

Nurse practitioners as an underutilized resource for health reform: Evidence-based demonstrations of cost-effectiveness

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Abstract

Healthcare reform in 2009 was motivated by an imperative to reduce the relentless increase in spending on medical care. Many efforts to solve the problem focused on applying proven principles of evidence-based practice and cost-effectiveness to find the least-expensive way to produce a specific clinical service of acceptable quality. This paper combines economic analysis and reviews published literature to show how the goals of healthcare reform can be accomplished by allowing independently licensed nurse practitioners to provide their wide range of services directly to patients in a variety of clinical settings. The paper presents extensive, consistent evidence that nurse practitioners provide care of equal or better quality at lower cost than comparable services provided by other qualified health professionals.

Introduction and background

The health reform battles of 2009 revealed intense differences within political institutions and between key stakeholders. Ironically, disagreement over specific solutions has often obscured general agreement on the problem—healthcare spending has finally become an unacceptable threat to the nation's economic future. Defenders of private enterprise are as likely as proponents of a government plan to believe that the costs of health care must be capped, sooner rather than later.

Slowing the medical sector's relentless growth as a relative portion of the gross domestic product is uniformly viewed as an essential step toward recovering from one of the worst economic collapses in our nation's history. Limiting this growth is also seen as a precondition to making health care affordable for all Americans, but politics has diverted the policy focus from comprehensive health reform to insurance overhaul. Congressional discussions of coordinated structural changes in delivery and payment evolved into concentrated efforts to mandate coverage during the 2009 session. The initial goal of improving the efficiency and effectiveness of healthcare delivery lost momentum in the process.

High and rising costs will continue until providers, payers, and purchasers change current policies that create

waste in today's medical marketplace.¹ Basic economic analysis and tight management must be brought to the essential task of harnessing unproductive expenditures and reallocating them to better uses, such as investments in output-enhancing technologies and price reductions that make health care affordable for more Americans.

This paper demonstrates how a fundamental concept of economics, input substitution, can be immediately applied to accomplish the goals of healthcare reform. Sound economic analysis and strong evidence show that the costs of producing care can be reduced by allowing the substitution of nurse practitioners for more-expensive health professionals without diminishing quality in the process. Policies that constrain appropriate input substitution need to be changed as quickly as possible. Money that could be reallocated to meeting reform goals is being wasted as long as rules and regulations hinder full utilization of less-expensive, equally qualified nurse practitioners.

In other words, economic and clinical gains can be realized by allowing nurse practitioners to be independent caregivers and delivery team leaders for a large number of health services in a wide variety of settings. The United States is paying a high price for current policies that prevent nurse practitioners from practicing within their full, legally defined scopes of practice. The costs of American health care could be reduced immediately

by changing regulations and policies that only reimburse higher cost health professionals for services provided at least as well for less money by nurse practitioners as licensed independent health practitioners.

Key reform issue: cost-effectiveness

The debate over health reform has generated example after example of unnecessary (and, therefore, wasteful) expenditures—spinal surgeries performed on patients who would have responded equally well to less-expensive physical therapy, referrals to overlapping medical specialists because care coordination services are not reimbursed, unnecessary duplication of prescriptions and medical tests in the absence of electronic medical records that would have prevented the redundancy, and the like. Study after study has consistently shown that hundreds of billions of dollars could be saved by reforms that shift spending from more-expensive to less-expensive care, all other things being equal.

This obvious conclusion applies a fundamental concept of economic science: *cost-effectiveness*. The cost-effective outcome is the least-expensive way to produce a specified good or service. Cost-effectiveness analysis begins with precise specification of the product, followed by determination of the costs of each different way to produce it, and finally selection of the lowest-cost method for producing the desired outcome. For example, medical researchers have identified several different ways to control coronary artery disease, including coronary artery bypass grafting, angioplasty and stenting, statins and antihypertensives, and behavioral interventions (e.g., controlled changes in diet and physical activity). The long-run costs of each approach are compared, ultimately identifying the least-expensive way to achieve the desired clinical result.

This key principle of economic science, identifying the least-expensive way to produce a specified outcome, is a necessary foundation for any meaningful health reform. Cost-effectiveness analysis clearly supports reversing rules and regulations that deny reimbursement to nurse practitioners while paying more-expensive health professionals for clinical services that achieve comparable results.

Evidence-based quality: not a problem with nurse practitioners

Quality is the paramount consideration in any proposal to improve the cost-effectiveness of healthcare delivery. The public reacted vociferously throughout 2009 to any reform proposal that implied reductions in quality—even if the trade-off would have reduced spending. Although health economists and other policy experts argue

convincingly that difficult reform choices must be made in the long-run because medical expenditures cannot continue to grow faster than the rest of the economy, cutting quality to save money is not a choice that Americans are currently willing to make.

Fortunately, several decades of experience with nurse practitioners and dozens of published studies show that quality is not a problem with reforms that would allow them to provide more services. Nurse practitioners care for patients at least as well as physicians in many clearly defined areas of nursing and medical practice.* Overall costs of medical care are held at unnecessarily high levels by policies that prevent substituting nurse practitioners for physicians in these overlapping areas. Removing inappropriate barriers to input substitution offers an excellent way to reduce the costs of care, without compromising quality, in treatment of simple to complex medical problems for patients of all ages in hospitals, transitional care centers, outpatient clinics, personal residences, medical homes, nurse-managed clinics, school-based clinics, long-term care facilities, community health centers and care programs, convenience clinics, private practices (specialty and primary care), and workplaces.

A large and consistent body of supportive literature has appeared since the U.S. Office of Technology Assessment (OTA) published its path-breaking analysis of the quality of care provided by physicians and nurse practitioners in 1981.² Every subsequent study published in peer-reviewed journals has reinforced the OTA's conclusions that nurse practitioners can be substituted for physicians in a significant portion of medical services—ranging from 25% in some specialty areas to 90% in primary care—with *at least* comparable outcomes. The internationally respected Cochrane Collaboration has recently produced a detailed review of this cumulative literature, citing more than three dozen objective studies that suggest patient care outcomes are similar.³ (The Cochrane review also suggests that nurse practitioners consistently score better on subjective measures of quality, such as patient satisfaction.)

Consistent findings about comparable and acceptable quality have been reported in studies focused on different institutional settings, including emergency departments,⁴

*I became personally aware of physicians' and nurse practitioners' substitutability in many areas of clinical practice in the 1980s when I was a research professor and academic administrator at the University of Colorado Health Sciences Center, an institutional pioneer in training nurse practitioners. My involvement in developing common courses for nurse practitioner and medical students provided the foundation for my book, *Not What the Doctor Ordered* (New York: McGraw-Hill, 1992, 2nd ed. 1998; for free download, <http://www.jeffbauerphd.com/NWTDO.pdf>). The book provides a detailed framework for evaluating the substitutability of qualified health professionals.

rural clinics,⁵ and nursing homes.⁶ Many more studies that reach the same conclusion are identified in the footnotes of these publications. A highly significant observation about the breadth of comparative studies in this area is the absence of any studies that reach a contrary conclusion. Of more than 100 published, post-OTA reports on the quality of care provided by both nurse practitioners and physicians, not a single study has found that nurse practitioners provide inferior services within the overlapping scopes of licensed practice.

Those who favor restricting the use of nurse practitioners in overlapping areas of clinical competency have no data to support their position. The published literature unambiguously supports the proposition that quality of care will be maintained—and possibly enhanced—if health reforms promote the use of nurse practitioners in their areas of demonstrated clinical expertise. In addition, all research studies that address consumer satisfaction suggest that patients like the care they receive from nurse practitioners at least as much as the care they receive from physicians. Consumers' overall appreciation of nurse practitioners is extremely high.

The use of nurse practitioners can save money in accord with another important goal of health reform, reducing the direct and indirect costs of professional liability (i.e., malpractice). A recently published analysis of data from 1991 through 2009 in the United States National Practitioner Data Bank clearly showed that nurse practitioners do not increase liability claims or costs. Nurse practitioners have remarkably lower rates of malpractice claims and lower costs per claim. Although malpractice payments appear to be declining for all practitioners, the rate is declining faster for nurse practitioners than for physicians. The analysis also suggests that the reasons for disciplinary action against physicians and nurse practitioners are largely the same.⁷ This in-depth study of the latest available data confirms that the quality of care provided by nurse practitioners can be at least as good as the same care provided by physicians. By also showing that expenses of professional liability are less for nurse practitioners, the study again draws attention to the cost concerns of health reform.

The cost side of the equation: advantage of nurse practitioners

All other things being equal, differences in annual incomes would help to explain the cost-effectiveness benefit of using nurse practitioners. For 2008, the average total compensation for nurse practitioners was approximately \$92,000.⁸ The average earnings for primary care physicians and internists in the same year were \$162,500.⁹ Of course, all other things are not equal. The

appropriate measure for cost-effectiveness analysis is not hours worked or total income earned. Rather, it is the cost of different labor inputs for producing the same service. Numerous studies have shown that the cost of services provided by nurse practitioners is generally less than the cost of the same services provided by a physician. As many studies show, the cost-reduction imperative of health reform can be met by eliminating policies that reimburse physicians while inhibiting the use of nurse practitioners to provide services within their scopes of practice.

For example, nurse practitioners in nursing homes reduce the total costs of caring for patients with Alzheimer's disease and related dementias by treating a broad array of their medical problems, such as gastrointestinal and genitourinary conditions, that often lead to expensive hospital stays where physicians would treat the patients.¹⁰ Similar savings were identified in a study of 667 nursing homes; cost-saving reductions in hospitalization were associated with care management led by nurse practitioners.¹¹ A corroborative inquiry found that subsequent hospitalization rates were cut almost in half when nurse practitioners directly managed the primary care of nursing home residents.¹² A recent 3-year study of worksite health clinics suggested that every dollar spent on nurse practitioners saved several dollars that otherwise would have been spent for physician treatment of major diagnostic conditions.¹³ A study in Tennessee found that costs at nurse practitioner-managed practices were 23% below the costs of care delivered by other primary care providers; inpatient hospitalization rates were 21% lower.¹⁴ Again, footnotes in these studies identify dozens of other studies that found similar savings, with no reports to the contrary, of the cost-effectiveness of nurse practitioners treating a wide range of clinical conditions in nearly every setting where health care is delivered.

Although the research literature provides ample evidence of nurse practitioners' cost-effectiveness, it decidedly does not show that other clinicians are necessarily wasteful in comparison. Several studies suggest that the most cost-effective model (as opposed to the most cost-effective practitioner) for certain types of care involves collaboration between nurse practitioners and other qualified health professionals. For example, the costs of care for patients discharged from hospitals were reduced nearly \$1000 when teams of nurse practitioners and other caregivers were responsible for the inpatient and after-hospital care of individual patients.¹⁵ A recent review of 38 similar studies also provided numerous examples of lower per-patient costs that result when nurse practitioners and other clinicians collaborate on care transitions between hospital and home.¹⁶

The bottom line: nurse practitioners reduce overall health spending

Health reform efforts must eliminate rules and regulations that hinder the cost-effective use of nurse practitioners, both as individual practitioners and as fully qualified members of care delivery teams. All available evidence supports changing policies as necessary to allow the substitution of nurse practitioners for physicians in their overlapping scopes of licensed practice. Research studies, based on data collected over several decades, show that clinical quality is not an issue. Nurse practitioners are rated at least as well as physicians in clinical outcomes, patient satisfaction, and other measures of quality.

The published literature also shows that collaborative, team-based approaches to care—including teams led by nurse practitioners—should be actively promoted to reduce overall spending on health care. Although the research literature clearly shows nurse practitioners to be cost-effective providers of many services also provided by physicians, it also supports the economic and clinical strengths of collaborative practices. Full recognition of the independent practice capabilities of nurse practitioners would be a particularly powerful move toward lower spending and higher quality if the policy shift is also tied to expected expansion of the medical home model. Restoring primary care practitioners to leadership in clinical decision making is one of the clearest lessons learned from health reform in 2009. The recognition of a serious and growing undersupply of primary care physicians adds even more power to the case for expanding use of nurse practitioners. The United States simply does not have enough primary care physicians to coordinate patient care.

Fortunately, nurse practitioners are available to fill many gaps in primary care at lower cost with impressive outcomes (quality). The full integration of nurse practitioners into daily practice as substitutes for other qualified health professionals in many clinical areas will also enhance access. The studies referenced in this report demonstrate that nurse practitioners treat patients in many settings where other qualified, independent caregivers are scarce, especially rural areas and long-term care facilities. Nurse practitioners are also leaders in providing care in the home and at worksites—two locations where demand is growing faster than the health system's capabilities to meet it.

In conclusion, all the evidence supports using nurse practitioners as one of the most cost-effective and feasible reforms to solve America's serious problems of cost,

quality, and access in health care. The issue is not raising the income of nurse practitioners to the level of physicians in areas where their competencies overlap. Rather, the issue is allowing patients to receive all the clinical and economic benefits of direct access to nurse practitioners. Americans are paying an unnecessarily high price for a system that denies direct access to the cost-effective provider of many basic health services.

Footnotes

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