Practice Variations And Health Care Reform: Connecting The Dots

A focus on medical error is preventing sufficient focus on improving the quality of patient decision making to reduce practice variations (and costs) in today’s health care system.

by John E. Wennberg

ABSTRACT: Unwarranted variation is a ubiquitous feature of U.S. health care. Remedies for variations exist, and several are described in the current collection of Health Affairs papers. Several obstacles stand in the way of widespread adoption of these remedies: (1) a quality agenda that has yet to focus on improving the quality of patient decision making; (2) economic incentives that do not reward exemplary practice; and (3) the poor state of clinical science. Medicare reform legislation creates the opportunity for a demonstration project to redesign health care to address these barriers. We also must grapple with the cultural bias that more care is better and that physicians must know best.

Several papers in this Health Affairs collection show once again that unwarranted variation—variation not explained by illness, patient preference, or the dictates of evidence-based medicine—is a ubiquitous feature of U.S. health care. As shown in several of these papers, health care systems fail to provide in full measure such simple life-saving, morbidity-sparing interventions as immunizations, diabetic glucose monitoring, and the use of drugs for those with heart attacks. Every region and every state exhibits underuse of effective care, some more so than others. James Weinstein and his colleagues provide further evidence that the incidence of discretionary surgery, the use of which should depend on patient preference, is unduly influenced by local physician opinion, which has resulted in striking long-term variation in the risk of surgery among local regions—the “surgical signature” phenomenon. Elliott Fisher and his colleagues show that among the chronically ill, the frequency of physician visits, diagnostic testing, and hospitalization and the chances of being admitted to an intensive care unit (ICU) depend largely on where patients live and the health care system they routinely use, independent of the illness they have or its severity. Katherine Baicker and her colleagues show that variation affects minority groups as it does white Americans, which clouds the interpretation of racial and ethnic disparities based on national average rates.

While noting that the U.S. supply of physicians grew remarkably over the past twenty years, David Goodman shows that growth in aggregate supply does not “cure” variations. In 1999 the per capita supply of generalist physicians varied more than twofold and that of medical specialists more than fivefold among regions. I and my colleagues document that
Medicare spending varies more than twofold among regions, but more spending is not associated with better quality, as measured by reduced underuse of effective care, or, surprisingly, with more major surgery. Greater per capita spending buys more intensive intervention among patients with chronic illness: Those who live in high-cost regions experience more visits to medical specialists, tests, hospitalizations, and ICU stays than their counterparts living in low-cost regions. And because of the way Medicare is financed, regions with low costs end up subsidizing a sizable proportion of the care for those living in high-cost regions.

The irony, as Fisher and his colleagues show, is that patients with similar chronic illnesses who live in high-cost regions, including those who receive most of their care from prominent academic medical centers (AMCs), do not have better health care outcomes than patients living in low-cost regions. In other words, the patterns of practice in managing chronic illness in low-cost regions do not appear to result in the withholding of valuable care (health care rationing); rather, systems of care serving high-cost regions are inefficient because they are wasting resources.

Possible remedies. The news, however, is not uniformly bad. Remedies for unwarranted variation exist, and several are described in these papers. The underuse of effective care can be reduced through feedback of information and by putting in place the infrastructure required to assure the systematic implementation of practice guidelines. Surgical processes can be improved with measurable influence on severity-adjusted casefatality rates. Medical errors associated with low-volume surgery could be reduced by regionalization (although, as Justin Dimick and his colleagues point out, some regions have too few cases to meet minimum volume criteria).

Annette O’Connor and her colleagues summarize a growing literature showing that for preference-sensitive care involving elective surgery, the role of the patient in influencing the choice of treatments can be modified and improved by the introduction of high-quality decision aids that encourage shared decision making. Weinstein and his colleagues describe a strategy for conducting clinical trials based on shared decision making that improves the scientific understanding of the outcomes of elective surgery and explicitly takes patient preference into account. As described by Karen Sepucha and her colleagues, quality measures can be developed to assess the degree to which shared decision making has occurred. The good news for payers is that the evidence so far suggests that not only do decision aids improve the quality of patient decision making, but also their use seems to reduce the incidence of elective surgery and result in lower costs.

The overuse of supply-sensitive care can be addressed through improvements in managing chronic illness and by paying attention to the capacity of a health care system relative to the size of the population it serves. As I and my colleagues show, population-based, provider-specific measures of performance based on Medicare claims can be used to describe the impact of decisions made by clinicians and administrators of fee-for-service (FFS) health care organizations on the populations they serve. Performance measures include per capita costs, resources used in managing chronic illness (such as the per capita numbers of full-time-equivalent physicians used), and utilization rates. Thus, at least in theory, health care organizations serving FFS Medicare beneficiaries can adopt a population-based strategy for managing resources and utilization that is similar to the strategies used by staff-model or prepaid group practice health maintenance organizations (HMOs) such as Kaiser Permanente.

Persistence of variation. Remedies have been applied sporadically, however. One reason is that the quality agenda has yet to focus on improving the quality of patient decision making—that is, on increasing the extent to which patients make genuinely informed, preference-based choices among treatment options. The concentration instead is on medical errors. The importance of focusing on both issues simultaneously can be seen in the po-
tential for unintended consequences of efforts to set minimum volume standards for performing discretionary surgery, to reduce the risk of death following surgery. (Hospitals with higher volume tend to have lower case fatality rates.) Among regions or populations served by a given health care organization, the case fatality rate is only one of two factors that determine variations in the underlying population-based death rate. The other is the risk of undergoing surgery—that is, the population-based surgery rate. For example, in the case of bypass surgery, the rate of exposure to surgery (surgery per capita) and the case fatality rate are of about equal importance in explaining deaths per capita associated with bypass surgery. Thus, in assessing the causes of variation in population-based death rates associated with surgery, the quality of the decisionmaking process that determines the use of surgery is as important a factor as the quality of the process of surgical care that determines the case fatality rate. Setting minimum volume standards will inevitably cause some low-volume hospitals or physicians to seek to increase the numbers of elective procedures they perform. Without a simultaneous focus on improving the quality of patient decision making to assure that patients’ rather than providers’ opinions determine the demand for elective surgery, one must expect a net increase in the numbers of patients undergoing surgery who have not made an informed choice. Moreover, as the per capita rate of surgery increases, the population-based death rate within thirty days of bypass surgery may also rise.

Another reason for the persistence of unwarranted variation is the absence of economic incentives that reward providers with exemplary patterns of practice. The “pay for quality” movement has concentrated primarily on rewarding providers who increase utilization rates for effective care (such as the percentage of diabetics who get annual eye examinations). Modifying the reimbursement system to promote shared decision making and higher-quality patient decision making for preference-sensitive care presents a much greater challenge. Under present circumstances, the relative frequency of use of discretionary surgery is remarkably stable over longer periods of time. Providers depend on the revenues generated from these patterns of practice. In light of the evidence that informed patients may demand less discretionary surgery than the amount now provided, the introduction of shared decision making may pose a serious threat to the financial integrity of health care organizations whose workload is in disequilibrium with “true” (that is, patient-driven) demand. The economic incentives now inherent in Medicare’s FFS reimbursement system must be modified if shared decision making is to be successfully implemented among enrollees in traditional Medicare.

A similar if not more complicated set of issues pertains to reduction in the overuse of supply-sensitive care when managing cohorts of chronically ill Medicare patients. Here, the utilization rate is closely related to the per capita supply of resources. Reduction in use thus requires a reduction in acute care capacity toward the population-based benchmarks provided by efficient providers. Again, the payment system is not designed to reward clinicians and administrators who wish to adopt the population-based approach. The reimbursement system is designed to pay for utilization; net savings that may result from more rational management revert to the payer, not to the health care organization. Given the dependency of health care organizations on utilization to generate the budgets to pay for infrastructure, amortize bond market debt, or reward equity investments, the reduction of overuse of supply-sensitive care will be difficult if not impossible to manage in the absence of economic incentives that reward providers with exemplary patterns of practice.
of reform of the reimbursement system.

There is yet another reason for only patchy progress in reducing unwarranted variation: the poor state of clinical science. Biotechnology is producing a growing number of technological interventions, and clinicians generate a plethora of theories about how they should be applied. But the basic mechanisms to assure the orderly evaluation of technologies and clinical theories simply are not in place. Clinical medicine is thus awash in novelty, but without the capacity to distinguish what truly works. My paper and that of Fisher and colleagues illustrate that the problem is generic, affecting our most prestigious scientific institutions. Part of the problem is that academe has few incentives to devote resources and talent to deal with the contradictions in their own patterns of practice. Without reform in federal science policy that gives the evaluation agenda high priority, intellectual and scientific confusion will continue to contribute to the problem of unwarranted variations.

Three needed reforms. The opportunity to provide systematic remedy thus depends on three reforms. First, the quality agenda must be extended beyond effective care; the agenda should also address unwarranted variation in preference-sensitive treatments such as discretionary surgery and the overuse of physician and acute care hospital services in managing chronic illness. Second, reform of the payment system must be undertaken to enable providers to deal with the complicated and interrelated financial, organizational, and behavioral issues that need to be resolved if the quality of patient decision making is to be improved and inefficiencies and waste in the treatment of chronic illness remedied. Third, AMCs and the National Institutes of Health (NIH) must respond to the glaring weaknesses in the scientific basis for clinical decision making by undertaking the systematic evaluation of the everyday practices of medicine.

As discussed in the commentary by Paul Harrington, Section 646 of the Medicare Prescription Drug, Improvement, and Modernization Act (MMA) of 2003 creates the opportunity to undertake a demonstration project to redesign health care, to address each of these barriers to progress. It asks participating provider organizations to address unwarranted variations in all three categories. It contains provisions for the reform of payment systems to promote the efforts of participating health care organizations to meet these goals. And it calls for the active involvement of the NIH and the Agency for Healthcare Research and Quality (AHRQ) in helping participating providers undertake outcomes research to evaluate variations in their own patterns of practice and improve the scientific basis for clinical decision making.

I am hopeful that the provisions of Section 646 will lead to a redesign of clinical practice that will serve as a model for wide replication. Variations, however, are remarkably resistant to change. Ultimately, the opportunity for a broad-based reform is constrained by our beliefs and expectations. Our culture is embedded with a strong belief that more is better and that physicians know best. The study of practice variations uncovers a very different, more nuanced reality. Making the practice-pattern story real to Main Street would be a giant step forward in building the constituency for change.

The author extends his thanks and appreciation to his many colleagues who have contributed to variations research over the years.
NOTES

1. A special collection of papers and commentaries on variations is available at content.healthaffairs.org/cgi/content/full/healthaff.var.140/DC1.


4. E.S. Fisher et al., “Variations in the Longitudinal Efficiency of Academic Medical Centers,” Health Affairs, 7 October 2004, content.healthaffairs.org/cgi/content/abstract/healthaff.var.19.


7. J.E. Wennberg et al., “Use of Medicare Claims Data to Monitor Provider-Specific Performance among Patients with Severe Chronic Illness,” Health Affairs, 7 October 2004, content.healthaffairs.org/cgi/content/abstract/healthaff.var.5.


17. Among the 100 largest hospital referral regions (HRRs), the correlation for Medicare Part A enrollees between bypass operations per capita and per capita deaths associated with surgery was .737 (p < .0001); the association between case fatality (percentage of procedures ending in death) and per capita deaths associated with surgery was .735 (p < .0001); and the association between case fatality rates and bypass surgery per capita was .113 (p < .0001). The data are for 1989–2001, from the Dartmouth Atlas of Health Care, www.dartmouthatlas.org (23 August 2004).


20. P. Harrington, “Quality as a System Property: Section 646 of the Medicare Modernization Act,” Health Affairs, 7 October 2004, content.healthaffairs.org/cgi/content/abstract/healthaff.var.136.