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# QUALITY FOR GOOD MEASURE

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## Roots of the Quality Measurement Movement

The second half of the 20th century witnessed many changes in the U.S. health care system. Importantly, an employer-sponsored health insurance system emerged that was supplemented in 1965 by national programs (Medicare and Medicaid) to guarantee coverage to elderly, disabled, and low-income populations, sparking an explosion of health care costs. Although federal cost containment efforts began as early as the Nixon administration and continued in various forms through the Clinton administration, these Washington-based solutions have failed to produce sustained reductions in the growth of health care spending. This failure opened the door for many health care consumers to rely on market-based solutions for cost containment, which ultimately highlighted the need for additional attention to quality of care concerns.

Throughout much of the debate over access and cost, the common rhetoric about the U.S. health care system was that it offered the “best medical care in the world,” thus leaving quality as an assumed positive attribute of the health care system and a negligible element in policy making. However, the evolving health care marketplace, driven by the private sector’s quest for sustained cost containment, eventually led to an epiphany in the health care community: An era of limited resources had arrived, and health care quality was in jeopardy.

Discussions regarding quality of care generally have suffered from two information deficiencies. First, the science of health care quality measurement has not yet reached a level of sophistication capable of providing answers to the quality of care concerns of policy makers or the public. Second, most policy makers and clinicians are not sufficiently trained in the fundamentals of quality measurement to address health care quality

concerns in a sophisticated manner. In an era of cost containment, physicians who have a grasp on quality of care issues will be best able to contribute positively to the evolving health care system.

## How is Quality of Care Defined?

Several definitions for quality of care have been offered [1], two of which are cited frequently. Avedis Donabedian, one of the fathers of the quality measurement field, defined quality as “the ability to achieve desirable objectives using legitimate means” [2]. Donabedian acknowledged, however, that the definition varies “depending on the level and scope of assessment and the valuations placed on both the methods and accomplishments of care.” Perhaps the most commonly cited definition of quality of care is the one developed by the Institute of Medicine, which states that quality in health 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” [3].

## Basic Principles of Quality Measurement

### Definition of a Quality Indicator

To participate in quality measurement, new physicians must be familiar with the statistical and methodological principles underlying the process. Some indicators are used for comparisons to a previously defined standard or between one entity and another. For example, the Health Plan Employer Data and Information Set (HEDIS), a series of standardized performance measures under the auspices of the National Committee for Quality Assurance (NCQA), is designed to compare the quality of managed care plans [4]. Many health plans have developed their own indicators to assess the impact of specific quality improvement interventions implemented within their respective organization.

### Risk Adjustment and Stratification

Any measure designed for quality comparisons must address the need for risk adjustment or stratification. Risk adjustment attempts to equalize all populations, whereas stratification divides the population into groups that are at a similar level of risk. Two primary factors should be considered in assessing risk:

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severity of illness and comorbidities. Physicians who are confident that they are practicing high-quality medicine are unlikely to accept data to the contrary unless it takes into account their populations' underlying severity of illness; otherwise, these physicians are likely to excuse their performance with the assertion that "my patients are sicker." Unadjusted measures could create a perverse incentive for providers or health plans to avoid attracting complex patients into their delivery systems.

One approach to standardizing populations is to take out "unusual" cases and make comparisons based on the cases for which a care approach is relatively clear. For example, HEDIS includes a measure on  $\beta$ -blocker treatment after an acute myocardial infarction (AMI). Rather than adjusting for comorbidities (eg, asthma), the HEDIS indicator attempts to standardize the populations within health plans across the country, in part by excluding those AMI patients who have absolute or relative contraindications to  $\beta$ -blocker treatment.

### Range and Types of Quality of Care Measurement

Donabedian suggested that quality of care measures can be separated into three categories [2].

- **Structural measures** address the underlying systems and infrastructure: Are systems in place and are the right types of people assembled in the right way to allow for the provision of quality care? NCQA—an organization whose goal is to assess and report on the quality of managed care plans—employs accreditation standards that address many structural factors, such as appropriate credentialing of physicians and evidence of effective quality improvement projects.
- **Process measures**, such as the HEDIS measure on  $\beta$ -blocker treatment after an AMI, assess the extent to which there is compliance with what should be done to and for a patient. The value of a process measure is reliant on the strength of the evidence that links it with ultimate outcomes.
- **Outcome measures**, in contrast, address the end results of medical care (eg, symptoms, level of blood pressure achieved, quality of life, mortality) [5].

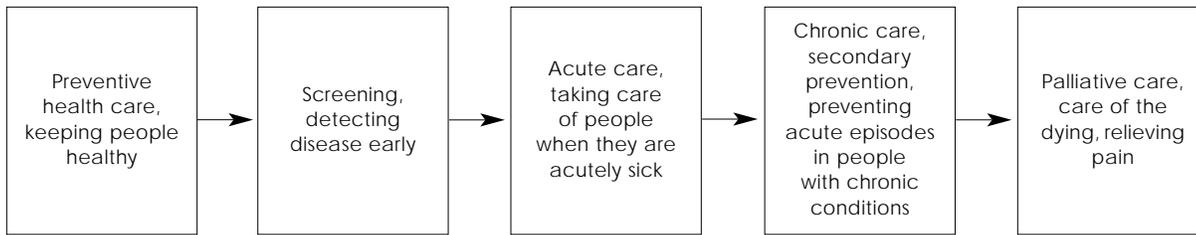
Controversy exists over the relative value of these three types of measures. Some researchers criticize structural and process measures because they do not address patient benefit. Also, evidence-based processes are not possible in all clinical situations, such

as whether a patient older than 75 years should have a cholesterol determination. Finally, process measures cannot take into consideration all situations, thus excluding potentially important cases. There may not be established, evidence-based processes to follow for patients with rare manifestations of a condition; if there is no process grounded in science, one cannot create a process measure to assess the care delivered.

Frustration with the limitations of process measures has led to a push for more outcome measures. However, outcomes are not feasible or valid in all situations. Risk adjustment or stratification techniques do not exist for many outcome measures. For example, the circumstance of a noncompliant patient or a patient with many life-threatening comorbidities presents a challenge in setting a single standard hemoglobin A<sub>1c</sub> level (ie, less than 8.0%) for all patients with type 2 diabetes. In some situations, the entity being measured has control over only a limited number of patient care factors or processes (eg, noncompliance, difficulty in affording medications, other medical conditions); thus, outcome may be influenced by factors beyond the provider's or health plan's control.

In other cases, outcome measures may be feasible, but the length of observation required for documentation is too long. For example, 5-year mortality would be an important outcome measure of AMI patient care, but 5 years is a long time to wait for information about delivered care. In these cases, outcome measures may not be the most practical tools. In addition, if health care providers have good results but cannot demonstrate how those outcomes were achieved, we have no way of knowing if it was a "fluke" or if they are likely to produce good outcomes in the future. Furthermore, outcome measures may lack sensitivity; a poor outcome does not occur every time there is an error in the provision of care. For example, failure to prescribe a key medication to patients with heart disease does not lead to an AMI in all or even most patients.

A combination of approaches typically produces the best measure of quality of care. For example, a new measure released by NCQA in the draft version of HEDIS 1999 assesses cholesterol management after acute cardiovascular events through a process measure (whether a lipid profile was performed within 1 year after an AMI or revascularization) linked with an intermediate outcome measure (whether the patient's low-density lipoprotein [LDL] cholesterol level was controlled to less than 130 mg/dL between 2 and 12 months following the event). This



**Figure 1.** Quality of care measures can assess different levels of care, ranging from primary prevention efforts to keep people healthy to palliative care for terminally ill patients.

translates to the clinical setting as follows: For a physician whose patients have inherently high LDL levels, the process measure indicates that lipid profiles are being obtained but, alone, does not indicate how well the physician is managing these patients' risks; when screening is combined with evidence that these patients' LDL levels were maintained below 130 mg/dL, the result is valuable and powerful information about that physician's quality of care.

Quality of care measures can assess different levels of care across a spectrum of patient health (**Figure 1**). Preventive care measures (eg, the rate at which current smokers are advised to quit) help to keep people healthy and prevent the onset of various diseases. Similarly, frequency of screening tests (eg, mammography, Pap smears) assesses the extent to which providers and plans detect disease early in asymptomatic individuals. Acute care measures (eg, mortality following coronary artery bypass graft surgery) provide insight into the care provided to patients who are sick. Secondary prevention measures (eg, post-AMI  $\beta$ -blocker treatment) assess how well physicians and health care organizations manage patients with existing disease to prevent future acute events. Other chronic care indicators (eg, disease-specific functional status) measure how well patients are living with their illnesses. Finally, palliative care measures theoretically can assess how well providers care for the dying.

Quality measures can be performed using different units of analysis depending on the interest or goal of the user. Quality can be measured at the level of physicians, nurses, medical groups, or other health care professionals; hospitals or other health care facilities; and health plans.

### Recent Developments in the Field of Quality Measurement

Scientific and intellectual developments are gradually improving the tools of health care quality mea-

surement. Growth in the field of clinical epidemiology has allowed researchers to identify wide variation in the processes and outcomes of care among patients who received routine treatment for the same health care problems in different places and health care settings. For example, sentinel research led by John Wennberg beginning in the 1970s demonstrated considerable practice variation that could not be explained [6]. Clinical epidemiology has also provided opportunities within health care organizations for learning how to improve care.

The emerging discipline of outcomes research has spurred the creation of new measures that address patient functioning, values, and preferences, most notably the SF-36, a 36-item functional status patient survey instrument [7]. The science of measurement has evolved to a point that researchers are beginning to be able to assess critical end results from the patient's perspective.

Progress in the advancement of information systems, computer technology, and communication techniques has vastly widened the spectrum of data that can be collected and accessed in an efficient way. Some health plans, such as New England's Harvard Pilgrim Health Care, have made substantial progress in developing electronic medical records that allow for greater and more timely access to important patient information by providers and quality improvement staff.

However, the demand for information about quality of care continues to grow for several reasons. In an era of cost containment, it is important to encourage competition based on criteria other than price alone. Quality measurement can conceivably be used to ensure accountability for care provided in all spheres of the delivery system and can stimulate improvement among providers and health plans. Finally, the demand for quality information can stimulate improvement in information systems technology and the science of measurement, thus building a

more sophisticated platform for future evaluation techniques.

### Conclusion

In a 1996 *New England Journal of Medicine* article, David Blumenthal wrote, "Just a few years ago, physicians could be confident that they alone had a social mandate to judge and manage the quality of care" [8]. Blumenthal indicates that this era has passed and physicians are now challenged merely to stay current with quality of care terminology and the variety of evaluation systems in development. Physicians have begun to recognize the heightened demand for objective quality of care information and realize that their involvement in the measurement development process is critical to their future role in the health care delivery system.

Although the quality measurement field is in the early stages of development, considerable progress has already been made, resulting in various projects that have led to public reporting of physician and health plan performance. No consensus exists regarding where along the spectrum of care quality should be measured. Furthermore, the objective of performance measurement and the specific application of these assessment tools remain matters of considerable debate.

Despite these lingering uncertainties, hospitals, physician groups, health plans, and government

agencies should not dismiss the potential for quality measurement to play a critical role in the future health care industry. These conditions provide a ripe environment for new physicians to engage in this emerging discipline and to help shape how the quality of care is assessed in the 21st century.

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