

# Lessons from the Unexpected: The Importance of Data Infrastructure, Conceptual Models, and Serendipity in Health Services Research

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**H**EALTH SERVICES RESEARCH IS A MAJOR TOOL FOR bringing an evidence-based approach to medical care and using the knowledge gained productively. Methodological sophistication and techniques have advanced considerably over the decades but, ironically, some of the practical challenges have become more difficult. The health care field has evolved from a cottage industry of small entrepreneurs and some larger, typically nonprofit, entities to one dominated by aggressive profit-oriented companies. As the health services have grown to their present magnitude, the number of interest groups has multiplied. These groups have a large stake in marketing their products and services, and they often treat research access and data in a proprietary way. The stakes are large, conflicts of interest in assessing drugs and other therapies are commonplace (DeAngelis 2000), and efforts have been made at times to intimidate investigators and agencies (Deyo, Psaty, Simon, et al. 1997).

The changes in health care and health care organization also make rigorous study more difficult. Mergers and acquisitions, rapidly changing patterns of practice, the churning of patient populations among health care plans, and rapidly changing technologies have rendered the applicability of results more uncertain. By the time sufficiently valid and

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reliable results on the performance of health services become available, organizations and practitioners plausibly argue that the practices covered by the studies have been refined, modified, or transformed and the findings no longer apply. This may or may not be true for individual studies, but it should alert health services researchers to pose their questions in a manner that promises a reasonable level of generalization.

## The Need for a Strong Data Infrastructure

A strong data infrastructure that can validly track and allow assessment of performance provides significant protection against special-interest advocacy and misrepresentation. Although we can never remove politics from important decisions affecting various interest groups, a strong database provides credibility and gains support from those whose interests are less affected. We owe a great debt to the many researchers who put in place a program of national surveys that are the source of much of what we know about the health services and their impact on individuals.

Starting with the surveys by the Committee on the Costs of Medical Care in 1928–1931, the expenditure surveys initiated by Odin Anderson at the Health Information Foundation, the various surveys initiated by the Public Health Service (and later the National Center for Health Statistics), and the medical expenditure surveys initiated by the National Center for Health Services Research (now sponsored by the Agency for Healthcare Research and Quality), we have learned a great deal about health and health care in America (Andersen and Anderson 1999). The many pioneers whose efforts are typically unknown to the users of these surveys include Odin Anderson, Dorothy Rice, Jacob Feldman, and Jack Elinson.

Over time, health surveys have become more sophisticated and ambitious—following cohorts or panels longitudinally and linking survey reports prospectively with administrative data sets, including Medicare and Medicaid data files, death records, and Social Security information. Much of the ingenuity in these efforts has gone unrewarded, and financial support for maintaining these surveys has required struggle year after year.

It can be an awesome task to command continued support for expensive health care surveys and other research efforts: to have the resources to present findings in a timely way; to make data files accessible in a timely

way to the research community; to ensure the privacy of respondents and maintain the public's cooperation in providing such information; and to modify these surveys as the health services system itself changes. Statistics rarely invoke public passion, and statistical research efforts are chronically underfunded.

Large components of care still are not adequately monitored. As the auspices for care change from one setting to another—for example, to home care, hospices, board and care facilities, life-care communities, and alternative practitioners—institutionally based surveys have been slow to respond. Adaptive strategies are needed that allow researchers to capture rapid changes in health care provision and their implications more quickly. The Robert Wood Johnson Foundation's large investment in tracking health care changes in representative U.S. communities and linked with more intensive qualitative study in 15 communities is one useful initiative (Ginsburg, Hughes, and Knickman 1995; Ginsburg 1996). In 1992, an Institute of Medicine (IOM) panel made recommendations to the National Center for Health Statistics on how to adapt the national health care data system to system changes and suggested a sampling strategy for doing so (Wunderlich 1992). The Center's survey program—which includes many of the important surveys by which the nation tracks its health progress, such as the National Health Interview Survey, the National Hospital Discharge Survey, the National Ambulatory Medical Care Survey, and the National Nursing Home Survey—is now more inclusive of new sites of care in response to the IOM's recommendations. Adaptive strategies need continued development as patterns of health care shift with new organizational, financial, and technological developments.

## The Importance of Conceptual Models

Health services research is often associated with large data sets and extensive statistical analyses, but equally important to a good data infrastructure is having sophisticated conceptual models that direct data collection and analysis, and that represent the true complexity of health care provision. One of my earliest experiences with Sam Shapiro, whose memory this presentation honors, was when we both served on a Committee on Human Factors studying the development of automated multiphasic health testing and services at the National Center for Health

Services Research and Development, a precursor to the current Agency for Healthcare Research and Quality (AHRQ) (U.S. Dept. of Health, Education, and Welfare 1971). Morris Collen, at the Kaiser Permanente Medical Group in Oakland, was promoting this technology with the notion that it could be administered by nonphysician personnel and become a routine and efficient approach to prevention. Shapiro understood that such technology implementation was not the simple challenge that others were suggesting. As he noted:

[O]ne of the more difficult problems is to motivate the patient to seek appropriate follow-up care and to have the physician receiving the results of the screening examination pursue positive findings aggressively. Without knowledge of success in these areas, little can be said about the likely effect of the screening program in a particular setting. Similar types of questions can be structured for “availability,” in terms of the organization and conduct of the screening program, and for “treatment” in terms of the methods that are being practiced. (Shapiro 1967, 9)

In short, Shapiro was arguing that the analytic approach for implementing and evaluating multiphasic screening was too simplistic—that a variety of additional variables had to be taken into account. How and why technologies and other interventions are implemented depend on a broad range of political, economic, professional, and attitudinal factors that may have little to do with their value or efficiency.

At present, federal agencies and other funders focus on immediate relevance, but much of the value of health services research comes through the conceptual work that guides how researchers understand and pose research and policy issues. Indeed, good health services research investigation often influences how researchers and eventually the general public think about health care issues over time. Influence on the climate of thinking by the informed public may be as important as any immediately relevant work. When Shapiro, Paul Densen, and Avedis Donabedian began studying prepaid group practice, the quality of care, and health outcomes, those issues were not high on either the public’s or funders’ agendas. One could argue that Donabedian’s detailed focus on quality processes were academic—far from the nuts and bolts of daily medical care. But what once might have appeared academic provided the perspective that informs most quality efforts today.

An example from my work on patterns of symptom perception and help-seeking might be helpful in illustrating the above point. Having initiated studies on illness behavior in the late 1950s (Mechanic 1961), I was intrigued by the apparent discrepancy in factors predicting help-seeking between qualitative and clinical studies and the findings from large cross-sectional surveys (Mechanic 1979; 1989). Illness behavior is an iterative process in which behavior evolves sequentially, and different factors may affect people's perception of symptoms, information seeking, decisions to seek help, and the types of help they seek (Greenley and Mechanic 1976; Greenley, Mechanic, and Cleary 1987). The limitations of many large multivariate studies resulted from failing to clearly differentiate sequential stages. Such a conceptual approach is useful in many applications, including understanding differences in access to invasive cardiac procedures (Einbinder and Schulman 2000).

A second example comes from important national efforts to modify behavior that's harmful to health. Interventions using the media to disseminate health information have had modest effects at best. Experimental evidence has demonstrated that a sophisticated conceptual approach is more likely to successfully guide changes in behavior than the usual informational approach. The parallel-processing model developed by Leventhal and his colleagues, for example, conceptualizes behavioral change as both cognitive and emotional and suggests the importance of providing specific instructional plans as part of health messages (Leventhal 1982; Leventhal, Prohaska, and Hirschman 1985). The wide applicability of this concept is nicely illustrated in *The Tipping Point: How Little Things Can Make a Big Difference* (Gladwell 2000).

### Some Big Effects from Seemingly Small Things

Solving immediate technical problems is also an important responsibility and contribution. Much important policy is buried in the seemingly technical minutiae of regulations and payment arrangements. Understanding how to develop risk-adjustment payments appropriately and to blend systems of remuneration, for example, are not simply technical administrative issues but are central to a well-functioning and equitable health care system. A good and fair risk-adjusted payment system would contribute immeasurably by reducing risk selection among plans and

providers, by supplying incentives to provide high-quality care, and by ensuring that the people who are most vulnerable and have the greatest need receive care appropriate to their conditions.

## Lessons from the Unexpected

Many researchers came to the health services field because they had strong beliefs and values about health as a “right,” and about equitable distribution of health care, and this was particularly true of the early pioneers. Health services research and the health policy field are often politically contentious. The conflicts of interest so conspicuous in the development, marketing, and evaluation of pharmaceuticals are also evident in health services inquiry, and pose a continuing threat to its integrity. Health services researchers have the right, and even the responsibility, to have strong values and to work toward the realization of their values. But they have to be watchful that strongly held values and beliefs do not distort their perceptions or reporting of the real state of affairs. If research simply reinforces our own biases, it teaches us nothing new. I have sometimes learned more when my expectations were wrong or simplistic than when they confirmed what I already believed. I provide three examples from my own work, not because they are more important than others, but simply because I have more intimate knowledge of the background of these studies.

### *Myths about Managed Care*

Health care professionals and the public dislike managed care. Many contentions about the influence of managed care are widely shared and they form the consensual view. Among these is the almost universal agreement that the growth of managed care, with its emphasis on efficiency and physician productivity, has substantially reduced the time physicians spend in face-to-face encounters with their patients in the past decade. This view is reinforced not only by the voluminous claims of physicians in medical journals and other media, but also by surveys of physician panels that find more physicians reporting that they have inadequate time for patients (Mechanic, McAlpine, and Rosenthal 2001). This perception seems intuitively correct, given our beliefs about the changing

patterns of care with increased managed care penetration. And, admittedly, I shared this perception on the basis of the reports, surveys, and informed testimonials I had encountered.

One day, while surfing the Internet, I came across a brief claim on the Web site of one of the health insurance trade associations that contended that this prevalent view was a myth. The assertion was supported by citing two data points taken from the AMA's Socioeconomic Monitoring System, based on yearly physician surveys. Because anyone can demonstrate almost anything by selecting two data points, I was skeptical that the claim was anything more than special-interest rhetoric. I decided to follow this up a bit by examining the AMA data series over a 10-year period, and the trend appeared to support the claim.

The AMA data are based on aggregate reports of the amount of time physicians reported they spent during the week in direct patient care and the number of patients they reported seeing. Dividing total time by the number of patients provides a rough estimate, but not one that gives much confidence. In contrast, the National Ambulatory Medical Care Survey carried out by the National Center for Health Statistics samples office-based visits and obtains face-to-face reports for each sampled encounter within the physician's practice. Analyzing these data for 1989 through 1998 (the same 10 years covered by the AMA data) showed that physician-patient encounter time increased significantly, by an average of two minutes. The trend was consistently observed for prepaid and nonprepaid patients, for primary and specialty care, for new and returning patients, and for the most common complaints and those most associated with mortality.

Since our intuition about the ongoing transformations in health leads us to believe that visits would have become shorter, my colleagues and I directed our attention to trying to understand why this hadn't in fact occurred. Here, we faced the limits of the information available. We formulated a number of hypotheses that we could examine and at least partially test. Among the factors we examined were: the changing gender distribution of physicians (since women doctors tend to spend more time with patients and to focus more on psychosocial issues); the growth of physician supply relative to the growth of patient demand; the changing complexity of care; the changing boundaries of care and increased expectations of physicians; and the growing competition for patients.

Some of these hypotheses turned out to be unimportant, such as those dealing with physician gender and complexity of care. We could not

resolve the issue in a fully convincing way, but I have a plausible explanation that's consistent with our data and physician reports. Patient care has become more competitive as health plans pursue increased market share. Moreover, physician supply has increased relative to patient demand and physicians are concerned about patient retention. Managed care plans are monitoring patient satisfaction, and physicians who have too many dissatisfied patients risk being excluded from plans (Mechanic and Rosenthal 1999). Some HMOs now adjust physician remuneration using surveys of patient satisfaction (Gold, Hurley, Lake, et al. 1995). One important factor affecting patient satisfaction is the time the doctor spends with the patient.

Expectations of physicians have increased, and patients come to doctors armed with more information from the media and from direct pharmaceutical advertising. There are more treatments available, more options to explain, more questions to answer, and perhaps more managed care procedures to explain. Thus, doctors are spending more time with patients but perhaps less time than they believe patients need and demand. We could find little evidence that the procedures and counseling doctors do have increased consistently over the 10-year period, but the data do not really permit a rigorous test of this hypothesis.

Doctors also are increasingly expected to do more. Medical care now encompasses health promotion and encouragement for smoking cessation, obesity control, improved diet, exercise, safe sex, and much more. Physicians are exhorted to be more sensitive to depression, substance abuse, and other psychiatric and psychosocial issues. Not all of this is possible within the average 18-minute consultation, but many physicians internalize these concerns and try and do as much as they can. Thus, it is not surprising that they may increasingly feel they have less time even when spending somewhat more time.

One additional factor may be quite important, although the available data are not presently clear. There appears to be a great deal of churning of enrollees among health care plans, and it has been speculated that many enrollees are being required to change their doctors. Initial visits with new patients take considerably more time than continuing visits and, to the extent that more patients are seeing new doctors and there is reduced continuity of care, we would expect visit length to increase. Knowledge of the patient, and patient and physician trust, is built iteratively. A physician who knows the patient's history and life circumstances

can benefit from this repository of background information and use the encounter time more efficiently.

The claim of decreasing encounter time is just one of many myths about managed care and the U.S. health care system. There appear to be two levels of discourse about health care performance—one primarily based on experience and research, another disseminated by the media and built anecdotally using a variety of sources of information. Many problems in health care, such as insufficient time, preceded the advent of managed care as we know it, but now dissatisfactions over such issues can readily be attributed to this little-favored target (Mechanic 1997). I seek not to defend managed care, which in any case embodies a great variety of structures, approaches, and strategies, both good and bad. But it is important to understand that some aspects of managed care that are high on the reform agenda of politicians and the media are not what they seem to be. For example, while gag rules are pernicious, they are relatively rare (Mechanic 2001). Further, there is little evidence that patients who need inpatient admissions are blocked from such care. No doubt errors are made in judgment but such errors occurred before managed care became prevalent.

Almost everyone believes that managed care has brought more hassle for physicians, and this idea seems highly plausible and seemingly self-evident. Yet, the AMA data failed to substantiate the assertion that doctors spent more time in administrative activities associated with their practices over the 10 years we studied (Mechanic et al. 2001). Indeed, they were spending significantly less time on such tasks. The only published study I know, which made careful efforts to examine the issue, found little evidence that managed care significantly increased physicians' burden (Remler, Gray, and Newhouse 2000). Some managed care practices make increased administrative demands on doctors, while others reduce the hassle associated with fee-for-service arrangements. So even such seemingly obvious matters require careful empirical examination. Good public policy ought not be built on myths or anecdotes.

### *Myths about Deinstitutionalization of the Mentally Ill*

My second example comes from mental health services research and the long-term trend of deinstitutionalizing persons with mental illness. If

one followed the claims at the time, which still prevail today, one might believe that the demise of the public mental hospital was solely due to the introduction of neuroleptic drugs in the early 1950s. The development of new psychiatric drugs in recent years is a significant advance and contributes a great deal to successful treatment. But today, even more than in the past, there is overzealous promotion of these drugs, and a misconception that little more than better drugs are required to deal successfully with psychiatric morbidity.

From its peak in 1955, the number of resident patients in public mental hospitals has declined to less than 10 percent of the 1955 figure. Many patients initially were transferred to other institutions and community residences, and general hospitals became the major site for acute inpatient psychiatric care (Mechanic 1999). The pharmaceutical industry and many observers typically claimed that these changes were a result of the discovery and prevalent use of antipsychotic medications.

Knowledge of clinical experience and appraisal of the data showed that, at best, this was a simplistic view of how the mental health services system was evolving. First, there was evidence from some localities that reduction of inpatient populations occurred before neuroleptics were introduced (Bockoven 1972). Thus, other factors had to be operative. Moreover, the reduction in resident patients was very modest for the first five years following widespread drug introduction and then accelerated in the second five-year period. In the first 10 years, the reduction was only about 15 percent. The large reductions occurred in the 1965–1980 period. Major social programs during that time provided financial incentives to the states to relocate their patient populations to institutions where the federal government would assume much of the cost (primarily through Medicaid) and also provide housing and subsistence support for patients returning to the community (through SSI and housing programs).

In the later part of this period, the pattern was reinforced by legal activism on behalf of people with mental illness arising out of the civil rights struggle (Grob 1994). With the cutbacks in social programs in the 1980s and the failure to develop appropriate community programs, people with mental illness commonly became homeless and many were incarcerated in jails and prisons.

The source of speculation about the role of neuroleptics was typically national aggregate data, but states have always been responsible for

mental hospitals. David Rochefort and I examined patterns of deinstitutionalization by states and found large differences in when and how much various states deinstitutionalized their mentally ill populations in different periods (Mechanic and Rochefort 1992). In the 1955–1975 period, in states with both large and small populations, reductions in resident patients varied greatly. California, for example, reduced its inpatient population by almost three-quarters, New York by about half and Texas by 40 percent. Reductions among smaller states varied from 15 percent to 81 percent. Two small states actually increased their inpatient populations between 1955 and 1986. In short, there were many factors affecting mental health services patterns, including the size and configuration of the state's facilities and the patient populations they contained, fiscal arrangements, the political influence of the hospital bureaucracy within and outside the state government, the vigor of local community ideologies and advocacy, the skills of state bureaucrats in shifting costs to federal and other budgets, and the availability of alternative institutional services (Mechanic and Rochefort 1992).

The introduction of neuroleptic drugs did make a difference. They made it less difficult to manage many patients, and gave hospitals and families confidence that they could reduce coercive controls. They also contributed to increased public confidence that state policies to relocate patients were viable options. But deinstitutionalization depended on many forces and circumstances, and the evolution of health service patterns was in no way inevitable. Our present overconfidence in drugs is also an oversimplification that may deflect other important treatment and rehabilitation efforts.

### *Physician Payment and Incentives*

A third example comes from earlier research experiences where ideas I strongly believed in turned out to be mistaken. The 1960s were a much more idealistic time than now, and many of us who were working in the health services looked to the English National Health Service (NHS) as the model for how to organize a system of universal coverage that allowed everyone equal access. We believed that if the distorting fee-for-service incentive could be removed from medical relationships, practitioners could make better clinically based decisions, distribute services efficiently and equitably, and give attention to the often-neglected psychosocial aspects. It seemed to us that capitation payment was a useful

mechanism to achieve these goals. Indeed, many of the idealistic innovators who contributed to the development of the major prepaid health plans in the United States believed that was the best way to insure population health. Looking at the managed care sector today, it might be difficult to appreciate the idealistic community motives that energized the efforts of people like Sam Shapiro and many of his colleagues who were committed to the prepaid group model (Shapiro 1967; Shapiro, Jacobziner, Densen, et al. 1960; Shapiro, Williams, Yerby, et al. 1967).

I went to England in 1965 to study how the NHS functioned and was much impressed by the extent to which general practitioners disparaged their patients, contending that the availability of free care at the point of service encouraged trivial and inappropriate consultations. Both in observing GPs while they practiced and in conversing with many of them, I found little evidence to support my assumptions about improved psychosocial care. Complaints by GPs of trivial and inappropriate visits were puzzling, since physician utilization at the time was no greater than in the United States and such complaints were not typically heard from physicians here. I subsequently surveyed a national sample of British GPs and a comparative national sample of American primary care physicians. These surveys revealed a variety of concerns, and here I focus on simply one aspect: how remuneration affected how doctors perceived and responded to their patients.

One measure I used was doctors' reported estimates of the proportion of their consultations they believed to be trivial, unnecessary, or inappropriate. Almost a quarter of British GPs described 50 percent or more of their consultations in this way while less than 10 percent of American primary care physicians did so. In contrast, American doctors practicing in prepaid settings, and paid on either capitation or salary, responded very much like the British GPs. Almost a third of U.S. prepaid general practitioners and 29 percent of prepaid pediatricians reported that 50 percent or more of their patient visits were trivial, inappropriate, or unnecessary (Mechanic 1975). Interestingly, despite the vast differences in culture and historical circumstances in the two countries, payment method had a comparable effect.

The single best predictor of the magnitude of trivial consultations was the number of patients the doctor saw on a busy day. The greater the intensity of the doctor's workload, the higher the estimates of triviality (Mechanic 1974). I did not take these estimates as descriptions of reality but more as expressions of frustration. These estimates were associated

with various measures of quality of care, however, so they reflected more than simply an attitude (Mechanic 1970). Very briefly, we found that how doctors were paid influenced how they managed their time. Fee-for-service doctors typically dealt with increased demands by expanding their patient care hours while prepaid doctors who typically worked within fixed schedules of responsibility processed patients more rapidly. An increased number of patient visits rewarded fee-for-service physicians for their additional efforts while prepaid doctors perceived that they were expected to do more with no reward. Lack of reward made them reluctant, unlike fee-for-service doctors, to increase substantially the time they spent with patients beyond their accepted norm (Mechanic 1974). However, they also were aware that they were cutting corners and dealt with this awareness by blaming the patient.

Subsequently we have learned that neither fee-for-service nor pure capitation or salary provides the preferred incentives. Fee-for-service encourages unnecessary and inappropriate care, but fixed payment undermines energetic responses to new objectives and, under some conditions, provides incentives for undertreatment and inappropriate denial of services. We have yet to arrive at any consensus on the optimal payment mix, and an important challenge for health services research is to find a way to blend remuneration incentives so as to promote responsive, efficient, and high-quality care. Health maintenance organizations are now experimenting with a variety of incentives and disincentives, some being focused on patient satisfaction and high-quality performance (Gold et al. 1995). There is still much to learn about how to align incentives correctly.

This third example brings me back to my initial illustration on patient-physician encounter time. The two examples have in common the importance of time as a core component of the medical care process. Only with appropriate time can physicians properly understand patients' concerns, assess their symptoms, and communicate and instruct them meaningfully. Among patients' chief concerns is having adequate time in their consultations with doctors, and physicians have consistently expressed a similar concern about having sufficient time for each patient. We persistently increase our expectations of physicians, expecting them to achieve more within the same time constraints. Perhaps our focus is misdirected, and we should give more effort to organizing the range of medical care functions by better using personnel and new technology.

## Some Challenges for the Future of Health Services Research

In comparison with the vast expenditures on health services, investments in biomedical research, and proprietary research and advocacy efforts, health services research remains a small and weak endeavor on the health scene. Although, from time to time, groups representing the field advocate for a significantly increased investment in research, interest in data is unlikely to be able to compete with the emotional impact of wars on disease. Thus, it is useful to consider how we might most appropriately use our limited resources and future opportunities.

Health services research, in addition to addressing important technical issues and monitoring the health services, often makes large contributions by addressing longer-range issues. The field does this by developing conceptual frameworks for thinking about care structures and processes and by building the data resources that provide opportunities to monitor and provide information about future patterns and trends. It also needs to analyze what constitutes meaningful outcomes and how to reasonably measure and assess them with attention to unanticipated as well as expected results.

The basic objective of most health services research efforts is ultimately to improve the outcomes for individuals—what Shapiro called “end result measurement” (1967). Outcomes research is especially difficult because outcomes depend not only on objective measures but also on individuals’ preferences and values. Thus, outcomes that might seem worthwhile to a clinician may be of little value or even have adverse consequences from the patient’s perspective. A further complication is that optimal outcomes for individuals are not necessarily optimal for the system as a whole, a common disjunction in perspective between clinician and policymaker. Clinicians often feel a responsibility to do everything possible for their patients regardless of cost-effectiveness, while policymakers commonly determine how to use available resources to achieve the best population outcomes.

A couple of decades ago, we commonly referred to the five D’s: death, disease, disability, distress, and dissatisfaction. Often we must trade off among values in these various outcome measures and there is no scientific basis for favoring one set of trade-offs against another. Research shows the probabilities of gain or risk in each outcome, but the value

of any combination of outcomes must depend on the preferences and subjective judgments of patients themselves. This, of course, raises the challenge of communicating meaningfully with patients about trade-offs important to them both in selecting their health service providers and in making treatment decisions. The evidence we have from a range of studies of primary care to end-of-life care suggests that this task is poorly performed.

In recent years, many efforts have been made to bring relevant information to aid the public in choosing among health plans, from the various versions of the Health Plan Employer Data and Information Set (HEDIS) to the work of the Consumer Assessment of Health Plans Survey (CAHPS). These important efforts are still in their infancy, and their usefulness to the public remains uncertain. Beyond the obvious psychometric properties of measures and their reliability and validity, the question remains as to whether these efforts speak to the issues of greatest importance to patients in making their choices. Moreover, we have yet to establish that the indicators sampled through these approaches are representative of areas of performance more generally.

We are now beginning to build our knowledge of how the public perceives and uses such information, and existing research suggests a large number of questions from the public and patients' perspectives (Lubalin and Harris-Kojetin 1999; Hibbard, Slovic, and Jewett 1997). Much of the public has problems dealing with complex information and reports on many indicators. They would like an overall measure, something akin to Consumer Union's best-buy ratings. However, we are a long way from providing such unified evaluations in a responsible way, nor is it apparent that the complexities of medical care can be captured in a single simple index. There is also the issue of credibility. The public places much more value on advice from family, friends, and medical professionals they know, and much less value on formal sources of information. Even presumably objective formal sources, such as the government, are suspect. Understanding how to build credibility, how to present performance outcomes in meaningful ways, and how to provide the kinds of information the public wants most remain difficult challenges.

In promoting quality and improved communication about treatment options, we need to understand the culture of physician groups, a subject that has been substantially neglected. Any complex organization may perform well in some areas and poorly in others, and it is unclear how predictive any set of indicators is of overall performance. It is further

unclear whether directing clinicians and physician groups to selected goals, such as immunizations or eye exams for people with diabetes, draws their attention away from other areas where performance is equally important. Our expectations of clinicians and provider groups continue to increase but we don't understand at what point the providers become overloaded, resulting in negative consequences. We also understand insufficiently how norms arise within professional groups and how they affect performance. Our models of physician groups remain simplistic and fail to capture the complex interactions influenced by socialization, norms, culture, and organizational and financial structures.

In the last few years, public discussion of health care has substantially focused on abuses under managed care and the need for a patients' bill of rights. Some regulatory attention to the managed care industry would moderate some abuses and, more importantly, help restore eroding public trust. But no informed person can reasonably believe that the right to sue one's HMO, whether desirable or not, is likely to affect in any significant way the quality of care in America. Much of the discussion in the Congress and the media are a diversion from the profound issues that should command most public attention: how to stem the tide of eroding insurance coverage and move closer to universal coverage; how to build a framework for financing and delivering long-term care for people with chronic disease and disabilities; and how to promote and implement high-quality, cost-effective patterns of care. Such complicated issues are not easily represented through sound bites, but we will serve the public well by providing reliable data and evaluation and helping focus attention on these key issues.

## References

- Andersen, R., and O.W. Anderson. 1999. National Medical Expenditure Surveys: Genesis and Rationale. In *Informing American Health Care Policy*, eds. A.C. Monheit, R. Wilson, and R.H. Arnett III, 11–30. San Francisco: Jossey-Bass.
- Bockoven, J.S. 1972. *Moral Treatment in Community Mental Health*. New York: Springer.
- DeAngelis, C.D. 2000. Conflict of Interest and the Public Trust. *Journal of the American Medical Association* 284(17):2237–8.
- Deyo, R.A., B.M. Psaty, G. Simon, E.H. Wagner, and G.S. Omenn. 1997. The Messenger under Attack—Intimidation of Researchers

- by Special-Interest Groups. *New England Journal of Medicine* 336(16):1176–80.
- Einbinder, L.C., and K.A. Schulman. 2000. The Effect of Race on the Referral Process for Invasive Cardiac Procedures. *Medical Care Research and Review* 57(Suppl. 1):162–80.
- Ginsburg, P.B. 1996. The RWJF Community Snapshots Study: Introduction and Overview. *Health Affairs* 15(2):7–20.
- Ginsburg, P.B., R.G. Hughes, and J.R. Knickman. 1995. A Robert Wood Johnson Program to Monitor Health System Change. *Health Affairs* 14(1):287–9.
- Gladwell, M. 2000. *The Tipping Point: How Little Things Can Make a Big Difference*. Boston: Little, Brown.
- Gold, M.R., R. Hurley, T. Lake, T. Ensor, and R. Berenson. 1995. A National Survey of the Arrangements Managed-Care Plans Make with Physicians. *New England Journal of Medicine* 333(25):1678–83.
- Greenley, J.R., and D. Mechanic. 1976. Social Selection in Seeking Help for Psychological Problems. *Journal of Health and Social Behavior* 17(3):249–62.
- Greenley, J.R., D. Mechanic, and P.D. Cleary. 1987. Seeking Help for Psychologic Problems: A Replication and Extension. *Medical Care* 25(12):1113–28.
- Grob, G.N. 1994. *The Mad Among Us: A History of the Care of America's Mentally Ill*. New York: Free Press.
- Hibbard, J.H., P. Slovic, and J.J. Jewett. 1997. Informing Consumer Decisions in Health Care: Implications from Decision-Making Research. *Milbank Quarterly* 75(3):395–414.
- Leventhal, H. 1982. The Integration of Emotion and Cognition: A View from the Perceptual Motor Theory of Emotion. In *The Seventeenth Annual Carnegie Symposium on Cognition*, eds. M. Clarke and S. Fiske, 121–56. Hillsdale, N.J.: Lawrence Erlbaum Associates.
- Leventhal, H., T.R. Prohaska, and R.S. Hirschman. 1985. Preventive Health Behavior across the Life Span. In *Prevention in Health Psychology*, eds. J.C. Rosen and L.J. Solomon, 191–235. Hanover, N.H.: University Press of New England.
- Lubalin, J.S., and L.D. Harris-Kojetin. 1999. What Do Consumers Want and Need to Know in Making Health Care Choices? *Medical Care Research and Review* 56(Suppl. 1):67–102.
- Mechanic, D. 1961. The Concept of Illness Behavior. *Journal of Chronic Diseases* 15:189–94.
- Mechanic, D. 1970. Correlates of Frustration among British General Practitioners. *Journal of Health and Social Behavior* 11(2):87–104.

- Mechanic, D. 1974. Patient Behavior and the Organization of Medical Care. In *Ethics of Health Care*, ed. L.R. Tancredi, 67–85. Washington, D.C.: Institute of Medicine, National Academy of Sciences.
- Mechanic, D. 1975. The Organization of Medical Practice and Practice Orientations among Physicians in Prepaid and Nonprepaid Primary Care Settings. *Medical Care* 13(3):189–204.
- Mechanic, D. 1979. Correlates of Physician Utilization: Why Do Major Multivariate Studies of Physician Utilization Find Trivial Psychosocial and Organizational Effects? *Journal of Health and Social Behavior* 20(December):387–96.
- Mechanic, D. 1989. Medical Sociology: Some Tensions among Theory, Method and Substance. *Journal of Health and Social Behavior* 30(June):147–60.
- Mechanic, D. 1997. Managed Care as a Target of Distrust. *Journal of the American Medical Association* 277(22):1810–1.
- Mechanic, D. 1999. *Mental Health and Social Policy: The Emergence of Managed Care*, 4th ed. Boston: Allyn and Bacon.
- Mechanic, D. 2001. The Managed Care Backlash: Perceptions and Rhetoric in Health Care Policy and the Potential for Health Care Reform. *Milbank Quarterly* 79(1):35–54.
- Mechanic, D., D.D. McAlpine, and M. Rosenthal. 2001. Are Patients' Office Visits with Physicians Getting Shorter? *New England Journal of Medicine* 344(3):198–204.
- Mechanic, D., and D.A. Rochefort. 1992. A Policy of Inclusion for the Mentally Ill. *Health Affairs* 11(1):128–50.
- Mechanic, D., and M. Rosenthal. 1999. Responses of HMO Medical Directors to Trust Building in Managed Care. *Milbank Quarterly* 77(3):283–303.
- Remler, D.K., B.M. Gray, and J.P. Newhouse. 2000. Does Managed Care Mean More Hassle for Physicians? *Inquiry* 37(3):304–16.
- Shapiro, S. 1967. End Result Measurements of Quality of Medical Care. *Milbank Fund Quarterly* 45(2, pt. 1):7–30.
- Shapiro, S., H. Jacobziner, P.M. Densen, and L. Weiner. 1960. Further Observations on Prematurity and Perinatal Mortality in a General Population and in the Population of a Prepaid Group Practice Medical Care Plan. *American Journal of Public Health* 50(9):1304–17.
- Shapiro, S., J.J. Williams, A.S. Yerby, P.M. Densen, and H. Rosner. 1967. Patterns of Medical Use by the Indigent Aged under Two Systems of Medical Care. *American Journal of Public Health* 57(5):784–90.
- U.S. Department of Health, Education, and Welfare. 1971. *Provisional Guidelines for Automated Multiphasic Health Testing and Services*, Vol. 3. DHEW Publication No. (HSM) 72–3011. Washington, D.C.: Government Printing Office.

Wunderlich, G.S., ed. 1992. *Toward a National Health Care Survey: A Data System for the 21st Century*. Washington, D.C.: National Academy Press.

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