urgent care, or emergency departments? Family physician scope of practice has declined over the last decade, suggesting that inability to manage large panels leads to

Table 1. The Impact of Large Panels

Stakeholders	Significance of Large Panels
Patients	I can't get an appointment when I want it and my visits are too short and too rushed
Clinicians	I am falling behind every day and there isn't enough time to take good care of my patients
Medical assistants	It's busy; I'm rooming and running all day
Practice manager	Large panels bring in plenty of revenue for both fee-for-service and capitation. But my clinicians are really burned out.
Health system leaders	Large panels for our clinicians means that we have a strong market share. But clinicians leaving is a big problem.

Table 2. Demand and Capacity

Let's do a thought experiment. A clinician, without an effective team, has a panel of 2,000 patients who seek care 3 times a year. Demand for that clinician's time is 2,000 × 3 or 6,000 visits per year. Let's assume the clinician sees 20 patients per day and works 200 days per year (4 days per week, 50 weeks a year). Capacity is 20 × 200 or 4,000 visits per year. The clinician has a demand-capacity gap of 6,000 – 4,000 or 2,000 visits. Ideal panel size for that clinician would be panel size × 3 patient visits per year = 4,000, making ideal panel size 1,333.

frequent referrals.[24] In fact, physicians with large panels are more likely to refer to specialists. Larger panel sizes are correlated with fewer preventive services.[30] A variety of formulas for adjusting panels are used to equalize work among clinicians, estimate ideal panel size, and address disparities.[31,32]

Altschuler and colleagues projected that a family physician could manage only 983 patients if she works alone. Delegating 77% of prevention and 47% of chronic care to team members allows a family physician to care for a panel of 1,947. Few primary care practices operate with that level of staffing support.[33] In fact, many practices offer little team assistance to their clinicians, making the average panel of 2,194 overwhelming.

Panel Size in Europe

The average 2015 European panel (list) size is estimated at 1,687 patients. List size varies among nations, with general practitioners (GPs) in the Netherlands caring for 2,322 patients compared with 800 in France.[34] Nations with larger panels tend to have extensive task shifting from physicians to practice nurses who handle many patient problems on their own.[35]

Panel Size and Access

Overempaneled clinicians have difficulty providing access.[30,36] At Mayo Clinic, increasing panel size is associated with longer wait times.[37] In Cleveland's MetroHealth system, adjusting for clinician time in clinic, appointment delays worsened with larger panels.[38] Increasing panel size is associated with lower patient satisfaction.[39] Poor access affects low-income and minority patients more because Medicaid patients face longer wait times than commercially insured patients.[40,41]

Panel Size and Burnout

Veterans Health Administration primary care physicians reported higher burnout for physicians with panel overcapacity than for those at or under capacity.[42] Physicians with large panels tend to shorten visit times to handle the relentless patient demand. In a study of 168 clinicians in 34 primary care practices, 67% and 53% needed more time for new patients and follow-ups respectively. Time pressure was associated with clinician stress, burnout, and intent to leave practice.[43,44] Higher burnout leads clinicians to leave practice, reducing capacity and cutting the number of clinicians available to care for too-large panels.[45] Group Health, now Kaiser Washington, reduced panel size from 2,300 to 1,800 in a pilot clinic. The emotional exhaustion component of burnout, equal in the pilot and control clinics at baseline, dropped to 10% in the pilot clinic compared with 30% in control clinics.[46,47]

In addition to increasing patient demand for appointments, larger panels create more work in addressing in-box messages and EMR documentation. Clinicians who spend more EMR time and those with high in-box volume have higher rates of emotional exhaustion.[48]

In summary, the best evidence suggests that average panel size for US family physicians is 2,194, a number too large to allow clinicians, without an effective team, to provide evidence-based care to the entire panel. The effects of large panels include poorer patient access to care and clinician burnout.

CONCLUSION

Part 1 of this essay argues that low primary care spending and large patient panels are powerful contributors to primary care's problems, in particular patient access and burnout. Part 2 suggests actions to solve or mitigate these problems. Part 2 argues that initiatives with the best chance of revitalizing primary care are those that increase the proportion of health care expenditures going to primary care and build powerful teams that assist clinicians to care for their panels.

Read or post commentaries in response to this article.

Key words: primary care issues; financial neglect; panel size; teams

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