

Innovations in Health Care Delivery

September/October 2009

Quality Matters is a newsletter from The Commonwealth Fund. Published bimonthly, the newsletter explores issues of quality and efficiency in health care.

Past issues of *Quality Matters* are available on The Commonwealth Fund Web site at www.commonwealthfund.org/Publications/Newsletters/Quality-Matters.aspx

Published October 5, 2009

Welcome to *Quality Matters*, a bimonthly roundup of news and opinion on quality and efficiency, information technology, performance improvement initiatives, and policy innovations.

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Health Care Reform Through Delivery System Redesign: A Look at One "Disruptive Solution"

Introduction and interview by Sarah Klein

The debate over health care reform has focused primarily on changing the financing of care. Much less attention has been paid to the redesign of care delivery. While both are interrelated, a redesign effort is essential to increase quality and lower costs for patients and payers. Indeed, the authors of [The Innovator's Prescription: A Disruptive Solution for Health Care](#) contend it is only by modifying the roles of health care providers and simplifying the business models of hospitals and medical clinics that we will increase access for patients, improve our understanding of complex diseases, and achieve the cost savings necessary for U.S. companies to compete in global markets.



The authors—Clayton Christensen of Harvard Business School, D.B.A., the late Jerome H. Grossman, M.D., of Harvard Kennedy School of Government, and Jason Hwang, M.D., M.B.A., of the [Innosight Institute](#)—find evidence for this premise in the experiences of the auto, computer, and telecommunications industries, all of which underwent

drastic transformations when a simple, affordable, and ultimately superior product challenged the status quo. In each case, the innovative product that turned the industry on its head by lowering costs and increasing consumer access was discounted by industry leaders, who deemed it inferior and lacking in potential for profit. But as the quality of the innovative product improved, consumers who craved convenience at a reasonable price flocked to it. Thus, personal computers took the place of minicomputers (which had overtaken mainframes); inexpensive Japanese imports were swapped for large American sedans; and cell phones replaced pay phones and many landlines.

According to the authors, the innovation that will disrupt health care, enabling cost reductions and increased access to services, is scientific discovery—specifically that which enhances our ability to diagnose disease and identify reliable treatments. Such discoveries—from advances in molecular biology, refinements in imaging technology, and improvements in telecommunications—will make the treatment of diseases and conditions more routine and rules-based, and therefore less prone to error. In so doing, they will create an opportunity to assign responsibility for treatment to less-expensive and more appropriate caregivers, including primary care physicians, nurse practitioners, and physician assistants (rather than specialist physicians). With widely dispersed technology, those caregivers can provide rules-based care in retail clinics or other venues that are convenient and accessible to patients, rather than capital-intensive hospitals and medical practices, which add overhead expense to medical bills.

"Enabling lower-cost venues of care and lower-cost caregivers to do more sophisticated things ... is the mechanism by which health care can become affordable and accessible – not by somehow hoping that a

miracle will occur and the expensive ones will become cheap," Christensen told attendees of a conference on innovation in health care at the Mayo Clinic last month.

"It is an uncomfortable message for medical doctors in academic centers that health care won't become affordable and accessible by replicating their expertise and intuition, but rather we have to commoditize [their] expertise. There is scientific progress under way that is actually making that happen for the simplest of diseases," Christensen said.

To explain how and where various types of care should be provided, Christensen and his co-authors have divided medicine into three realms, which fall along a continuum. Precision medicine describes care for diseases that can be diagnosed precisely and for which treatments are predictably effective. Strep throat, Gaucher's disease, and bone fractures are examples of diseases or conditions treated with precision medicine. Empirical medicine covers diseases for which treatment outcomes can be described in probabilistic terms. Heart attack and stroke fall into that realm. The last category, intuitive medicine, describes conditions that are diagnosed only by symptoms and treated with therapies of uncertain efficacy. Examples of diseases and conditions that require intuitive medicine include depression, lupus, and multiple sclerosis.

Rules-based precision medicine would be outsourced to nurse practitioners and physician assistants (or generalist physicians, if necessary). There is considerable evidence demonstrating the value of nurse practitioners in delivering basic care, and a growing body of evidence demonstrating the contributions of physician assistants and other licensed independent providers.

Diseases that fall in the most challenging category of intuitive medicine—that is, those

for which we have no reliable treatment and which can only be diagnosed by symptoms—should be left in the hands of specialists, who ideally would be working collaboratively in a hospital setting to diagnose and treat the most complicated cases. Such programs exist in limited numbers. They include the National Jewish Medical and Research Center in Denver, which focuses on pulmonary disease, and the Texas Heart Institute in Houston, which focuses on cardiovascular disease.

"These diseases are still in the realm of intuitive medicine because they often arise at the intersection of multiple systems in a body," Christensen says. And having specialists work together to diagnose and treat these cases is likely to shift them from what he calls "unstructured, trial-and-error intuitive medicine" into the realm of pattern recognition and precision medicine.

In the meantime, oversight of patients suffering from chronic diseases and conditions that require behavioral interventions, such as diabetes, high cholesterol, and obesity, should be assigned to multidisciplinary networks of professionals trained to keep chronically ill patients healthy. Improving the quality of care for those coping with multiple chronic diseases could go a long way toward lowering health care costs. Community-based solutions, including patient support groups, such as dLife.com for patients with diabetes and their families and Alcoholics Anonymous for those fighting alcohol dependence, can be effective as well, especially for chronic conditions that require an extensive

behavioral change, but for which the motivation to change can be low.

In the authors' vision, primary care physicians would continue to provide wellness and prevention services and, as technology enables it, would take over testing, imaging, and other services that specialists now provide.

To accomplish this would require significant changes in health care business models. Hospitals that set themselves up as "solution shops," with multidisciplinary teams of specialists who focus on particularly difficult diseases using intuitive medicine, would bill on a fee-for-service basis. Services (typically procedures) provided outside of a hospital after a definitive diagnosis has been made would be paid on a fee-for-outcome basis, because the treatment and its outcome would be more predictable. Services for chronic disease management through online services or other facilitated networks would be paid on a fee-for-membership basis, while firms handling chronic disease management using nurse practitioners or other professionals would be paid through capitation. The authors contend it would be a mistake for providers to attempt to combine these models, because doing so would conflate measurement of value, costs, pricing, and profit. Accurate measures of these items are necessary to make the system more efficient.

Quality Matters asked the authors how their proposal would affect the quality of care. Hwang, one of the authors, provided the responses.

QM: *If the innovations you describe in the book occurred, how would the quality of health care improve from the perspective of patients?*

Hwang: It's important to recognize that the definition of quality differs depending on the circumstance. For complex conditions, patients want assurance of an accurate diagnosis and effective course of treatment,

without the need to visit specialist after specialist over a period of many months to years. These patients will find their demands for better quality met by institutions that have integrated across multiple disciplines to diagnose diseases correctly the first time. Hospitals focused on diagnosing pulmonary diseases or neuropsychiatric conditions are some of the examples emerging today.

QM: What about simple conditions?

Hwang: For those, patients often have a very different definition of quality. Because the care is routine and rules-based, patients' priorities are convenience and affordability. New business models such as retail clinics have been successful because they recognize the changing dimensions of perceived quality.

QM: Will providers view the change in quality differently than patients?

Hwang: Providers may be a little more reluctant to change. The multidisciplinary solution shops described above require historically independent physicians to work in very different ways from which they may be accustomed. Likewise, for routine care, it means accepting that some basic elements of care can be performed as well or even better by providers with less training [than physicians]. Because the highest-cost providers are being disrupted by lower-level providers, they will believe that quality is suffering and will attempt to put up roadblocks against disruption.

QM: In the book, you argue that existing business models for hospitals and physician practices greatly increase the cost of health care by adding overhead charges for services that could be more quickly provided by less-expensive health care providers in less capital-intensive settings, such as retail clinics. What are some of the other benefits of

moving care out of traditional physician offices and hospitals?

Hwang: The new business models move care away from centralized facilities like the general hospital and closer to where patients work and live. In addition to lowering overhead costs, there is the element of convenient access. Many of us have experienced the internal debate over whether it is worth taking significant time away from work or from home in order to see a doctor. Making medical care available in on-site clinics at work or in convenient settings like pharmacies and grocery stores will reduce the self-denial of care that exists whenever people are forced to make an inconvenient choice.

QM: Are there downsides to such a redistribution of work—such as the risk that less-experienced practitioners will miss symptoms of more complex problems, especially in patients who've received episodic care or have been medically underserved? If so, what safeguards might be put in place to prevent this from happening?

Hwang: It's important that providers do not practice beyond the limits of their abilities, but if implemented correctly, the risk for negative outcomes from disruptions like retail clinics is less, not greater. The bottom line is that we ought to be encouraging all providers to practice up to the limits of their licensure; when we restrict expansion of duties such that people are practicing too far below their limits, we price patients out of health care. In practical terms, the type of care that ought to be offloaded is the rules-based work—care that is driven by algorithm and routine processes—which does not require the intuition of a higher-cost expert. Simple checklist forms, computer-based decision tools, go/no-go diagnostic tests, and interoperable health records are all tools that

already exist to minimize risk in these new settings.

QM: You've categorized medicine practiced in the U.S. into three types: precision medicine, which describes care for diseases that can be diagnosed precisely and for which treatments are predictably effective; empirical medicine, which covers diseases for which treatment outcomes can be described in probabilistic terms; and intuitive medicine, which describes conditions that are diagnosed only by symptoms and treated with therapies of uncertain efficacy. Do you think the means by which we measure and monitor the quality of care should be revised to reflect the different approaches of each?

Hwang: Yes, and this ties in very closely with how we pay for each of these categories of care. For example, when pay-for-performance initiatives attempt to tackle diseases that still reside largely in intuitive medicine, providers object, because there are too many unpredictable variables beyond their control that may impact quality measurements. However, for precision care and much of empirical medicine, you can start to measure—and pay for—quality outcomes in much more certain terms. In these areas, we will increasingly see reflections and measures of quality that are already common in other industries, but have largely been dismissed in health care—customer experience, quality guarantees, ease of accessibility, and timeliness.

QM: In the book, you note the potential of personalized medicine to enhance the quality of care by identifying how biological and non-biological issues can affect a patient's response to treatment. How would you change the way patient data are collected to ensure that providers and researchers have access to the depth of epidemiological data necessary for such work?

Hwang: I would recommend looking at what companies like [23andMe](#) and [PatientsLikeMe](#) are doing, which is essentially building a network of users who very willingly share their health data. In fact, in the case of 23andMe, the users actually pay for the privilege of contributing their information to the community database (of course, they get their personal results in return). It really turns the whole process of patient enrollment and clinical trial management on its head. Empowered patients, acting out of their own self-interest, will self-organize and serve as ready partners in biomedical research.

QM: You recommend that physicians transfer oversight of patients with behavior-intensive diseases such as diabetes to nurses or other networks of professionals. However, recent experience suggests better outcomes when disease management is embedded in or integrated with primary care because patients want to feel that the nurse is part of a team that includes their personal physician. Do you think this patient expectation will change as the job assignments of nurses do?

Hwang: Chronic diseases that require significant behavior changes can be managed effectively by several different entities. It's important to coordinate such care with the remainder of the health care system, but it doesn't mean that this care must be provided by or somehow tied to a primary care physician. This argument is currently being made by professional societies that wish to keep physicians in the central coordinating role of patient care. However, there will be more and more patients who only need a software tool, a nurse-staffed telephone line, or reminders via text messaging to manage their chronic diseases effectively. Personally controlled electronic health records will end up serving the important role of data coordination.

QM: Won't assigning disease management responsibilities to an independent person or agency lead to a loss of longitudinal continuity with a personal physician? Can electronic health records really make up for that lack of relationship?

Hwang: Keep in mind that this same situation has played out over and over again whenever a profession built on long-term trust finds itself getting disrupted. Travel agents, real estate agents, retirement portfolio managers, and stockbrokers have all made similar arguments as they were losing customers to new business models within their respective industries. Likewise, this is an argument often made by primary care societies that have a vested interest in holding on to their current position in the system. This is not to say that primary care physicians are unnecessary, but only that people deserve choices when it comes to care coordination. I believe that electronic health records will play an increasingly important role in this regard.

QM: Do you see any disadvantages (financial or other) to locating retail clinics within primary care physician practices to handle care as part of a team, as Group Health Cooperative in Seattle has done?

Hwang: Group Health Cooperative is among the integrated health systems that I believe can implement and manage retail clinics correctly and for the right reasons. However, the main danger when any existing business model tries, in essence, to disrupt itself is that ultimately its motivations and goals will revert back to serving the parent business. In other words, a health system may not see retail clinics as part of an integrated delivery system, but merely as another source of patient referrals to higher-margin hospital and emergency care. If retail clinics fail to drive revenue to the hospital, they'll get shut down, even if they were

profitable and delivering quality care all along, simply because the parent organization will find investments that buttress the hospital more attractive.

QM: Your description of facilitated network businesses as a network through which members exchange information or products with one another has many similarities to the definition of accountable care organizations (defined as real or virtual organizations that form relationships between different providers to enhance the coordination of care for a population and for which financial reward is based on group rather than individual performance). What role, if any, might accountable care organizations play in your vision of a restructured health care system?

Hwang: Accountable care organizations will add nothing new unless they are truly free to partner with new business models that are determined to deliver care in very different ways. Otherwise, it's merely the latest term for managed care. The bundled payment model is a good idea, as it shifts responsibility for determining and rewarding value closer to the actual providers of care. However, the same in-fighting across different provider groups will remain and quite possibly intensify as they seek to divide up bundled payments. The best way to bypass this situation is to encourage development of organizations that integrate the financing and delivery of health care—which we called integrated, fixed-fee providers in the book.

QM: Your model of health care delivery would encourage a vertical displacement of jobs, as less-expensive providers take over responsibilities for care traditionally provided by providers at a higher level of pay grade. Do you also expect to see horizontal displacement (e.g., physicians taking over pharmacy responsibilities in remote locations

or primary care physicians providing dental sealants to patients)?

Hwang: Yes, as long as it leads to greater access to services that previously did not exist (thereby expanding the market of customers), disruption will occur. At HealthPartners [a Minn.-based not-for-profit HMO], for example, pediatricians have been deeply involved in providing dental sealants to children who otherwise may not have received subsequent care from a dentist. In this situation, expanding the market is not just a power grab, but it benefits everyone involved.

QM: What's the best way to foster an evolution in the roles of medical professionals and paraprofessionals over the next decade?

Hwang: It's futile to expect highly trained, highly skilled professionals like physicians to somehow become less costly versions of themselves, no matter how much you cut their payment rates. It will be up to the institutions that employ physicians to determine when it's possible to disrupt them by using less costly providers. But rather than waiting for hospital nursing and medical residency programs to churn out cheaper graduates, health systems may one day offer medical education themselves to ensure a steady supply of workers who do not require significant re-training. As long as these internally trained providers can perform the work expected by the health system, then a lot of associated costs such as licensure, certification, and accreditation are no longer necessary.

QM: Are there any lessons from other industries with similarly entrenched traditions where this has happened?

Hwang: A similar situation has arisen in the disruption of MBA programs. Rather than

continuing to pay the rising salaries of top-tier MBA graduates, many companies have instead started training their existing employees in-house. It is far more cost-effective and ensures that employees receive only the education and training that is really necessary to succeed within the company.

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QM: You contend that employers—rather than the government—are in one of the best positions to effect the changes necessary to lower the cost of health care services. Is there an industry (or a type of business) that is likely to pursue such innovation? Should the government encourage employer involvement with incentives?

Hwang: All it takes is a business with enough employees to make it worthwhile to make an alternative investment in employee health care. These innovations are not restricted to any particular industry; even Safeway, which is in an industry with high employee turnover, has found significant value in investing in employee health. Government incentives could help smaller businesses, but innovations among large employers are already happening. Forward-looking companies with successful employee health programs like Perdue Farms, Pitney-Bowes, and QuadMed [see this issue's case study for more detail] may eventually open up their clinics to the general public as a more affordable, higher-quality option. They're simply following the same path that led to Kaiser Permanente's founding many decades ago.

QM: How might scientific discovery lead to innovations in population health and prevention?

Hwang: One of the most critical factors to improving population health is the reduction of existing disparities, and patients that normally cannot afford or access health care will especially benefit from new medical technologies that allow for lower-cost, disruptive models of care. This requires existing institutions that attempt to address these disparities, notably the public health system, to embrace innovations like retail clinics as legitimate partners in reaching these underserved populations. Moreover, armed with new technologies and connected through online facilitated networks, patients will be capable of doing much more for themselves, rather than always relying on a provider they may see for only one or two hours out of the year. This is not only the most expedient way, but it is the only affordable option to ensure that everyone receives appropriate preventive and wellness care.

Case Study: QuadMed—Transforming Employer-Sponsored Health Care Through Workplace Primary Care and Wellness Programs

By Douglas McCarthy

***Summary:** Worksite health clinics that focus on comprehensive primary care and wellness have helped lower costs and improve care for employees of the Wisconsin printing company Quad/Graphics. This approach transforms the role of employers from mere purchasers of health insurance to investors in employee health and productivity.*

Issue

Employers can play a key role in improving the value of health care that they purchase and arrange for employees and their family members by establishing onsite health clinics. Recently, employers have shown renewed interest in such clinics as a way to boost worker productivity, enhance convenient

access to care, improve prevention and wellness, and control health care costs.¹ Such an approach has the potential to act as what Harvard Business School Professor Clayton Christensen calls a "disruptive innovation" in the marketplace for employer-sponsored health care—one that can dramatically lower costs and improve care for patients.²

Quad/Graphics, a Wisconsin-based printing company, was one of the first employers to offer comprehensive worksite health clinics in recent decades. Nearly 20 years ago, the founder of this family-owned business, Harry Quadracci, noticed his employees were complaining of problems with medical claims or the quality of care while at the same time the company's medical costs were soaring.³ Taking a cue from the company's business strategy, which integrates printing activities from design to distribution, he set out to create a more reliable and efficient health care system for his employees by "cutting out the middleman" and bringing the provision of primary health care in-house.

Objective and Intervention

Quad/Graphics invests in employee health and productivity and promotes health care value by integrating worksite primary care services and wellness programs with a directly contracted specialty care and hospital provider network as part of a self-funded employee health care benefits plan. Quadracci framed the objective of this approach from the employee's perspective: "We'll keep you well; and by the way, if you get sick, we'll take care of that, too."

Organization

Founded in 1971, [Quad/Graphics](#) is the nation's largest privately held commercial printing company with 9,000 non-unionized employees, 10 printing plants in six states, and more than \$2 billion in annual revenues. [QuadMed, LLC](#), a subsidiary of Quad/Graphics, operates the worksite clinics, related fitness and rehabilitation facilities, and wellness programs on behalf of Quad/Graphics and other employer clients.

Implementation and Leadership

QuadMed began with a single physician and a single nurse staffing a small worksite clinic at the company's Pewaukee, Wisc., plant in 1990. As the clinic gained acceptance with employees, Harry Quadracci (the late founder and CEO) recruited his brother, Leonard Quadracci, M.D., a kidney specialist, to run the unit and expand its scope and capacity companywide. QuadMed's current president, Raymond Zastrow, M.D., took over when Leonard Quadracci retired in early 2008. Thomas Van Gilder, M.D., J.D., M.P.H., medical director for quality initiatives, joined QuadMed over three years ago and practices internal medicine at the clinic located in Quad/Graphics' West Allis, Wisc., plant.

Target Population

QuadMed delivers care to more than 20,000 employees, family members, and some retirees of Quad/Graphics. About 85 percent of the Quad/Graphics workforce gets care at QuadMed clinics, which are located at or near three plants in the Milwaukee, Wisc., area, Saratoga Springs, N.Y., and Martinsburg, W.Va. (Exhibit 1).

QuadMed has operated clinics for workforces (unionized and non-unionized) at the MillerCoors plant in Milwaukee and at Briggs & Stratton plants in Milwaukee and Poplar Bluff, Mo. for a number of years. (Employees at Briggs & Stratton and MillerCoors may use Quad/Graphics' onsite clinics for care as well.) In September 2009, QuadMed also began operating two on-site clinics for the Milwaukee-based financial services provider Northwestern Mutual.

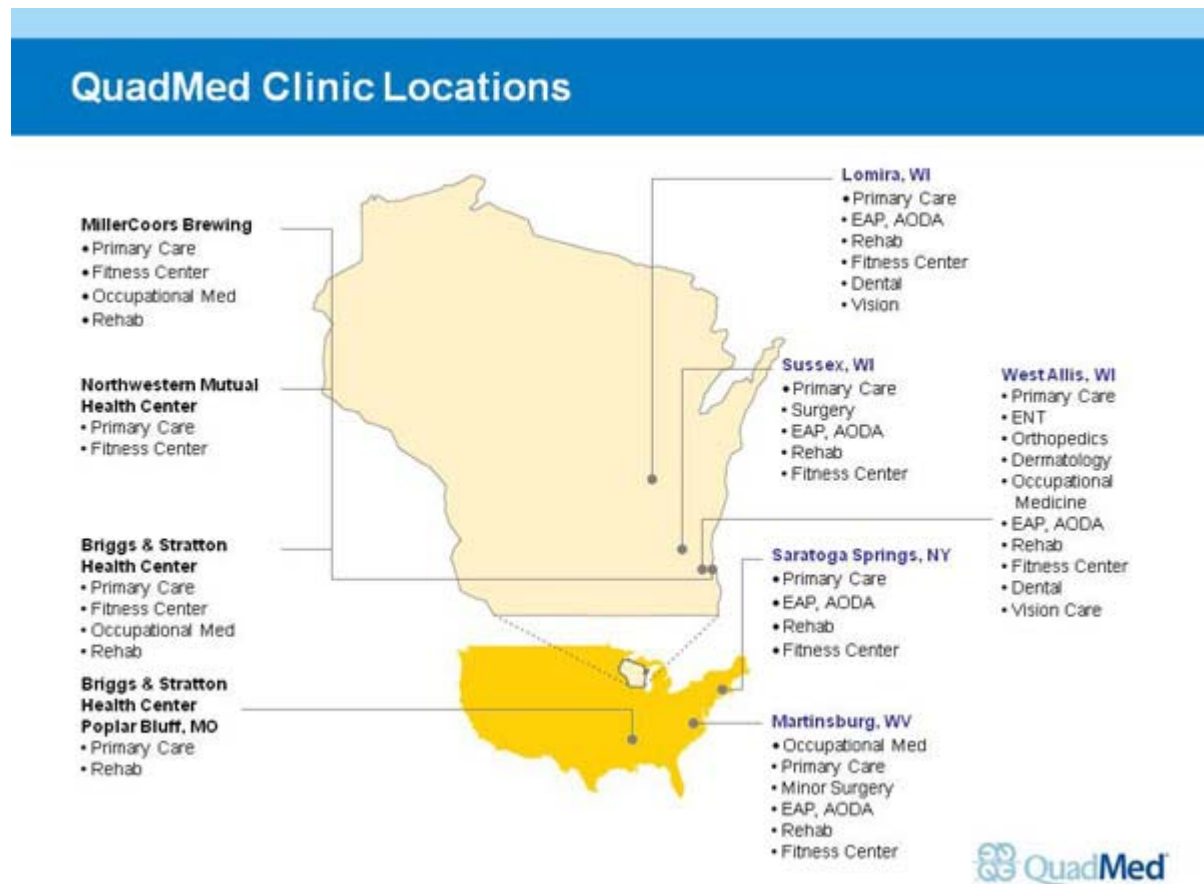
Services Offered

QuadMed clinics offer a full range of primary care, dental and vision care, and

occupational medicine as well as selected specialty care such as cardiology, dermatology, obstetrics/gynecology, and orthopedic surgery. Onsite ancillary services include pharmacy, X-ray, laboratory, rehabilitation clinics, and fitness centers. Clinic patients with mental and behavioral health needs also have access to an employee assistance program (EAP) and alcohol and other drug abuse services. QuadMed directly contracts with a "high-performance network" of local hospitals, specialists, and radiology practices to provide services not offered at the onsite clinics. Participation in the network is determined based on providers' pricing and their reputation for quality and responsiveness.

Quad/Graphics' point-of-service plan gives employees a choice of providers with variable cost-sharing requirements that encourage (but do not require) the use of worksite clinics. For those who use QuadMed clinics for their primary care, copayments are \$6 for any visit to a QuadMed clinic and \$30 for visits to specialty physicians in the network, plus a \$100 deductible. (Patients do not need a referral to visit a specialist.) Employees who do not use QuadMed clinics pay 20 percent coinsurance after a \$200 deductible for care within the network or 30 percent coinsurance after a \$300 deductible for care outside the network. (Family deductibles are twice the employee level.)

Exhibit 1



Source: QuadMed

Services Offered

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Practice of Care

QuadMed's worksite clinics offer more than just convenience for patients. According to Van Gilder, the clinics provide a holistic approach to care made possible by unhurried visits lasting 30 minutes or longer, along

with short waiting times and integration of onsite ancillary services such as pharmacy and laboratory services. Patients "know that they will get in, see the doctor after a very brief wait, and end the visit ready to go" without having to travel across town for a lab test or X-ray, he says. During the time employees might have spent traveling to a doctor's office, they can instead actually be seen by and talk with their doctor. Patients also may see midlevel practitioners (physician assistants or nurse practitioners) for urgent care and ongoing chronic care needs.

"When somebody comes in for a sore throat, it's expected that we'll not only address the sore throat, which may take just a few minutes, but we'll address all of their health concerns and all of their appropriate health screenings at that visit," Van Gilder explained. "That allows a doctor-patient relationship to develop, so that when either more complex problems come around or when some of the more difficult prevention topics come up—whether physical activity or diet or smoking cessation—we've developed a relationship that people feel they can trust and come to us for their care and wellness needs."

Protecting medical privacy is key to maintaining employees' trust: QuadMed promises not to share patients' medical records with the company's human resources department. "We emphasize that we are very protective of their health information, and we monitor who has access to the charts," said Van Gilder. Clinicians wear a different uniform than plant employees to emphasize they are not "company doctors" but patient advocates. "It's a daily struggle to maintain that trust, because any breach [of privacy] would be a serious threat to our ability to continue to do the work that we do," Van Gilder said.

QuadMed has used an electronic medical record (EMR) system for more than 10 years. It recently converted to General Electric's Centricity system and is currently installing functionality that will provide real-time prompts to physicians in the exam room when a patient is due for preventive care. The system will also support monthly reporting so that physicians can track their performance for an entire patient panel. Most physicians enter progress notes directly in the EMR, but a few continue to dictate and the transcription is then entered in the EMR.

Care Coordination

In Wisconsin, QuadMed has established a close relationship with one of the region's hospital systems (Wheaton Franciscan Healthcare), whose hospitalists care for QuadMed patients when they are admitted. QuadMed clinicians can use a portal into Wheaton Franciscan's information system to view admission and progress notes and the results of inpatient laboratory and imaging studies. The hospital also faxes discharge notes to QuadMed when patients leave the hospital. Quad/Graphics' claims adjudicators also alert the clinic when a patient has a major medical issue that appears to require follow-up.

To promote good care coordination, QuadMed periodically hosts receptions with area medical specialists and informally evaluates their patients' experiences with referrals and the specialists' communication with the primary care providers. QuadMed also encourages patients to have laboratory testing done at the clinic prior to specialty consultations and elective surgery, so that test results will be captured in the clinic's EHR.

Population Health

To support this emphasis on comprehensive care, QuadMed has developed wellness programs (such as "Lean You," described below) that engage patients at the worksite and outside the clinic. Wellness is considered the foundation of the QuadMed program, part of the company's "social contract" with its employees. "There's a real sense of taking care of each other—not just to make an extra buck, but to make sure everyone's doing all right, both for the health of the company and for the community," Van Gilder observed.

Wellness programs are coordinated by appointed (volunteer) wellness champions and paid fitness coordinators throughout the company. Employees and their spouses are eligible and encouraged to sign up during the annual open enrollment period (when they select benefit options) as well as throughout the year. Clinicians routinely assess their patients' body mass and exercise habits during clinic visits, encourage them to participate in wellness programs, and perform physical evaluations as part of program enrollment.

The goals of the "Lean You" wellness program are to promote physical activity, weight loss, smoking cessation, and early identification and control of diabetes as well as risk factors for cardiovascular disease. Participants receive a \$2 discount off their weekly health insurance premium; those who promise not to smoke or who quit smoking (and attest to being tobacco free) earn an additional \$8 weekly discount (worth a total of \$520 per year). Participants track their progress on a personalized Web page and can earn annual cash incentives of \$400 for meeting all of the program's goals, \$175 for meeting some goals, and \$50 for making some progress toward meeting the goals (Exhibit 2).

Exhibit 2**Participant Goals for the "Lean You" Wellness Program**

1. Be tobacco free by July 1 of enrollment year.
2. Be at or reach body mass index (BMI) of less than 27, or lose 10 percent of body weight in one year, whichever is less.
3. Exercise a minimum of three times a week for a duration of 30 minutes each time (does not have to be at a Quad/Graphics fitness center).
4. Control blood pressure and LDL-cholesterol within national guidelines and have normal glucose (or, if diabetic, at hemoglobin A1c goal).
5. Complete an annual preventive health exam with a primary care professional who attests that all health maintenance is up to date.
6. Complete an online health risk appraisal (www.HowsYourHealth.com).

Source: QuadMed

Diabetic patients participating in "Lean You" can qualify for a "Well You for Diabetes" program that provides quarterly consultations (face-to-face and virtually) with a certified diabetes educator to support disease control. Copayments for diabetes medications and supplies are waived (a benefit worth about \$400 annually) if participants meet program criteria, including regularly refilling medications, getting all diabetic tests and attending physician visits, quarterly contacts with the diabetes educator, and meeting outcome goals for glucose, blood pressure, high cholesterol, weight loss, exercise, and smoking.

The certified diabetes educator, Diane Collelo, R.N., works in close partnership with primary care physicians. For example, she and Van Gilder often see diabetic patients during the same clinic visit, with Collelo engaging patients in self-management education so that Van Gilder can focus on clinical management, including identification and treatment of comorbid conditions. Collelo keeps a registry of diabetic patients and follows-up with those who fail to make regular clinic appointments or quarterly contacts.

The use of data is a critical management tool for evaluation and benchmarking at QuadMed. All clinic visits are captured as encounters in the company's claims system and combined with data on care received from community providers. A 2005 analysis, for example, found that obesity was a major contributing factor to health care spending: costs for overweight, obese, and morbidly obese employees were 35 percent, 54 percent, and 94 percent higher, respectively, than for normal weight employees. This insight led the company to adopt a "value-based" benefit design that eliminates copayments for weight management services and diabetes medications (the latter as part of the "Well You for Diabetes" program) to encourage better disease prevention and control.⁴

Staffing

QuadMed employs 40 full-time-equivalent health care providers. At the West Allis plant, for example, the clinic staff includes four internal medicine physicians, two family physicians, a pediatrician, two physician assistants, and a nurse practitioner. The company also contracts with several specialists to provide care on a part-time basis

at the onsite clinics. Employed providers are paid market-competitive salaries, with incentive bonuses (worth about half of a potential 10 percent annual bonus) for meeting quality targets based on national clinical guidelines and patient satisfaction and for participation in clinic governance. Staffing is not determined by fixed patient-to-physician ratios but based on meeting patient scheduling demand.

QuadMed initially hired experienced community physicians who were attracted to the opportunity to move away from production-oriented care to patient-centered care. As its model has gained a track record, the company has had success hiring physicians from residency programs. Newly hired physicians receive on-the-job training to become conversant in QuadMed's approach to care. "I think in part we retain people because the people get hooked on being able to take care of patients in an atmosphere that really fosters wellness instead of a crazy paperwork-driven production model where you have to see somebody every seven or 10 minutes," Van Gilder said.

QuadMed providers meet as a group four times per year, supplemented by smaller meetings, to engage in peer education and peer review. "We look at how quality targets are being met and we try to do so in a very collegial way without penalties and without untoward incentives. We have the standards and we help each other meet them and by and large we all do," Van Gilder said. During the recent novel H1N1 pandemic, for example, staff members from adult and pediatric medicine, along with lab personnel, reviewed national, state, and local guidelines to provide clearer, more clinically relevant recommendations to all QuadMed staff and help ensure consistent, evidence-based care for flu patients and their families.

Results

Participation in the "Lean You" wellness program has increased from 22 percent of Quad/Graphics employees in 2005, the first year it was offered, to 70 percent today. About 25 percent of the participants achieve all programs goals and qualify for the full incentive reward. QuadMed estimates that the "Lean You" program more than pays for itself. In 2005, for example, the estimated program costs were \$240,000, compared with estimated savings of almost \$2 million from early diagnosis of four cases of cancer detected during enrollment exams.⁵

More than 200 of the 732 diabetic patients in Quad/Graphics' workforce are participating in the "Well You for Diabetes" program and have reduced their hemoglobin A1c levels (a measure of blood glucose control) from 8 percent to 7.5 percent on average. Observation suggests that participants have improved emotional well-being as well.

Quad/Graphics spends more on primary care per patient than the average employer, but makes up the difference in lower costs for emergency department visits and hospitalizations. In 2008, for example, Quad/Graphics' outpatient visit rate was 15 percent higher for employees and family members in Wisconsin compared with the Midwest norm (434.2 vs. 377.5 visits per 100 lives), while its inpatient visit rate was more than 9 percent lower (55.7 vs. 61.5 per 1000 lives).

The difference in dollars between Quad/Graphics' health care costs and those of other Midwestern employers has widened from \$500 per employee (including family members) in 1991 to more than \$2,500 lower in 2008 (Exhibit 3). Since 1999, costs have risen at an average annual rate of 6 percent at Quad/Graphics versus 8.3 percent

at other Midwestern employers (medical inflation in Milwaukee was almost 1 percent lower than average for Midwestern cities represented in the Consumer Price Index). Although Quad/Graphics' employees are somewhat younger than the regional average, an actuarial analysis by Mercer Consulting found that Quad/Graphics' costs were below the benchmark after adjusting for differences in demographics and benefit designs, widening from 18 percent lower in 1998 to 31 percent lower in 2008. This widening difference in costs suggests that QuadMed's approach has been successful in "bending the cost curve."

Quality results for Quad/Graphics' patients treated at QuadMed clinics are at or above national employer benchmarks for the use of evidence-based practices to help control diabetes (75.3% vs. 61.4%), blood pressure (86.4% vs. 80.1%), and high cholesterol (92.6% vs. 78.0%) (Exhibit 4). Patient satisfaction has been increasing, with the proportion reporting that "I receive exactly the care I want and need exactly when and how I want and need it" rising by 14 percentage points among patients who are burdened by disease from 2006 to 2008, surpassing the national benchmark and the satisfaction level among healthy patients (Exhibit 5). Four of five QuadMed patients say that they would recommend QuadMed.

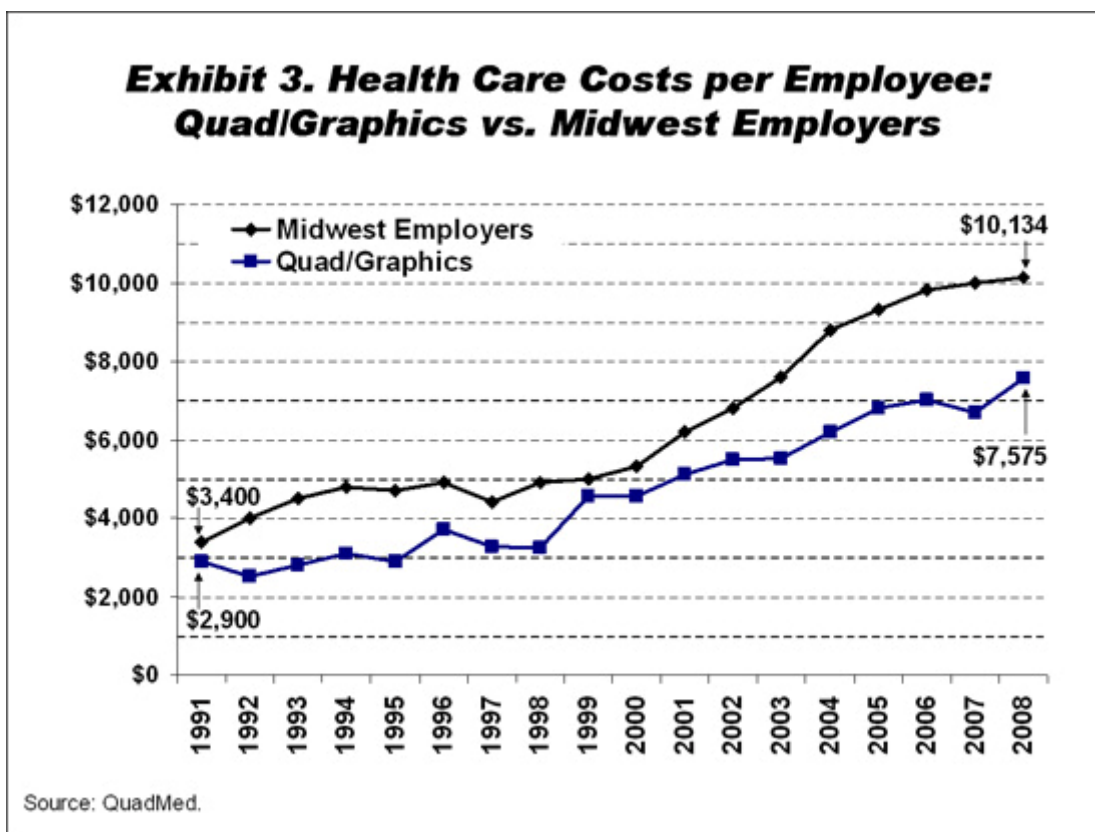
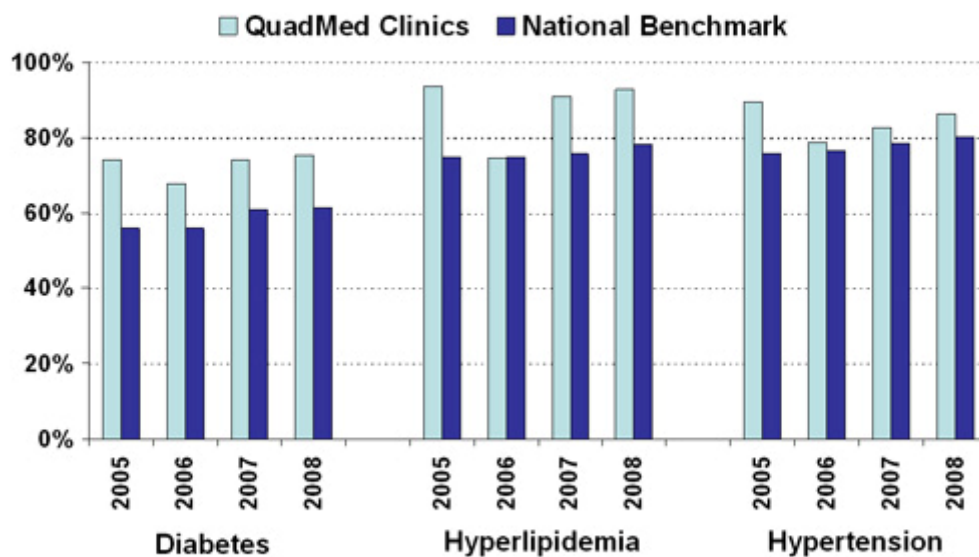
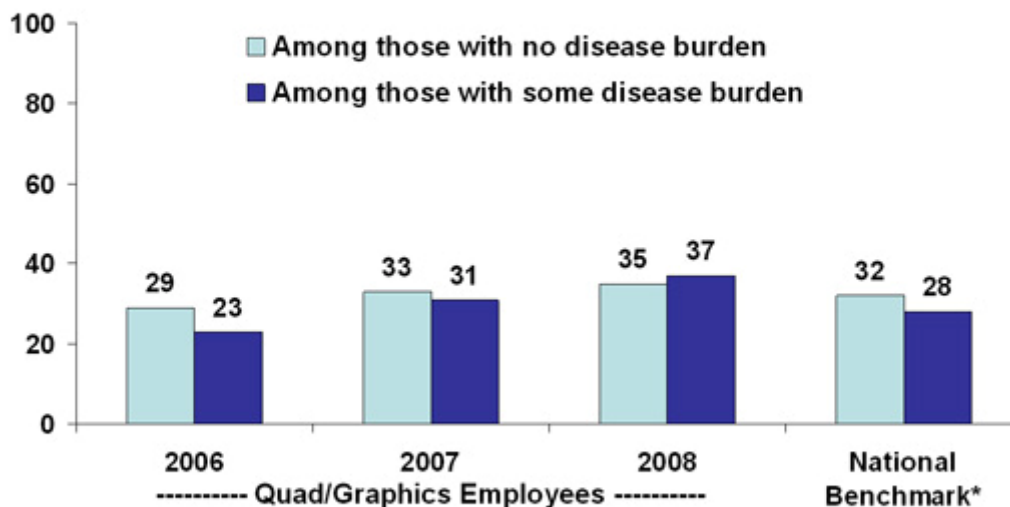


Exhibit 4. Use of Evidence-Based Practices to Help Control and Prevent Chronic Disease



Source: QuadMed.

Exhibit 5. Percent of patients agreeing with the statement: "I receive exactly the care I want and need exactly when and how I want and need it"



Source: QuadMed. *National benchmark drawn from www.HowsYourHealth.org for Jan. 2005–Apr. 2008 as reported in J. H. Wasson et al. *Joint Commission Journal on Quality and Patient Safety* 2008, 34(8):445–52. Burden of illness: chronic diseases, significant functional limitations, or three or more prescribed medications.

Lessons Learned

QuadMed appears to have achieved widespread acceptance in a family-oriented workplace by providing comprehensive onsite primary care in a way that prioritizes patient health and convenience. The critical success factor is organizing care so that it is oriented toward outcomes rather than production, with key ingredients including salaried physicians, extended patient visits, and integrated wellness programs, according to John Neuberger, vice president of operations. "We can't find a primary care model in any market that is as generous and as considerate of what we want to accomplish for our employees and their families," he said.

The payoff is more than financial, said Van Gilder: "Investing in employee health—and not simply paying health care claims or premiums—can really have returns: not only in terms of costs, but also in quality, wellness, retention of employees, and productivity. People think of these [returns] as being only very long-term, but we see that some of these things start helping almost immediately. As Joel Quadracci (son of the founder and current CEO) said, 'Who would have thought that health care would become a competitive advantage for a printing company?'"

QuadMed has not found that obese individuals are more likely (than non-obese individuals) to participate in wellness programs, suggesting that multifaceted approaches are needed to reach all segments of the workforce. Imposing a requirement for complying with lifestyle changes means that some workers postpone joining the diabetes wellness program until they get weight under control and are ready to make a commitment to quit smoking, Collelo said. This experience suggests that employers offering similar wellness programs should

consider ways to help people work through stages of readiness for change.

"Treating the whole person makes us more successful" in helping patients control their diabetes, Collelo observed. "We can teach anybody a standard; it doesn't mean they'll follow it. Nobody gets up and says, 'I'm going to be noncompliant today.' We have to figure out why they are noncompliant and how can we overcome their noncompliance... whether it's financial (which can be addressed by waiving copayments), do they not like to stick their fingers, do they have difficult work schedules or a tough family life, do they need an EAP consult, things like that."

Implications

It is unclear how many companies are likely to adopt Quad/Graphics' hands-on approach to "in-sourcing" the provision of comprehensive worksite health care. Some companies prefer to outsource the operation of worksite clinics to outside vendors, as MillerCoors and Briggs & Stratton have hired QuadMed to do. Fuld & Company reports that 24 vendors currently manage 2,200 worksite clinics for 1,200 employers. Its market research suggests that the number of worksite clinics could grow by up to 20 percent year and that they could serve 10 percent of the under-65 population (employees and their families) by 2015.⁶

Company size is a limiting factor in the spread of worksite clinics. QuadMed finds that a company needs to have 1,000 to 2,000 employees before an onsite health clinic will be cost-effective. (There were 5,510 private-sector establishments employing 1,000 or more workers at one location in the U.S., representing 11.6 million workers or 10 percent of the private-sector workforce in 2007.⁷) Still, smaller companies can adopt portions of the model, such as a part-time

onsite nurse practitioner or wellness programs with incentives that are tied to chronic disease management.

Successfully providing care in different work environments requires being attuned to their particular culture, according to Van Gilder. At unionized companies, for example, gaining employees' trust is especially critical to overcome skepticism about management-led initiatives. The union can become an advocate for onsite clinics if its members perceive that they are genuinely oriented to improving employees' health and well-being. Offering employees the choice of using onsite clinics or other community providers also helps build acceptance and distinguishes this approach from company-run clinics of the past.

Should worksite health care spread widely as part of a larger movement toward primary care "medical homes," it could help induce a shift in emphasis toward primary care and away from more costly specialty and hospital care, which could require changes in the composition of the health care workforce. "I think we offer a better way of practicing medicine: the way that we wanted [to

practice] when we started into primary care," Van Gilder noted. "And we removed some of the administrative and other overhead-type hassles. In exchange, folks get a chance to flourish as physicians and develop lasting and trusting relationships with patients."

Some observers have expressed concern that widespread use of worksite health clinics could have a detrimental effect on the viability of other community physician practices, in which the patient mix would shift toward a greater proportion of those covered by Medicare and Medicaid, which tend to pay lower rates than commercially insured patients.⁸ On the other hand, competition for privately insured patients might induce community physicians to undertake changes in their practices to match the perceived value offered by worksite clinics. In today's market, Neuberger doesn't think worksite clinics are a threat to primary care practices, which are often overwhelmed by demand for their services. Worksite clinics may help relieve some of this pressure so that community physicians are able to provide better care to their remaining patients.

This study was based on publicly available information and self-reported data provided by the case study institution(s). The Commonwealth Fund is not an accreditor of health care organizations or systems, and the inclusion of an institution in the Fund's case studies series is not an endorsement by the Fund for receipt of health care from the institution.

The aim of Commonwealth Fund-sponsored case studies of this type is to identify institutions that have achieved results indicating high performance in a particular area of interest, have undertaken innovations designed to reach higher performance, or exemplify attributes that can foster high performance. The studies are intended to enable other institutions to draw lessons from the studied institutions' experience that will be helpful in their own efforts to become high performers. It is important to note, however, that even the best-performing organizations may fall short in some areas; doing well in one dimension of quality does not necessarily mean that the same level of quality will be achieved in other dimensions. Similarly, performance may vary from one year to the next. Thus, it is critical to adopt systematic approaches for improving quality and preventing harm to patients and staff.

For Further Information
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Notes

1. Mercer's [2008 National Survey of Employer-Sponsored Health Plans](#) found that 32 percent of large employers (500+ employees) had worksite clinics that offered occupational health services and 13 percent had clinics that provided primary care services at or near the worksite. For more on worksite clinics, see: Watson Wyatt Worldwide, [Realizing the Potential of Onsite Health Centers](#), 2008; and Mercer, [Survey on Worksite Medical Clinics](#), 2008.
2. C. M. Christensen, J. H. Grossman, and J. Hwang, [The Innovator's Prescription: A Disruptive Solution for Health Care](#) (New York: McGraw Hill, 2009).
3. V. Fuhrmans, "Radical Surgery—One Cure for High Health Costs: In-House Clinics at Companies," *Wall Street Journal*, Feb. 11, 2005, A1.
4. A. Helwig, D. Schultz, and L. Quadracci, "Obesity and Corporate America: One Wisconsin Employer's Innovative Approach," *Wisconsin Medical Journal*, 2005 104(5):15–18.
5. R. J. Zastrow and L. Quadracci, "Engaging Quad/Graphics Employees in the Improvement of Their Health and Healthcare," *Journal of Ambulatory Care Management*, 2006 29(3):225–9.
6. Fuld & Company, [The Growth of On-Site Health Clinics](#), Feb. 2009.
7. U.S. Bureau of Labor Statistics, [Employment and Wages, Annual Averages 2007](#), Table 3.
8. K. Terry, [Worksite Clinics—The Next Threat?](#) *Physicians Practice*, May 2009.

News Briefs**CBO Underestimates Health Reform Savings, Researcher Finds**

Over the last 30 years, the Congressional Budget Office (CBO), which assesses the costs of proposed legislation and is widely respected for its competence and integrity, has underestimated the amount of savings and overestimated the costs that major changes in the health care system would bring, according to Jon Gabel in a recent [op-ed](#) published in the *New York Times*.

Drawing on Commonwealth Fund-supported research, Gabel, a senior fellow at the University of Chicago's National Opinion Research Center, analyzed the CBO's forecasts of three major changes in the Medicare program relative to their ultimate outcomes.

He found that in the early 1980s, the CBO underestimated savings from reforms Congress made in the way Medicare paid hospitals by \$11 billion. Gabel also found

that savings from the Balanced Budget Act of 1997, which changed the way skilled nursing facilities and home health services were reimbursed under Medicare, turned out to be 50 percent greater in 1998 and 113 percent greater in 1999 than the budget office had forecast. And, the even though the CBO predicted that drug prices would rise following the Medicare Modernization Act of 2003, which added prescription drug benefits to Medicare, by estimating that spending on the drug benefit would be \$206 billion, actual spending was nearly 40 percent less than that, Gabel found.

When the CBO analyzes initiatives aimed at reducing costs, it uses evidence from similar previous policy changes that have saved money. When there is a lack of historical examples, the "unknown" variable often becomes zero.

Gabel observes that underestimating savings that can come from cost-control initiatives in Medicare and throughout the health system could undermine efforts to pass health

reform legislation. "As Congress now works on its greatest push for health care reform in generations, the budget office needs to revise the methods it uses to make predictions about costs," he says.

Hospital Group Resists Improvement Targets for Stimulus Payments

In late August, the Federation of American Hospitals sent a [letter](#) asking federal officials to drop proposals that would require providers to meet quality improvement targets to qualify for federal incentive payments related to electronic health records.

Under the economic stimulus package, hospitals and physicians demonstrating "meaningful use" of electronic health records will qualify for Medicare and Medicaid incentive payments. While the rules for "meaningful use" [are still being debated](#), the Health IT Policy Committee recently recommended that provider payments be linked to fulfillment of certain quality improvement targets.

The Federation of American Hospitals, a trade association for for-profit hospitals, argues that this recommendation goes beyond the scope of the stimulus legislation. The group maintains that the law requires providers to report quality measures—not to meet certain targets. In addition, the group warns that tying incentive payments to outcome measures could hinder health IT adoption.

Leaving Hospital Against Medical Advice Contributes to Readmissions, Study Finds

The number of hospital stays that ended with patients leaving against medical advice increased 39 percent between 1997 and 2007, according to a [study](#) by the Agency for Healthcare Research and Quality published in August. Patients choosing to be discharged

against medical advice had higher rates of adverse health outcomes and substantially higher readmission rates than those who followed medical advice.

The study, which draws on data from the Healthcare Cost and Utilization Project 2007 Nationwide Inpatient Sample, found that nearly half of patients leaving the hospital against medical advice in 2007 were Medicaid beneficiaries or the uninsured. Hospital stays in which the patient left against medical advice were 1.6 times more common among men than among women, and 2.7 times more common among patients living in the poorest communities than in the wealthiest communities.

Understanding the reasons why patients leave the hospital—such as behavioral problems, fear of incurring high costs, or family or work responsibilities—can help hospital providers to design strategies that promote patient adherence to medical advice. These, in turn, could help avoid adverse outcomes and readmissions, the study concludes.

Premier P4P Demo Reduced Infections, Mortality Rates

[Results](#) from the fourth year of the nation's largest value-based purchasing demonstration program suggest that the program has helped prevent infections in pneumonia patients and cut death rates in heart attack patients. Members of Congress have looked to the demonstration as a model to control health care spending and improve the quality of care.

Between 2003 and 2007, hospitals participating in the Centers for Medicare and Medicaid Services/Premier Hospital Quality Incentive Demonstration were evaluated on their performance on 30 measures of the quality of care. Over the four-year period,

improvements in the quality of care at participating hospitals saved the lives of an estimated 4,700 heart attack patients. In addition, 92.6 percent of patients with pneumonia received recommended treatments, such as antibiotics, to prevent infection transmission, an increase from 69.3 percent of patients in 2003.

CMS will award more than \$12 million in bonus payments to 225 top-performing hospitals in the program. Three poor performers will be penalized.

Recent Publications of Note

Selected articles on quality improvement from a number of journals, including the *American Journal of Medicine*, *Annals of Internal Medicine*, *Archives of Pediatric and Adolescent Medicine*, *BMJ*, *Health Affairs*, *Health Services Research*, *International Journal for Quality in Health Care*, *Joint Commission Journal on Quality and Safety*, *Journal of the American Medical Association*, *Journal of General Internal Medicine*, *Journal of Patient Safety*, *Journal of Safety and Quality in Health Care*, *Medical Care*, *The Milbank Quarterly*, *The New England Journal of Medicine*, and *Pediatrics*. The articles are nominated by Editorial Advisory Board members from a preselected list.

Hospital Discharge Summaries Lacking

A study of discharge summaries at two academic medical centers found only 25 percent of them mentioned any pending tests and only 13 percent documented all pending tests. The study, which involved a review of records for 668 patients with test results pending, also found only 16 percent of 2,927 tests were mentioned in the summaries. The study suggests discharge summaries, which play a crucial role in communication between hospital-based physicians and outpatient providers, are inadequate to ensure proper management and follow-up of patients. M. C. Were, X. Li, J. Kesterson et al., [Adequacy of Hospital Discharge Summaries in Documenting Tests with Pending Results and Outpatient Follow-up Providers](#), *Journal of General Internal Medicine*, September 2009 24(9):1002–06.

Toyota Production System Principles Applied to Psychiatric Patient Transfers

A San Francisco psychiatric hospital used Toyota's efficiency improvement techniques to identify sources of error and delay in its patient transfer protocol. The hospital also used the method to design a standardized transfer process that improved access to

appointments and patient safety by reducing communication errors. As a result, the time required to both transfer a patient to its outpatient medication management clinics from other inpatient and outpatient services within the hospital and schedule the first appointment was reduced by 74.1 percent in the first year and by an additional 52.7 percent in the next two years. The time elapsed to the first appointment was reduced by 31.2 percent the first year and was stable in the following two years. J. Q. Young and R. M. Wachter, [Applying Toyota Production System Principles to a Psychiatric Hospital: Making Transfers Safer and More Timely](#), *Joint Commission Journal on Quality and Safety*, September 2009 35(9):439–48.

Impact of Order Set for Community-Acquired Pneumonia Studied

To assess the impact of a standardized order set for community-acquired pneumonia, Baylor Health Care System studied the use of such a set in eight of its acute-care hospitals. The Dallas, Tex.-based health system found in an unadjusted analysis that the order set improved compliance with clinical guidelines and demonstrated

reductions in in-hospital mortality, 30-day mortality, and direct costs. However, after risk-adjustment, only the increase in core measure compliance was retained. N. S. Fleming, G. Ogola, and D. J. Ballard, [Implementing a Standardized Order Set for Community-Acquired Pneumonia: Impact on Mortality and Cost](#), *Joint Commission Journal on Quality and Patient Safety*, August 2009 35(8):414–21.

Adherence to Treatment Lower When Physicians Communicate Poorly

A meta-analysis of published literature documenting the impact of physician-patient communication on patient adherence to treatment found there is a 19 percent higher risk of non-adherence among patients whose physician communicates poorly compared with patients whose physician communicates well. The researchers, who examined literature published between 1949 and August 2008, also found that training physicians in communication skills leads to significant improvements in patient adherence. K. B. Haskard Zolnieriek and R. M. DiMatteo, [Physician Communication and Patient Adherence to Treatment: A Meta-Analysis](#), *Medical Care*, August 2009 47(8):826–34.

Quality Improvement Initiatives, Professional Satisfaction Linked

A survey of 1,887 randomly selected physicians in Massachusetts found that physicians in practices with quality improvement activities experienced significantly less isolation, stress, and dissatisfaction compared with physicians working in practices that had reported experiencing quality problems. The survey also found a substantial portion of physicians reported moderate to severe problems with isolation (17 percent of respondents), work-life stress (31 percent of respondents), and dissatisfaction (27 percent of respondents). M. A. Quinn, A. Wilcox, J. E. Orav et al., [The](#)

[Relationship Between Perceived Practice Quality and Quality Improvement Activities and Physician Practice Dissatisfaction, Professional Isolation and Work-Life Stress](#), *Medical Care*, August 2009 47(8):924–28.

Public Reporting Enhances Performance on Quality Measures in Nursing Homes

A study testing the impact of public reporting on post-acute care in 8,137 nursing homes found that most post-acute care quality measures improved after the launch of Nursing Home Compare. While the quality improvements were statistically significant, the magnitude of the change was small. One measure that did not improve was the rate of potentially preventable rehospitalizations. The researchers found it did not change or worsened slightly after the launch. They concluded that while public reporting may lead to improvement on specific measures, it may not translate into broader quality improvement. To achieve that, policymakers may need to combine public reporting with pay-for-performance initiatives. R. M. Werner, R. T. Konetzka, E. A. Stuart et al., [Impact of Public Reporting on Quality of Postacute Care](#), *Health Services Research*, August 2009 44(4):1169–86.

Beta-Blockers Lower Mortality for Aneurysm Repair, but Risk-Assessment Is Required

The implementation of the Leapfrog Group's beta-blocker standard in California hospitals led to an estimated 50 percent decrease in mortality following elective abdominal aortic aneurysm repair. Nonetheless, the authors caution that hospitals must continually reexamine the efficacy and the effectiveness of perioperative beta-blocker therapy, given recent research that suggests that for some patients such therapy is associated with a higher risk of stroke and overall mortality. The researchers conclude more stratification of risk is necessary and offer a sample

checklist to identify patients who are likely to benefit from the therapy. B. S. Brooke, F. Dominici, M. A. Makary et al., [Use of Beta-Blockers During Aortic Aneurysm Repair: Bridging the Gap between Evidence and Effective Practice](#), *Health Affairs*, July/August 2009 28(4):1199–09.

Composite Measure More Predictive of Surgical Mortality than Individual Measures

Using data from the Medicare Provider Analysis and Review files, researchers developed a simple measure to predict surgical mortality in the hospital. The composite measure—based on hospital case counts and deaths and tested on six procedures—gives additional weight to the observed mortality rate based on the number of cases and places less weight on such rates when a hospital performs a low number of cases. The composite measure predicted large differences in future risk-adjusted mortality across hospitals, and achieved the most reliable predictions for pancreatic resection. The least predictive composite measure was for coronary artery bypass grafting, although the measure still predicted that future mortality rates for hospitals in the worst quartile were 1.7 times higher than those in the best quartile. J. B. Dimick, D. O. Staiger, O. Baser et al., [Composite Measures for Predicting Surgical Mortality in the Hospital](#), *Health Affairs*, July/August 2009 28(4):1189–98.

Results of Pay-for-Performance Program in England

A pay-for-performance program in England accelerated improvements in the quality of asthma and diabetes care. Yet, once targets were reached, the pace of improvement in care for patients with these conditions slowed, while the quality of care declined for two conditions not linked to incentives. Continuity of care, a measure of how often patients saw their usual doctor, declined significantly after the program was

introduced and remained at a lower level. An unanticipated benefit of the program was a reduction in sociodemographic disparities in the delivery of services. S. M. Campbell, D. Reeves, E. Kontopantelis et al., [Effects of Pay for Performance on the Quality of Primary Care in England](#), *New England Journal of Medicine*, July 2009 361(4):368–78.

Failure to Document Aortic Dilations in a System with an Advanced EMR

A study of 91 patients at two Veterans Affairs Health System facilities who had aortic dilations newly identified via CT scans found that less than 40 percent of those patients had evidence of the dilations recorded in their medical record within three months of discovery and 18 percent lacked documentation of follow-up care over an average of 3.2 years. In addition, more than 40 percent of patients with new aortic dilations had no follow-up contact with the provider who ordered the initial CT scan. The findings suggest the need for better strategies to ensure test results are acted upon and documented in medical records. J. R. S. Gordon, T. Wahls, R. C. Carlos et al., [Failure to Recognize Newly Identified Aortic Dilations in a Health Care System with an Advanced Electronic Medical Record](#), *Annals of Internal Medicine*, July 2009 151(1):21–7.

Federal Reporting of Patient Data Necessary, Author Argues

In this commentary, the author argues that private ownership of patient data is not in the best interest of public health or safety and urges the federal government to require hospitals and other medical institutions to report anonymous patient data to a federal agency for public use. The collection and sale of patient data by private companies impedes scientific discovery and puts patients at risk, the author argues. Further, it should not be allowed because patients supply the

information and its collection has been financed by the public, via insurance companies, taxes, and other channels. M. Rodwin, [The Case for Public Ownership of Patient Data](#), *Journal of the American Medical Association*, July 2009 302(1):86–8.

Quality and Spending Not Correlated on a Hospital-Specific Basis, Study Finds

Using Hospital Quality Alliance data to study the association between the quality of care and intensity of spending on end-of-life care on a hospital-specific basis, researchers found

the association nil or negative. Indeed, the study demonstrated that hospitals achieved exemplary performance on process-of-care measures for acute myocardial infarction, pneumonia, and heart failure across wide ranges of care intensity. Further, higher- and lower-spending hospitals do not perform uniformly well or poorly on quality indicators. L. Yasaitis, E. S. Fisher, J. S. Skinner et al., [Hospital Quality and Intensity of Spending: Is There an Association?](#), *Health Affairs* Web Exclusive, May 21, 2009:w566–w572.

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Special thanks to Editorial Advisory Board members Mary Naylor and Gordon Mosser for their guidance with this issue, and to Carol Beasley at the Institute for Healthcare Improvement for her assistance with the case study.

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Citation

Quality Matters: Innovations in Health Care Delivery, The Commonwealth Fund, September/October 2009, vol. 37.