

DO BETTER OUTCOMES MEAN BETTER QUALITY CARE?

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INTRODUCTION

In so many areas of research, one generation's astounding revelation becomes the next generation's received wisdom. Path-finding discoveries lead the way to improved understanding of how our cells, organs, and bodies work and to ways of intervening to prevent and correct malfunctions, misalignments, overgrowth, and undersupply.

This message of innovative research evolving into commonplace health care is driven home everyday in the biomedical sciences. For example, just last week, when advertisements about Viagra filled clinical journals and quips about impotence had become acceptable outside men's locker rooms, the scientist who identified the vasodilatory effects of nitric oxide won the Nobel Prize. My mother's first cousin, Robert Furchgott, is one of these three Nobel laureates, but treating impotence was the farthest thing from Robert's mind when he identified the substance that induced vasodilation as being derived from vascular endothelium, the substance that turned out to be nitric oxide, and the discovery that made Viagra possible.

So it is in health care research. Today's development of new ways to measure outcomes and quality of care may lead to improved health care in the future. Improved ways of identifying factors that are associated with poor access to care may improve future Americans' ability to find their way to that high quality care. Understanding the costs and utilization of health care services may allow limited resources to be used more effectively in the future.

Another story of seminal discovery in health care research is the story of health outcomes. About a quarter of a century ago, an epidemiologist by the name of Jack Wennberg developed a method called "small area variation studies" that enabled him to demonstrate the widespread differences in the amount of health care and particular health care services that are received by Americans living in different

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areas of the country and even in neighboring communities. Patients receiving their care in Boston had almost twice as much utilization of certain services as those receiving their care in New Haven, neither exactly backwater ports of American medicine (1).

Wennberg's results, which still startle some today and which have led to the immensely interesting and valuable *Dartmouth Atlas of Health Care* (2) woke up many American health policy makers. Could these reasons for these differences be explained by epidemiology, disease burden, or the effectiveness of care in improving the health of different populations? No existing studies could explain the variations. However, variations did seem to be greatest for those services for which there was uncertainty about the appropriate and most effective care. When the strategy for care was fairly clear cut, such as for the management of hip fracture, variations were low. On the other hand, for many services for which there was little known about the real outcomes of care, variations were substantial (for example, cesarian section, mammography, tympanostomy, or spinal fusion).

THE OUTCOMES STORY

In 1988, Dr. Paul Ellwood was one of many who increasingly were concerned about variations in the amount of health care services used in different areas of the country, and who were challenged by the opportunity for improving the quality of care while decreasing costs. In his 1988 Shattuck Lecture, Ellwood called for outcomes management, which would become the systematic application of the emerging field of outcomes research to medical decision-making. Outcomes management would offer a way of applying the results of outcomes research and translating it into improved patient care. He described the need for "a technology of patient experience designed to help patients, payers and providers make rational medical care-related choices based on better insights into the effect of these choices on the patient's life." Ellwood challenged the medical establishment to develop a common, easily understood language of health outcomes, especially outcomes that matter to patients. He argued for the development of a permanent national database of information and analysis on clinical, economic and patient-oriented outcomes and their relationship to medical interventions. Finally, he urged that these data be accessible to decision makers and that they guide the care that is provided (3).

The momentum continued into the next year. In the spring of 1989, the Physician Payment Review Commission (PPRC) issued its Annual Report to Congress, in which it called for a resource-based relative

value scale to determine physician payment. The Commission suggested more, however. The resource-based relative value scale would, at least in theory, level the playing field in physician payment. No longer would physicians be paid more for their time while performing a procedure than while counseling their patients. The differences in income among specialists would decrease, hopefully increasing the number of medical students entering primary care fields. In addition, the PPRC felt that, if the financial incentives for specific services were eliminated, physicians could make their decisions based upon what would be best for their patients (4). While that made sense from the perspective of the behavioral economist, clinical scientists were concerned that the data for deciding what would be best for the patient might be missing.

These researchers knew that advances in biomedical knowledge had not been accompanied by comparable advances in understanding how to measure health outcomes. Not only were most health outcomes still measured in physiological or life-and-death metrics rather than measures of the quality of life, but in many instances there were no measures at all. The Commission recommended that a new agency be established to sponsor research in this area, in order to close the gap between what was known and what was needed in health outcomes. In November, 1989, Congress passed the Omnibus Budget Reconciliation Act of 1989, establishing not only the resource-based relative value scale, but also the new Agency for Health Care Policy and Research, with the mission of improving the nation's understanding of health outcomes, quality, and the cost, use, and access to medical care.

WHAT IS BEING DONE TODAY?

The interest in outcomes research continues today. President Clinton's Advisory Commission on Consumer Protection and Quality in the Health Care Industry recognized the importance of outcomes research in improving the quality of health care in the nation. It supported continued and increased national commitment to developing measures of quality and outcomes and identification of ways of improving them.

The Agency for Health Care Policy and Research is now evaluating the effects of its nearly 10-year commitment to the development of outcomes research. Many of AHCPR's Patient Outcomes Research Teams ("PORTs") have developed valuable measures of health outcomes that are being used to enhance the quality of care, and early findings demonstrate their value in improving health care.

For example, the PORT at Johns Hopkins, which focused on cata-

racts, developed an improved measure of health outcomes for cataract surgery. Prior to the study, the primary indicator for cataract extraction was impaired visual acuity. The Visual Function-14 (VF-14) measure of the outcomes after cataract surgery broke new ground. This new instrument for outcomes measurement includes other factors that are more pertinent to day-to-day quality of life, including reading a newspaper or book, recognizing people nearby, nighttime driving, and cooking. The VF-14 scale is now the gold standard for determining appropriateness for cataract surgery and outcomes following extraction and is required by the Health Care Financing Administration for Medicare payment.

Another example of outcomes research being put to use is the work of the low-birth weight PORT, which has improved outcomes for premature infants. Corticosteroids had previously been demonstrated to be effective in reducing neonatal mortality and morbidity when given to pregnant mothers at risk for premature delivery, but PORT researchers found that the drug was substantially underutilized, being used in only 20% of appropriate cases. The PORT researchers identified causes for underuse, including physician confusion about its effectiveness and mixed messages about who would benefit as well as the timing of the administration. To respond to these gaps between the science and medical practice, an active initiative to increase utilization of corticosteroids was carried out under the leadership of Robert Goldberg's team at the University of Alabama. Active dissemination was associated with an increase in use of antenatal steroids to 70% of appropriate cases in the study's 13 hospitals across the country (5).

MEASUREMENT ALONG THE OUTCOMES CONTINUUM

Despite these advances, there is much to be learned about how to measure the outcomes of health care, particularly in terms that are important to our patients. It is helpful to think of the measurement of outcomes along a continuum, ranging from the traditional measures of health outcome, such as mortality, to newer measures that reflect our patients' preferences and values (6). Table 1 displays this continuum of health outcomes measures.

We are accustomed to measuring outcomes of health care in terms of quantifiable, reliable measures such as mortality. Death rates cannot always be used, however, because mortality fortunately is an unusual event, and although it may be defined easily, it is difficult to use, especially in studies with small samples. Physiological measures, such as blood pressure, have also been used as surrogates to reflect patients'

TABLE 1
The Continuum of Health Outcomes Measures

Health Outcomes Continuum
Mortality
Physiologic Measures
Clinical Events
Health Perceptions
Symptoms
Functional Measures
General
Specific
Preference-based Measures
General
Specific
Satisfaction

mortality or morbidity. Other substitutes for health outcomes include proxies for physiological function such as lab tests and biopsy results. If mortality from cardiac disease cannot be used alone as a measure of outcomes because it is too unusual or because other outcomes are also considered important, then an alternative might be the peak of cardiac enzymes in a myocardial infarction or changes in an electrocardiogram, decreases in blood pressure or other physiologic measures and laboratory tests. Although these measures are easily quantified, it is less clear that they really relate to the outcomes that patients value and understand.

More in keeping with a commitment to measuring those outcomes that are important to patients, many investigators have measured clinical events as their outcomes, particularly in clinical trials. Events such as myocardial infarction or health-care events that are provoked by changes in health outcomes, such as repeat angioplasty for restenosis, are clinical events that are easily measured and more likely reflect outcomes that are of immediate importance to our patients.

In a health-care system that is increasingly patient-oriented and driven by market concerns, health-care decision makers, even those who previously used only clinical and physiologic measures, are coming to understand the importance of patient satisfaction and perceptions. However, some may argue the converse: that physical outcomes may not reflect what patients really care about. In addition, patients' perceptions of their health status have been shown to be a reliable predictor of health care utilization (7, 8). Symptoms, such as angina, are clearly important to our patients, and measuring symptoms as an indicator of health outcomes gets closer to measuring that which our patients care about. In response, health outcomes researchers have

advanced the state of their art to measure more than traditional clinical measures and indices of patient satisfaction. They have developed measures that reflect patients' function, preferences, and broader satisfaction. These measures can be focused on a specific disease, or they may be general measures of health outcomes.

CONCLUSIONS

To meet patients' needs, the leadership of clinical medicine should commit itself to emphasizing not just the elegance of diagnostic acumen and the introduction of new therapeutics, but also renewed attention to what offers benefits to our patients. To focus on our patients is to focus on the outcomes of their care. This will require attention to the science of clinical practice, to outcomes and effectiveness research that can guide health care in the future. If we can translate better outcomes research into better clinical decision-making, our patients will be the beneficiaries.

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DISCUSSION

Billings, Baton Rouge: John, you mentioned, “better outcomes make better decisions.” I’m not sure that it is not the other way around: “better decisions make better outcomes,” in that those individuals who made what they thought was their better decision ended up with a better outcome, at least for them and their quality-of-life issues.

The question that I have after that comment is: how do we guarantee that the health care providers look at outcomes and not just at cost? As I see it in the patients that I deal with, each year and sometimes two or three times a year, a patient is placed in a situation wherein his insurance or her insurance, as the case may be, is changed strictly because of cost issues such as days of hospitalization, pharmacy that the patient is or is not allowed to choose, whether or not high dose therapy in stem-cell infusion is included or not included. How do we guarantee along the lines of Ed Stemmler's address that we, as a profession, take the role that we should take in encouraging insurance companies, HMO's, PPO's to do what is right for our patients?

Eisenberg: Fred, you have made two points that get right to the heart of the issue. The first one about better decision making better outcomes—it is true on two fronts. First, if we could make better decisions based upon good data about what the likely outcomes of our decisions would be, then I agree with you that our patients would enjoy better health outcomes because of improved quality of care. But good outcomes research will be important in helping with those decisions.

Second, you point out that, if our patients are engaged in these decisions, if they are empowered, if there is shared decision-making, then they are likely to have better outcomes simply from the process of participating. I think you are right, there is some research that shows that shared decision-making leads to better outcomes, but not much research has been done in this area. To the point of getting insurance companies to pay more attention to the quality and less, or at least relatively less, to the cost of care, let me say this. Insurance companies are really intermediaries in health decision-making as well as in payment. They reflect the values of the people that they sell their product to, benefits managers and our patients. Many experts feel that we will get what we demand, what we signal that we want. AHCPR has found that more than 60% of Americans want information on quality and that Americans say that it is the most important characteristic for them in choosing a health plan. But if you ask them how many of them have ever seen data on quality, you find about only a third who say they have. If you ask how many have ever used any of that data in making a choice, you find even fewer. I think that what we need to do is to get the information out to our patients, for the leadership in medicine to be sure that the data are available and that the emphasis is on data on quality. Then the patients who really do want this information and want to act on it have a chance to do so.

David Dale, Seattle: I want to pick up on this last comment you made and that is: if the information that is being generated through the agency belongs, in part, to the public, how can they access that information? I see people who want to be involved in the decision making about their care, but it is hard to find the information.

Eisenberg: It is hard to find, but it is getting easier. I understand that the most commonly sought sites on the Web are actually not porn, despite the belief of some; they are health sites. One of the problems that we have, however, is that those health sites range all the way from the ridiculous to the terrific. We are exploring different ways of getting information to patients (I still want to call them "patients"; I have trouble calling them by their trendier name of "consumers", I must admit), so that they can make good decisions. One of the ways we want to do that is through their health professionals, to build doctor-patient partnership and communication, so that doctors write prescriptions for information as well as prescriptions for drugs. One of our major projects is the National Guideline Clearinghouse, which we are doing with the AMA and the American Association of Health Plans. In fact, Yank Coble, who is here today, has been one of the key people in building that partnership. In mid-December, we are going to put the National Guideline Clearinghouse on the Web at www.guideline.gov. Go to the site and look at it. However, it is really aimed at health professionals. We don't know how many

patients are going to use it. We are concerned and anxious that they will use it without their doctors' guidance, so the logical question is "Should there be something like the Merck Manual for guidelines and outcomes?" The only way we can deal with this issue, given our limited budget, is through partnerships with professional societies and advocacy groups.

Wenzel, Medical College of Virginia: The question I have is, how do you answer the question of the primary care internist, for example, who is pressed to see patients at ten-to twenty-minute intervals, depending on the schedule, when patients might have a choice for outcomes and yet it is cheaper to get them out without giving them that choice. In medicine, one of the arguments recently that we have dealt with is treating patients who probably have viral bronchitis. We can give them an antibiotic. It is much more difficult to stop and say, "Well, you really don't need an antibiotic and here are your choices" than to sort of say, "Get the antibiotic; it can only harm you; it costs money; it may not help, except for the placebo effect". How do you handle the issue of time and pressure of time and choices and outcomes?

Eisenberg: It is the ultimate limited resource, isn't it? It strikes me that since it is only one of the limited resources that we have in health care, that we ought to look at it not as an isolated part of the delivery system, but as part of a team of professionals taking care of patients together with the kinds of aids that we are describing. Better ways of getting information to patients that don't require that the physician has to gather all the data himself or herself and have to deliver all the information himself or herself, but rely upon other health professionals to share that. I think in the end the question is how we are going to allocate our time among the various demands on it and I don't have a good answer for that one Dick. I wish I did.