Use of outcome data by purchasers and consumers: new strategies and new dilemmas

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Abstract

Objective. The complexities involved in measuring outcomes of care are perceived as a core challenge of health services research. However, the complexities associated with making outcomes data useable for purchasers and consumers are just beginning to be recognized. The purpose of this paper is to outline some of the barriers to purchaser and consumer use of clinical outcome (and other performance) data and to identify strategies for supporting greater use of these data. Dilemmas associated with current and proposed strategies are highlighted and recommendations are proposed.

Evidence. Three recent studies focusing on consumer and purchaser use of outcome data are used to illustrate barriers. The decision research literature is also drawn upon to describe the information processing challenges faced by purchasers and consumers when using performance information for making choices.

Findings. Information packaging strategies and decision support tools designed to overcome barriers are described, and dilemmas associated with their use are outlined. One major concern is that if we adopt strategies to make report card data more digestible, we may be trading off some of the market effects (e.g. improved health plan performance) that justify report card efforts in the first place.

Keywords: consumer decision making, consumer information

Market-based approaches dominate current health care reform efforts. The goal is to stimulate health plans to compete on the basis of both cost and quality of performance. These approaches rely on informed consumer and purchaser choice to stimulate competition on quality. Comparative quality reports on health plan performance are being disseminated to purchasers and consumers in the hope of creating informed choice and an environment that encourages health plans to compete on quality.

However, there are many unanswered questions about the best way to implement comparative quality reports. Which performance measures should be included in comparative quality reports? What is the best way to present comparative health plan data? What will be most meaningful and usable for consumers and purchasers?

Background

Health services researchers define clinical outcome measures as the highest level of quality measurement. There is an implicit hierarchy of indicator types, with outcomes of care at the top [1]. However, recent work has shown that purchasers and consumers do not always share this implicit hierarchy. Clinical outcome measures tend to be less valued by both consumers and purchasers and are less likely to be used by them for health plan choice than process or consumer satisfaction measures [2,3].

Drawing upon recent studies of purchaser and consumer use of performance data and decision research findings, this paper delineates some of the barriers to purchaser and consumer use of clinical outcome (and other performance)
Barriers to purchaser and consumer use of outcome data

In a recent investigation large employer purchasers were interviewed about their awareness and use of hospital outcome data. The outcome data included such measures as mortality after heart surgery and complications of hospital-based treatments. These hospital-based quality measures are the primary source of publicly available risk-adjusted clinical measures of the outcomes of care.

The purchasers included in the study were all in regions of the country where hospital outcome data are available [2]. Only 16% of large purchasers reported using the clinical outcome data to make health plan choice. Many were unaware of the availability of the data. However, even among those aware of the data, only 25% said that they used the data in health plan choice. One reported barrier to using the data is that the hospital outcome data is often not organized or listed by plan. However, plans are what purchasers are selecting. When asked what quality measures were most often used and most influential they listed consumer satisfaction data followed by accreditation by the National Committee on Quality Assurance (NCQA).

In two separate investigations with consumers similar results were observed. That is, consumers valued other measures of performance over clinical outcome measures. For example, in an investigation carried out by the Foundation for Accountability (FACCT) focus groups were held in Denver and San Francisco to determine consumers’ preferences for types of quality information. Consumers were asked to use play money to buy different types of performance data [3]. They could choose among the three categories of: (i) consumer satisfaction; (ii) processes of care data or steps to good care (whether or not appropriate care/processes happened for the right people); or (iii) the results of care (outcome data). Each of the terms was explained and consumers were given examples of each category of data. Consumers used the most money on steps to good care (process measures) valuing it higher than outcome data (Table 1).

Table 1 Preferences for types of quality information among consumers

<table>
<thead>
<tr>
<th>Type of measurement information</th>
<th>Average dollars spent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steps to good care (process)</td>
<td>415</td>
</tr>
<tr>
<td>Results of care (outcomes)</td>
<td>338</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>250</td>
</tr>
</tbody>
</table>

Taken from [3].

With which consumers rated the usefulness of quality indicators of breast cancer care. After a briefing that explained the types of measures available, consumers were asked to rate different types of process and outcome measures associated with breast cancer. Outcome measures included 5-year survival and quality of life. Process measures included lumpectomy rates and stage of diagnosis. Satisfaction with breast cancer care was also included as a separate category [4]. Process and consumer satisfaction measures associated with breast cancer care were viewed as more useful than clinical outcome data (Table 2).

Table 2 Breast cancer performance indicators rated as most important

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Score&lt;sup&gt;1&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient satisfaction</td>
<td>4.3</td>
</tr>
<tr>
<td>Process (lumpectomy rate, mammogram rate, early diagnosis)</td>
<td>4.0</td>
</tr>
<tr>
<td>Outcome (5-year survival, quality of life, able to work)</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Taken from [4].

<sup>1</sup> 1 = least important, 5 = most important.

Poor understanding of measures

For both purchasers and consumers there was indication of some lack of understanding or problems interpreting the measures [2,4]. Not understanding can undermine the perceived ‘meaningfulness’ or importance of the measures [5]. In the study of breast cancer quality measures, consumers who received more contextual information about why the measures are important and how they might reveal something about plan quality, saw more value in the outcome measures than consumers who did not get the same contextual information. That is, by making the indicators more understandable, placing them within a larger context, and providing some interpretation consumers found the information more meaningful [4].

So to some degree the barriers around beliefs and misinformation can be addressed by educational efforts and by increasing the contextual and interpretive information provided with quality data.

Information processing and cognitive complexity

Information processing and the cognitive complexity of the task is the second major category of barriers to using performance information. These barriers are encountered by...
both purchasers and consumers. Comparing multiple plans on multiple performance dimensions is a difficult information processing task. Research shows that as people use more information, the confidence in their decisions increases. However, their ability to use that information decreases or stays the same. Even among experts (who presumably understand the importance and meaning of each of the variables) the ability to use the information consistently declines as the amount of the information increases. The research shows that providing more than five variables actually reduces the efficiency of decision making [6].

There is reason to be concerned that the amount of information in report cards is beyond that which humans can effectively process and use. Many report cards list as many as 20 performance indicators and may compare as many as 17 plans. Moreover, both consumers and purchasers have other types of information to factor into their choices: plan type, benefits and coverage levels, provider panel considerations, geographic locations and costs. Trying to integrate several different types of variables into a decision increases the complexity and the difficulty. Bringing all the disparate parts together and not leaving out important variables is a further challenge. An added level of complexity is when the decision makers must make trade-offs [7]. That is, within any one option there are likely to be positive and negative elements. Plans don’t sort themselves neatly into those performing well on all indicators and those that perform poorly on all indicators. This would certainly make the choice easier and clearer. More probably there is conflicting information that requires trade-offs. As the number of variables for comparison increases the likelihood of the need for trade-offs also increases. For example, should a parent choose a plan that performs well on children’s care but not so well on adult care, or choose a plan that performs just average on both? Or the trade-off can be across categories of variables. For example, a plan that is low cost but has relatively poor outcomes compared with a high priced plan with average outcomes. Trade-offs are particularly burdensome and they tend to make people anxious and uncomfortable.

The studies of information processing and human judgement show that when faced with too much information to process or decisions that involve burdensome cognitive processes like trade-offs, people tend to adopt strategies to reduce the burden – they take short-cuts. The most common short-cut is to create dominance in one factor. So, for example, in a situation where a plan is low cost but also shows poor outcomes, the decision maker might try to resolve this dilemma by deciding that one of these factors is much more important, while at the same time mentally minimizing the importance of the other factor [8]. This makes the decision easier and resolves the conflicting information. However, these short-cuts often undermine the decision makers own self-interest.

A similar process occurs when there is too much information. People often just decide to focus on one important factor and ignore other factors. So how does the person decide which variable to give dominance to? They most often choose a factor that is quite well understood and has precise meaning to the decision maker. In the example of the conflict between outcome measures and cost, cost is likely to be much more concrete and understandable than is the more vague and more difficult to understand outcome measure, and cost will probably be given dominance [9,10]. Although there is limited evidence about the relative comprehensibility of outcome and process measures, to the degree that process measures (or consumer satisfaction measures) are better understood, they are likely to be given dominance in decisions. That is, outcome measures, as currently understood and reported, are not likely to be the factors that are given dominance in decisions.

There is evidence from consumers and purchasers that they do engage in these short-cut strategies to reduce complexity and burden. For example, 12% of large purchasers reported that they made their purchasing decision based on one dimension alone [2].

To summarize, we are not really supporting informed choice when we overload consumers and purchasers with information. Current ways of reporting performance information probably give too much information and increase the propensity to take short-cuts. These short-cuts often result in suboptimal decisions.

The process of decision making can be likened to making a golf shot. The golfer knows where he or she wants to hit the ball, but may not have the skill to get it there. Judgment and decision making also require skill. So the question is how to help consumers and purchasers employ their decision making skills to get the quality of care they desire?

**Strategies to support informed choice**

The strategies being adopted or under consideration for reducing the information processing burden and complexity fall into two main categories: information packaging and decision support tools. Many of the strategies discussed below are designed to increase the use of performance information, in general, in health plan decisions. However, they can also be used specifically to increase the importance of clinical outcome data in decisions.

**Information packaging strategies**

One approach to reducing the information processing burden inherent in current comparative quality reports is simply to provide fewer performance measures for consideration. One way to reduce the number is to roll-up or summarize individual measures into scores on fewer areas of performance. The Consumer Assessment of Health Plan Study (CAHPS) is moving in this direction with its latest reporting format, providing only seven measures for plan comparison (most of which are summarized measures). The earlier CAHPS version 1.0 compared plans on 13 areas of performance. However, the current CAHPS reporting format includes only one type of performance data – consumer assessments.
data into one reporting format has not yet been tried or tested.

FACCT is proposing just such an approach. They are proposing a framework for reporting to consumers that summarizes plan performance in five key areas. The framework maps several different types of performance measures into these five areas. The framework was derived from and validated by consumers. The FACCT approach moves us away from the dilemma of trying to make outcome variables more salient (over other measures) and simply integrates them into a framework that is both understandable and relevant to consumer interests. An actual reporting template for this proposed roll-up strategy has not yet been developed or tested.

All of the roll-up strategies assume that the roll-ups are just the top layer of information, users can drill down and get more specific information if they wish. Whereas they have not been tried in report cards, ordering strategies have been shown to increase consumer use of information. In a study of shoppers’ use of unit pricing, it was found that consumers were much more likely to buy lower priced products when the unit pricing was displayed in one chart with the products ordered from least expensive to most expensive per unit; just posting the per unit price next to each item did not yield a change in purchasing patterns [11]. Thus the packaging of the information can make a big difference in making it more useable for consumers. Using clinical outcome data to order plans from best performers to poorest performers might help consumers to integrate more easily the outcome data into decisions. Further, it may make it more likely that the outcome data will be used over other types of performance data. However, ordering can only be done on a very limited number or factors. Ordering on several dimensions would still leave consumers with too much information to cope with.

Another approach to packaging information that reduces complexity, does so by removing some potential trade-offs. For example, instead of presenting cost and performance measures separately, present performance information within cost strata, so that a user could make a decision about cost first, and then choose the highest performing plan within that cost range. This presentation or packaging approach removes one potential trade-off and reduces the problem of having to integrate two separate categories of variables into a decision.

These packaging strategies are not designed specifically to increase the salience of outcome data, but are designed to help consumers integrate quality data into decisions. However, the strategies can be employed to raise the salience of outcome data and the likelihood that consumers and purchasers will use clinical outcome data in decisions. For example, ordering plans on performance (e.g. on outcome data) within cost strata, will help to avoid a trade-off and make it easier to use the ordered data.

Decision support tools

Decision support tools are designed to assure a rational decision process, while at the same time reducing the complexity and burden. Decision support is usually a computer aided approach, but it can be person-mediated or a worksheet. A key element in decision support is framing the issues and providing a context for thinking about the decision. Decision support helps the decision maker by dividing the cognitive tasks into smaller steps. The tool can elicit individual values and assure that they are accounted for in the decision. It can also ensure that all the relevant factors are considered and are properly weighted. Thus, these tools can be used to raise the importance of clinical outcome data in health plan choice. Finally, decision support can assist a decision maker in handling trade-offs, and help to bring all the variables together into a decision. CAHPS has included decision support both as a worksheet for consumers and as a computer tool adapted for use with Medicaid and employed populations.

So changes are being implemented that are aimed at helping consumers and purchasers digest this information. However, there is an additional challenge.

Major dilemmas associated with making information useable

When people are dealing with unfamiliar, complex, and important issues, they often do not know what their preferences are or where their self-interest lies. In these cases, people do not know what is important to them or what is their priority; they tend to construct their preferences in the act of deciding. The problem with these constructed preferences is that they are highly changeable and are influenced by how the information is presented and packaged [12]. This appears to be the case with performance information. Consumers preferences about what is important to them appear to be influenced by what is presented and how the information is presented [13]. This is unsettling, as it means that the way we present information may be as influential as the information itself. Further, we do not really know the direction or the extent that any presentation approach affects consumer preferences. Are precise numbers more influential than relative summaries (e.g. average, above average, below average)? Should a full description of each plan be presented one at a time, or should comparative charts listing all plans together be presented?

Dilemma 1. It is not known how different presentation approaches affect the use of performance information

So much effort goes into the collection of valid data, and yet it is not known how the presentation approach used to disseminate that data skewed how it is interpreted and used.

Typically, most report card formats are tested to determine their attractiveness for consumers. Even though consumers may find a format attractive, this does not guarantee that it helps them process information in a way that serves their interests. Only careful research on information processing can determine this. What we want to know is: what presentation formats support informed choice? what formats are most...
likely to support decisions that adequately weight performance information in decisions?

There does seem to be some movement toward reducing the amount of information in report cards. However, we still need to know what effect different formats have on how information is used and weighted in decisions. Does making outcome data more interpretable and more concrete make them more likely to be used? Does ordering plans according to performance or giving fewer, rolled-up measures, help consumers to use this information?

Determining the best presentation approaches for supporting informed choice will require more rigorous designs than the testing approaches used to date. They would require laboratory studies that derive the weights given by consumers in response to different presentation stimuli. Because decision makers are generally unable to accurately report how they weighted a variable in a decision, deriving weights from observed decisions is necessary (rather than just asking consumers how they weighted quality).

Although purchasers and consumers face similar barriers in using performance data, their decision tasks differ and the amount and type of data they use may also differ. Therefore, separate laboratory studies focusing on supporting purchaser and consumer decision making would be necessary.

Dilemma 2. When report card efforts fail to influence consumer choice, current evaluation methods will not tell us how to fix it

If we do not understand how presentation affects the use of performance information, we are faced with a further problem. Current large scale outcome evaluations (such as CAHPS) are not set up to test the effect of different presentation formats. Typically only one format is tested in the intervention. Evaluations have focused on whether consumers say they found the reports useful and whether they say they used them in decision making. However, self-reports are not an accurate indicator of information use. When report card efforts fail, what should we conclude? Are consumers not interested in the information? Will the policy approach not work under any circumstances? Or, is it just that the reports are not designed to support consumer decisions? Would appropriately designed reports yield the intended effects?

Thus, despite the resource investment and the growing scope of activities, current evaluations may not reveal reasons for report card failures, nor how to improve upon our efforts.

Dilemma 3. Some of the strategies to support consumer use of information may actually undermine the market goal of encouraging plans to improve

While helping consumers to digest the information more easily, the roll-ups may reduce the observed variation among plans. The process of summarizing will probably mean a loss of information about tangible differences in specific areas of performance. Thus, roll-ups may mask real differences among the plans, differences that may be highly salient to consumers and purchasers. In addition, because they can mask differences, the roll-ups may make it harder for health plans to 'show' improvement. If plans perceive this way, it also may reduce their incentives to improve. That is to say, by making the information more useable for purchasers and consumers, we run the risk of undermining other key goals associated with this policy approach (e.g. improved quality of care). We may be trading off some of the market effects that justify report card efforts in the first place.

Thus, summarizing information for easier consumption represents a loss of information and a compromise of the original measurement methodology. It also has the potential to jeopardize quality improvement incentives to health plans. These potential losses and risks underscore the need to understand the potential gains associated with making the information more useable.

Recommendations

First, laboratory studies to observe which presentation approaches are most helpful to consumers in making choices are needed. These studies will help to determine what is gained in usability by adopting such strategies as roll-ups and ordering.

Taking the laboratory findings out into the field to test their efficacy in real-world decisions is a second step. Are report card efforts that are based on these tested approaches more effective? Do more consumers use them? Do they make better decisions?

Finally, as these real world efforts are evaluated, it will be important to track other possible unintended and unwanted effects. To what degree do consumer-friendly presentation approaches compromise the market goal of improved health plan performance? Gains associated with more digestible information must be weighed against any compromises they represent to market goals.

In summary, the packaging of performance information must be designed so that it supports consumer and purchaser choice. An investment in the research and design of information formats is necessary to ensure that the substantial measurement investments in clinical outcomes data do not go unused.

References


Accepted for publication 28 July 1998