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# Overview, History, and Objectives of Performance Measurement

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*This article provides an overview of health care performance measurement, including a chronological history of the major developments in the performance measurement field. It is not intended to be all-encompassing in its descriptions of events and organizations but, rather, its purpose is to provide a broad historical context for describing health care performance measurement activities of the past 50 years. The article also highlights the key constituents driving performance measurement (government payers, private sector regulators, business coalitions, health care providers, and health care consumers), how they have influenced what is measured (the content of performance measurement), and why. The article concludes by establishing the commonalities among constituents and forecasts what the foreseeable future may hold regarding performance measurement.*

## INTRODUCTION

During the past decade, managed care has become recognized as the dominant health care delivery and financing system in the United States. In recent years, managed care plans have greatly increased

their market share, so that today, the overwhelming majority of insured persons in the private market is enrolled in some form of managed care, either a health maintenance organization (HMO), a preferred provider organization (PPO), or a point-of-service (POS) product. In 1998, HMO membership stood at 78.8 million—more than one out of four Americans and a 91-percent increase since 1993. As of 1997, there were 89.1 million PPO members, representing an increase of 47 percent since 1993 (InterStudy, 1995; 1999).

As managed care organizations (MCOs) evolved and matured, they eventually reached a point where they began to frequently resemble each other in terms of price, benefits packages, management tools, and cost controls. Consequently, most plans have now reached a stage in their development where, in order to remain viable, they need to continue to deliver not only cost savings and a competitive benefits package, but they must also distinguish themselves in another key arena. That arena is quality, and its associated oversight activity is performance measurement.

There is a myriad of economic, social, technological, and political forces that have contributed to this resurgent focus on quality, and these will be discussed later in this article. For now, suffice it to say that consumers, researchers, policymakers, and purchasers (both public and private) of health care services are justifiably questioning the value or quality of health care that they receive; seeking quality at an affordable and reasonable price; and

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requiring that health plans, providers, and medical institutions provide greater accountability for the quality of their services. This demand for quality is not at all unique to health care and has indeed had a global effect on virtually all businesses, industries, and professions, though it has spawned virtually an entire new industry of health care performance management in the process. In 1988, Avedis Donabedian M.D.—one of the pioneers in health care quality management and the chief proponent of the “structure/process/outcome” paradigm in quality management—noted:

“We are turning now to the one concern that should have always preoccupied us, the quality of care. There are stirrings everywhere: at the grass roots, where people, awash in the alphabet soup of acronymic health care providers, are beginning to murmur their discontent; in the boardrooms of corporations, where those who buy health care by the carload are wondering what precisely their dollars have bought, in the labyrinthine folds of government, where politicians and bureaucrats, their wetted fingers to the wind, have felt the chill of public opprobrium; and in the rarefied reaches of academe, whose denizens, exquisitely attuned to the ebb and flow of grants, see new, rich pastures before them. It is an awakening to wonder at, a return to sanity we must applaud.” (Donabedian, 1988).

A decade later, the Institute of Medicine (IOM) issued a less sanguine statement and implied, at least tangentially, that not much had changed since Donabedian’s statement: “Serious and widespread quality problems exist throughout American medicine. These problems, which may be classified as underuse, overuse, or misuse, occur in small and large communities alike, in all parts of the country, and with approximately equal frequency in man-

aged care and fee-for-service systems of care. Very large numbers of Americans are harmed as a result. Quality of care is the problem, not managed care” (Chassin, 1998). A statement such as this, from such a respected body of professionals, could serve as the proverbial clarion call to action for all those who have a stake in the outcome of our country’s complex health care debate, and could further the causes of quality assurance and performance management.

How does one define quality? Within the medical profession, the IOM’s definition has gained wide acceptance: “Quality of care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” (Lohr, 1990). In the business and industrial worlds, quality is often thought of as follows: “All work is composed of a set of processes. Each process has a set of requirements for successful completion. Quality is defined as the degree to which the processes are in conformance with the requirements” (Crosby, 1994). Regardless of which definition one prefers, one thing that has become certain is that health care quality has long since stopped being viewed as a subjective phenomenon. Although the measurement process is far from being considered complete or mature, the point worth making is that quality can indeed be legitimately quantified, measured, tracked, and trended—just like many other business variables and activities.

A problem that must be recognized, however, is that different constituencies view quality management and performance measurement differently. Scientists, statisticians, and physicians—groups who are trained to think critically and analytically—often view the issues surrounding performance measurement from a theoretical

perspective and consequently might see the glass as “half empty,” whereas those constituencies that are primarily rooted in the public policy, regulatory, and business worlds tend to recognize more often that the glass is “half full.” And finally, a third group—health care consumers—seems significantly uninformed and unaware of the foundations and goals of managed care and its attempts to standardize processes, reduce unnecessary expense, and improve the overall quality of care (Employee Benefits Research Institute, 1999).

## **HISTORY OF HEALTH CARE PERFORMANCE MEASUREMENT**

### **Early Attempts at Performance Measurement: 1750-1910**

Although performance measurement in health care may appear to be a relatively recent phenomenon, the Pennsylvania Hospital was collecting patient outcomes data, tabulated by diagnostic groups, as early as 1754. Although isolated efforts at performance measurement continued to occur in the 18th and 19th centuries, the earliest significant American efforts are generally attributed to Ernest A. Codman M.D., a surgeon at Massachusetts General Hospital who, during the early 1900s, was an advocate for systematic health care performance assessment. In 1910, Codman proposed the “end result system of hospital standardization,” whereby a hospital would track every patient it treated long enough to determine whether the treatment was effective. Three years later, Codman’s colleague Franklin Martin M.D., founded the American College of Surgeons (ACS), which incorporated Codman’s “end result system” into its stated objectives. In 1918, the ACS began conducting onsite hospital inspections to determine facility-level compliance with the ACS internally developed

document—“Minimum Standards for Hospitals”—activities which presaged the formation of the Joint Commission on Accreditation of Hospitals (JCAH) 33 years later. Interestingly, only 89 of the initially 692 surveyed hospitals met the requirements.

Codman (1996) faced many of the same challenges that confront today’s health care quality investigators, and his comments are eerily similar to those voiced by many current observers:

“Our charitable hospitals do not consider it their duty to see that good results are obtained in the treatment of their patients...It is against the individual interests of the medical and surgical staffs of hospitals to follow up, compare, analyze, and standardize all their results” because (1) “perhaps the results as a whole would not be good enough to impress the public very favorably;” (2) it is “difficult, time-consuming, and troublesome;” and (3) “neither Trustees of Hospitals nor the Public are as yet willing to pay for this kind of work.” Codman concluded that “the superintendent would lose his position, if he undertook to insist on ‘good results.’”

### **Birth of the Modern Era and New Delivery Systems: 1910-1950**

In order to understand performance management within managed care, it is important to understand the history of managed care’s evolution during the 20th century. The United States’ current dominant health care delivery system is usually regarded as a recent phenomenon, yet it actually had its origins almost 90 years ago. Sometimes cited as the first example of an HMO (or prepaid group practice, as it was known until the early 1970s) is the Western Clinic in Tacoma, Washington. Starting in 1910, the Western Clinic offered, exclusively

through its own providers, a broad range of medical services in return for a premium payment of \$0.50 per member per month. The program was available to lumber mill owners and their employees and served to assure the clinic a flow of patients and revenues. Shortly thereafter, a similar program was developed in Tacoma and later expanded to include 20 sites in Oregon and Washington.

In 1929, Michael Shadid, M.D., established a rural farmers' cooperative health plan in Elk City, Oklahoma. Participating farmers purchased shares for \$50 each to raise capital for a new hospital in return for receiving medical care at a discount. Shadid promptly lost his membership in the county medical society and was threatened with having his license suspended. However, 20 years later, he was vindicated by an out-of-court settlement in his favor of an antitrust suit against the county and State medical societies (Mayer and Mayer, 1985).

Also in 1929, Baylor Hospital in Texas agreed to provide approximately 1,500 teachers prepaid health care services, an arrangement that marked the birth of the Blue Cross system. The program was subsequently expanded to include the participation of other employers and hospitals. Beginning in 1939, State medical societies in California and elsewhere created Blue Shield plans, which reimbursed for physician services. At this point in history, commercial health insurance was not a significant factor for most Americans, yet it had arrived on the scene.

The formation of the various Blue Cross and Blue Shield plans, as well as many HMOs, in the midst of the Great Depression reflected neither consumer demand nor non-physician entrepreneurship but rather, providers wanting to protect and enhance patient revenues. Many of these developments were threat-

ening to organized medicine, best represented by the American Medical Association (AMA), which adopted a strong stance against prepaid group practices and all they represent, favoring indemnity insurance as an alternative. The AMA's stance at the national level set the tone for continued State and local medical society opposition to prepaid group practice and attempts to seriously manage care in an organized, systematic fashion.

The period immediately surrounding World War II saw the formation of several HMOs that are among today's leaders. These organizations encountered varying degrees of opposition from local and State medical societies. They represent a diversity of origins, with the initial impetus for development arising variously from employers, providers hoping to maintain patient revenues, consumers seeking access to improved and affordable health care, and even a housing lending agency seeking to reduce the number of foreclosures (Kongstvedt, 1996). The following are examples of some of the HMOs that emerged during that time:

- *The Kaiser Foundation Health Plans*—organized in California in 1937 by Sidney Garfield M.D., working in collaboration with Henry J. Kaiser and his construction and shipbuilding companies. Kaiser Permanente now serves over 8 million members in 16 States and the District of Columbia and is the country's largest group model HMO.
- *Group Health Association (GHA)*—also founded in 1937 in Washington, DC., as a non-profit consumer cooperative which became the prototype staff model HMO. The organization was strongly opposed by the DC. Medical Society, which sought to restrict hospital admitting privileges for GHA physicians. A bitter antitrust suit ensued that culminated in the U.S. Supreme Court's ruling in favor

of GHA. In 1994, faced with impending insolvency, static growth, an aging membership, and following a strike of its unionized physicians, GHA was acquired by Humana Health Plans, and soon thereafter by Kaiser Permanente.

- *Health Insurance Plan of Greater New York*—was founded in 1944 at the behest of New York City, which was seeking coverage for its employees.
- *Group Health Cooperative of Puget Sound*—was founded in 1947 in Seattle as a consumer cooperative. Having overcome early opposition from the King County Medical Society, it remains one of the country's most respected and successful HMOs.
- *San Joaquin Medical Foundation*—was formed in 1954 by the San Joaquin County Medical Society in response to competition from Kaiser Permanente. The foundation established a relative value fee schedule for provider reimbursement, heard grievances against physicians, and monitored the quality of care. It became licensed by the State of California to accept capitation payment, thereby making it the first independent practice association model HMO (Kongstvedt, 1996).

### **Golden Years: 1950-1980**

The authors have somewhat arbitrarily defined this period as the golden years because it represents a period in the modern era when the medical profession simultaneously: was least encumbered by regulation; had a reasonably respectable reputation within the private and public sectors; had very few curbs placed upon its income-generating potential; and enjoyed a high degree of professional autonomy which, in some instances, bordered on sovereignty. These were the years that witnessed the

post-war economic boom, a huge increase in the country's population, the birth of Medicare and Medicaid, and major technological and cognitive advances in science in general and medicine in particular.

External performance measurement of the newly emerging health plans was minimal during this period, and of note is the fact that meaningful performance oversight was largely confined to the hospital arena. The dominant player in the field of health care performance measurement was unquestionably the JCAH, which was formed in 1951 as the logical successor to the antecedent ACS program which began in 1918. In 1953, JCAH began offering accreditation to hospitals and published its Standards for Hospital Accreditation. In 1964, JCAH first began charging fees for accreditation surveys, and the following year Congress passed the Social Security Amendments of 1965, which included a provision that hospitals must be JCAH-accredited in order to participate in the Medicare and Medicaid programs.

In the early 1970s, rising costs made public efforts to improve access to medical care seem all the more urgent. The major boost to the HMO movement during this period was the enactment in 1973 of the Federal HMO Act, the main features of which were the following:

- Grants and loans were available for the planning and startup phases of new HMOs, as well as for service area expansions of existing HMOs.
- State laws that restricted the development of HMOs were overridden for HMOs that became federally qualified.
- Dual choice provisions required that employers with 25 or more employees and who offered indemnity coverage must also offer two federally-qualified HMOs (if the plans requested to be offered).

The HMO Act also established a process for becoming federally qualified—a process which can be viewed as one of the earliest external performance measurement systems that was applied to HMOs. In order to become federally qualified, plans had to satisfy a series of requirements, such as: meeting minimum benefits package standards; demonstrating that their provider networks met adequacy standards; having a quality assurance program; meeting standards of financial stability; and having an enrollee grievance system. Most of these requirements remain within the foundations of present day HMOs.

Federal qualification quickly became an absolute requirement for a plan's successful entry into the HMO marketplace, for the following reasons: Federal qualification quickly became the industry equivalent of a seal of approval, which was helpful in marketing efforts; the dual choice requirements assured access to the employer market; the override of State laws applied only to federally-qualified HMOs; and Federal qualification was required for access to Federal grants and loans. By 1994, 51 percent of HMOs nationally, accounting for 71 percent of all enrollment, were federally qualified (Interstudy, 1995). However, by this point, the numbers were already in decline due to the rise of organizations like the National Committee for Quality Assurance (NCQA) and the JCAH organizations, which recaptured the gold standard status from Federal qualification and are discussed later in more detail.

In the late 1960s and early 1970s, performance measurement of a sort came into being for the Medicare and Medicaid programs with the birth of utilization review committees, as they were called. The original Medicare law had required hospitals to set up committees of their medical staffs to review whether services were actually necessary and thus guard against fraud and

abuse. Yet these committees had no formal evaluation criteria to guide their decisions, no power to deny payment, and no incentive to be effective (Starr, 1982). In 1969, the Nixon Administration proposed giving the Department of Health, Education, and Welfare (today's Department of Health and Human Services) authority to appoint program review teams of doctors, other health professionals, and consumers to deny payment for unnecessary Medicare services. After much political wrangling, the outcome was that the Department of Health, Education, and Welfare would contract with professional standard review organizations (PSROs) made up only of physicians, but it was stipulated that these PSROs could not be State medical societies. The AMA objected strongly to these proposals and succeeded in having them modified so that, ultimately: national norms were discarded; the Federal Government would not own the data; the responsibilities of PSROs were limited to inpatient care and services; preadmission certification for elective surgery would no longer be mandatory; and only physicians could participate in decisions (Starr, 1982). In spite of the AMA's role in initiating these modifications, many of its leaders objected to the concept of PSROs and considered them government intrusion into medical practice. At the other end of the political spectrum, liberals opposed PSROs because of their complete exclusion of consumers from representation in the program, with Ralph Nader's Health Research Group calling it a case of "the fox guarding the henhouse" (Starr, 1982).

### **Age of Information and Consumerism: 1980-2000**

During the 1980s, the health care industry as a whole focused its efforts and attentions on cost controls, with the emergence

of managed care and at risk payments as predominant forces in the health care delivery system. Contributing to the rise of enrollment in managed care was the passage of the Tax Equity and Fiscal Responsibility Act (TEFRA) in April 1985 that operationalized the Medicare risk program, allowing Medicare HMOs to enroll Medicare beneficiaries under a capitated risk program. Despite such efforts, health care costs continued to escalate in the 1970s and again in the 1980s. Consequently, there has been increased interest in holding health plans accountable for providing quality care at an affordable price, with purchasers of health care, the Federal and State governments and employers, in the position to do so. The 1990s and beyond have also seen a rise in consumerism, where the average consumer today demands more information about a product or service in order to know exactly what he is paying for, particularly given the ever-increasing amount of information available through the Internet. Health care is no exception. In order to adapt to the increasing sophistication of their purchasers and consumers, health plans must focus on the quality of care. With competition, namely the fact that consumers “can vote with their feet” and payers can cancel contracts, health plans that do not focus on quality run the risk of losing market share to those health plans that are committed to continually improving the quality of care they deliver.

This period has also seen a change in the structure of the health care delivery system, with the emergence of HMOs, PPOs, POS, provider-sponsored organizations (PSOs), and physician hospital organizations. The health care delivery system has changed dramatically through mergers and acquisitions of payers, hospital sys-

tems, and provider groups as well. The Balanced Budget Act of 1997 implemented the Medicare+Choice (M+C) program, allowing coordinated health plans (HMOs, PSOs, and PPOs), fee-for-service plans (FFS), and medical savings account (MSA) plans to serve Medicare beneficiaries.

As previously noted, from its inception the PSRO program was the center of controversy. As part of TEFRA 1982, the Peer Review Improvement Act of 1982 created the utilization and quality control peer review program that replaced the PSRO program. Under the new program, utilization and quality control peer review organizations (PROs) became responsible for promoting effective, efficient, and economical delivery of quality health care services to Medicare beneficiaries through contracts with HCFA, including review requirements specified in the PRO’s scope of work. Beginning with the fourth scope of work, HCFA incorporated PROs into its Health Care Quality Improvement Initiative, focusing on both a data-driven approach to monitor patterns of care and outcomes, and a cooperative approach of working with Medicare managed care plans (now M+C organizations) and FFS plans to implement projects, directed by HCFA and initiated by the PROs. Currently, under the sixth scope of work, HCFA and PROs are committed to overseeing the following:

- The use of mammography screening.
- The use of influenza and pneumococcal vaccines to prevent deaths from influenza, pneumonia, and the diseases they exacerbate.
- The prompt use of drugs of proven effectiveness promptly to treat heart attack patients and prevent recurrence.
- The delivery of the appropriate antibiotics promptly to patients with pneumonia.

- The proper evaluation and treatment of patients with heart failure.
- The use of proven techniques to prevent new or recurrent stroke.
- Comprehensive diabetes management.

In 1990, the concepts and tools of total quality and continuous quality improvement, pioneered by such quality experts as Joseph Juran and J. Edwards Deming, that had been applied previously with success within the industrial sector, were shown to be applicable to the health care industry as a way of improving care processes while reducing costs (Berwick, Godfrey, and Roessner, 1990). Through total quality and continuous quality improvement principles, the quality of a health care process can be measured in terms of the degree to which the process is in conformance with its work requirements.

The 1990s have seen the implementation of multiple efforts to measure health care quality in terms of processes and outcomes—performance measurement efforts that translate data into information for purchasers and consumers and define value as quality per unit cost. Some of these efforts have been led by the following organizations:

- NCQA is a non-profit organization dedicated to providing information that enables purchasers and consumers of managed health care (systems of care for defined populations) to distinguish among plans based on quality. NCQA began its accreditation program in 1991 with MCOs, and since expanded to behavioral health care organizations, credentials verification organizations, physician organizations, and, most recently, PPOs. Since 1992, NCQA has collaborated with MCOs, academic researchers, corporate purchasers, and consumer representatives to create a performance measurement set known as the Health Plan Employer Data and

Information Set<sup>1</sup> (HEDIS®). HEDIS 2000, which reports on 1999 data, consists of over 56 measures across 8 domains of care: (1) (effectiveness of care; (2) access and availability of care; (3) satisfaction with the experience of care; (4) health plan stability; (5) use of services; (6) cost of care; (7) informed health care choices; and (8) health plan descriptive information) applicable to the commercial, Medicaid, and Medicare populations. Beginning with its 1999 accreditation standards, NCQA integrated HEDIS® into its accreditation process. In 1997, the NCQA HEDIS® Audit Compliance™ program was launched as an independent assessment of a health plan's information systems and compliance in following the HEDIS® technical specifications for the applicable measurement year, enabling plan-to-plan comparisons to be made by purchasers and consumers. Ninety percent of all HMOS currently report HEDIS® measures, and all M+C HMOs are required to report audited HEDIS® measures.

- JCAHO is a non-profit organization that evaluates and accredits a range of health care facilities, including acute care, ambulatory care, behavioral health care, home care, clinical laboratory services, long-term care, and managed care. Through its ORYX™ initiative, JCAHO has integrated outcomes and other performance measures into its accreditation process. The ORYX™ initiative includes the use of approved measurement systems to report performance measures (for instance, qualifying hospitals identify, collect, and submit data for six measures using JCAHO-approved measurement

<sup>1</sup> In 1991, the HMO group, today known as the Alliance of Community Health Plans, released the first draft of a standard set of measurements—HEDIS®—in cooperation with its coalition members, Bull HN Information Systems, Digital Equipment Corporation, GTE, Xerox, and Towers Perrin. In 1992, the project was moved to NCQA, which assumed responsibility for further development, releasing HEDIS® 2.0 in November 1993.



systems). In February 2000, JCAHO approved 25 measures for which measure specifications are being developed across 5 initial core measurement areas (acute myocardial infarction [8 measures], congestive heart failure [5 measures], pneumonia [7 measures], surgical procedures [2 measures], and pregnancy [2 measures]). Seventeen of the measures were derived from HCFA's sixth PRO scope of work measure sets.

- The American Accreditation HealthCare Commission, also known as the Utilization Review Accreditation Commission, is a non-profit, charitable organization that issues accreditation certificates for MCOs. The commission is currently undertaking an effort to develop performance criteria for workers' compensation MCOs, as well as a project to examine the capability of PPOs to report on performance.
- The AMA, in collaboration with specialty, State, and local medical societies, developed the American Medical Accreditation Program (AMAP). AMAP is a voluntary accreditation program that measures and evaluates individual physicians against national standards, criteria, and peer performance in: credentials, personal qualifications, environment of care, clinical process, and patient outcomes.
- The Foundation for Health Care Accountability, established in 1995, has developed consumer-focused quality measurement guides, including: adult asthma, alcohol abuse, breast cancer, diabetes, health status under age 65, and major depressive disorder. It is working cooperatively with NCQA, consumer organizations, purchasers, providers, State and Federal agencies, health plans, and researchers and has developed a framework and measurement sets for assessing child and adolescent health, which are being piloted in Washington State.
- The Agency for Healthcare Quality and Research (AHQR), formerly known as the Agency for Health Care Policy and Research, is the lead Federal agency in quality research. AHQR has sponsored the development of publicly available quality assessment tools. Two of these are the Computerized Needs-Oriented Quality Measurement Evaluation System (CONQUEST), and the Consumer Assessment of Health Plan Satisfaction (CAHPS®) survey. CONQUEST is a series of interlocking databases—the measures database contains select attributes of 53 sets of clinical performance measures containing 1,197 measures, and the condition database contained selected attributes of 57 clinical conditions (Agency for Healthcare Quality and Research, 1998). CAHPS is a consumer-based satisfaction survey that is applicable to FFS and managed care plans that asks consumers about their satisfaction and experiences with health care (Agency for Healthcare Quality and Research, 1998). Both HCFA and NCQA use CAHPS®.
- HCFA requires M+C organizations to participate in performance measurement activities. Qualifying M+C organizations must submit a subset of audited HEDIS® data, with HCFA requiring full HEDIS® audits for the 1999 reporting year. M+C organizations participation marked its third year in 1999 in the Medicare managed care CAHPS. In 1998, HCFA required qualifying M+C organizations to participate in the Medicare Health Outcomes Survey, a longitudinal, self-administered survey that utilizes the HCFA Standard Form-36 and additional case-mix variables, with the first cohort being sampled in 1998. M+C organizations, as part of Quality Improvement System for Managed Care (QISMC), must initiate at least two quality assurance

and performance improvement (QAPI) projects annually that are designed to achieve, through ongoing measurement and intervention, demonstrable and sustained improvement in significant aspects of clinical care and non-clinical services. Annually, at least one of the QAPIs must be in the national topic area identified by HCFA, in cooperation with their designated PRO. For 1999, the national project was diabetes and for 2000 the topic was community-acquired pneumonia. In addition, under QISMC, M+C organizations, beginning in 2001, must show demonstrated improvements.

As previously noted, there are a number of well-intentioned performance measurement activities underway in the United States, although such efforts are not without their problems. The use of population-based measures can be extremely difficult, especially for those based on health outcomes, as opposed to processes involved with health care delivery. Eddy (1998) groups these performance measurement problems into two main categories: “natural” and “man-made.” The natural problems are intrinsic to the process of measuring health care quality and cannot be modified, whereas the man-made problems have the potential to be resolved. Natural problems include: the probability factor—health outcomes are highly probabilistic; low frequency; lengthy period of observation required; limited, if any, control over outcomes; lack of clinical detail (the idea that a performance measure should be consonant with its corresponding clinical trial); and lack of understanding of the clinical relevance of an outcome (e.g., what does it really mean if health plan A treats 5 percent more of its moderate asthmatics with inhaled corticosteroids than health plan B?).

Man-made problems include: inadequate information systems; excessive numbers of measures and measurers; complex-

ity of health plans (benefit packages and delivery networks); and a lack of public funding to support a publicly available standardized set of performance measures. Most impartial observers, but especially those among the ranks of physicians and statisticians, would conclude that the net effect of all the previously described measurement problems is that today’s measures tend to be blunt (as a result of inadequate information systems, the vast majority of which are incapable of measuring a high level of clinical detail), expensive, incomplete, and potentially misleading.

The President’s Advisory Commission on Consumer Protection and Quality in the Health Care Industry (1998) noted that the Nation’s health care system is not immune to quality problems, including avoidable errors, underutilization of services, overuse of services, and variation in services. The commission made over 50 recommendations, including:

- Creating two complementary entities, one public and one private, to provide ongoing national leadership in health care quality improvement.
- Establishing a core set of aims of improvements that are accompanied by specific, measurable objectives for improvement throughout the health care system.
- Creating a systematic approach to quality measurement, that includes identifying core sets of quality measures applicable to each sector of the industry for standardized reporting and ensuring comparative information on health care quality is valid, reliable, comprehensive, and available in the public domain.
- Strengthening the market to improve quality by holding participants in the health care industry accountable for improving the quality of health care system.
- Building the capacity to improvement quality through investment in basic, clinical, preventive, and health services

research, and continuing to develop and disseminate evidence-based information to practitioners.

- Making a significant investment in health information systems to provide data on the individual and comparative performance of plans, facilities, and practitioners; help improve coordination of care; advance evidence-based health care; and support continued research and innovation.

Collaboration is beginning. As called for in the commission's recommendations, the National Forum for Health Care Quality and Reporting, a not-for-profit membership organization formally incorporated in May 1999, is devoted to developing and implementing a national strategy for health care quality measurement and reporting. The Federal Government has created the Quality Interagency Coordination Task Force, established in March 1998, "...to ensure that all Federal agencies involved in purchasing, providing, studying, or regulating health care services are working in a coordinated way toward the common goal of improving quality of care." In May 1998, JCAHO, NCQA, and AMAP<sup>2</sup> agreed to work collaboratively, through a Performance Measurement Coordinating Council, to coordinate important aspects of performance measurement activities across the health care system.

During the 1990s, significant effort has been devoted to making health plan information available to consumers so that they can make informed health care decisions—this includes the Federal Government (the Office of Personnel Management, HCFA); States (the Maryland Health Care Commission); busi-

ness coalitions (such as the Pacific Business Group on Health through its HealthScope website), health plans, consumer groups, and accreditation bodies (NCQA and JCAHO).

## Future Directions

A careful study of the current state of affairs and the events and trends of the past 50 years is probably one of the most reliable methods for predicting what might lie ahead for the American health care system and all its various stakeholders. With that context in mind, the following are postulated as future characteristics of health care and health plan performance measurement.

*Physicians will become more accepting and appreciative of the value of quality management and performance measurement, but only if they are presented with the right incentives to do so.* Health plan performance measurement today is much more sophisticated and commonplace than it was even 10 years ago, yet there is widespread agreement that the process is really only in its infancy. Nonetheless, all progress needs to start somewhere, so it is important to recall this obvious fact and not let criticism of existing performance measures dominate the discussion of this topic. Physicians, in particular, need to be mindful of this because, as a group, they often waste precious time and resources debating the theoretical and waiting for perfection: "Since the measurement tools have flaws, they are invalid and therefore should not be used," is a not uncommon physician reaction to attempts at measuring quality. In fairness to them, however, physicians, statisticians, and health researchers very appropriately and correctly are requesting a scientific approach to performance measurement. The point, though, is for them to remember that sci-

<sup>2</sup> On March 27, 2000, AMA announced it was ending its program to accredit individual physicians, after spending 4 years and \$12 million, indicating it probably was just ahead of its time as far as the marketplace was concerned, and further stating it did not have the best business model, which ultimately led to huge expenditures. AMA indicated however, it would continue its role in the Performance Measures Coordinating Council.

entific knowledge evolves in a non-linear fashion, with breakthroughs and setbacks, and progress in health care performance measurement is no exception.

Clinical performance measurement is not easy, and most physicians currently lack the time, the technical knowledge and support, the interest, and the incentive to participate in this activity in a meaningful fashion. Nonetheless, physicians who ignore the measurement issue do so at their own risk and are inviting someone else to manage their profession. The loss of professional autonomy which physicians have lamented over the past decade can only be erased if physicians assume a more active and responsible role in quality management and performance measurement, a concept referred to by some as accountable autonomy (Newcomer, 1998). The health plans and third party payers that enjoy future long-term viability and success will be those that align physician incentives in such a way as to promote consistent practice patterns and quality outcomes.

*Performance measurement and quality management will receive renewed and heightened interest by third party payers, the Federal Government, and patient advocacy groups.* On November 30, 1999, IOM released the results of an intensive multi-year study of health care quality in the United States (Kohn, Corrigan, Donaldson, 1999). The study was hardly reassuring and found that as many as 98,000 people die every year in hospitals alone because of errors and accidents—more deaths than those caused by motor vehicle accidents, breast cancer, or acquired immunodeficiency syndrome. When one extrapolates the data in this study to health care in general, including outpatient care, the estimated number of deaths climbs to a staggering 150,000 to 400,000 per year. These numbers—conser-

vatively speaking—translate to the equivalent event of two jumbo jet airliners crashing (with no survivors) every 2 days.

Nobody lists these accidents as among the leading causes of death in the United States. If they did, the IOM's studies suggest they would rank third—higher than tobacco, stroke, diet, alcohol, drugs, firearms, or automobiles—behind only heart disease and cancer (Lawrence, 2000). The public debate in health care has thus far focused on choice, access, and financing—not safety nor quality. Patients simply assume, wrongly, as the IOM report so amply demonstrates, that they are receiving quality care and that they are safe. Conceivably, this report could serve as the necessary catalyst to meaningful reform of our health care system, just as Rachel Carson's *The Silent Spring* and Ralph Nader's *Unsafe at Any Speed*, respectively, played roles in the environmental movement and the automobile safety debate.

*The number of organizations involved in health plan performance management will diminish over time.* Simply stated, there are too many organizations attempting to measure health plan performance at present. Although these efforts are generally well-intentioned, they represent an enormous financial and personnel burden to health plans, many of whom view—with some legitimacy—the various performance measurement methodologies as either redundant, seriously flawed, inadequate or misrepresentative of the plans' totality of quality management activities. Physicians who participate with the plans tend to take an even more cynical view, considering activities like NCQA accreditation status and HEDIS® audits to be nothing more than thinly veiled marketing ploys. Health plan members and large purchasers who look at the performance data either do not fully appreciate what it does/does not signify, or

else base their health plan selection on factors other than those being measured (e.g., cost, benefit package, network composition). Indeed, the sheer number of players in the performance management arena has imposed an air of commercialism upon the entire enterprise, and has caused many to question the value of what is added by having such a multiplicity of agents, as well as the process itself.

Eventually, we are likely to figure it all out and will perhaps have a standardized set of national performance measures, overseen by one or two public or private hybrid organizations (e.g., HCFA, NCQA), but it's unlikely to happen soon—or at least not until there is some stronger imperative in the public consciousness to recognize the importance of quality. As Winston Churchill once said, “You can always depend on the Americans to do the right thing—after they've tried everything else and failed.”

*Process measures and outcome measures will both remain part of most performance management systems, and neither will dominate.* The debates about health plan performance management have traditionally placed a heavy emphasis upon outcome measures, the idea being that they represent a more valid assay of health plan quality. However, as the managed care industry gains more experience, there is a growing realization that no single approach (process measures versus outcome measures; population-based studies versus case-based studies) can be considered complete per se. The challenge is to find a balanced approach, one that recognizes the problems of distortion, bluntness and incompleteness inherent in population-based measures, the deficiencies of case-based measures, and the high costs associated with either approach.

*The future success or failure of health care performance management will largely be determined by the prevailing delivery system and practice paradigm.* As provider groups assume more financial risk and undertake more delegated responsibilities from health plans (e.g., utilization management, credentialing, appeals processes, etc.), there will be a necessary shift in the accountability balance. However, the shift will be directly proportional to the degree to which providers assume such roles. Regrettably, experience to date has shown that very few provider groups in the traditional private practice and/or academic medical center sectors have succeeded in managing these tasks. Why? The main reason is that they seriously underestimate the scope and the complexity of the infrastructure that is required to adequately manage health care on a risk basis. In addition, there is usually a lack of an ideological resolve to seriously manage care, a process which often requires making difficult and politically unpopular decisions and a firm commitment to proven, successful management principles.

Also, we know that physicians work more safely and effectively when they practice in teams, yet more than three-quarters of all U.S. physicians practice alone or in small, single-specialty groups (Lawrence, 2000). Consequently, they are less able to learn from peers and share experiences and new information. The more “open” a health care delivery system is (e.g., network/independent practice association model HMOs, PPOs, classic indemnity models) the more difficult it is to align incentives properly, control multiple variables, and adequately measure performance within that system. Conversely, more “closed” systems (e.g., staff or group

model HMOs, large multispecialty group practices) lend themselves to tighter control, stronger oversight, and more meaningful performance management. Accordingly, the success or failure of performance management in health care will largely be determined by whatever dominant practice paradigm happens to prevail at the time of measurement. The current landscape, with most physicians practicing either alone or in small groups; participating with multiple health plans, each with its own different set of benefits, policies and procedures; having widely varying capabilities for information management; and limited—if any—incentives for conducting internal quality management activities, poses a serious obstacle to future efforts at credible, relevant, cost-effective performance measurement.

Our current health plan performance measurement approach is flawed inasmuch as it relies excessively on measuring plans rather than providers. It is as if one were trying to measure blood pressure by using a thermometer, or using a scale to measure one's height. Our science, technology, medical care, understanding of what works and what does not in medicine are the best in the world. But, as noted by Lawrence (2000):

“...the safety with which care is delivered in this country is compromised by the delivery system through which most Americans receive it. That fragmented, unorganized system is more than 100 years old and can no longer do the job. It is obsolete. We know that safety will be compromised further in this system as the science expands and our technologies grow more powerful in the coming decade of unprecedented breakthroughs that most observers foresee. We know that the starting place for improved patient safety is the formation of organized systems of care that include

groups of physicians practicing in carefully structured and supported teams with other professionals, and that are focused on continuously improving the safety of the care they provide to their patients.

This is the real patients' rights issue: the right to safe care that can occur only if we make fundamental changes in the way we organize and deliver the remarkable care we now have available to improve the quality of our lives.”

## ACKNOWLEDGMENTS

The authors would like to acknowledge the thoughtful review and comments of Kathryn Langwell, who provided valuable support and direction in the development of this article.

## REFERENCES

- Agency for HealthCare Policy and Research: *Consumer Assessment of Health Plans (CAHPS): Fact Sheet*. AHCPR Pub. No. 97-R079. Rockville, MD. December 1998.
- Berwick, D.M., Godfrey, B.A., and Roessner, J.: *Curing Health Care New Strategies for Quality Improvement A Report on the National Demonstration Project on Quality Improvement in Health Care*. Josey Bass and Company. San Francisco, CA. 1990.
- Chassin, M.R., et al.: *The Urgent Need to Improve Health Care Quality*, Institute of Medicine National Roundtable on Health Care Quality. Institute of Medicine. Washington, DC. September, 1998.
- Codman, E.A.: *At Study in Hospital Efficiency* (Boston, 1917), reprinted by the Joint Commission on Accreditation of Healthcare Organizations. Oakbrook Terrace, Illinois. 1996.
- Crosby, P. B.: *Quality Without Tears*. McGraw-Hill, New York, NY. 1984.
- Donabedian, A.: *Quality Assessment and Assurance: Unity of Purpose, Diversity of Means Inquiry*, 25(2): 173-192, 1988.
- Eddy, D. M.: *Performance Measurement: Problems and Solutions*, *Health Affairs*, 17(4): 7-25, July/August 1998.

Employee Benefits Research Institute: *Public Attitudes on the U.S. Health Care System: Findings from the 1999 Health Confidence Survey*. Issue Brief. No. 215. Washington, DC. November 1999.

InterStudy: The Competitive Edge, Vol. 9, No. 1, HMO Industry Report, Minnetonka, MN. April 1999.

InterStudy: The Competitive Edge, Vol. 5, No. 1, HMO Industry Report, Minnetonka, MN. February 1995.

Lawrence, D.M.: The Future of Health Care, Medscape—*Millenium 2000 series*, Medscape, 2000 ([www.medscape.com](http://www.medscape.com)).

Lohr, K., (ed.): Medicare: A Strategy for Quality Assurance. National Academy Press. Washington, DC. 1990.

Kohn, L.T., Corrigan, J., Donaldson, M. (eds.): *To Err is Human Building a Safer Health System*. National Academy Press. Washington, DC. 1999.

Kongstvedt, P.R.: *The Managed Health Care Handbook*. Third Edition, Aspen Publishers, Inc., Gaithersburg, MD. 1996.

Mayer, T.R. and Mayer, G.G.: HMOs: Origins and Development: *New England Journal of Medicine*, 312(9):590-594, 1985.

Newcomer, L.N.: "Physician, Measure Thyself," *Health Affairs*, 17:4: 32-35, July/August 1998.

Starr, P. R.: *The Social Transformation of American Medicine*. Basic Books, Inc. Publishers, New York, 1982.

President's Advisory Commission on Consumer Protection and Quality in the Health Care Industry: Final Report *Quality First: Better Health Care for All Americans*. Washington, DC. March 1998.

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