Shared Decision Making & Medical Costs

Introduction

The strongest argument for shared decision making is that patients have a fundamental right to understand all the reasonable medical options and the arguments for and against each option. Simply put, informing and involving patients in medical decisions is the right thing to do. The majority of people want to make decisions about their health care -- rather than be told what to do or make decisions without a complete understanding of the situation and the options. While pursuing shared decision making is the right thing to do for ethical reasons, given the serious concerns about escalating health care costs, many people want to know how increased use of shared decision making would affect the cost of health care. Some people have hypothesized that patients who are informed and involved will demand more care and interventions, thus accelerating the upward spiral of health care costs. In fact, there is essentially no evidence to substantiate this concern. Rather, five separate bodies of evidence suggest that routinely informing and actively involving patients in their medical care is likely to be cost neutral or even reduce health care costs:

1. Medical costs vary widely, but there is no evidence that spending more, benefits patients.
2. Procedure rates vary widely, but there is no evidence that more procedures benefit patients.
3. Physicians tend to drive decisions and favor interventions.
4. Patients who use decision aids want fewer interventions.
5. Two studies found that decision support reduced surgery, ER visits, hospitalization and overall costs.

1. Medical costs vary widely, but there is no evidence that spending more, benefits patients.

Since the 1970s, researchers at Dartmouth-Hitchcock Medical Center have documented wide variations in Medicare expenditures, based on the geographic location in which the beneficiary received treatment. In the highest cost areas, patients visit specialists more often, receive more testing, and are more likely to be hospitalized, particularly in intensive care units, compared with patients in the lowest cost areas (Wennberg and Cooper, 2006; Welch et al., 1993). In the last six months of life, patients in the highest cost areas are more likely to spend time in ICUs and die in the hospital rather than at home, compared with patients in the lowest cost areas (Fisher et al., 2003). Despite the discrepancy in the amount of treatment received, people in the high-cost areas live no longer than patients in low-cost areas; in fact, there is some evidence that mortality may be a little worse in the high-cost areas (Fisher et al., 2003).
Not only is survival unimproved in high-cost areas, but at least one study found that the quality of care may be worse in these regions, compared with low-cost areas (Chandra and Baicker, 2004). Moreover, when surveyed about their care, Medicare beneficiaries in low-cost areas report no more unmet need for care than their counterparts in high-cost areas and they tend to give a slightly higher rating for their overall medical care (Fowler et al., 2008). When asked specifically about their desires for end-of-life care, people generally prioritize quality of life over length of life and want to die in their own homes rather than in hospitals (Barnato et al., 2007). This preference holds true equally for people who live in the areas where end-of-life care is more intensive (and expensive) and for people in low-cost areas.

Overall, research has shown that the extra services delivered in the high-cost areas are of very little medical benefit or value to the recipients. Many experts hypothesize that if physicians in the high-cost areas began practicing the style of medicine used in the low- or medium-cost areas, overall health care costs could be reduced without depriving patients of the services that they would need or want, if they were truly informed.

2. Procedure rates vary widely, but there is no evidence that more procedures benefit patients.
Researchers at Dartmouth-Hitchcock Medical Center also have long documented that the rates at which surgical procedures are performed vary markedly from place to place, sometimes by a factor of three or four. Their research has shown that these procedure rates do not necessarily correlate with overall per capita expenditures. For example, Wennberg and colleagues (1989) reported that per capita Medicare expenditures in Boston were nearly twice as high as those in New Haven, but the rates of hysterectomy and coronary artery bypass surgery were higher in New Haven than Boston. Investigators have found that a subset of procedures, referred to as “preference-sensitive,” tend to have frequency rates that vary more widely than those of other procedures. Preference-sensitive procedures are those for which there are reasonable alternatives to surgical treatment or more than one surgical option, with each alternative likely to vary in its profile of costs and benefits from the patient’s perspective. Thus, two patients facing the same decision about these procedures might make different choices because they have different priorities (or “preferences”).

By itself, the variation in procedure rates does not necessarily mean that the number of procedures performed is too high in high-rate areas or too low in low-rate areas. However, the Dartmouth researchers also have found that the variation in procedure rates tends to be stable over time--strong circumstantial evidence suggesting that the variation stems from the concentration of physicians who have adopted similar practice styles in medical communities. To the extent that it is the physicians, and not patients, who are making decisions about whether preference-sensitive procedures should be performed, there is reason to believe that fewer of these procedures would be performed, particularly in the high-rate areas, if patients were informed and involved in making decisions.

3. Physicians tend to drive decisions and favor interventions
In 2007, researchers with the Survey Research Center at the University of Michigan interviewed more than 3,000 adults age 40 or older about 10 common medical decisions; three about taking long-term prescription medicines, three about whether or not to have a screening test for cancer, and four about whether or not to have an operation (Zikmund-Fisher et al., 2010). Respondents who had discussions with their physicians about one or more of these decisions in the preceding two years were asked a series of questions.

By analyzing the responses to these questions, investigators were able to characterize the current state of medical decision making in the United States. They uncovered five noteworthy findings:
1. Discussions about these medical decisions were usually initiated by physicians.

2. Physicians talked much more about reasons for taking the medication or having the test or surgery than they did about reasons why patients might not want those options.

3. The vast majority of physicians recommended that the patients take the medication, have the screening test or proceed with the surgery.

4. In most instances the physician did not inquire about the patient’s preference or opinion (Zikmund-Fisher et al., 2010).

5. When patients were asked four or five basic questions relevant to the decisions they had made, fewer than half could answer more than one (Fagerlin et al., 2010). These findings suggest that common medical decisions are largely being made by physicians, with patients mostly uninformed and not very involved.

The University of Michigan results are consistent with those from two classic studies conducted in the late 1990s. Braddock and colleagues audio-taped interactions between doctors and patients and coded how decisions were made. They found that informing and involving patients in key decisions was the exception, not the norm (Braddock 1999; 1997). Added information on surgical decision making comes from a recent survey study of Medicare beneficiaries who had either surgery for prostate cancer or insertion of a coronary artery stent for heart disease. The prostate cancer patients actually were fairly involved by their providers in deciding what treatment to have, but the stent decisions were almost totally driven by physicians: patients were seldom told about alternatives, told about the cons of the procedure, or asked for any input (Fowler, et al, 2012).

Thus, while there is some variation in how decisions are made, depending on what the decision is about, the evidence is quite clear that the vast majority of important decisions are driven by physicians.

### 4. Patients who use decision aids tend to want fewer interventions.

Decision aids are tools that help patients participate in decision making about their health care. Decision aids provide information on the various options and help patients clarify and communicate their personal values and preferences. Well-designed decision aids present the medically reasonable options for patients facing a decision and describe what is known about the likely risks and benefits of each option in a fair and balanced way. They are available in several formats: booklets, audiotapes, DVDs and in various forms on the Internet.

More than 80 clinical trials have been conducted on the effects of decision aids. Because these trials varied in several parameters, including the format of the decision aid, the extent of decision support provided to the control group, and the number of subjects in the study, it is difficult to generalize broadly from the results of any particular study. To address this difficulty, in 2011 the Cochrane collaborative convened an international group of volunteer experts in the field of medical decisions to conduct an analysis of the 86 randomized trials that studied the effects of decision aids and had roughly similar designs. The trials used decision aids that covered decisions about surgery, cancer screening and taking medication.

The meta-analysis showed that the studies that involved a surgical procedure observed an average relative reduction of about 20 percent in the rate at which patients chose the invasive treatment when they used a decision aid. Although small, this difference was statistically significant. The meta-analysis revealed similar results for other decisions. For example, trials comparing decision aids with usual care addressed the decision
of whether or not to have prostate specific antigen (PSA) screening for prostate cancer. Pooled analysis of these trials showed an average reduction in patient desire to be tested with the use of decision aids (Stacey et al, 2011). While the cost of PSA testing itself is not expensive, the downstream costs in treatment of cancers that are slow-growing and unlikely to have ever been found and treated without PSA testing, can be extensive (Barry et al., 1995).

Four trials explicitly addressed the issue of costs. All four studies were conducted in Europe, where the rates of interventions tend to be lower than in the United States. Three showed that using a decision aid and coaching had no effect on the cost of medical services; the fourth found that these interventions reduced costs (Stacey et. al., 2009).

In addition to the Cochrane meta-analysis, two other sources suggest that better informed patients may lead to reductions in medical care costs. First, researchers at the Dartmouth-Hitchcock Medical Center studied the effect of decision aids on patients’ decisions regarding four conditions often treated with surgery: herniated disc, hip osteoarthritis, knee osteoarthritis and spinal stenosis. The researchers asked patients before and after viewing a decision aid whether they were leaning toward having the procedure, leaning toward conservative management or undecided. After seeing the decision aid, fewer patients were unsure of their decision and a greater proportion reported a preference for conservative management over surgery. As the table below shows, the effect was not large but was statistically significant, given the large numbers. Investigators at our demonstration sites have reported a similar pattern when studying the effects of decision aids on patients’ decisions about these surgical procedures.

Second, investigators in Canada provided patients who were eligible candidates for knee or hip replacement surgery with a thorough explanation of the pros and cons of the surgical and nonsurgical options. The researchers found that less than 20 percent of these patients wanted to proceed with the surgery (Hawker et al., 2001). Both the Dartmouth findings and the Canadian study substantiate the Cochrane meta-analysis, suggesting that patients who are fully informed prefer more conservative treatment interventions than patients who are less informed.

![Patient Treatment Preference Before and After Viewing Decision Aid for Four Surgical Decisions](chart.png)

**Note:** Patient data collected by Dartmouth-Hitchcock Medical Center from July 2005 to July 2009 for surgical decisions regarding Herniated Disc, Hip Osteoarthritis, Knee Osteoarthritis, and Spinal Stenosis.

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5. Decision support reduces hospital use, surgery and medical care costs

The Health Coaching Model

Health Dialog is a privately held company founded in 1997 to address unwarranted variation in health care through integrated care activities, including data analysis and patient coaching. A partner of the Informed Medical Decisions Foundation, Health Dialog creates decision aids based on clinical evidence that has been developed by the Foundation. As part of standard care, Health Dialog coaches call health plan members with chronic conditions who have been classified as being at the highest risk for complications. The coaches discuss all the patient’s health care issues, not only the one that led to their high-risk classification. They also provide health information, send decision aids if the patient is facing decisions about their preference-sensitive procedures, help patients to set priorities and counsel patients to seek advice from their physicians if there are unresolved issues regarding their medical care.

In 2007, Health Dialog researchers collaborated with health plan staff to investigate the effects of heightened patient outreach on the use of health services (Wennberg et al., 2010). In the experimental design, about 175,000 health plan members were divided into two groups. In the experimental group, health coaches contacted a substantially higher percentage of patients with chronic conditions or selected other health problems than was standard. In the usual care group, coaches contacted only individuals classified as being at highest risk (top 3%) for complications. The researchers found that the population that had the more intensive intervention had lower rates of episodes requiring medical care or hospitalization than the usual care group. In addition, the intervention group opted for preference-sensitive surgical procedures at a lower rate than the controls. Overall, the adjusted estimates of per capita costs were significantly lower in the population for which the information and decision support to patients at high risk for complications significantly reduces their need for serious medical interventions.

Putting Decision Aids into Routine Care

In 2009, Group Health in Seattle, Washington began an experiment to encourage surgeons to provide their patients with decision aids before making a decision about whether or not to do knee or hip replacement for osteoarthritis. The audiovisual decision aids were available in DVD form and also on the Internet. Despite the fact that fewer than half the eligible patients saw the decision aids, a detailed analysis concluded that the surgical rates were reduced by 26% for hip replacement and 38% for knee replacement. Moreover, overall costs for care were 12-21% lower over a 6 month period. Although the authors could not rule out the possibility that a longer-term follow up would see some of those who opted to avoid surgery later deciding to have it (Arterburn, et al., 2012), this experiment provides the most direct evidence to date that routinely informing and involving patients in decisions about surgery will reduce surgery rates and the costs of medical care.

Conclusion

The most compelling case for shared decision making is that it helps ensure that patients get the care that is right for them. Patients have the right to be informed and involved with decisions about their health care. Indeed, legal experts have argued that operating on a patient who would not have wanted an operation if he or she had been fully informed can appropriately be labeled a medical error, because it represents a case of operating on the wrong patient (Moulton and King, 2010).

The two large-scale randomized controlled trials that evaluated the cost implications of shared decision making and the use of decision aids both demonstrate that they can lower medical care costs both by keeping people with chronic conditions out of emergency rooms and hospitals and by reducing the rates of surgical
procedures that informed patient do not want.

Predicting the impact of any intervention on costs requires assumptions about how well the intervention will be implemented. This also holds true for shared decision making. The percentage of eligible patients affected, the quality of the decision aids used, the quality of health counseling, and the rate at which interventions occur in usual care, are all factors that will influence the effectiveness -- including the cost effectiveness -- of shared decision making. We believe that shared decision making should be pursued because it is the most ethical way to practice medicine. Patients have the right to be informed and involved in decisions that affect their health. By being informed and involved, patients have the ability to avoid having surgery that exposes them to risks they do not think are worth the benefits. In addition to those certain benefits, the evidence is also mounting that shared decision making is likely to pay for itself -- and it may well do better than that.
Arterburn D, Wellman R, Westbrook E, et al. Introducing decision aids at Group Health was linked to sharply lower hip and knee surgery rates and costs. *Health Aff.* 2012;31:9,2094-2104.


