

Corporate Management of Quality in Employee Health Plans

James Maxwell
and
Peter Temin

As large companies move their employees into managed care, they must concern themselves with the quality and price of their employees' health care. Based on a survey of Fortune 500 companies, we show that most Fortune 500 companies are integrating several aspects of quality into their purchasing and contracting decisions by focusing on three dimensions of quality—customer service, network composition, and clinical quality.

Large employers have transformed their purchasing of health care during the last decade by conducting intensive price negotiations with health plans and using financial incentives to encourage employees to shift from indemnity to managed care coverage.¹ The movement to managed care has prompted serious concerns about the quality of care among consumers and the media.² Consumers have voiced complaints and filed lawsuits against managed care plans alleging that they denied access to necessary treatments.

Quality concerns in the health care system extend beyond managed care. The Institute of Medicine (IOM) recently announced the existence of a quality chasm “between the health care we have and the care we could have.”^{3(p.1)} According to the IOM, the existing health care system harms too frequently, resulting in millions of medical errors and thousands of preventable deaths each year. It also frequently fails to deliver potential benefits to consumers. In response, the IOM has called upon public and private purchasers to “examine their current payment methods to remove barriers that currently impede quality improvement, and to build stronger incentives for quality enhancement.”^{3(p. 182)}

We examined the role of *Fortune 500* employers in quality management based upon evidence from a recently completed survey of health care purchasing among the nation’s largest public companies. Our findings confirmed that a transformation has occurred in the way companies manage health care quality. We found that companies are integrating several aspects of quality into their purchasing and contracting decisions. We focus on three dimensions of quality—customer service, network composition, and clinical quality. We found that large employers emphasize different dimensions of quality than their counterparts in the health care sector, focusing on customer service rather than clinical quality. Large companies

Key words: *customer service, health benefits purchasing, health care quality, Fortune 500*

James Maxwell, Ph.D., is Director of Health Policy and Management Research, JSI Research & Training Institute, Boston, Massachusetts.

Peter Temin, Ph.D., is the Elisha Gray II Professor of Economics, MIT Department of Economics, Cambridge, Massachusetts.

are collecting more data on consumer satisfaction and customer service and less on clinical quality. Their preference for service-based measures is also evidenced in their purchasing decisions. When contracting for carriers, nearly twice as many companies require improvement in customer service as clinical quality. We explore some of the factors that may lead companies to focus more on customer service than clinical quality.

Understanding quality management activities among *Fortune 500* companies is important for many reasons. Providing coverage for 20 million employees and many more dependents and retirees, *Fortune 500* companies are crucial to the country's economy and are influential models for other purchasers of health care. If *Fortune 500* companies pioneer approaches to quality management, other small and medium firms may follow. Large companies' purchasing will greatly affect any attempts to overcome the quality chasm in the health care delivery system. The article begins by describing the literature on quality measurement and management among large employers. We then present the methods and measures used in our survey of the *Fortune 500*. We use the results of this survey to describe the central tendencies of these companies. These quantitative results are compared with qualitative results from extensive interviews with some innovative companies that are actively managing the clinical quality of care. Finally, we conclude with an explanation of these results.

THEORY AND PRACTICE OF QUALITY IMPROVEMENT

No overarching theory of quality management has been applied to health delivery systems and corporate management of employee health benefits. The health care and corporate sectors rely on different theories and traditions of quality management. Based upon the work of Juran, Aoki, and Demming, corporate continuous quality improvement (CQI) and total quality management (TQM) programs focus on measuring quality and installing programs that prevent quality problems before they occur.⁴⁻⁶ In other words, the corporate approach emphasizes standardizing processes. The health care literature, by contrast, seeks to identify processes that lead to better clinical outcomes, thus linking processes to outcomes. It has drawn on the work by Donabedian and focuses on assessing the appropriateness of care as well as adherence to pro-

fessional standards.⁷ Lately, some health care organizations have shown interest in transferring industrial approaches such as TQM and Six Sigma to their health care quality management.³

DEFINING HEALTH CARE QUALITY

The medical and much of the health policy literature define quality as the degree to which health services increase the likelihood of achieving desired health outcomes and are consistent with current professional knowledge.⁸ This definition of quality implies that quality improvement should address the knowledge and practices of individual physicians as well as the processes of care relied upon by major health care delivery organizations.⁹ High-quality health care depends on the capabilities of delivery systems to prevent and minimize errors, to coordinate care across settings and practitioners, and to ensure that reliable health care information is available when needed. There is a recognition that best practices are hard to define in health care and that some variability in outcomes is inevitable.

By contrast, service quality is a key priority among large employers who have transferred the definitions and tools of quality management from their core businesses to health care. From reports by industry participants, a small number of studies, and our own pretests at 88 companies, it appears that health benefit managers in large companies define health care quality more broadly than the health care sector. This is important because how quality is defined and measured determines the kinds of quality programs undertaken.

Service quality, although not explicitly included in the medical definition of quality, has become an emerging concern in the health care sector. Service quality refers to characteristics that shape the experience of care for patients and their families other than the technical quality of diagnostic and therapeutic procedures. A recent *Journal of the American Medical Association* review of the literature on service quality in health care reported that improvements in service quality could translate into better clinical outcomes and patient and physician satisfaction.¹⁰ The review also stated that the techniques for service improvement developed in other sectors could be transferred readily to the health care sector. Currently, service quality, though less developed, is increasing in importance among the health care sector.

Quality has three key dimensions for health benefit managers at large companies: customer service quality by health plans and providers, access to services, and clinical quality. Customer service involves measuring the interaction between the health plans and employees on measures such as telephone response time, claims turnaround times, and the speed at which disputes are resolved. At the provider level, customer service involves satisfaction with amenities, interpersonal relations, and other nontechnical aspects of care. Access refers to what hospitals and physicians are included in health plans' networks. Consequently, improvements in these areas can increase value to consumers as well.¹¹

Other health researchers have noted the analogy between assessments of health care quality and industrial quality. Luft observes that in the industrial sector, companies (and consumers) monitor closely the customer satisfaction ratings of automobiles by JD Power and Associates.¹² The yearly rankings provide information on performance, dependability, dealer responsiveness, and overall customer satisfaction by individual model types and by company. Other data from the National Highway Safety Administration and the Insurance Institute for Highway Safety document injuries in crash tests and in actual use. Luft compares the JD Power rating to consumer satisfaction surveys of health plans, NCQA accreditation, HEDIS (Health Plan Employer Data and Information Set), and clinical outcomes to reports on injuries and mortality.

PAST RESEARCH ON CORPORATE PURCHASING

Research has begun to document the quality strategies that companies adopt on their own, through business coalitions, or through accreditation organizations like the NCQA. These studies examining quality and health care purchasing have produced mixed results. Some have shown a growing interest in quality management among employers; others have reported little knowledge or interest in health care quality among the corporate community.

Based upon extensive interviews with company executives and health plans in four markets, Maxwell and colleagues found that prominent early movers to managed care were transferring their procurement strategies used in their core businesses to health care.¹³ Companies employed business tactics such as competitive bidding and standard setting to negotiate

more aggressively with health plans over premium prices and the quality of care. When purchasing health care, some companies selected health plans based in part on quality considerations and standards for them to meet in the areas of customer service, access, and clinical quality. To encourage health plans to invest in clinical and service quality, a few of these companies put a portion of their premiums at risk to ensure their compliance with established standards. A few companies also modified premium contribution based upon specified quality criteria, and paid employees more for selecting health plans that they rated high on quality.

A study of 25 large employers in a single market by Thompson and colleagues found similar results. The employers set performance requirements in their request for proposal (RFP) process for customer service and satisfaction. If individual requirements were not met, employers would withhold a percentage of their administrative fees. Although considered important, employers did not use clinical quality measures in a comparable way in their purchasing process. The authors explain that employers did not emphasize clinical quality measures because they relied on consultants for their assessment of quality and their own lack of staff with a medical background. Because of their lack of expertise in measuring clinical quality, employers tend to "emphasize those aspects of health plan performance that they best understand."¹⁴(p.70)

Meyer and his colleagues found in a qualitative study of large employers and business coalitions that some of these organizations were holding health plans accountable for their performance with regard to both costs and quality, a process they referred to as "value purchasing."¹⁵ They classified employers into three categories in terms of their movement toward value purchasing: exclusively focused on cost containment, quality information collected but not used in purchasing decisions, and quality criteria used to select their health plans and providers. In his discussion, Meyer differentiates between administrative (service) quality and clinical quality. He remarks that clinical quality measures are more difficult to define and therefore are only actively pursued by purchasing "pioneers."

Other studies document how widely the quality improvement practices of purchasing leaders were spreading to large employers as a group. In 1997, the Business Roundtable surveyed its 200 member companies—a group comprised mainly of *Fortune 500* companies—about their health care "quality initiatives."¹⁶ According to Business Roundtable, large companies recognize the potential impact of their programs on individual

employees and their families, as well as the indirect implications for workforce productivity and retention.¹⁶ As a result, many member companies manage the quality of health plans, evaluate the quality of health providers, and advocate quality health care for employees. These companies appear to include customer service in their evaluation of quality health care, although the survey did not focus on it.

Hibbard and colleagues found similar results among thirty-three large employers in four selected markets.¹⁷ They found that large employers relied upon NCQA accreditation, HEDIS, and customer satisfaction surveys in their health purchasing decisions. Large employers were less likely to collect or disseminate data on clinical quality obtained at the hospital or provider level. They also reported that companies with geographically concentrated workforces were more likely to use HEDIS and customer satisfaction surveys than those with more dispersed workforces.

Gabel found strikingly different results when examining the impact of standardized clinical quality measurement (such as NCQA accreditation and HEDIS) in employers' purchasing decisions.¹⁸ Based on 1997 KPMG survey data of different size firms, he concluded that NCQA accreditation and HEDIS reports still have a relatively minor impact on companies' choice of plans. Only about a third of those surveyed were even familiar with NCQA accreditation, and 11 percent rated it as "very important" in the selection of health maintenance organizations (HMOs) (just 5 percent rated HEDIS "very important"). Furthermore, of those companies using quality data, very few provided the information to employees to help them choose among multiple health plan options.

Based upon data from the 1997 RWJ Employer Health Insurance Survey, Marquis and Long found a higher rate of use of general quality information in purchasing decisions than some other studies.¹⁹ Nearly 60 percent of employers reported relying on quality information in their purchasing. The rates increased to nearly 70 percent for those offering HMO or (point of service) POS plans for which quality information is most readily available. The use of quality information in purchasing was also positively associated with firm size, and enrollment in HMO and POS plans. Contrary to their hypothesis, firms offering multiple carriers reported using quality information more than those purchasing from a single carrier.

Some companies have participated in business coalitions and third-party accreditation to complement or in some cases to substitute for their own qual-

ity programs.^{20,21} Influential third-party accreditation processes for health plans only emerged in the early 1990s when several prominent companies sought to identify uniform and standardized quality performance indicators for managed care. Since then, large employers have helped promote NCQA and HEDIS by requiring NCQA accreditation as a condition for contracting.

Recent survey data from the National Business Coalition on Health show that 90 percent of their nearly 85 employer-led coalitions (representing over 11,000 employers) collect quality information and that nearly two thirds report extensive involvement in these collection activities. Eighty-four percent of coalitions reported participating in continuous clinical quality improvement activities with health plans and providers, and nearly half of these rate their involvement as extensive. The study was unable to evaluate the extent to which business coalitions harnessed their market power for quality as well as cost containment purposes.²²

In sum, the existing literature on quality in health care purchasing suggests that large employers are collecting a wide variety of information on their own. This is a significant change, as many of these quality measures and tools did not exist a decade ago. Nevertheless, it is unclear from existing evidence how large employers define the quality of health care, that is, which dimension of quality they are relying on for their purchasing decisions. The inconsistent findings in the literature may be due to the fact that studies have relied upon different definitions and measures of quality. The literature suggests certain factors—both industry characteristics and delivery system variables—may be associated with the use of quality information in health purchasing. However, no studies have explored whether different factors are linked with different dimensions of quality in purchasing.

The existing literature on quality in health care purchasing suggests that large employers are collecting a wide variety of information on their own. This is a significant change, as many of these quality measures and tools did not exist a decade ago.

Our study design was developed to remedy some of these problems. We sought to measure explicitly the different domains of quality—customer service, access, and clinical quality. By focusing on the *Fortune 500*, we examine quality practices in a sample where they should be prevalent and relatively homogenous. By studying the different domains of quality and collecting information on different types of insurance and purchasing practices, we can explore the relationship among them.

DATA AND METHODS

During the first half of 2000, we conducted a telephone survey of senior health benefits and human resources executives at *Fortune 500* companies about their corporate health care purchasing practices. The primary research instrument consisted of a 35-minute telephone survey targeted towards senior benefits managers in each firm. We conducted supplementary interviews with managers at 32 companies as a follow-up to the telephone survey. (We pretested several different versions of the survey with more than 70 companies in the *Fortune 501–1000* companies, and with 18 of the largest privately owned U.S. companies. We also conducted more than a dozen 2-hour interviews with corporate managers prior to the administration of the survey in order to help with the survey design and wording.) The methods for our study have been described in detail elsewhere.²³

Rather than selecting a random sample, the telephone survey was conducted with officials at firms in the complete 1999 *Fortune 500* list, which consists of the 500 publicly traded U.S.-based firms with the largest 1998 revenues. We report results for the *Fortune 500* and the *Fortune 100*, that is, the 100 largest companies by revenue. In recent years, the composition of this list has changed to reflect the continued growth of the service and high-tech sectors.

We interviewed 411 companies out of 489, for a response rate of 84 percent. Eleven *Fortune 500* companies had been involved in mergers and acquisitions so that they no longer had unique benefits policies. Among the *Fortune 100*, we interviewed 84 out of 100 companies for an 84 percent response rate. Surveyed *Fortune 500* companies ranged in size from 4,458 to 204,250 employees. The median company had 16,730 employees.

We typically interviewed the senior-most official responsible for health benefits, their supervisors responsible for all compensation and benefits including

health, or the vice-president of human resources. The titles of these individuals often were director of health benefits, director of compensation, or vice president of human resources. A team of six trained interviewers administered the survey with participants by telephone. Because these senior-level managers receive numerous requests for participation in benefits surveys, we were careful to select interviewers that could speak knowledgeably about the subject matter and thereby better engage our respondents. The interviewers also participated in an initial 40-hour training program, which reviewed the key concepts in health care purchasing and managed care. In addition, the interviewers received extensive training in “nondirective” probing techniques that promoted highly uniform data collection procedures.²⁴ The interviewers received ongoing training during the 6-month period of data collection.

The survey instrument contained questions in six major sections: health benefits and plan types, purchasing strategies, quality, outcomes, administrative structure, and human resources. It consisted of a total of 118, mostly close-ended, questions. Due to the lack of comparable questionnaires, we could not use many questions from other surveys. We did draw upon a small number of questions (e.g. on types of health plans and employer contributions) from the Robert Wood Johnson Foundation’s Employer Health Insurance Survey’s national sample of establishments and from similar surveys of large companies.²⁵

Because of the lack of in-depth studies of health care quality among large companies, we had to develop nearly all of our own quality measures. We were guided by extensive pretests with 88 companies. (Given the need to develop large numbers of questionnaire items, we pretested several different versions of the survey with more than 70 companies in the *Fortune 501–1000* companies, and with 18 of the largest privately owned U.S. companies. The results of the pretest led to final modifications of the survey instrument.) Based upon both the literature and our earlier fieldwork, we developed questions to document quality practices in these three domains—clinical quality, customer service, and network composition. The low frequency and variability of particular quality practices led us to develop questions that best characterize companies’ general approaches to each of three different dimensions of quality. We asked companies whether they set requirements in their contracts with health plans with regard to customer service, network composition, and clinical quality. We

also asked a more general question about quality as a *formal* criterion in carrier selection, and adapted a question from the Foster Higgins health benefits survey about requirements for NCQA accreditation.²⁶ We asked questions about the collection of different types of quality information and its dissemination to employees.²⁷ To gauge the level of quality management activities, we asked companies how frequently they met with health plans and whether they provided financial incentives and disincentives to monitor quality.

A number of other measures were relied upon in the regression analyses. For documenting employee enrollment by plan type, we asked respondents to estimate “what percentages of covered employees are enrolled in each type of health plan: traditional indemnity, PPO, POS, and HMO.” (This measure was found in Marquis and Long.²⁵) In this article, we use the word “plan” to refer to the company offering specific products (for example, Kaiser Permanente is a health plan while HMO, PPO are products). In the article, we refer to health products by specific type, that is, HMO, preferred provider organization (PPO), POS plans.

To measure employer contribution levels, we asked about percentage contribution to individual coverage. Workforce concentration was measured by taking the ratio of enrollment in the largest metropolitan area as a percentage of the total enrollment. We used combined percent enrollment in HMO and POS plans as a measure of HMO penetration. Self-insurance was measured by querying corporations as to whether they self-insured, purchased coverage, or relied upon both financing methods. We included a measure for choice—asking a company about how many carriers it offered its employees in the metropolitan area in which it had the largest number of employees. As a measure of size, we relied on Fortune rankings, classifying companies into *Fortune 100* versus others in the *Fortune 500*. In our regression analysis, we also included a variable on outsourcing to consulting firms and other outside vendors. We asked, “compared to 1994, do you do more, same, or less outsourcing for health benefits?”

We used descriptive tables to examine key quality variables. Because the survey response rate was 84 percent, the full sample is a nearly complete representation of the *Fortune 500* during the interview period. We used logistic regressions in an exploratory analysis that attempts to identify company characteristics that are associated with having contractual requirements regarding quality. Three binary outcomes are modeled: having contractual requirements for cus-

tom service, for annual clinical quality improvements, and for composition of the provider network. Predictors are based on company characteristics and purchasing practices including: Fortune ranking, concentration of employees, choice of plans, HMO penetration, self-insured, outsourcing to consultants, and percent employer contribution. These attributes were chosen because they are important predictors of other health plan purchasing behaviors.^{23,28–30}

RESULTS

Nearly all of the *Fortune 500* now regularly collect many types of quality information, including NCQA accreditation, consumer satisfaction surveys, and HEDIS, as shown in Table 1. The highest percent of companies collect information from customer satisfaction surveys, followed by information on accreditation status and HEDIS. *Fortune 100* companies were more likely to collect quality information across all three of these measures than others in the *Fortune 500*.

When asked about the most useful source of quality information, the majority of *Fortune 500* companies (49 percent of the *Fortune 100* and 53 percent overall) cited consultants. Consultants typically collect data on customer service issues such as consumer satisfaction, the accuracy of claims processing, and telephone response times. Less frequently, they provide more clinically oriented advice, programs, and software that assist companies in working with their health plans or managing the health of their employees.

The results in Table 2 show that customer service and satisfaction data have priority in company dissemination of health care information to employees. Only 31 percent of the *Fortune 500* report disseminat-

TABLE 1

COLLECTION OF QUALITY INFORMATION,
FORTUNE 100 AND 500, 1999

	Fortune 100	Fortune 500
Collect any quality information	94%	93%
Accreditation by NCQA or other	69%*	52%
Consumer satisfaction survey	70%*	54%
HEDIS	67%	50%

* Statistically significant difference at the .05 level.

TABLE 2TYPE OF INFORMATION DISSEMINATED BY
FORTUNE 500, 1999

	Fortune 500 (N = 141)
Consumer satisfaction survey	60%
Accreditation status (NCQA or other)	55%
HEDIS	38%
Quality data from business coalitions	15%
Quality data from consultants	30%
Other	30%

ing any quality data to their employees. Of those 141 companies, 60 percent provided employees with consumer satisfaction survey results. Half of companies distribute accreditation information and 38% give out HEDIS data.

The overwhelming majority of companies surveyed reported using quality in health plan selection as shown in Table 3. However, since only 32 percent of the *Fortune 500* companies require improvements in clinical quality, the actual definition of "quality" comes into question. Corporations rely on customer service and network composition as measures of quality. Almost all of the *Fortune 500* required standards for customer service in their contracts but only one-

TABLE 3USE OF QUALITY IN CONTRACTING, *FORTUNE 100 AND 500*, 1999

	Fortune 100	Fortune 500
<i>Use quality in carrier selection</i>	86%	83%
Require NCQA accreditation	73%	55%
Requirements for network composition	61%	61%
<i>Customer service standards in contract</i>	93%	86%
Annual improvements in clinical quality	37%	32%

* No statistical significance found between columns.

third require improvements in clinical quality. Though it wasn't statistically significant, the greatest size effect was found in requiring NCQA accreditation (73 percent of the *Fortune 100* versus 55 percent of the *Fortune 500*).

A few companies such as General Motors and Verizon have found that higher quality plans are not always the most expensive plans. They believe that the market on its own is not providing appropriate signals or adequate incentives for quality improvement. To encourage plans to compete on the basis of quality rather than risk selection, these companies adjust premium contributions to encourage quality by allowing employees to pay less for health plans with higher quality ratings. However, very few companies—only 7 percent of the *Fortune 500*—adjust employee premium contributions based on quality, indexed by both customer service and clinical quality ratings. Looking only at the very largest firms, 20 percent of the *Fortune 100* provide positive financial incentives for quality. All of these companies offer the majority of their employees a choice of two or more plans; 12 percent of companies that offer a choice of carriers also adjust their premium contributions. (Of course, adjusting premiums only makes sense for companies that offer a choice of two or more plans.) This may be a sign that altering premiums may be the wave of the future, but managers reported in supplementary interviews that competition among health plans is based on price rather than quality.

Companies also use negative incentives, or penalties, to regulate health plan quality. Fifty-five percent of *Fortune 500* companies increase monitoring of offending plans. Only 17 percent freeze enrollment, that is, they do not allow employees to enroll in the offending plan for a given year. Forty-seven percent of *Fortune 500* companies and 51 percent of the *Fortune 100* pursue a more drastic course and drop offending plans. Of course, these large numbers also reflect the prevailing trend among companies to drop plans.^{23,28} In supplementary interviews, managers cited both clinical quality and service reasons for dropping plans.

To examine the association between requirements for customer service, clinical quality, and access and various industry and health insurance characteristics, we used logistic regressions. The results are shown in Table 4. We found a strong correlation between customer service and outsourcing. Once again, this points to the importance of consultants in RFP-based health purchasing. Percent employer premium contribution was positively associated with all three measures.

TABLE 4

LOGISTIC REGRESSIONS PREDICTING CUSTOMER SERVICE, IMPROVEMENTS IN CLINICAL QUALITY, AND COMPOSITION OF PROVIDER NETWORK

Independent Variables	Dependent Variables		
	Relative Odds (Confidence Interval) ^a		
	Customer Service	Improvements in Clinical Quality	Composition of Provider Network
Offering employees choice of three or more health plans (Y/N)	0.62 (0.32–1.19)	1.24 (0.77–2.00)	0.55 (0.35–0.86)***
HMO penetration	1.00 (1.00–1.02)	1.01 (1.00–1.02)***	1.00 (0.99–1.00)
Outsourcing to consultants (Y/N)	2.45 (1.31–4.58)***	1.01 (0.63–1.61)	1.11 (0.72–1.73)
Average percent contribution	1.03 (1.00–1.06)**	1.03 (1.00–1.06)**	1.01 (0.99–1.04)
Self-insured (Y/N)	2.09 (0.69–6.36)	1.63 (0.60–4.42)	1.22 (0.50–2.98)
Concentration	0.99 (0.99–1.01)	1.00 (0.99–1.01)	1.00 (0.99–1.01)
Fortune 100 (Y/N)	0.82 (0.38–1.77)	1.20 (0.69–2.09)	1.08 (0.63–1.86)
-2 Log L	295.260	455.616	490.633

^a For each parameter estimate the odds of requiring each of the three outcomes changes by a factor of $e^{\text{parameter estimate}}$ for a unit increase in one factor.

Key: Point estimate (P value): * $p < .10$, ** $p < .05$, *** $p < .01$

Firms may have a greater responsibility for all three dimensions of quality if they pay a larger share of premiums. Other factors, such as self-insurance and concentration of employees, were not found to be important in any of the models.

We found that the greater the choice of health plans offered to employees, the more likely the company was to set requirements for network composition, but not for clinical quality and customer service. Choice of plans and access to providers are linked in the current managed care debate. Alternatively, a broad selection of plans may impede partnership between health plans and companies on clinical quality issues.³⁰

We found that percent enrollment in HMO and POS plans increased the odds of a firm requiring improvements in clinical quality when contracting with plans. Consequently, clinical quality-minded firms will find it in their best interest to partner with HMO and POS plans. Until recently, comparative measures of PPO performance have not been available. In addition, PPO plans generally have less influence than HMOs over their hospital and physician networks.

Our findings are consistent with Marquis and Long who found that enrollment in HMOs and POS plans were important predictors of the use of quality measures in purchasing. In contrast to Hibbard, concentration of employees was not associated with any purchasing practices in the domains of quality. The biggest difference between our analyses and past research is that most other studies had not disaggregated elements of quality.

Overall, our regression results suggest that different factors influence different domains of quality. To work with health plans on customer service, health benefits managers must understand employees' needs for services and the capabilities of carriers to improve their service. In contrast, for clinical quality, they need knowledge of their employees and dependents' health problems, the medical management systems of their plans, and the clinical capabilities of their provider networks. *Fortune 500* companies are concerned with many aspects of quality—which means more than clinical quality in their view—and emphasize customer service in their activities.

CASE STUDIES OF QUALITY MANAGEMENT

Most companies, as we have shown, focus on improving customer service for their employees. Some companies also are attempting to promote clinical quality improvements among health plans and providers. Despite cost and the lack of adequate measures, more than one-third of the *Fortune 500* participate in clinical quality management. It is important to note these innovations because we do not want to convey the impression that large companies are neglecting clinical quality. In addition, such practices may spread and the companies at the forefront of clinical quality improvement may influence the rest of the *Fortune 500* as well as other large and medium firms.

We provide three examples of large companies—General Motors (GM), Circuit City, and the Central Florida Health Care Coalition (CFHCC)—that are pursuing a number of different approaches to clinical quality improvement in this section. We chose to highlight these cases because of the differences in type of company and type of quality program. For instance, GM is a large manufacturing company (the largest purchaser of health benefits after the federal government) while Circuit City is a retailer. The CFHCC, by contrast is a coalition of different kinds of employers in the Orlando area. Despite these differences, all three displayed common themes in their quality programs.

General Motors

With 1.5 million covered lives and an annual budget of \$3.9 billion, General Motors is the largest private purchaser of health care in the United States. Through its sheer size, GM exerts a great influence on the health care delivery system. GM presents a useful example because it has adopted a variety of strategies to improve health plan quality in both service and clinical quality dimensions. GM's example also shows how inefficiency at the plan and market level can affect even the largest of purchasers. GM has used its purchasing leverage to improve quality in three major ways—by setting performance standards and benchmarking quality management on its own, by introducing chronic care management among its employees, and by helping to launch the Leapfrog Group.

Like many large companies, GM began by issuing RFPs on its own. These RFPs required NCQA accreditation, proven clinical outcomes, and other specifications measuring effectiveness of care. GM aggres-

GM has used its purchasing leverage to improve quality in three major ways—by setting performance standards and benchmarking quality management on its own, by introducing chronic care management among its employees, and by helping to launch the Leapfrog Group.

sively uses benchmarking to rate its contracting health plans on their quality performance. Each year, GM asks over 120 HMOs nationwide to respond to a comprehensive RFI (request for information) that includes submission of the HEDIS Quality Compass disk months before the official HEDIS review. The RFI also solicits information on clinical and preventive measures (number of cesarian sections, routine diabetic exams, etc.), provider access, and other guides to performance.

General Motors rates plans based on their quality measurements and then disseminates report cards to participating carriers, other purchasers, and employees. Through the report cards, GM holds health plans accountable for their performance. Moreover, because many purchasers and enrollees see the results, plans with low scores feel pressure to improve. The data are also used to identify specific clinical processes for which plans should target continuous quality improvements.

According to GM's management, the market does not always offer adequate incentives for employees to select high-quality health plans. In fact, GM conducted a study that showed little correlation between cost and quality of plans. GM employs "flex pricing" to encourage migration into higher quality plans. To price plans, GM begins with the assumption that the very best managed care plans offer a greater level of benefits and are considerably more efficient than the indemnity option. As a result, GM employees choosing a benchmark carrier will pay less than they would pay for indemnity coverage. Pricing based on the benchmark assures that higher-rated plans are less expensive to consumers. To ensure a countervailing emphasis on quality in health care, GM believes that

employers must assume a more active role in providing a financial incentive to enroll in higher-quality plans.

Besides offering their employees financial incentives to choose lower-cost plans with higher ratings, GM has also worked to promote healthful behavior among its employees by instituting chronic care management programs. These target employees with certain diseases (heart disease, diabetes) that are prevalent among the GM workforce. Currently, GM is piloting ActiveCare, a program that connects high-risk employees with care provided by a select network of physicians.

Early on, GM found that participating with a coalition facilitates the contracting process for both companies and plans. Joining a coalition allows companies to impose standardized quality requirements. While benchmarking standardizes the measurement of clinical quality, collecting quality information as a coalition standardizes administrative processes. Rather than barrage plans with RFPs, GM and other participating members of the Greater Detroit Area Health Council (GDAH) and other purchasing coalitions nationwide have been issuing a uniform RFP. The group incorporated GM's performance expectations into a common 75-page quality RFI that is used by all member companies. When dealing with individual purchasers, health plans must address conflicting demands for quality. By contrast, coalitions enforce a clearer, more consistent view of quality care. GDAH, for instance, has worked to develop common quality standards for Detroit-area plans.

GM was also a leading member of the Business Roundtable's Leapfrog Group, a coalition of large employers working with hospitals to adopt a series of measures aimed at reducing medical errors and promoting patient safety.³¹ These leaps include installing computer software systems for prescription writing, staffing intensive care units with specially trained physicians, and limiting high-risk procedures to hospitals that specialize in them. Leapfrog is a direct result of the 1999 Institute of Medicine's grim statistic that between 44,000 and 98,000 Americans die each year from *preventable* medical mistakes made in hospitals.³² Preventable medical mistakes also contribute to an estimated additional \$27 billion in health care costs each year. Participating companies add conditions in their contracts requiring hospitals to adopt a set of three "leaps."

Even for GM, with all its size and purchasing clout, clinical quality management is not easy. To achieve it,

GM recruited an experienced manager from GTE who had already successfully implemented many of the same programs there. GM faced additional difficulties because of the number of retirees in their system. They also have greater health problems and costs because of the number of older employees and others suffering from chronic diseases such as diabetes and heart disease. Because of unions, they can only apply some of their quality programs to management employees.

Circuit City and Active Health Management

During the last few years, many employers complained that managed care failed to improve quality of care or cut costs. Realizing that a few high-risk, high-cost cases often account for much of their health costs, a few companies have turned to vendors other than health plans for medical care management. These outside vendors monitor extensive databases with information on clinical algorithms, drug interactions, and number of medical visits. They use the data to identify at-risk employees and encourage rapid intervention.

Circuit City, the *Fortune 500* electronic products retailer, provides a prominent example through its partnership with Active Health Management. According to Circuit City, the main problem lay in health plans' ineffective use of patient data. Consequently, Circuit City followed an approach pioneered by Merrill Lynch. It partnered with Active Health Management, a New York-based disease management software provider, to monitor patients' clinical data to identify high-risk patients now and later prevent these patients' health situations from exacerbating and their number from exploding.

Twenty percent of cases accounts for 80 percent of health plan costs. Also, part of a company's total bill for health care consists of costs associated with inadequate screening for disease, inappropriate treatment, and often, simple medical errors. By running 40,000 employee lives through Active Health's central database, Circuit City hopes to act early to prevent high-risk patients from becoming high-cost episodes. Active Health constructs a series of algorithms involving medical information, prescription records, and lab reports. The software then flags any cases of drug non-compliance, possible drug interactions, or patients receiving suboptimal care.

Significantly, Circuit City provided Active Health with access to medical information on all individual cases but no cost data. Successful care management hinges on coordination between Circuit City and Active

Health. Active Health is not responsible for treating any of the cases it identifies. While Active Health monitors patients' clinical data, Empire Blue Cross and Shield, Circuit City's claims administrator, actually provides medical management. Currently, Circuit City is collecting reports through random audit on how these cases were handled. Through review, Circuit City hopes to establish whether this innovative approach to disease management actually succeeded in cutting costs while improving quality and employees' health outcomes.

In Merrill Lynch's case, health insurance costs per capita dropped between 1995 and 1999 and the rate of claims more than \$50,000 have also declined.³³ Eighty percent of Merrill's employees are covered by the system. A number of employers, both private and public, have decided to contract with Active Health and companies providing similar services. Interested employers besides Circuit City include Sears Roebuck, Marriott, and the Commonwealth of Massachusetts. While data on these programs' long-term effects is still unavailable, in the short-term they are most threatened by HIPAA and other regulations related to patient privacy. Their progress raises the concern that employers will identify high-risk employees for purposes other than care management, but these practices are spreading rapidly as more companies look outside their health plans for disease management programs and services related to clinical quality.

Central Florida Health Care Coalition: Quality Improvement with Hospital Systems

In the preceding example, Circuit City and Active Health worked together to improve the health and manage the behavior of their employees. In this example, a group of mostly service-sector employers, the Central Florida Health Care Coalition (CFHCC) partnered with local hospital systems to improve quality at the provider level.³⁴ The CFHCC, which includes Walt Disney World, Orange County Public Schools, Lockheed Martin, and other large employers, used quality data to spur changes in the health delivery system. Concentrating on the two hospital systems used by its employees, the coalition collected data on diverse quality measures such as rates of cesarean section, cardiac catheterization, and blood pressure screenings. Staff from the hospital systems and the employer coalition worked together on the project. Using data analysis software, they looked for variation in quality and utilization, identifying averages, benchmarks, and outliers.

By partnering with hospitals directly rather than with health plans, the employers were able to improve the *cost and quality* of their health care benefits. By initiating data collection and analysis at the hospital, group practice, and physician levels, opportunities to increase the value of their health care services were identified. The cost savings amounted to millions of dollars, and the improvements in the quality of care were significant.

In order to make their strategy a success, the CFHCC overcame several obstacles. To adequately track health improvements requires ongoing measurement and monitoring. CFHCC's hospitals utilized the same data collection, MediQual/Atlas, across all the hospitals to evaluate health outcomes and charges. The coalition was able to use the data to demonstrate to physicians how they compared with their peers in terms of quality improvements and costs. The results were reported to hospital system officials, prompting greater awareness and often resulting in corrective action.

One large coalition participant, Orange County Public Schools (OCPS), pushed this idea further by encouraging data collection and analysis at the individual physician level. OCPS looked first at the doctors within their health plan hospitals. Significant differences in the practices of physicians were discovered—resulting in wide variation in costs and quality outcomes. They helped develop quality performance criteria that were then used to examine physician practices. The results were shared with employers in the Coalition, providers, and individual physicians. Simply sharing the data led to measurable voluntary improvements. Just as GM's report cards pushed health plans to compete with each other on quality, the OCPS data encouraged physicians to improve their performance.

While the CFHCC's strategies demonstrated significant benefits, they highlight some of the obstacles that other employers and coalitions may face in implementing clinical quality initiatives. A central part of the coalition's strategy was to obtain the buy-in of physicians in order to convince them to change the ways that they practice medicine. Physician resistance at the level of data collection may come into play. Some physicians are wary of tying their performance to "economic credentialing." They are also concerned about whether their individual performance will be released to the public. Lastly, physicians may question the validity of the data, such as whether it is case-mix adjusted.³⁵

Different hospitals may be using different information systems, and conversion to one standardized

format requires significant buy-in and resources. Indeed, many hospitals even have different information systems internally that are not fully integrated. Even when the same information system is used, there are potential limitations. With MediQual/Atlas, individual charges down to the level of the specific lab tests and other procedures could not be elucidated. Rather, the system was limited to detecting global charges.

Disney, OCPS, and the other employers in the Coalition have succeeded in raising clinical quality and saving money through the partnership approach. By initiating data collection and analysis at the hospital, group practice, and physician levels, opportunities to increase the value of their health care services were identified. The use of many procedures dropped; cesarean section rates dropped from 36 percent to 21 percent in 1 year. While health plans and hospitals provided much of the initial investments required to start data collection, the savings materialized quickly. Within 2 years, for example, one participating hospital system saved \$12 million in annual Medicare expenditures as a direct result.

The examples above showcase the variety of approaches available to companies interested in clinical quality management. They also show certain similarities both in processes and expected outcomes. In all three cases, companies overcame internal and external barriers to implementing clinical quality improvement. They were all motivated by rising health care costs as well as system inadequacies. They all believed that by investing in quality, they would save money in the long run. While we have included only three companies in our case studies section, we interviewed many more who reported similar experiences managing clinical quality.

Moreover, each case study company relied on quality data as an integral part of a strategy for improvement. By issuing report cards, GM provided its employees with information to make an educated decision. The report cards also prompted health plans and hospitals to meet certain performance requirements. The CFHCC achieved similar results just by disseminating clinical quality information. Circuit City, meanwhile, used claims data to prevent high-cost medical episodes before they happened.

Company strategies were implemented not by fiat but through concerted coordination among employers, plans, hospitals, and outside vendors. GM, Circuit City and the CHFCC followed a trend toward pursuing quality management at the level of the delivery system. All of the innovative quality programs were

initiated by highly experienced health benefits managers who were knowledgeable about the health care delivery system.

The examples also show why more companies do not take innovative approaches to managing clinical quality. First, clinical quality is difficult to measure. All the above cases took existing measures into account when designing their own standards for benchmarking plans, providers, and hospitals. Increasingly, consultants are moving into this territory by advising companies on how to integrate quality into carrier selection and creating their own trademark quality indices.

DISCUSSION

Our research has confirmed that a major transformation has occurred in the use of quality measures in health care purchasing among the nation's largest companies. A decade ago the major tools for assessing health plans such as HEDIS and CAHPS did not even exist. Today, *Fortune 500* employers routinely collect large amounts of data and use them in their purchasing decisions. Our response rate and use of multiple quality measure lends credence to our findings. The lower rates reported by Gabel and some earlier studies are likely due to the fact that their samples included small and medium employers who use quality measures less frequently in their health care purchasing. Even among the *Fortune 500*, we found major size effects with the *Fortune 100* being more active in quality management than other companies.

However, *Fortune 500* companies have emphasized customer service and access more than clinical quality. This emphasis is reflected in the type of quality information that they collect and in their purchasing decisions. Nearly twice as many companies reported setting standards for customer service than for clinical quality with their health plans (32 percent for clinical quality versus 86 percent for customer service). This confirms the findings from our earlier studies and those of Thompson and colleagues.¹⁴

Our study suggests that companies have many reasons to emphasize customer service and access over clinical quality. Information on clinical quality is more difficult to obtain and interpret than data on customer service, as our case studies illustrate. Most benefits managers in our survey were not health professionals (only 2 percent report having a medical background) and thus may have exhibited a reluctance to interfere in clinically related quality issues. They often pre-

ferred to let health plans or other provider groups address them.

The emphasis on customer service is reinforced by companies' reliance on consultants who also typically lack clinical training. Our regressions demonstrated that companies that outsourced more administration to consulting firms were more likely to promote customer service. We found no relationship between use of outsourcing and the likelihood of clinical quality improvement. Benefits managers and consultants often think of health care primarily as a customer service organization.¹⁴ Because of the managed care backlash, managers also must be concerned with the political implications of quality management. If companies do not address employee concerns about access, more stringent and costly anti-managed care legislation may result.

Despite the barriers to improving clinical quality, nearly a third of companies report setting standards for clinical quality in their contracts as well as being involved in other clinical quality activities. These companies as well as those discussed in our case studies overcame the formidable internal and external barriers that make it difficult to design and implement clinically oriented quality programs. Many of these companies have maintained their commitment to clinical quality programs even when confronted with rising health care costs. Although the commitment remains among many of the companies that we studied, the focus of these corporate clinical programs is shifting from health plans to physicians and hospitals. As our case studies above suggested, when large companies band together—for example, GE and GM's work with Leapfrog—they come closest to heeding the IOM's recommendations.

Our findings have significant implications for attempts to bridge the quality chasm in the health care delivery system. Although large employers spearheaded the managed care revolution, they are unlikely to play a similar leadership role on clinical quality issues for the many reasons discussed above. Leadership will have to come from the provider community or the government, perhaps with the support of the nation's largest corporations. In addition, at this time, it is not clear whether the innovative clinical quality programs pioneered by leading *Fortune 500* companies will disseminate to other *Fortune 500* companies or to the corporate community as a whole. Without further dissemination, there is a risk that the quality of care in the whole health system may be compromised.

Our study has important implications for research on health care purchasing and the quality of care. Researchers must be aware that the very topic of quality management imposes unique limitations on their study. First, as we have found, quality is difficult to measure. We tried to remedy this problem by introducing several indicators of clinical quality, network composition, and customer service. As quality management is a sensitive political issue for both employers and health plans, questions on it encourage a positive response bias. That is, respondents may be reluctant to acknowledge that they are not actively engaged in quality management. Moreover, quality is difficult to define. Our research suggests that adopting different definitions of quality can lead to different outcomes.

Nonetheless, as more companies pursue quality management activities, there is a greater need for studies of the potential costs and benefits of such programs. One key question is to the extent to which the quality programs adopted among the *Fortune 500* are spreading to small and medium corporations. A second question is whether clinical quality programs such as the ones highlighted in the case studies will yield cost savings to the companies that adopt them. It is also important to examine the factors that influence the implementation of corporate health care quality programs. Finally, information is needed on how the techniques for improving customer service can be transferred from corporate practices to the health care sector. The same industrial quality techniques may have to be modified substantially when applied to the health sector. These are all key areas for future research.

REFERENCES

1. Maxwell, J., Temin, P., and Watts, C. "Corporate Purchasing of Health Care Among the *Fortune 500*." *Health Affairs* 3, no. 20 (2001): 181–88.
2. Robinson, J. "The End of Managed Care." *JAMA* 285 (2001): 2622–28.
3. Institute of Medicine. *Crossing the Quality Chasm*. Washington DC: National Academy Press, 2001, pp. 1, 182.
4. Deming, W.E. *Out of the Crisis*. Cambridge, MA: Massachusetts Institute of Technology, Center for Advanced Engineering Study, 1986.
5. Aoki, M. "The Japanese Firm as a System of Attributes: A Survey and Research Agenda." In *The Japanese Firm: The Sources of Competitive Strength*, edited by M. Aoki et al. Oxford: Oxford University Press, 1998, pp. 11–40.

6. Juran, J.M. *Quality Control in Service Industries*. Wilton, CT: Juran Institute, 1973.
7. Donabedian, A. "The Quality of Care: How Can it be Assessed?" *Journal of the American Medical Association* 260, no. 12 (1988): 1743-48.
8. Lohr, K. (ed.). *Medicare: A Strategy for Quality Assurance*. Washington, DC: National Academy Press, 1990.
9. Chassin, M.R., and Galvin, R. "The Urgent Need to Improve Health Care Quality." *JAMA* 280, no. 11 (1998): 1000-05.
10. Kenagy, J.W., Berwick, B., and Shore, M. "Service Quality in Health Care." *JAMA* 281, no.7 (1999): 661-65.
11. Coye, M.J., and Detmer, D.E. "Quality at a Crossroads." *The Milbank Quarterly* 76, no. 4 (1998): 759-68.
12. Luft, H. "Modifying Managed Competition to Address Cost and Quality." *Health Affairs* 15, no. 1 (1996): 23-38.
13. Maxwell, J., Briscoe, F., Davidson, S., Eisen, L., Robbins, M., Temin, P., and Young, C. "Managed Competition in Practice: 'Value Purchasing' by Fourteen Employers." *Health Affairs* (May/June 1998): 216-26.
14. Thompson, J., Draper, D., and Hurley, R. "Revisiting Employee Benefit Managers." *Health Care Management Review* 24 (Fall 1999): 70-79.
15. Meyer, J. et al. "Theory and Reality of Value-Based Purchasing: Lessons from the Pioneers." Washington, D.C.: Agency for Health Care Policy and Research, pub. no. 98-0004, 1997.
16. The Business Roundtable. "Quality Health Care is Good Business." *The Business Roundtable* (September 1997): 1-29.
17. Hibbard, J.H. et al. "Choosing a Health Plan: Do Large Employers Use the Data?" *Health Affairs* (November/December 1997): 172-80.
18. Gabel, J., Hunt, K., and Hurst, K. "When Employers Choose Health Plans; Do NCQA Accreditation and HEDIS Data Count?" *The Commonwealth Fund* (September 1998).
19. Marquis, S., and Long, S. "Prevalence of Selected Employer Health Insurance Purchasing Strategies in 1997." *Health Affairs* (July/August 2001): 220-30.
20. Christianson, J. "Paying Attention to Healthcare: The Experience of American Employers." In *Advances in the Study of Entrepreneurship, Innovation, and Economic Growth*, edited by G.D. Libecap. Greenwich, CT: JAI Press, 1997, pp. 147-79.
21. Christianson, J. "The Role of Employers in Community Health Care Systems." *Health Affairs* (July/August 1998): 158-64.
22. Fraser, I., McNamara, P., Lehman, G., Isaacson, S., and Moler, K. "The Pursuit Of Quality By Business Coalitions: A National Survey." *Health Affairs* (November/December 1999): 158-65.
23. Maxwell, J., Temin, P., and Watts, C. "Corporate Purchasing of Health Care Among the Fortune 500." *Health Affairs* (May/June 2001): 181-88.
24. Mangione, T., and Fowler, F. *Standardized Survey Interviewing: Minimizing Interviewer-Related Error*. London: Sage Publications, 1990.
25. Marquis, S., and Long, S. 1997 *Robert Wood Johnson Foundation Health Insurance Survey/Questionnaire*. Washington, DC: RAND, December 1996.
26. A. Foster Higgins & Co., Inc. *William M. Mercer Survey of Health Benefits*. Washington, D.C.: Author, 1997.
27. Watson Wyatt Worldwide. *Creating a Line of Sight: From Benefits to Business Results, Fourth Annual Survey Report on Purchasing Value in Health Care 1999*. Washington, DC: WBGH, 1999.
28. Maxwell, J., and Temin, P. "Managed Competition Versus Industrial Purchasing Among the Fortune 500." *Journal of Health Policy, Politics, and Law* 27 (February 2002): 7-30.
29. Maxwell, J., Zaman, S., and Temin, P. "The Benefits Divide: Health Purchasing among Retail and Other Sectors of the Fortune 500." *Health Affairs* (August/September 2002): 224-33.
30. Temin, P. and Maxwell, J. "Corporate Contracting for Health Care." Submitted to *Journal of Law and Economics* (January 2001).
31. Brown, D. "The End of an Error? Big Business, Launching a New Era of Reform, Is Pressuring Hospitals to Cut Mistakes—and Costs." *The Washington Post* (March 26, 2002): F1, F5.
32. Institute of Medicine. "To Err is Human." Washington, DC: National Academy Press, 1999.
33. Gentry, P. "Merrill Lynch Cuts Health Costs, Creates a Generous Benefit Plan." *Wall Street Journal* (May 23, 2000).
34. Maxwell, J. Briscoe, F., and Temin, P. "Corporate Health Care Purchasing and the Revised Social Contract with Workers." *Business and Society* 39, no. 3 (2000): 281-303.
35. Treister, N.W. "Physician Acceptance of New Medical Information Systems: The Field of Dreams." www.cio.com/research/healthcare/field_of_dreams.html, Updated July 19, 1999.