

Virtual Mentor

American Medical Association Journal of Ethics
January 2010, Volume 12, Number 1: 36-40.

POLICY FORUM

The Primary Care Shortage, Nurse Practitioners, and the Patient-Centered Medical Home

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The issue of how to address the acknowledged shortage of primary care physicians is at the center of many health policy questions. One question that has been discussed with increasing frequency is whether nurse practitioners are the solution. In my judgment, nurse practitioners are a part of the answer, but not the whole answer, as some have suggested.

Primary care serves four important functions in the delivery of health care: (1) first contact access for each new medical need, (2) long-term, person-focused (not disease-focused) care, (3) comprehensive care for the majority of a person's health related needs, and (4) coordination of care when it must be sought elsewhere [1]. Primary care physicians are the only medical professionals who provide patient-centered, integrated, accessible health care that addresses the large majority of patients' needs in the context of a sustained partnership with the patient and the community [2]. Such comprehensive and coordinated care yields improvement in health-related outcomes at reduced expense [3]. Primary care physicians account for 52 percent of annual office visits made to physicians, although they comprise only 35 percent of the physician work force [4, 5].

Starfield et al. have demonstrated that primary care services—whether measured in terms of primary care physician supply, source of primary care delivery, or the components of primary care that are utilized—reduce morbidity and mortality [3]. Furthermore, they found that primary care is more often associated with more equitable distribution of health resources than specialty care and with improved outcomes at reduced cost.

The contributions of primary care to improvements in many aspects of population and individual health are well documented. In addition to the health benefits, there are reductions in health system costs and in disparities in health across population subgroups. These findings are robust over time and across areas and health systems. International comparisons show that countries with health systems based on strong primary care have better health at lower costs [3].

Being under the care of a primary care physician is associated with improved health outcomes in cancer, heart disease, stroke, infant mortality, low birth weight, and life expectancy [4]. To quantify this relationship, an increase of one primary care physician per 10,000 population is associated with an average mortality reduction of

5.3 percent as well as a reduction in cost [4, 6]. Patients who have a personal primary care physician (rather than a specialist as a personal physician) have 33 percent lower health costs and a 19 percent lower mortality rate, even when results are adjusted for age, sex, ethnicity, insurance status, reported diagnoses, and smoking status [7]. Finally, when evaluating Medicare data, Baicker and Chandra found that states with more primary care physicians per capita had lower per capita cost and higher quality care [6]. The opposite was seen in states with more specialists per capita.

Policy discussions about ways to increase the primary care physician workforce have considered utilizing nurse practitioners to address the shortage of primary care physicians. Nurse practitioners are part of the answer, but they are not the solution. Although nurse practitioners provide some types of care that primary care physicians do, their training is very different. There are limits to a nurse practitioner's ability to deliver the full-service, comprehensive care delivered by primary care physicians.

A 2004 Cochrane review attempted to assess patient health outcomes when nurses were substituted for primary care physicians [8]. They found that nurse practitioners received high scores in patient satisfaction, but studies of outcomes were limited and had methodological problems. Of the studies reviewed, more than half occurred in the 1960s and 1970s, and only four were recent (the latest was in 2001). The Cochrane reviewers opined that all studies had methodological shortcomings, most notably a lack of statistical power [8]. The reviewers concluded that, although the findings "suggested" that nurses may produce care of the same quality as primary care physicians, their conclusions should be "viewed with caution given that only one study was powered to assess equivalence of care, many studies had methodological limitations, and patient follow-up was generally 12 months or less" [8]. By comparison, the studies cited above on outcomes in primary care have demonstrated improved patient outcomes with an increased primary care physician workforce [4, 6].

Some assume that, for those who claim nurse practitioners' care is not equal to that delivered by primary care physicians and that, therefore, NPs are not the answer to the primary care workforce shortage, the matter is a turf issue. It is not. Setting the lack of outcomes research aside, nurse practitioners themselves do not have the workforce necessary, based on full time equivalents (FTEs), to provide the amount of care that will be needed as the population ages and the chronic disease burden increases.

Robert C. Bowman, professor of family medicine at the A.T. Still School of Osteopathic Medicine in Mesa, Arizona, has published numerous articles on physician workforce issues, especially as they relate to rural medicine. He also maintains large public data sets and research literature on primary care workforce issues [9]. Bowman has found that, since 2004, the number of nurse practitioners entering primary care has declined by 40 percent (as has the number of physicians entering primary care) [10]. Moreover, a nurse practitioner who enters primary care

now spends an average of 3 standard primary care years, a decline from the 9 standard primary care years common a decade ago [10, 11]. This compares to 29.3 standard primary care years for a family medicine residency graduate [11]. The standard primary care year is based on a number of variables including time spent in primary care delivery, active years in career, and time remaining in career [12]. Nurse practitioners spend only 33 percent of their careers in primary care, compared to 90 percent for family physicians [11, 12]. Based on such workforce studies, it would take 10 nurse practitioners to equal the contribution of one family medicine resident [11].

The benefits of primary care physicians to patients and society are clear. The current predicament of the primary care physician workforce and the need to care for patients with ever-increasing chronic care needs demand a solution. Fortunately, there is a solution. The answer lies in a team-based approach that includes primary care physicians, nurse practitioners, and others working together—the patient-centered medical home.

The patient-centered medical home (PCMH) was first described by the American Academy of Pediatrics in 1967 [13]. For the last few years, the PCMH concept has been the focal point of primary care redesign and encompasses joint principles agreed to in 2007 by the American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, and American Osteopathic Association [14]. These principles are: (1) every patient should have a personal physician, (2) physicians direct and lead the medical practice, (3) care is coordinated and integrated, (4) quality and safety are hallmarks of the PCMH, (5) patient access to care is enhanced, and (6) the payment system is reformed to reflect the value of primary care services.

There is ample evidence that the principles of the PCMH are able to deliver as promised [15-19]. The Group Health Cooperative of Puget Sound found that patients cared for in a PCMH had better HEDIS (Healthcare Effectiveness Data and Information Set) quality measures and a reduction in hospital admissions [19]. Community Care of North Carolina implemented a PCMH for Medicaid patients and improved the quality of care for people with asthma and diabetes and reduced hospitalizations, cost, and emergency room use [20, 21]. Geisinger Health System in Pennsylvania implemented PCMHs in 2007 and, after two years, found improvements in prevention and in care for patients with diabetes and coronary artery disease [21, 22].

There is an answer to the primary care physician shortage: the patient-centered medical home, where a physician-led health care team, incorporating nurse practitioners as vital team members, coordinates care and manages most of the needs of the patient.

References

1. World Organization of National Colleges, Academics and Academic Association of General Practitioner/Family Physicians (WONCA). The role of the general practitioner/family physician in health care systems. Victoria, Australia: WONCA; 1991.
http://www.globalfamilydoctor.com/publications/Role_GP.pdf. Accessed December 11, 2009.
2. Donaldson MS, Yordy KD, Lohr KN, Vanselow NA, eds. *Primary Care: America's Health in a New Era*. Washington, DC: National Academy Press; 1996.
3. Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. *Milbank Q*. 2005;83(3):457-502.
4. Macinko J, Starfield B, Leiyu S. Quantifying the health benefits of primary care physician supply in the United States. *Int J Health Serv*. 2007;37(1):111-126.
5. Dodoo MS, Fryer GE, Green LA, Phillips RL, Ruddy GR, McCann JL. Patterns of visits to physicians' offices, 1980 to 2003. *Am Fam Physician*. 2005;72(5):762.
<http://www.grahamcenter.org/online/graham/home/publications/onepagereports/2005/op35-patterns-visits.html>. Accessed January 27, 2009.
6. Baicker K, Chandra A. Medicare spending, the physician workforce, and beneficiaries' quality of care. *Health Aff (Millwood)*. 2004 (Suppl):W184-197.
7. Franks P, Fiscella K. Primary care physicians and specialists as personal physicians: Health care expenditures and mortality experience. *J Fam Pract*. 1998;47(2):105-109.
8. Laurant M, Reeves D, Hermens R, et al. Substitution of doctors by nurses in primary care. *Cochrane Database Syst Rev*. 2005 18;(2):CD001271.
9. Bowman RC. Physician workforce studies.
http://www.ruralmedicaleducation.org/physician_workforce_studies.htm. Accessed October 7, 2009.
10. Bowman RC. Why nurse practitioners are no longer primary care solutions.
http://www.ruralmedicaleducation.org/basichealthaccess/Why_NP_Primary_Care_Solution.htm. Accessed October 7, 2009.
11. Bowman RC. Measuring primary care: The standard primary care year. *Rural Remote Health*. 2008;8(3):1009. [Epub September 10, 2008.]
12. Bowman RC. The standard primary care year.
http://01f21cf.netsolhost.com/basichealthaccess/The_Standard_Primary_Care_Year.htm. Accessed October 7, 2009.
13. Sia C, Tonniges TF, Osterhus E, Taba S. History of the medical home concept. *Pediatrics*. 2004;113(5 Suppl):1473-1478.
14. Joint principles of the patient-centered medical home. American Academy of Pediatrics National Center for Medical Home Implementation.
<http://www.medicalhomeinfo.org/joint%20Statement.pdf>. Accessed October 7, 2009.

15. Beal AC, Doty MM, Hernandez S, et al. Closing the divide: how medical homes promote equity in health care: Results from the Commonwealth Fund 2006 Health Care Quality Survey. The Commonwealth Fund; 2007.
16. Bodenheimer T. Coordinating care: A perilous journey through the health system. *N Engl J Med*. 2008;358(10):1064-1071.
17. Adams J, Grundy P, Kohn MS, et al. Patient-centered medical home: what, why, and how. IBM Global Services: Institute for Business Value. 2009.
18. Reid RJ, Fishman PA, Onchee Y, et al. Patient-Centered Medical Home demonstration: A prospective, quasi-experimental, before and after evaluation. *Am J Manag Care*. 2009 Sep 1;15(9):e71-87.
19. Grumbach K, Bodenheimer T, Grundy P. The outcomes of implementing patient-centered medical home interventions: a review of the evidence on quality, access and costs from recent prospective evaluation studies. UCSF Center for Excellence in Primary Care.
<http://familymedicine.medschool.ucsf.edu/cepc/pdf/outcomes%20of%20pcmh%20for%20White%20House%20Aug%202009.pdf>. Accessed October 7, 2009.
20. Stenier BD, Denham AC, Ashkin E, Newton WP, Wroth T, Dobson LA Jr. Community Care of North Carolina: Improving care through community health networks. *Ann Fam Med*. 2008;6(4):361-367.
21. Mercer. Executive Summary, 2008. Community Care of North Carolina Evaluation.
<http://www.communitycarenc.com/PDFDocs/Mercer%20ABD%20Report%20SFY08.pdf>. Accessed October 7, 2009.
22. Geisinger White House Roundtable. August 10, 2009. <http://www.c-spanvideo.org/program/288301-1>.

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