

It Isn't Just about Choice: The Potential of a Public Performance Report to Affect the Public Image of Hospitals

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Can a well-designed public performance report affect the public image of hospitals? Using a pre/postdesign and telephone interviews, consumer views and reports of their use of public hospital report are examined. The findings show that the report did influence consumer views about the quality of individual hospitals in the community 2 to 4 months after the release of the report.

Keywords: *quality of health care; report cards; hospital performance*

A recent field experiment in the state of Wisconsin examined the impact of a public hospital performance report on quality improvement efforts. The widely disseminated public report explicitly ranked hospitals on their performance, with the top performers listed at the top of the page and highlighted with a color bar. The findings showed that making performance public in this

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way stimulated quality improvement efforts in the clinical areas included in the report. Furthermore, the results indicated that hospitals believed the report would affect their public images although not their market share (Hibbard, Stockard, and Tusler 2003). The threat to their public images appeared to motivate hospital quality improvement efforts. In this study, we examine the impact of that same public hospital report on consumers. Did the report in fact have an impact on the public images of hospitals? Were highly ranked hospitals viewed more favorably after the report, lower ranked hospitals less so?

The dominant assumption underlying public reporting is that it will stimulate quality improvement among plans and providers via informed consumer choice (Marshall et al. 2000; Marshall and Davies 2001). That is, consumers would use comparative performance information to make provider and plan choices, and high performers would be rewarded with higher market share. However, it may be that when reports have the potential to more directly enhance or detract from provider public images, this also motivates quality improvement. Thus, there may be at least two viable pathways through which public reports can stimulate quality improvement: through informed choice and/or through a threat to public image.

USING THEORY AND EVIDENCE FROM COGNITIVE SCIENCES

Most public reports on health care quality have been complex and burdensome to use. They have too much data and conflicting information (e.g., a hospital that is good on one measure and poor on another), leaving the viewer confused and unsure of what to do with the information. Consumer confusion is particularly apparent when public reports compare multiple providers and none of the options stand out as a high performer on all indicators. It has been difficult for consumers to know how to differentially weight the different elements included in reports (Hibbard et al. 2002). This undermines the effectiveness of public reports for either informing consumer choice or for potentially affecting the public images of the plans or hospitals included in the report. If a report is difficult to understand and use, consumers are not likely to use it for choice. At the same time, a complex and ambiguous report is not likely to either threaten or enhance the public images of the providers included in the report. To date, public reporting has not been widely used by consumers (Marshall et al. 2000; Schaufliker and Mordavsky 2001). It is possible that if they were easier to understand, wider use by consumers would be observed.

Most designs for public performance reports have not taken advantage of what is known from cognitive sciences about how people process and use information (Vaiana and McGlynn 2002). Hibbard and colleagues used an

approach from cognitive sciences called “evaluability” to design and test health care performance report formats. Evaluable data displays are ones that make it easier for the viewer to map a good/bad scale onto the information. For example, ordering providers by performance makes that information more evaluable because it allows the viewer to quickly see who the top and bottom performers are. In controlled laboratory studies, Hibbard et al. (2002) showed that evaluable data presentation approaches resulted in greater use of performance information in choice.

A recent example from restaurant health inspections illustrates the difference that evaluable reporting can make on consumer choice. Before 1977, Los Angeles health inspectors scored restaurants on a 0 to 100 scale but did not give letter grades or post the scores. After letter grades (A, B, or C) were introduced and posted in 1998, revenues at A-graded restaurants rose 5.7 percent, while revenues at B-graded restaurants rose 0.7 percent and C-graded ones fell 1 percent (Jin and Leslie 2003).

As illustrated in the above case, using evaluable data presentation approaches in health care performance reports could reduce the complexity and burden that consumers face in using them and thus enhance both the “informed choice” pathway and the “public image” pathway. In addition, by using evaluable reporting approaches, there is also the potential to reach those who do not actually see the report. A kind of “viral” effect might occur if viewers of the report retain impressions about which are the better hospitals and pass them on to friends and family in much the same way people pass on their views about better schools and restaurants. If this were to occur, it would greatly expand the reach and the impact of the report.

Institutions spend substantial resources and effort in building a public image of trust, safety, and quality. Through a coordinated communication and advertising strategy, referred to as “branding,” institutions try to create a generalized positive impression. A public report that is easy to digest and one where it is easy to discern high and poor performers could threaten or support an institution’s public image.

NEW CONTRIBUTION

While the impact of public reports on consumer choice has been investigated, the impact of a report on consumer perceptions and thus the impact on hospital reputation or public image has not been investigated. In looking at the report’s effect on reputation, we examine a possible alternative pathway or “viral effect” on how a public report designed to be evaluable may operate. Current policies are based on the assumption that supporting informed consumer choices will be the most effective strategy for motivating hospital

quality improvement. This may not be the case, and rethinking the strategy may be called for.

THE QUALITYCOUNTS REPORT

The Alliance, a large employer-purchasing cooperative in Madison, Wisconsin sponsored the public report on hospital safety used in our study. The report, titled QualityCounts, compared performance on 24 hospitals in South Central Wisconsin. The report can be viewed online at http://www.qualitycounts.org/QCReport_2001.pdf. Two summary indices of adverse events (deaths and complications) occurring within the broad categories of surgery and nonsurgery were included along with indices summarizing three individual clinical areas: hip/knee surgery, cardiac care, and maternity care (Figure 1). Hospitals were rated as better than expected (fewer deaths/complications), as expected, or worse than expected. The data were derived from the Wisconsin Bureau of Health Information inpatient public-use data sets. Measures were adapted from the original Healthcare Cost and Utilization Project (HCUP) Quality Indicators and were summarized and risk adjusted by MEDSTAT using their disease-staging methodology.

Several aspects of this particular public report were somewhat unique and may have helped enhance the impact on consumers. First, the report was designed to be highly evaluable for consumers. Evaluable presentation approaches, tested in the laboratory, were used in the QualityCounts report (Hibbard et al. 2002). For example, hospitals were ordered by performance, with the top performers at the top and the poor performers at the bottom. Furthermore, the top tier performers were highlighted in the report with a color band (Figure 1).

Second, a concerted effort was made to widely disseminate the QualityCounts report to the public. It was inserted into the Madison newspaper, Alliance employers sent it to employees' homes, and there were newspaper stories about the report. It was also available on a Web site, and hard copies were distributed by community groups and at libraries. This was the first public report on hospital quality issued in this region, and it generated substantial public interest.

Finally, the report indicated that there was significant variation in performance in two key clinical areas, maternity and cardiac care. Eight of the 24 hospitals had poor scores in obstetrics, and 3 of the 24 had poor scores in cardiac care (Figure 1). In contrast, only one hospital was better than expected in maternity, and three hospitals were better than expected in cardiac care. Many performance reports fail to show much variation and often do not capture the

What the symbols mean:

⊕ Fewer mistakes, complications and deaths than expected

○ Average number of mistakes, complications and deaths

⊖ More mistakes, complications and deaths than expected

Regional Hospitals	Surgery	Non-Surgery	Hip/Knee	Cardiac	Maternity
Hospital A	⊕	⊕	⊕	⊕	○
Hospital B	⊕	⊕	⊕	○	○
Hospital C	⊕	⊕	⊕	○	⊖
Hospital D	⊕	⊖	⊕	⊖	*

Community Hospitals	Surgery	Non-Surgery	Hip/Knee	Cardiac	Maternity
Hospital F	⊕	⊕	⊕	○	⊕
Hospital G	⊕	⊕	⊕	⊕	○
Hospital H	⊕	⊕	⊕	○	○
Hospital I	⊕	⊕	⊕	○	○
Hospital J	⊕	⊕	⊕	○	○
Hospital K	⊕	⊕	⊕	○	○
Hospital L	⊕	⊕	⊕	⊕	⊖
Hospital M	⊕	⊕	○	○	*
Hospital N	⊕	⊕	⊕	○	⊖
Hospital O	⊕	⊕	⊕	⊖	○
Hospital P	⊕	⊕	⊕	○	⊖
Hospital Q	⊕	⊕	○	○	⊖
Hospital R	⊕	⊕	⊕	⊖	⊖
Hospital S	⊕	○	⊕	○	*
Hospital T	○	⊕	○	○	*
Hospital U	⊕	○	○	○	○
Hospital V	⊕	○	⊕	○	⊖
Hospital W	○	○	**	**	○
Hospital X	○	○	**	**	○
Hospital Y	○	○	○	○	⊖

FIGURE 1 QualityCounts Report Format

Note: Hospitals in the shaded areas had fewer or an average number of mistakes, complications, and deaths across the five types of care rated.

* Hospital does not provide this type of care. ** Hospital did not provide enough of this care during the study period to get a rating.

public's attention. Because of the variations in this report, it may have been more interesting to consumers.

The QualityCounts public report is evaluated in terms of its impact on consumer views and on consumer behavior. The research questions explore both the impact of the report on consumers and the potential for the report creating a "viral" effect:

- How many consumers saw, read, or heard about the report?
- Did the report influence consumer impressions of which were the higher and lower performing hospitals, and were these impressions accurate?
- Were these impressions of individual hospitals remembered and shared with others?
- Were some consumers more likely than others to accurately remember the results?

METHOD

The QualityCounts hospital report was released in the fall of 2001. A pre/postdesign was used to evaluate the impact of the report. Because the report was sent to employees and inserted into the local newspaper, the impact on both employees and the general public was investigated. One month prior to the release of the report, a baseline telephone survey of employees was conducted along with a baseline community survey using a random digit dial (RDD) sampling strategy. Two months after the release of the report, the same respondents were resurveyed. In addition, as the baseline may have sensitized respondents to the issue of hospital performance, a post-only community RDD sample was also interviewed. Thus, three groups were evaluated, a panel of employees, an RDD community panel, and a post-only RDD community group.

Table 1 shows the sample sizes and response rates for the surveys among the three groups of respondents. A newspaper story about the public hospital report came out during the baseline survey data collection period, and, to avoid any contamination the story might create, the baseline community RDD survey was cut short, curtailing the size of the community panel, reducing the sample from 200 to 89. Table 2 shows the demographic characteristics of the three study groups. As would be expected, the RDD sample is somewhat older than the employee group. In addition, the RDD sample has higher levels of education, reflecting the characteristics of employees covered by the Alliance. In the employee panel, nonrespondents at the postsurvey appear to be those younger in age and who are in lower income brackets. The demographic characteristics of the community RDD panel remained largely the same from the presurvey to the postsurvey.

TABLE 1 Response Rate

	<i>Baseline</i>		<i>Post</i>	
	N	%	N	%
Employees	175	55	93	59
RDD	89	51	67	75
RDD post only	NA	NA	469	41

Note: RDD = random digit dial; NA = not applicable.

TABLE 2 Demographic Characteristics of the Samples (in percentages)

	<i>Employee Panel</i> (n = 93)	<i>RDD Panel</i> (n = 67)	<i>RDD Post Only</i> (n = 469)
Age (mean)	42.3	43.7	43.4
18 to 39	42.4	40.0	45.8
40 to 64	55.4	49.2	41.4
65 or older	2.2	10.8	12.8
Gender (% male)*	55.9	41.8	50.3
Education***			
High school or less	39.8	17.9	21.2
Some college	32.3	25.4	30.5
College degree or more	28.0	56.8	46.7
Race (% white)	96.7	95.4	93.0
Income			
< \$40K	24.4	30.5	34.4
\$40K to \$60K	32.6	20.3	20.8
More than \$60K	43.0	48.6	44.7
Number in household (mean)	2.9	2.6	2.8

Note: RDD = random digit dial.

* Gender percentage is significantly different between the employee panel and the RDD panel, $p < .05$. *** Education levels for the employee panel are significantly different from the RDD panel and the RDD post-only groups, $p < .001$.

ANALYSIS

To answer the first research question regarding how many consumers saw, read, or heard about the report, we examine frequency data from the postsurveys of the two panel groups as well as the RDD post-only group (total $n = 629$) and use analysis of variance to compare results across the three sample groups.

To answer the second question regarding the influence of the report on consumer impressions of hospital quality, we first use the panel data ($n = 160$) to compare views before and after the report was issued, employing a repeated measures analysis of variance (component of the sample as a factor and pre- and postviews as a repeated measure). Because the panel may have been sensitized to the issues of hospital quality through the preintervention interview, we also look at the impact of the report on respondents who were included in the post-only survey. Using the entire post-cross-sectional group ($n = 629$), we examine the relationship between participants' seeing the report and reading it carefully and their accurate recollection of hospital quality. We hypothesize that those who read most or all of the report would be most likely to believe that there are quality differences in hospitals and to correctly identify both low- and high-performing hospitals. Two-way analysis of variance is used to control for source of the sample (employee panel, community panel, and post-only RDD).

We answer the third question regarding the extent to which impressions of hospitals were shared with others by examining the frequency distributions among the cross-sectional sample and using analysis of variance to compare respondents across the three elements of the sample.

Finally, to answer the fourth question regarding whether some consumers were more likely than others to accurately remember the results, we use a multiple regression equation focusing on the cross-sectional sample. Independent variables included in the analysis are respondent's education level, income, panel survey participation, health status, and the extent to which he or she read the report.

FINDINGS

How many consumers saw, read, or heard about the report? Figure 1 shows how many consumers were exposed to the report in some form: saw the report, read stories about it, or heard about it from others. Those in the employee panel were much more likely to have seen the report than the other two groups. This is not surprising, as their employer sent it to their home. They also could have seen the insert in the local newspaper. The RDD panel was more likely to see the report than the RDD post-only sample. It is likely that the presurvey sensitized respondents to the issues, and they were therefore more likely to actually look at the report when it appeared in their newspaper. The degree of other forms of exposure to the report, including reading newspaper stories or hearing about it from others, was similar among the three groups of respondents. Thus, respondents could have had multiple exposures by viewing the report, reading news stories about it, and hearing about it from others.

Of the 31 percent of respondents who had been exposed to the report, 19 percent had only one form of exposure, 10 percent had two forms of exposure, and 2 percent had all three forms of exposure.

It should be noted that most respondents had a choice of hospitals. Fifty percent indicated that they had at least three hospitals to choose from; an additional 25 percent had at least two hospitals to select from.

Did the report influence consumer impressions of which were the better and worse hospitals? Were these impressions remembered? Respondents were asked prior to the public report release whether they thought there were differences between area hospitals in how good the medical care is overall, in the chance of being harmed by a medical mistake, and in the chance of having a preventable complication. Figure 2 shows that there was a statistically significant increase in the number of respondents who thought that there were differences between the hospitals after the release of the report.

In addition, respondents were asked about which hospitals they would recommend to a family member or choose for themselves. This question was asked in terms of overall choice, and then respondents were asked about choosing or recommending a hospital for cardiac care, for surgery, and for maternity care. They were also asked which hospitals had fewer preventable complications and which made fewer medical mistakes. Thus, the respondents were asked six questions in all. Figure 3 shows the percentage of those six responses that indicated a higher-performing hospital (one listed in the top color tier in the report) both prior to and after the release of the report. The results show that there was a small but statistically significant increase from the presurvey to the postsurvey in terms of the percentage of top tier hospitals named.

We also explored the degree to which respondents remembered which were the low-performing hospitals. Respondents were asked about which hospitals were *more* likely to make medical errors and which hospitals had *more* preventable complications. Figure 3 shows the percentage of respondents who named a lower-ranked hospital (e.g., not listed in the top color tier) prior to and after the release of the report. There was even a bigger shift toward correct responses to these questions that asked about low performers. Again, those who saw the report were more likely to respond correctly to these items.

Interviewers were instructed to indicate if they thought the respondent was looking at the report when answering the questions. Interviewers flagged only 6 percent of respondents as possibly looking at the report during the interview. However, those respondents were no more likely than other respondents to name a high- or low-performing hospital when asked.

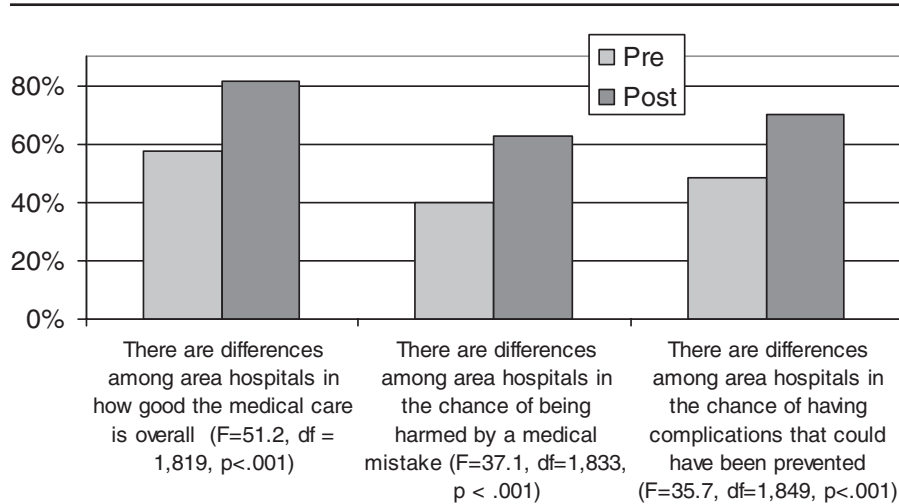
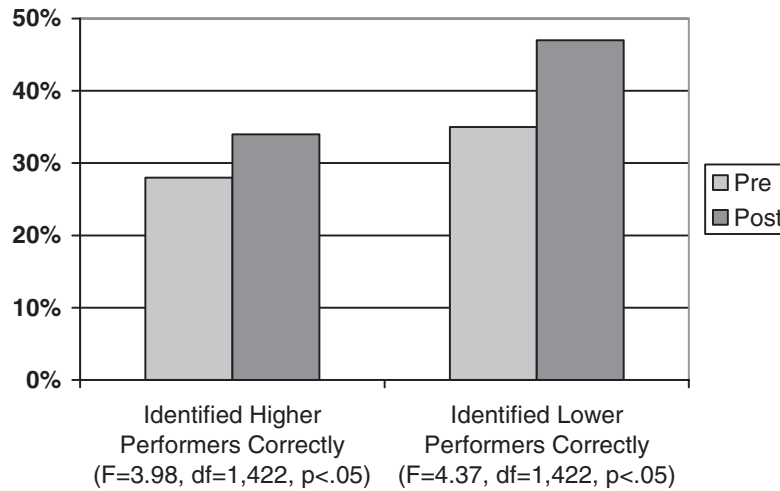


FIGURE 2 Beliefs about Quality Differences in Hospitals prior to and after the Release of the Public Report

Finally, using the cross-sectional sample, we examined the relationship between how carefully participants reported reading the results and their ability to identify high- and low-performing hospitals. As shown in Figure 4, those who read the report carefully were significantly more likely to identify the high- and, especially, the low-performing hospitals. However, among those who did not see the report, no significant shift toward higher rated hospitals was observed.

Among those who saw the report, women and those with higher incomes were significantly more likely to read it carefully. No other variables predicted reading the report carefully; neither self-rated health status nor a recent hospitalization predicted whether the report was read carefully. Multiple exposures, through word of mouth or newspaper stories, were also unrelated to how carefully the report was read.

Thus, results from both our panel analysis and our cross-sectional analysis indicate that exposure to the public report increases the likelihood that consumers were able to remember which hospitals were in the top tier and which were not. Recall on lower performers was even better than recall on high performers. Consumers are apparently interested enough to retain both types of information.



Questions that identify higher performing hospitals:

"If you had to recommend a good hospital in your community for a family member, which one would you recommend?"

"If you had to recommend a good hospital in your community for a family member needing maternity care, which hospital would you recommend?"

"Now, what about surgery? If you had to recommend a good hospital in your community for a family member needing surgery, which hospital would you recommend?"

"What about CARDIAC CARE? If you had to recommend a good hospital in your community for a family member needing CARDIAC CARE, which hospital would you recommend?"

"Which Madison area hospital do you think makes FEWER medical mistakes?"

"Which Madison area hospital do you think tends to have FEWER complications that could have been prevented?"

Questions that identify lower performing hospitals:

"Which Madison area hospital do you think makes MORE medical mistakes?"

"Which Madison area hospital do you think tends to have MORE complications that could have been prevented?"

FIGURE 3 Consumers Identify Higher and Lower Performing Hospitals Prior to and After the Release of the Report

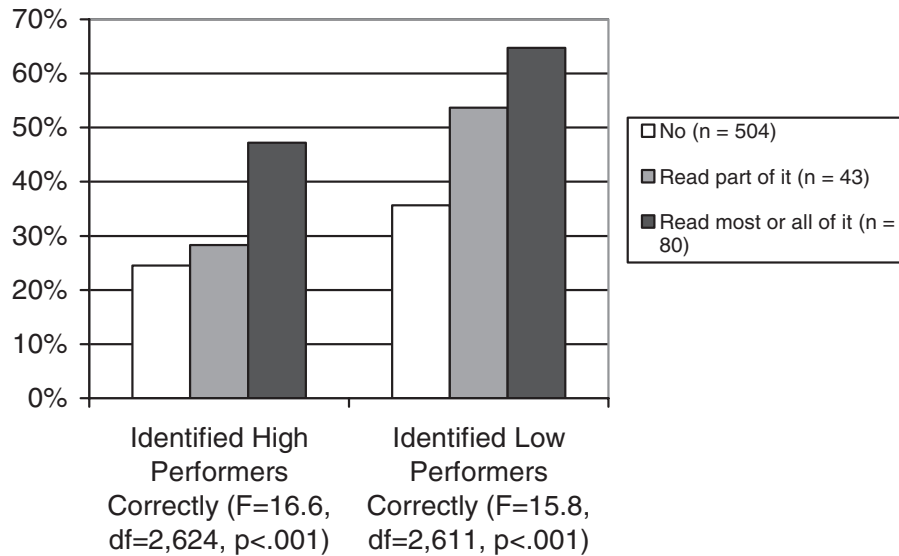


FIGURE 4 Consumer Attention to Report and Ability to Identify High- and Low-Performing Hospitals at Post

Were these new impressions of individual hospitals shared with others? Figure 5 shows the ways in which respondents who saw the report acted on it. Almost 30 percent of people who saw the report had already talked about it with family and friends. Another 39 percent intended to do so. Around 30 percent planned to talk to their doctor about it. Almost half said they would use the report to select or recommend a hospital, and more than 50 percent indicated they would pass it along to someone else or save it for future reference. In each case, approximately 25 percent had already done so.

Thus, there is some evidence that the report created a viral effect with those who saw it, remembering impressions about which were the higher and lower rated hospitals and sharing that information with others.

Were some consumers more likely than others to accurately remember the results? We examined what health, sociodemographic, or other factors predict the ability to correctly identify high- and low-performing hospitals at post using regression analysis. The strongest predictor was exposure to the report and how carefully it had been read. That is, consumers of differing levels of education, income, and age were equally likely to be influenced by the report, if they read

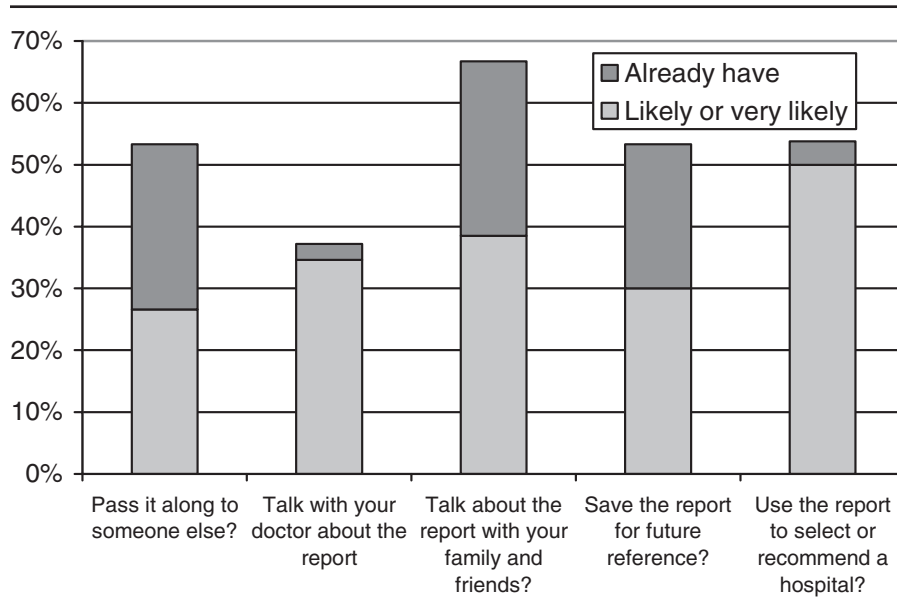


FIGURE 5 How Consumers Who Saw the Report Plan to Use It

most of it. Making the report “evaluable” may have made it more usable and understandable for people with different levels of skill and interest.

Thus, it appears that the public report had an effect on people’s impressions of which were the better hospitals. As the survey data were collected 1 to 2 months after the release of the report, these changed impressions were ones that were sustained at least that long.

DISCUSSION

A previous analysis examined the impact of the QualityCounts report on subsequent hospital quality improvement efforts (Hibbard, Stockard, and Tusler 2003). That analysis showed increased quality improvement efforts in the clinical areas reported on, and the efforts appeared to be motivated by a concern that the public report would affect the public image of the hospital. The results of this analysis indicate that the QualityCounts public performance report did, in fact, have some effect on how consumers viewed the hospitals. Consumer views on better and worse hospitals shifted after the release of the report, and the ability to recall which hospitals were higher or lower

performers was observed, particularly among those who saw the report. That consumers gained an impression and remembered those impressions suggests that consumers who are not making choices (few actually used the information for choice) are still interested in which are the higher and lower performing hospitals in their community.

Furthermore, the findings indicate that almost 70 percent of the consumers who saw the report talked to others or planned to talk to others about the report. It is the combination of remembering higher and lower performing hospitals and talking to others about it that has the potential to create the viral effect. The findings provide some evidence for such a viral effect in Madison.

The impact of a public report is dependent, to some degree, on its reach and visibility in the community. Thus, a public report that is evaluable and widely distributed and promoted apparently has the potential to significantly affect the public image of hospitals included in that report. Protecting their public image was found to be an important motivator for stimulating hospitals to put effort into quality improvement activities (Hibbard, Stockard, and Tusler 2003). This suggests that, in addition to making informed choices, an important consumer role in stimulating quality improvement is to simply attend to and form an opinion of hospitals based on their performance.

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